Partial FCC Test Report

(Spot Check)

Report No.:	RFBGTL-WTW-P22020477-1
FCC ID:	APYHRO00315
Received Date:	Feb. 19, 2022
Test Date:	May 03 ~ May 11, 2022
Issued Date:	May 30, 2022
Applicant:	SHARP Corporation Mobile Communication BU
Address:	2-13-1 Iida Hachihonmatsu Higashi-hiroshima City, Hiroshima 730-0192, Japan
Manufacturer:	Sharp Corporation
Address:	1 Takumi-cho, Sakai-ku, Sakai City, Osaka 590-8522, Japan
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN
FCC Registration / Designation Number:	788550 / TW0003

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
RFBGTL-WTW-P22020477-1	Original release.	May 30, 2022

1 Certificate of Conformity

Product:	Smart Phone
Brand:	SHARP
Sample Status:	Engineering sample
Applicant:	SHARP Corporation Mobile Communication BU
Test Date:	May 03 ~ May 11, 2022
Standards:	47 CFR FCC Part 15, Subpart E (Section 15.407) ANSI C63.10:2013

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

Prepared by : Polly Chien , **Date:** May 30, 2022

Polly Chien / Specialist

Approved by : Jeremy Lin , **Date:** May 30, 2022

Jeremy Lin / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(9)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -16.50 at 0.50190MHz.
15.407(b) (1/2/3/4(i/ii)/9)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -10.0 at 11400.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	N/A	Refer to Note
15.407(e)	6dB bandwidth	N/A	Refer to Note
15.407(g)	Frequency Stability	N/A	Refer to Note
15.203	Antenna Requirement	Pass	Antenna connector is I-PEX not a standard connector.

Note:

1. This report is a partial report, only spot check test items such as Radiated Emissions and Conducted Power test chosen the worst channel of original report was were performed for this report. Refer to original report for the other test data.
2. For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOBE test plots were recorded in Annex A.
3. 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.
4. 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) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.79 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	2.44 dB
	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Smart Phone
Brand	SHARP
Sample Status	Engineering sample
Power Supply Rating	5.0Vdc (from adapter) 3.87Vdc (Battery)
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDMA
Modulation Technology	OFDM, OFDMA
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 300Mbps 802.11ac: up to 1733.3Mbps 802.11ax: up to 2402Mbps
Operating Frequency	5180 ~ 5320MHz, 5500 ~ 5720MHz, 5745 ~ 5825MHz
Number of Channel	5180 ~ 5320MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 8 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 4 802.11ac (VHT80), 802.11ax (HE80): 2 802.11ac (VHT160), 802.11ax (HE160): 1 5500 ~ 5720MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 12 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 6 802.11ac (VHT80), 802.11ax (HE80): 3 802.11ac (VHT160), 802.11ax (HE160): 1 5745 ~ 5825MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 5 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 2 802.11ac (VHT80), 802.11ax (HE80): 1
Output Power	Refer to note
Antenna Type	Refer to note
Antenna Connector	Refer to note
Accessory Device	Refer to note
Cable Supplied	Refer to note

Note:

1. This report is a supplementary report to the original BV CPS report no.: RFBGTL-WTW-P22020475-1. Exhibit prepared for FCC Spot Check Verification report, the format, test items and amount of spot-check test data are decided by applicant's engineering judgment, for more details please refer to declaration letter exhibit. Radiated emission and output power verification worst test refer to original report.
2. There are differences between FCC ID: APYHRO00314 & FCC ID: APYHRO00315:

FCC ID	APYHRO00314	APYHRO00315
FM Radio	Supports	Doesn't support

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

Modulation Mode	TX Function
802.11a	2TX
802.11n (HT20)	2TX
802.11n (HT40)	2TX
802.11ac (VHT20)	2TX
802.11ac (VHT40)	2TX
802.11ac (VHT80)	2TX
802.11ac (VHT160)	2TX
802.11ax (HE20)	2TX
802.11ax (HE40)	2TX
802.11ax (HE80)	2TX
802.11ax (HE160)	2TX

* The bandwidth and modulation are similar for HT20/HT40 on 802.11n mode and VHT20/VHT40 on 802.11ac mode and HE20/HE40 on 802.11ax mode. The bandwidth and modulation are similar for VHT80/VHT160 on 802.11ac mode and HE80/HE160 on 802.11ax mode. Therefore the investigated worst case is the representative mode in test report. (Final test mode refer section 3.2.1)

4. The EUT contains following support units.

Product	Brand	Model	Description
Adapter (Support unit)	Salom	XN-2QC25	Input: 100-240Vac, 50/60Hz, 0.2A Output: 5.0Vdc, 800mA
Battery	-	-	3.87Vdc, Rated 4870mAh (18.9Wh), Typ. 5000mAh (19.4Wh)
Headset (Support unit)	Ambibio	AB-HI02JS	-
USB cable (Support unit)	Luxshare-ICT	L6KU2007-CS-H	0.95m shielded cable without core

5. The antenna used in this EUT is listed as below table:

Ant. Type	Connector	Ant. No.:	Antenna Gain (dBi)				
			2400-2472 MHz	5150-5250 MHz	5250-5350 MHz	5470-5725 MHz	5725-5850 MHz
PIFA	I-PEX	4	-2.7	-2.5	-3.6	-3.8	-1.9
		8	0.0	-2.9	-2.4	-1.6	-0.9

6. Output Power are as below:

Frequency (MHz)	Output Power (mW)						
	Full RU	Partial RU					
		RU26	RU52	RU106	RU242	RU486	RU996
5180-5250	30.558	12.010	11.832	11.785	11.702	11.576	10.900
5250-5320	30.834	12.109	11.984	11.901	11.804	11.697	0.003
5500-5720	30.622	12.262	12.178	12.055	11.957	11.739	11.404
5745-5825	30.622	12.167	11.956	11.914	11.860	11.470	-

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

3.2 Description of Test Modes

For 5180 ~ 5320MHz:

8 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

4 channels are provided for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz
54	5270 MHz	62	5310 MHz

2 channels are provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency	Channel	Frequency
42	5210MHz	58	5290MHz

1 channel is provided for 802.11ac (VHT160), 802.11ax (HE160):

Channel	Frequency
50	5250MHz

For 5500 ~ 5720MHz:

12 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

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), 802.11ax (HE40):

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), 802.11ax (HE80):

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

1 channel is provided for 802.11ac (VHT160), 802.11ax (HE160):

Channel	Frequency
114	5570MHz

For 5745 ~ 5825MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

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

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency
155	5775MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description
	RE≥1G	RE<1G	PLC	P	
-	√	√	√	√	-

Where RE≥1G: Radiated Emission above 1GHz & Bandedge Measurement RE<1G: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission P: Conducted Output Power Measurement

Note:
1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on Y-plane.
2. Radiated emission test (below 1GHz) and power line conducted emission test items chosen the worst maximum power channel for final testing.

Radiated Emission Test (Above 1GHz):

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11ax (HE20)	5180-5250	36 to 48	40	OFDMA	MCS0
-	802.11ax (HE20)	5250-5320	52 to 64	52, 64	OFDMA	MCS0
-	802.11ax (HE20)	5500-5720	100 to 144	140	OFDMA	MCS0
-	802.11ax (HE20)	5745-5825	149 to 165	165	OFDMA	MCS0

Radiated Emission Test (Below 1GHz):

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11ax (HE20)	5180-5250	36 to 48	165	OFDMA	MCS0
	802.11ax (HE20)	5250-5320	52 to 64		OFDMA	MCS0
	802.11ax (HE20)	5500-5720	100 to 144		OFDMA	MCS0
	802.11ax (HE20)	5745-5825	149 to 165		OFDMA	MCS0

Power Line Conducted Emission Test:

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11ax (HE20)	5180-5250	36 to 48	165	OFDMA	MCS0
	802.11ax (HE20)	5250-5320	52 to 64		OFDMA	MCS0
	802.11ax (HE20)	5500-5720	100 to 144		OFDMA	MCS0
	802.11ax (HE20)	5745-5825	149 to 165		OFDMA	MCS0

Transmit Power Measurement:

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5180-5250	36 to 48	36, 40, 48	OFDM	6.0
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	MCS0
	802.11n (HT40)		38 to 46	38, 46	OFDM	MCS0
	802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	MCS0
	802.11ac (VHT40)		38 to 46	38, 46	OFDM	MCS0
	802.11ac (VHT80)		42	42	OFDM	MCS0
	802.11ac (VHT160)		50	50	OFDM	MCS0
	802.11ax (HE20)		36 to 48	36, 40, 48	OFDMA	MCS0
	802.11ax (HE40)		38 to 46	38, 46	OFDMA	MCS0
	802.11ax (HE80)		42	42	OFDMA	MCS0
	802.11ax (HE160)		50	50	OFDMA	MCS0
-	802.11a	5250-5320	52 to 64	52, 60, 64	OFDM	6.0
	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	MCS0
	802.11n (HT40)		54 to 62	54, 62	OFDM	MCS0
	802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	MCS0
	802.11ac (VHT40)		54 to 62	54, 62	OFDM	MCS0
	802.11ac (VHT80)		58	58	OFDM	MCS0
	802.11ac (VHT160)		50	50	OFDM	MCS0
	802.11ax (HE20)		52 to 64	52, 60, 64	OFDMA	MCS0
	802.11ax (HE40)		54 to 62	54, 62	OFDMA	MCS0
	802.11ax (HE80)		58	58	OFDMA	MCS0
	802.11ax (HE160)		50	50	OFDMA	MCS0
EUT Configure Mode	**Mode**	**Frequency Band (MHz)**	**Available Channel**	**Tested Channel**	**Modulation Technology**	**Data Rate (Mbps)**
-	802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	6.0
	802.11n (HT20)		100 to 144	100, 116, 140, 144	OFDM	MCS0
	802.11n (HT40)		102 to 142	102, 110, 134, 142	OFDM	MCS0
	802.11ac (VHT20)		100 to 144	100, 116, 140, 144	OFDM	MCS0
	802.11ac (VHT40)		102 to 142	102, 110, 134, 142	OFDM	MCS0
	802.11ac (VHT80)		106 to 138	106, 122, 138	OFDM	MCS0
	802.11ac (VHT160)		114	114	OFDM	MCS0
	802.11ax (HE20)		100 to 144	100, 116, 140, 144	OFDMA	MCS0
	802.11ax (HE40)		102 to 142	102, 110, 134, 142	OFDMA	MCS0
	802.11ax (HE80)		106 to 138	106, 122, 138	OFDMA	MCS0
	802.11ax (HE160)		114	114	OFDMA	MCS0

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0
	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	MCS0
	802.11n (HT40)		151 to 159	151, 159	OFDM	MCS0
	802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	MCS0
	802.11ac (VHT40)		151 to 159	151, 159	OFDM	MCS0
	802.11ac (VHT80)		155	155	OFDM	MCS0
	802.11ax (HE20)		149 to 165	149, 157, 165	OFDMA	MCS0
	802.11ax (HE40)		151 to 159	151, 159	OFDMA	MCS0
	802.11ax (HE80)		155	155	OFDMA	MCS0

Partial RU

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11ax (HE20)	5180-5250	36 to 48	36, 40, 48	OFDMA	MCS0
	802.11ax (HE40)		38 to 46	38, 46	OFDMA	MCS0
	802.11ax (HE80)		42	42	OFDMA	MCS0
	802.11ax (HE160)		50	50	OFDMA	MCS0
-	802.11ax (HE20)	5250-5320	52 to 64	52, 60, 64	OFDMA	MCS0
	802.11ax (HE40)		54 to 62	54, 62	OFDMA	MCS0
	802.11ax (HE80)		58	58	OFDMA	MCS0
	802.11ax (HE160)		50	50	OFDMA	MCS0
-	802.11ax (HE20)	5500-5720	100 to 144	100, 116, 140, 144	OFDMA	MCS0
	802.11ax (HE40)		102 to 142	102, 110, 134, 142	OFDMA	MCS0
	802.11ax (HE80)		106 to 138	106, 122, 138	OFDMA	MCS0
	802.11ax (HE160)		114	114	OFDMA	MCS0
-	802.11ax (HE20)	5745-5825	149 to 165	149, 157, 165	OFDMA	MCS0
	802.11ax (HE40)		151 to 159	151, 159	OFDMA	MCS0
	802.11ax (HE80)		155	155	OFDMA	MCS0

Test Condition:

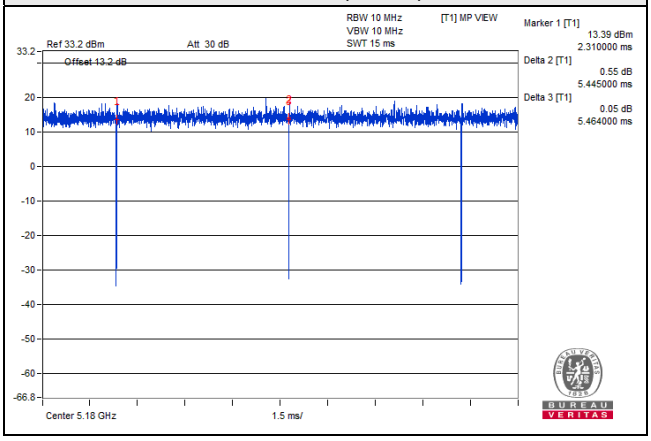
Applicable to	Environmental Conditions	Input Power	Tested by
RE≥1G	21 deg. C, 67% RH	120Vac, 60Hz	Thomas Cheng
RE<1G	21 deg. C, 67% RH	120Vac, 60Hz	Thomas Cheng
PLC	21 deg. C, 68% RH	120Vac, 60Hz	Thomas Cheng
P	25 deg. C, 60% RH	120Vac, 60Hz	Wayne Lin

3.3 Duty Cycle of Test Signal

Duty cycle of test signal is > 98 %, duty factor is not required.

802.11ax (HE20): Duty cycle = 5.445ms/5.464ms = 0.997

802.11ax (HE20)



3.4 Description of Support Units

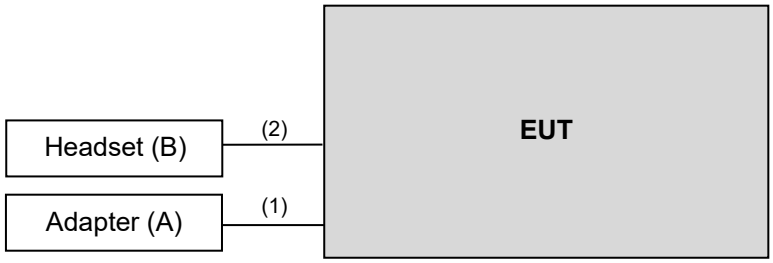
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Adapter	Salom	XN-2QC25	NA	NA	Provided by client
B.	Headset	Ambibio	AB-HI02JS	NA	NA	Provided by client

Note: 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.	USB cable	1	0.95	Y	0	Provided by client
2.	Audio cable	1	1.1	N	0	Provided by client

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards 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

<table>
<tr><td colspan="3">Applicable To</td><td colspan="2">Limit</td></tr>
<tr><td colspan="3" rowspan="2">789033 D02 General UNII Test Procedure New Rules v02r01</td><td colspan="2">Field Strength at 3m</td></tr>
<tr><td>PK: 74 (dBμV/m)</td><td>AV: 54 (dBμV/m)</td></tr>
<tr><td>Frequency Band</td><td colspan="2">Applicable To</td><td>EIRP Limit</td><td>Equivalent Field Strength at 3m</td></tr>
<tr><td>5150~5250 MHz</td><td colspan="2">15.407(b)(1)</td><td rowspan="3">PK: -27 (dBm/MHz)</td><td rowspan="3">PK: 68.2(dBμV/m)</td></tr>
<tr><td>5250~5350 MHz</td><td colspan="2">15.407(b)(2)</td></tr>
<tr><td>5470~5725 MHz</td><td colspan="2">15.407(b)(3)</td></tr>
<tr><td rowspan="2">5725~5850 MHz</td><td>☒</td><td>15.407(b)(4)(i)</td><td>PK: -27 (dBm/MHz) *1
PK: 10 (dBm/MHz) *2
PK: 15.6 (dBm/MHz) *3
PK: 27 (dBm/MHz) *4</td><td>PK: 68.2(dBμV/m) *1
PK: 105.2 (dBμV/m) *2
PK: 110.8(dBμV/m) *3
PK: 122.2 (dBμV/m) *4</td></tr>
<tr><td>☐</td><td>15.407(b)(4)(ii)</td><td colspan="2">Emission limits in section 15.247(d)</td></tr>
<tr><td colspan="5">*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.</td></tr>
</table>

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

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

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer Agilent	N9010A	MY52220314	Dec. 03, 2021	Dec. 02, 2022
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Apr. 11, 2022	Apr. 10, 2023
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-969	Nov. 14, 2021	Nov. 13, 2022
BILOG Antenna SCHWARZBECK	VULB 9168	9168-472	Oct. 28, 2021	Oct. 27, 2022
Fixed Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	Apr. 05, 2022	Apr. 04, 2023
Loop Antenna TESEQ	HLA 6121	45745	Jul. 21, 2021	Jul. 20, 2022
Preamplifier EMCI	EMC 012645	980115	Oct. 05, 2021	Oct. 04, 2022
RF Coaxial Cable EMCI	EMC104-SM-SM-8000	171005	Oct. 05, 2021	Oct. 04, 2022
RF Coaxial Cable HUBER+SUHNNER	SUCOFLEX 104	EMC104-SM-SM-1000(140807)	Oct. 05, 2021	Oct. 04, 2022
RF Coaxial Cable WOKEN	8D-FB	Cable-Ch10-01	Oct. 05, 2021	Oct. 04, 2022
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower &Turn Table Controller MF	MF-7802	NA	NA	NA
Peak Power Analyzer KEYSIGHT	8990B	MY51000485	Jan. 18, 2022	Jan. 17, 2023
Wideband Power Sensor KEYSIGHT	N1923A	MY58020002	Jan. 17, 2022	Jan. 16, 2023

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 10.

4.1.3 Test Procedures

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. 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 detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

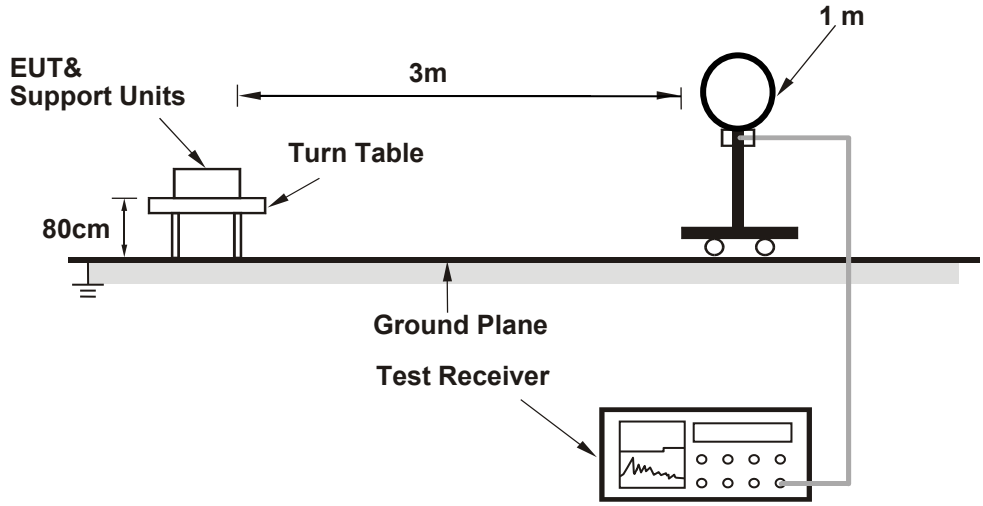
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz. (802.11ax (HE20): RBW = 1MHz, VBW = 10Hz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

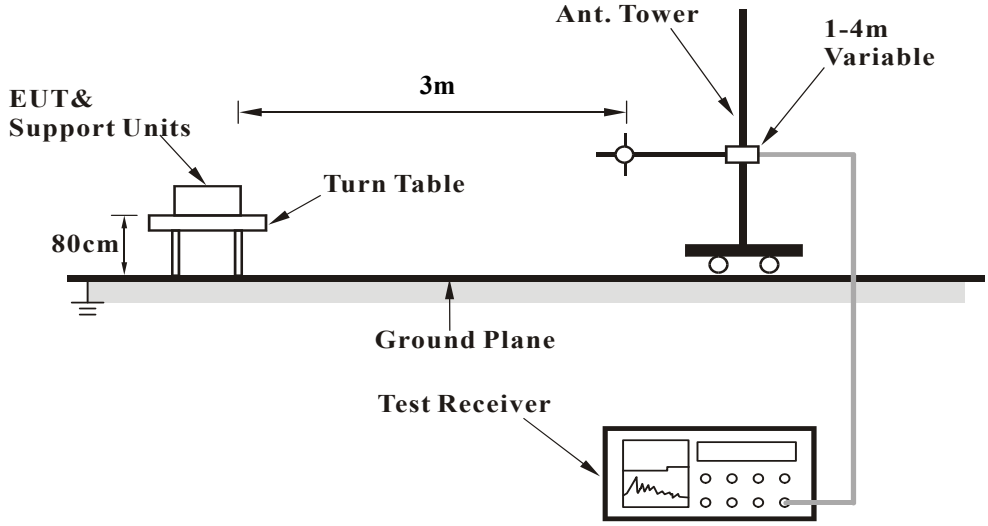
No deviation.

4.1.5 Test Setup

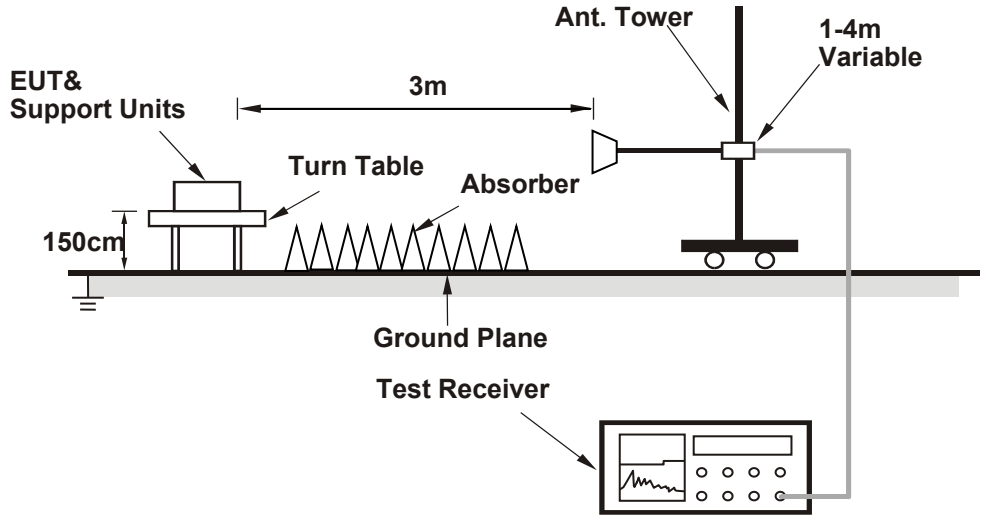
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

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

4.1.7 Test Results

Above 1GHz data:

RF Mode	TX 802.11ax (HE20)	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	100.4 PK			1.01 H	158	64.3	36.1
2	*5200.00	88.9 AV			1.01 H	158	52.8	36.1
3	#10400.00	52.4 PK	68.2	-15.8	2.95 H	285	58.4	-6.0
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	103.6 PK			2.77 V	260	67.5	36.1
2	*5200.00	90.4 AV			2.77 V	260	54.3	36.1
3	#10400.00	52.9 PK	68.2	-15.3	2.15 V	88	58.9	-6.0

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 802.11ax (HE20)	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	51.0 PK	74.0	-23.0	1.01 H	160	67.9	-16.9
2	5150.00	40.4 AV	54.0	-13.6	1.01 H	160	57.3	-16.9
3	*5260.00	100.3 PK			1.01 H	160	64.4	35.9
4	*5260.00	88.3 AV			1.01 H	160	52.4	35.9
5	#10520.00	52.3 PK	68.2	-15.9	3.89 H	190	58.3	-6.0
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	51.5 PK	74.0	-22.5	2.69 V	260	68.4	-16.9
2	5150.00	40.6 AV	54.0	-13.4	2.69 V	260	57.5	-16.9
3	*5260.00	104.5 PK			2.69 V	260	68.6	35.9
4	*5260.00	92.6 AV			2.69 V	260	56.7	35.9
5	#10520.00	52.8 PK	68.2	-15.4	2.13 V	118	58.8	-6.0

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 802.11ax (HE20)	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	100.8 PK			1.00 H	183	65.0	35.8
2	*5320.00	87.6 AV			1.00 H	183	51.8	35.8
3	5350.00	50.7 PK	74.0	-23.3	1.00 H	183	67.5	-16.8
4	5350.00	40.3 AV	54.0	-13.7	1.00 H	183	57.1	-16.8
5	10640.00	52.6 PK	74.0	-21.4	3.85 H	300	58.3	-5.7
6	10640.00	42.7 AV	54.0	-11.3	3.85 H	300	48.4	-5.7
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	104.1 PK			2.70 V	262	68.3	35.8
2	*5320.00	91.0 AV			2.70 V	262	55.2	35.8
3	5350.00	51.3 PK	74.0	-22.7	2.70 V	262	68.1	-16.8
4	5350.00	40.4 AV	54.0	-13.6	2.70 V	262	57.2	-16.8
5	10640.00	52.7 PK	74.0	-21.3	1.11 V	217	58.4	-5.7
6	10640.00	43.1 AV	54.0	-10.9	1.11 V	217	48.8	-5.7

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 802.11ax (HE20)	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	95.6 PK			1.00 H	188	58.8	36.8
2	*5700.00	89.6 AV			1.00 H	188	52.8	36.8
3	#5725.00	52.8 PK	68.2	-15.4	1.00 H	188	68.8	-16.0
4	11400.00	53.3 PK	74.0	-20.7	2.65 H	122	58.1	-4.8
5	11400.00	43.5 AV	54.0	-10.5	2.65 H	122	48.3	-4.8
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	*5700.00	99.2 PK			2.68 V	275	62.4	36.8
2	*5700.00	91.6 AV			2.68 V	275	54.8	36.8
3	#5725.00	53.7 PK	68.2	-14.5	2.68 V	275	69.7	-16.0
4	11400.00	53.9 PK	74.0	-20.1	2.06 V	235	58.7	-4.8
5	**11400.00**	**44.0 AV**	**54.0**	**-10.0**	**2.06 V**	**235**	**48.8**	**-4.8**

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 802.11ax (HE20)	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	#5622.40	51.1 PK	68.2	-17.1	1.02 H	186	67.3	-16.2
2	*5825.00	96.1 PK			1.02 H	186	59.2	36.9
3	*5825.00	85.2 AV			1.02 H	186	48.3	36.9
4	#5930.40	51.0 PK	68.2	-17.2	1.02 H	186	66.7	-15.7
5	11650.00	52.8 PK	74.0	-21.2	3.95 H	13	58.3	-5.5
6	11650.00	42.9 AV	54.0	-11.1	3.95 H	13	48.4	-5.5
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	#5644.80	51.5 PK	68.2	-16.7	2.74 V	284	67.7	-16.2
2	*5825.00	99.8 PK			2.74 V	284	62.9	36.9
3	*5825.00	88.7 AV			2.74 V	284	51.8	36.9
4	#5943.20	50.8 PK	68.2	-17.4	2.74 V	284	66.5	-15.7
5	11650.00	53.3 PK	74.0	-20.7	3.30 V	136	58.8	-5.5
6	11650.00	43.0 AV	54.0	-11.0	3.30 V	136	48.5	-5.5

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.

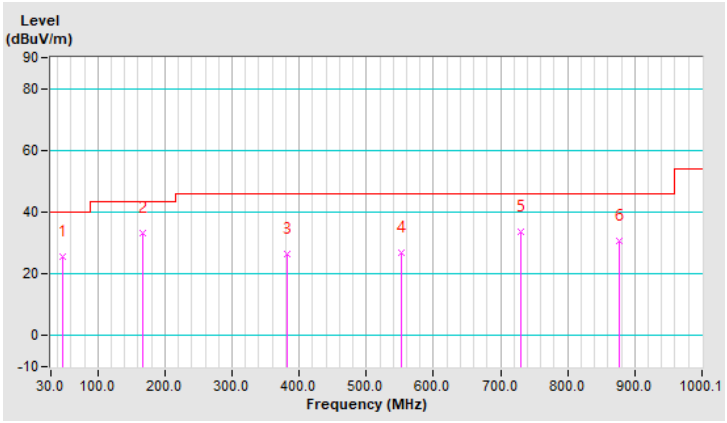
Below 1GHz Worst-Case Data:

RF Mode	TX 802.11ax (HE20)	Channel	CH 165：5825 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	48.43	25.7 QP	40.0	-14.3	3.13 H	210	38.2	-12.5
2	167.75	33.1 QP	43.5	-10.4	2.25 H	108	46.0	-12.9
3	382.15	26.5 QP	46.0	-19.5	1.63 H	148	36.0	-9.5
4	552.88	26.7 QP	46.0	-19.3	3.13 H	333	31.8	-5.1
5	729.44	33.7 QP	46.0	-12.3	1.24 H	160	34.9	-1.2
6	875.93	30.7 QP	46.0	-15.3	2.70 H	82	29.2	1.5

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. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

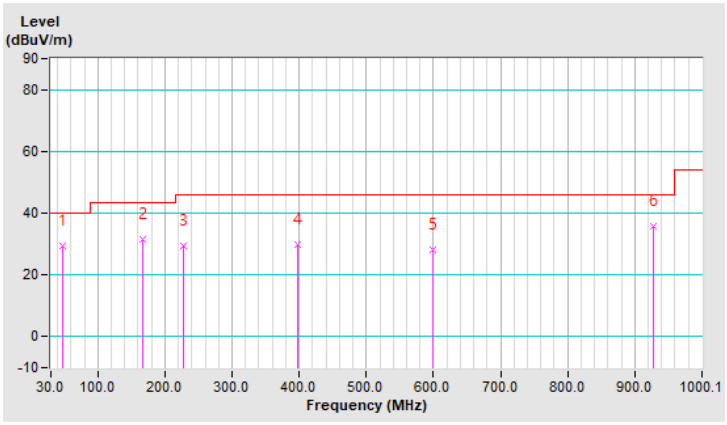


RF Mode	TX 802.11ax (HE20)	Channel	CH 165：5825 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

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	48.43	29.4 QP	40.0	-10.6	1.07 V	284	41.9	-12.5
2	167.75	31.7 QP	43.5	-11.8	3.85 V	132	44.6	-12.9
3	227.90	29.5 QP	46.0	-16.5	1.35 V	307	45.6	-16.1
4	398.64	29.7 QP	46.0	-16.3	2.17 V	313	39.1	-9.4
5	599.45	28.0 QP	46.0	-18.0	2.02 V	201	31.6	-3.6
6	928.31	35.8 QP	46.0	-10.2	2.67 V	301	33.5	2.3

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. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

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

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Dec. 03, 2021	Dec. 02, 2022
RF signal cable Woken	5D-FB	Cable-cond1-01	Jan. 15, 2022	Jan. 14, 2023
LISN/AMN ROHDE & SCHWARZ (EUT)	ENV216	101826	Mar. 14, 2022	Mar. 13, 2023
LISN/AMN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Sep. 07, 2021	Sep. 06, 2022
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 1 (Conduction 1).
3. The VCCI Site Registration No. is C-12040.
4. Tested date: May 04, 2022

4.2.3 Test Procedures

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

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

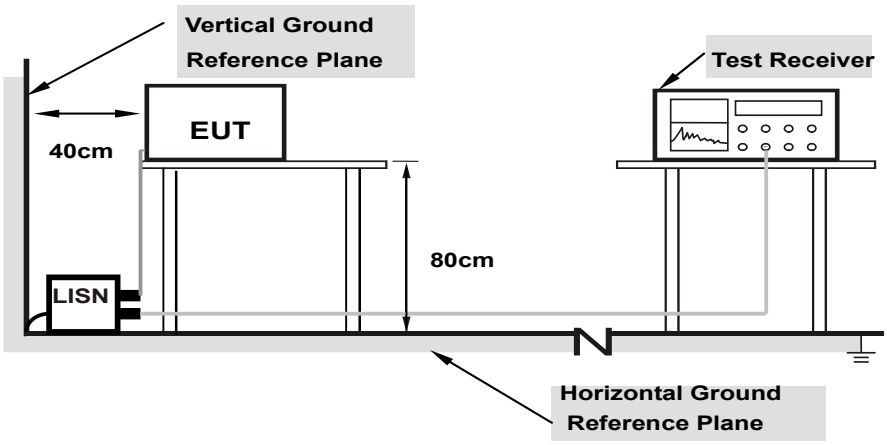
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

4.2.7 Test Results

Worst-case data:

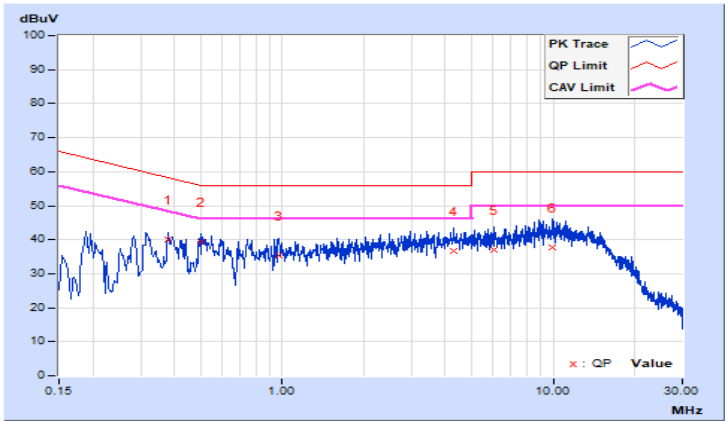
802.11ax (HE20)

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

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.38069	9.69	30.39	18.34	40.08	28.03	58.26	48.26	-18.18	-20.23
2	**0.50190**	**9.69**	**29.81**	**17.50**	**39.50**	**27.19**	**56.00**	**46.00**	**-16.50**	**-18.81**
3	0.97110	9.70	25.63	14.15	35.33	23.85	56.00	46.00	-20.67	-22.15
4	4.29460	9.75	26.79	17.27	36.54	27.02	56.00	46.00	-19.46	-18.98
5	6.01500	9.77	27.10	17.73	36.87	27.50	60.00	50.00	-23.13	-22.50
6	9.96410	9.81	27.88	18.42	37.69	28.23	60.00	50.00	-22.31	-21.77

Remarks:

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

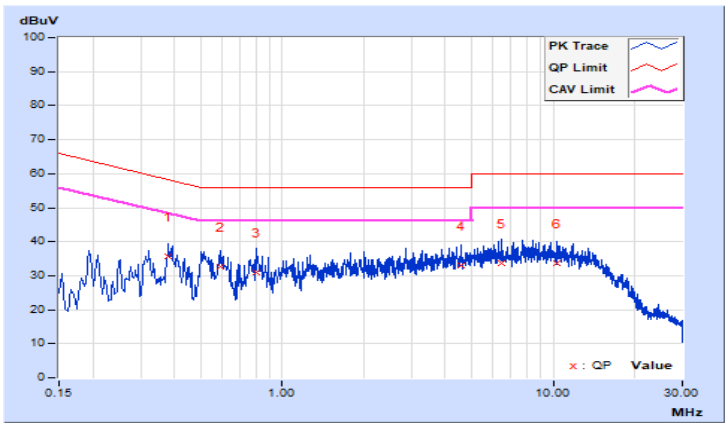


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.38069	9.69	25.86	15.25	35.55	24.94	58.26	48.26	-22.71	-23.32
2	0.58792	9.69	22.88	12.63	32.57	22.32	56.00	46.00	-23.43	-23.68
3	0.79906	9.70	21.23	10.49	30.93	20.19	56.00	46.00	-25.07	-25.81
4	4.59958	9.76	23.26	13.97	33.02	23.73	56.00	46.00	-22.98	-22.27
5	6.47638	9.77	23.89	14.54	33.66	24.31	60.00	50.00	-26.34	-25.69
6	10.33555	9.81	23.95	14.86	33.76	24.67	60.00	50.00	-26.24	-25.33

Remarks:

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



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	√	Mobile and Portable 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,

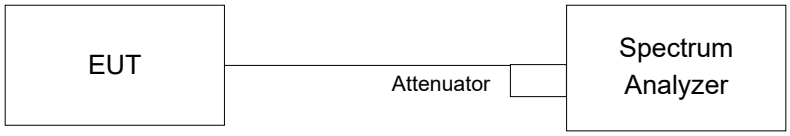
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

4.3.2 Test Setup

For Power Output

For 26dB Bandwidth and power output of transmission above 5.725 GHz where the EBW crosses 5.725 GHz



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

For Average Power Measurement

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

For transmission above 5.725 GHz where the EBW crosses 5.725 GHz
For channel aggregation (channel 138, 142, 144) measurement refer to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Section III Channel Aggregation subpart C. measurement procedures 2 and section II E 2 d) method SA-2.

For 26dB Bandwidth

a. Set RBW = approximately 1% of the emission bandwidth.

b. Set the VBW > RBW.

c. Detector = Peak.

d. Trace mode = max hold.

e. 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 Conditions

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

4.3.7 Test Result

For straddle channels, measured in accordance with FCC KDB 789033 UNII Test Procedure Method SA-2 and tested with a spectrum analyzer, if the duty cycle is less than 98%, the duty cycle factor is included in the total power. The duty cycle factor can be found in chapter 3.3 of the report.

Power Output:

802.11a

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	11.64	11.74	29.516	14.70	24.00	Pass
40	5200	11.76	11.78	30.063	14.78	24.00	Pass
48	5240	11.74	11.81	30.098	14.79	24.00	Pass
52	5260	11.75	11.72	29.822	14.75	23.88	Pass
60	5300	11.72	11.80	29.995	14.77	23.86	Pass
64	5320	11.55	11.84	29.565	14.71	23.90	Pass
100	5500	11.77	11.81	30.202	14.80	23.93	Pass
116	5580	11.63	11.73	29.448	14.69	23.87	Pass
140	5700	11.55	11.95	29.956	14.76	23.88	Pass
144	5720 (For U-NII-2C)	10.51	10.60	22.728	13.57	22.71	Pass
144	5720 (For U-NII-3)	4.15	4.06	5.147	7.12	30.00	Pass
149	5745	11.68	11.51	28.881	14.61	30.00	Pass
157	5785	11.86	11.71	30.171	14.80	30.00	Pass
165	5825	11.87	11.71	30.207	14.80	30.00	Pass

Note:

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

Chain 0

1. 11dBm + 10log (19.56) = 23.91 < 24dBm
2. 11dBm + 10log (19.55) = 23.91 < 24dBm
3. 11dBm + 10log (19.65) = 23.93 < 24dBm
4. 11dBm + 10log (19.73) = 23.95 < 24dBm
5. 11dBm + 10log (19.57) = 23.91 < 24dBm
6. 11dBm + 10log (19.53) = 23.90 < 24dBm
7. 11dBm + 10log (5725.00 - 5709.95) = 22.77 < 24dBm

Chain 1

1. 11dBm + 10log (19.41) = 23.88 < 24dBm
2. 11dBm + 10log (19.35) = 23.86 < 24dBm
3. 11dBm + 10log (19.51) = 23.90 < 24dBm
4. 11dBm + 10log (19.65) = 23.93 < 24dBm
5. 11dBm + 10log (19.40) = 23.87 < 24dBm
6. 11dBm + 10log (19.42) = 23.88 < 24dBm
7. 11dBm + 10log (5725.00 - 5710.15) = 22.71 < 24dBm

802.11n (HT20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	11.70	11.73	29.685	14.73	24.00	Pass
40	5200	11.61	11.71	29.313	14.67	24.00	Pass
48	5240	11.70	11.75	29.753	14.74	24.00	Pass
52	5260	11.66	11.79	29.756	14.74	24.00	Pass
60	5300	11.62	11.71	29.346	14.68	24.00	Pass
64	5320	11.68	11.81	29.894	14.76	24.00	Pass
100	5500	11.82	11.74	30.133	14.79	24.00	Pass
116	5580	11.72	11.78	29.925	14.76	24.00	Pass
140	5700	11.51	11.80	29.294	14.67	24.00	Pass
144	5720 (For U-NII-2C)	10.41	10.21	21.485	13.32	22.98	Pass
144	5720 (For U-NII-3)	4.50	4.32	5.522	7.42	30.00	Pass
149	5745	11.63	11.56	28.876	14.61	30.00	Pass
157	5785	11.81	11.61	29.658	14.72	30.00	Pass
165	5825	11.83	11.60	29.695	14.73	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (21.41) = 24.30 > 24dBm
2. 11dBm + 10log (21.52) = 24.32 > 24dBm
3. 11dBm + 10log (21.22) = 24.26 > 24dBm
4. 11dBm + 10log (21.49) = 24.32 > 24dBm
5. 11dBm + 10log (21.49) = 24.32 > 24dBm
6. 11dBm + 10log (21.39) = 24.30 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.20) = 22.98 < 24dBm

Chain 1
1. 11dBm + 10log (21.52) = 24.32 > 24dBm
2. 11dBm + 10log (21.62) = 24.34 > 24dBm
3. 11dBm + 10log (21.33) = 24.28 > 24dBm
4. 11dBm + 10log (21.26) = 24.27 > 24dBm
5. 11dBm + 10log (21.68) = 24.36 > 24dBm
6. 11dBm + 10log (21.27) = 24.27 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.11) = 23.01 < 24dBm

802.11n (HT40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	11.67	11.74	29.617	14.72	24.00	Pass
46	5230	11.75	11.73	29.856	14.75	24.00	Pass
54	5270	11.75	11.70	29.753	14.74	24.00	Pass
62	5310	11.71	11.68	29.548	14.71	24.00	Pass
102	5510	11.80	11.73	30.029	14.78	24.00	Pass
110	5550	11.75	11.67	29.652	14.72	24.00	Pass
134	5670	11.51	11.72	29.017	14.63	24.00	Pass
142	5710 (For U-NII-2C)	11.05	10.85	24.897	13.96	24.00	Pass
142	5710 (For U-NII-3)	0.90	0.65	2.392	3.79	30.00	Pass
151	5755	11.78	11.69	29.823	14.75	30.00	Pass
159	5795	11.81	11.73	30.064	14.78	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (42.37) = 27.27 > 24dBm
2. 11dBm + 10log (42.28) = 27.26 > 24dBm
3. 11dBm + 10log (42.34) = 27.26 > 24dBm
4. 11dBm + 10log (41.53) = 27.18 > 24dBm
5. 11dBm + 10log (41.97) = 27.22 > 24dBm
6. 11dBm + 10log (5725.00 - 5689.19) = 26.54 > 24dBm

Chain 1
1. 11dBm + 10log (41.69) = 27.20 > 24dBm
2. 11dBm + 10log (42.09) = 27.24 > 24dBm
3. 11dBm + 10log (42.17) = 27.25 > 24dBm
4. 11dBm + 10log (42.47) = 27.28 > 24dBm
5. 11dBm + 10log (41.89) = 27.22 > 24dBm
6. 11dBm + 10log (5725.00 - 5689.19) = 26.54 > 24dBm

802.11ac (VHT20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	11.72	11.86	30.206	14.80	24.00	Pass
40	5200	11.63	11.73	29.448	14.69	24.00	Pass
48	5240	11.72	11.77	29.891	14.76	24.00	Pass
52	5260	11.68	11.83	29.964	14.77	24.00	Pass
60	5300	11.65	11.72	29.481	14.70	24.00	Pass
64	5320	11.69	11.85	30.068	14.78	24.00	Pass
100	5500	11.84	11.79	30.376	14.83	24.00	Pass
116	5580	11.76	11.81	30.167	14.80	24.00	Pass
140	5700	11.52	11.83	29.431	14.69	24.00	Pass
144	5720 (For U-NII-2C)	10.51	10.23	21.790	13.38	22.98	Pass
144	5720 (For U-NII-3)	4.52	4.33	5.542	7.44	30.00	Pass
149	5745	11.65	11.58	29.010	14.63	30.00	Pass
157	5785	11.84	11.79	30.376	14.83	30.00	Pass
165	5825	11.86	11.80	30.482	14.84	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (21.41) = 24.30 > 24dBm
2. 11dBm + 10log (21.52) = 24.32 > 24dBm
3. 11dBm + 10log (21.22) = 24.26 > 24dBm
4. 11dBm + 10log (21.49) = 24.32 > 24dBm
5. 11dBm + 10log (21.49) = 24.32 > 24dBm
6. 11dBm + 10log (21.39) = 24.30 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.20) = 22.98 < 24dBm

Chain 1
1. 11dBm + 10log (21.52) = 24.32 > 24dBm
2. 11dBm + 10log (21.62) = 24.34 > 24dBm
3. 11dBm + 10log (21.33) = 24.28 > 24dBm
4. 11dBm + 10log (21.26) = 24.27 > 24dBm
5. 11dBm + 10log (21.68) = 24.36 > 24dBm
6. 11dBm + 10log (21.27) = 24.27 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.11) = 23.01 < 24dBm

802.11ac (VHT40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	11.70	11.76	29.788	14.74	24.00	Pass
46	5230	11.78	11.75	30.028	14.78	24.00	Pass
54	5270	11.77	11.73	29.925	14.76	24.00	Pass
62	5310	11.74	11.70	29.719	14.73	24.00	Pass
102	5510	11.81	11.74	30.098	14.79	24.00	Pass
110	5550	11.76	11.68	29.720	14.73	24.00	Pass
134	5670	11.53	11.73	29.117	14.64	24.00	Pass
142	5710 (For U-NII-2C)	11.11	10.91	25.243	14.02	24.00	Pass
142	5710 (For U-NII-3)	0.93	0.67	2.406	3.81	30.00	Pass
151	5755	11.80	11.72	29.995	14.77	30.00	Pass
159	5795	11.84	11.74	30.204	14.80	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (42.37) = 27.27 > 24dBm
2. 11dBm + 10log (42.28) = 27.26 > 24dBm
3. 11dBm + 10log (42.34) = 27.26 > 24dBm
4. 11dBm + 10log (41.53) = 27.18 > 24dBm
5. 11dBm + 10log (41.97) = 27.22 > 24dBm
6. 11dBm + 10log (5725.00 - 5689.19) = 26.54 > 24dBm

Chain 1
1. 11dBm + 10log (41.69) = 27.20 > 24dBm
2. 11dBm + 10log (42.09) = 27.24 > 24dBm
3. 11dBm + 10log (42.17) = 27.25 > 24dBm
4. 11dBm + 10log (42.47) = 27.28 > 24dBm
5. 11dBm + 10log (41.89) = 27.22 > 24dBm
6. 11dBm + 10log (5725.00 - 5689.19) = 26.54 > 24dBm

802.11ac (VHT80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	11.74	11.63	29.483	14.70	24.00	Pass
58	5290	11.67	11.83	29.930	14.76	24.00	Pass
106	5530	11.64	11.78	29.654	14.72	24.00	Pass
122	5610	11.50	11.79	29.226	14.66	24.00	Pass
138	5690 (For U-NII-2C)	11.11	11.05	25.647	14.09	24.00	Pass
138	5690 (For U-NII-3)	-2.83	-3.20	1.000	0.00	30.00	Pass
155	5775	11.77	11.66	29.687	14.73	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (83.24) = 30.20 > 24dBm
2. 11dBm + 10log (83.27) = 30.20 > 24dBm
3. 11dBm + 10log (83.84) = 30.23 > 24dBm
4. 11dBm + 10log (5725.00 - 5649.07) = 29.80 > 24dBm

Chain 1
1. 11dBm + 10log (83.37) = 30.21 > 24dBm
2. 11dBm + 10log (82.97) = 30.18 > 24dBm
3. 11dBm + 10log (83.44) = 30.21 > 24dBm
4. 11dBm + 10log (5725.00 - 5648.59) = 29.83 > 24dBm

802.11ac (VHT160)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
*50	5250 (U-NII-1 Band)	8.73	8.74	14.946	11.75	24.00	Pass
*50	5250 (U-NII-2A Band)	8.70	8.67	14.775	11.70	24.00	Pass
114	5570	11.89	11.80	30.588	14.86	24.00	Pass

Note:
For U-NII-2A Band:
Chain 0
1. 11dBm + 10log (84.67) = 30.27 > 24dBm
2. 11dBm + 10log (169.33) = 33.28 > 24dBm

Chain 1
1. 11dBm + 10log (84.30) = 30.25 > 24dBm
2. 11dBm + 10log (169.69) = 33.29 > 24dBm

Full RU

802.11ax (HE20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	11.75	11.93	**30.558**	14.85	24.00	Pass
40	5200	11.66	11.75	29.618	14.72	24.00	Pass
48	5240	11.73	11.79	29.994	14.77	24.00	Pass
52	5260	11.70	11.85	30.102	14.79	24.00	Pass
60	5300	11.67	11.74	29.617	14.72	24.00	Pass
64	5320	11.71	11.88	30.242	14.81	24.00	Pass
100	5500	11.86	11.81	30.517	14.85	24.00	Pass
116	5580	11.78	11.83	30.307	14.82	24.00	Pass
140	5700	11.53	11.85	29.534	14.70	24.00	Pass
144	5720 (For U-NII-2C)	10.58	10.25	22.021	13.43	22.98	Pass
144	5720 (For U-NII-3)	4.84	4.57	5.912	7.72	30.00	Pass
149	5745	11.74	11.60	29.382	14.68	30.00	Pass
157	5785	11.86	11.81	30.517	14.85	30.00	Pass
165	5825	11.88	11.82	**30.622**	14.86	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (21.41) = 24.30 > 24dBm
2. 11dBm + 10log (21.52) = 24.32 > 24dBm
3. 11dBm + 10log (21.22) = 24.26 > 24dBm
4. 11dBm + 10log (21.49) = 24.32 > 24dBm
5. 11dBm + 10log (21.49) = 24.32 > 24dBm
6. 11dBm + 10log (21.39) = 24.30 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.20) = 22.98 < 24dBm

Chain 1
1. 11dBm + 10log (21.52) = 24.32 > 24dBm
2. 11dBm + 10log (21.62) = 24.34 > 24dBm
3. 11dBm + 10log (21.33) = 24.28 > 24dBm
4. 11dBm + 10log (21.26) = 24.27 > 24dBm
5. 11dBm + 10log (21.68) = 24.36 > 24dBm
6. 11dBm + 10log (21.27) = 24.27 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.11) = 23.01 < 24dBm

802.11ax (HE40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	11.73	11.79	29.994	14.77	24.00	Pass
46	5230	11.80	11.81	30.306	14.82	24.00	Pass
54	5270	11.81	11.76	30.167	14.80	24.00	Pass
62	5310	11.80	11.73	30.029	14.78	24.00	Pass
102	5510	11.84	11.77	30.307	14.82	24.00	Pass
110	5550	11.78	11.71	29.891	14.76	24.00	Pass
134	5670	11.55	11.79	29.390	14.68	24.00	Pass
142	5710 (For U-NII-2C)	11.18	10.94	25.539	14.07	24.00	Pass
142	5710 (For U-NII-3)	0.98	0.71	2.431	3.86	30.00	Pass
151	5755	11.81	11.73	30.064	14.78	30.00	Pass
159	5795	11.86	11.78	30.412	14.83	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (42.37) = 27.27 > 24dBm
2. 11dBm + 10log (42.28) = 27.26 > 24dBm
3. 11dBm + 10log (42.34) = 27.26 > 24dBm
4. 11dBm + 10log (41.53) = 27.18 > 24dBm
5. 11dBm + 10log (41.97) = 27.22 > 24dBm
6. 11dBm + 10log (5725.00 - 5689.19) = 26.54 > 24dBm

Chain 1
1. 11dBm + 10log (41.69) = 27.20 > 24dBm
2. 11dBm + 10log (42.09) = 27.24 > 24dBm
3. 11dBm + 10log (42.17) = 27.25 > 24dBm
4. 11dBm + 10log (42.47) = 27.28 > 24dBm
5. 11dBm + 10log (41.89) = 27.22 > 24dBm
6. 11dBm + 10log (5725.00 - 5689.19) = 26.54 > 24dBm

802.11ax (HE80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	11.77	11.65	29.653	14.72	24.00	Pass
58	5290	11.90	11.86	**30.834**	14.89	24.00	Pass
106	5530	11.83	11.87	**30.622**	14.86	24.00	Pass
122	5610	11.52	11.81	29.361	14.68	24.00	Pass
138	5690 (For U-NII-2C)	11.16	11.09	25.915	14.14	24.00	Pass
138	5690 (For U-NII-3)	-2.78	-3.15	1.0114	0.05	30.00	Pass
155	5775	11.81	11.68	29.894	14.76	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (83.24) = 30.20 > 24dBm
2. 11dBm + 10log (83.27) = 30.20 > 24dBm
3. 11dBm + 10log (83.84) = 30.23 > 24dBm
4. 11dBm + 10log (5725.00 - 5649.07) = 29.80 > 24dBm

Chain 1
1. 11dBm + 10log (83.37) = 30.21 > 24dBm
2. 11dBm + 10log (82.97) = 30.18 > 24dBm
3. 11dBm + 10log (83.44) = 30.21 > 24dBm
4. 11dBm + 10log (5725.00 - 5648.59) = 29.83 > 24dBm

802.11ax (HE160)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
*50	5250 (U-NII-1 Band)	8.80	8.78	15.137	11.80	24.00	Pass
*50	5250 (U-NII-2A Band)	8.76	8.71	14.946	11.75	24.00	Pass
114	5570	11.91	11.82	30.729	14.88	24.00	Pass

Note:
For U-NII-2A Band:
Chain 0
1. 11dBm + 10log (84.67) = 30.27 > 24dBm
2. 11dBm + 10log (169.33) = 33.28 > 24dBm

Chain 1
1. 11dBm + 10log (84.30) = 30.25 > 24dBm
2. 11dBm + 10log (169.69) = 33.29 > 24dBm

Partial RU

RU26

802.11ax (HE20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	7.54	7.87	11.799	10.72	24.00	Pass
40	5200	7.56	7.77	11.686	10.68	24.00	Pass
48	5240	7.74	7.83	**12.010**	10.80	24.00	Pass
52	5260	7.56	7.85	11.797	10.72	24.00	Pass
60	5300	7.75	7.84	12.038	10.81	24.00	Pass
64	5320	7.73	7.91	**12.109**	10.83	24.00	Pass
100	5500	7.65	7.80	11.847	10.74	24.00	Pass
116	5580	7.67	7.88	11.986	10.79	24.00	Pass
140	5700	7.81	7.94	**12.262**	10.89	24.00	Pass
144	5720 (For U-NII-2C)	-20.04	-19.78	0.020	-16.90	22.60	Pass
144	5720 (For U-NII-3)	7.48	7.55	11.286	10.53	30.00	Pass
149	5745	7.66	7.85	11.930	10.77	30.00	Pass
157	5785	7.57	7.91	11.895	10.75	30.00	Pass
165	5825	7.73	7.95	**12.167**	10.85	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (21.11) = 24.24 > 24dBm
2. 11dBm + 10log (21.06) = 24.23 > 24dBm
3. 11dBm + 10log (20.74) = 24.16 > 24dBm
4. 11dBm + 10log (21.04) = 24.23 > 24dBm
5. 11dBm + 10log (21.19) = 24.26 > 24dBm
6. 11dBm + 10log (21.31) = 24.28 > 24dBm
7. 11dBm + 10log (5725.00 - 5710.36) = 22.65 < 24dBm

Chain 1
1. 11dBm + 10log (20.82) = 24.18 > 24dBm
2. 11dBm + 10log (21.23) = 24.26 > 24dBm
3. 11dBm + 10log (20.88) = 24.19 > 24dBm
4. 11dBm + 10log (21.00) = 24.22 > 24dBm
5. 11dBm + 10log (20.87) = 24.19 > 24dBm
6. 11dBm + 10log (20.97) = 24.21 > 24dBm
7. 11dBm + 10log (5725.00 - 5710.53) = 22.60 < 24dBm

802.11ax (HE40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	7.56	7.88	11.839	10.73	24.00	Pass
46	5230	7.67	7.72	11.764	10.71	24.00	Pass
54	5270	7.65	7.89	11.973	10.78	24.00	Pass
62	5310	7.71	7.78	11.900	10.76	24.00	Pass
102	5510	7.69	7.79	11.887	10.75	24.00	Pass
110	5550	7.63	7.83	11.862	10.74	24.00	Pass
134	5670	7.71	7.93	12.111	10.83	24.00	Pass
142	5710 (For U-NII-2C)	-25.74	-26.17	0.005	-22.94	24.00	Pass
142	5710 (For U-NII-3)	7.27	7.55	11.022	10.42	30.00	Pass
151	5755	7.63	7.79	11.806	10.72	30.00	Pass
159	5795	7.73	7.88	12.067	10.82	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (42.37) = 27.27 > 24dBm
2. 11dBm + 10log (42.28) = 27.26 > 24dBm
3. 11dBm + 10log (42.34) = 27.26 > 24dBm
4. 11dBm + 10log (41.53) = 27.18 > 24dBm
5. 11dBm + 10log (41.97) = 27.22 > 24dBm
6. 11dBm + 10log (5725.00 - 5690.12) = 26.42 > 24dBm

Chain 1
1. 11dBm + 10log (41.69) = 27.20 > 24dBm
2. 11dBm + 10log (42.09) = 27.24 > 24dBm
3. 11dBm + 10log (42.17) = 27.25 > 24dBm
4. 11dBm + 10log (42.47) = 27.28 > 24dBm
5. 11dBm + 10log (41.89) = 27.22 > 24dBm
6. 11dBm + 10log (5725.00 - 5690.20) = 26.41 > 24dBm

802.11ax (HE80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	7.65	7.72	11.737	10.70	24.00	Pass
58	5290	7.66	7.78	11.832	10.73	24.00	Pass
106	5530	7.71	7.85	11.997	10.79	24.00	Pass
122	5610	7.72	7.90	12.082	10.82	24.00	Pass
138	5690 (For U-NII-2C)	-24.50	-24.48	0.007	-21.48	24.00	Pass
138	5690 (For U-NII-3)	7.49	7.54	11.286	10.53	30.00	Pass
155	5775	7.67	7.78	11.846	10.74	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (83.24) = 30.20 > 24dBm
2. 11dBm + 10log (83.27) = 30.20 > 24dBm
3. 11dBm + 10log (83.84) = 30.23 > 24dBm
4. 11dBm + 10log (5725.00 - 5650.51) = 29.72 > 24dBm

Chain 1
1. 11dBm + 10log (83.37) = 30.21 > 24dBm
2. 11dBm + 10log (82.97) = 30.18 > 24dBm
3. 11dBm + 10log (83.44) = 30.21 > 24dBm
4. 11dBm + 10log (5725.00 - 5650.46) = 29.72 > 24dBm

802.11ax (HE160)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
*50	5250 (U-NII-1 Band)	7.28	7.60	11.100	10.45	24.00	Pass
*50	5250 (U-NII-2A Band)	-32.50	-32.88	0.001	-29.68	24.00	Pass
114	5570	7.73	7.57	11.644	10.66	24.00	Pass

Note:
For U-NII-2A Band:
Chain 0
1. 11dBm + 10log (88.18) = 30.45 > 24dBm
2. 11dBm + 10log (169.33) = 33.28 > 24dBm

Chain 1
1. 11dBm + 10log (88.52) = 30.47 > 24dBm
2. 11dBm + 10log (169.69) = 33.29 > 24dBm

RU52

802.11ax (HE20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	7.52	7.84	11.731	10.69	24.00	Pass
40	5200	7.54	7.72	11.591	10.64	24.00	Pass
48	5240	7.67	7.77	**11.832**	10.73	24.00	Pass
52	5260	7.54	7.82	11.729	10.69	24.00	Pass
60	5300	7.71	7.77	11.886	10.75	24.00	Pass
64	5320	7.70	7.85	**11.984**	10.79	24.00	Pass
100	5500	7.63	7.78	11.792	10.72	24.00	Pass
116	5580	7.62	7.78	11.779	10.71	24.00	Pass
140	5700	7.79	7.90	**12.178**	10.86	24.00	Pass
144	5720 (For U-NII-2C)	-13.67	-13.08	0.092	-10.35	22.63	Pass
144	5720 (For U-NII-3)	7.32	7.55	11.084	10.45	30.00	Pass
149	5745	7.55	7.81	11.728	10.69	30.00	Pass
157	5785	7.54	7.87	11.799	10.72	30.00	Pass
165	5825	7.64	7.88	11.945	10.77	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (22.02) = 24.42 > 24dBm
2. 11dBm + 10log (21.64) = 24.35 > 24dBm
3. 11dBm + 10log (21.31) = 24.28 > 24dBm
4. 11dBm + 10log (21.41) = 24.30 > 24dBm
5. 11dBm + 10log (21.70) = 24.36 > 24dBm
6. 11dBm + 10log (21.56) = 24.33 > 24dBm
7. 11dBm + 10log (5725.00 - 5710.05) = 22.74 < 24dBm

Chain 1
1. 11dBm + 10log (21.45) = 24.31 > 24dBm
2. 11dBm + 10log (20.98) = 24.21 > 24dBm
3. 11dBm + 10log (20.91) = 24.20 > 24dBm
4. 11dBm + 10log (21.38) = 24.30 > 24dBm
5. 11dBm + 10log (21.42) = 24.30 > 24dBm
6. 11dBm + 10log (21.13) = 24.24 > 24dBm
7. 11dBm + 10log (5725.00 - 5710.42) = 22.63 < 24dBm

802.11ax (HE40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	7.55	7.87	11.812	10.72	24.00	Pass
46	5230	7.66	7.71	11.736	10.70	24.00	Pass
54	5270	7.63	7.84	11.876	10.75	24.00	Pass
62	5310	7.70	7.77	11.873	10.75	24.00	Pass
102	5510	7.67	7.78	11.846	10.74	24.00	Pass
110	5550	7.61	7.82	11.821	10.73	24.00	Pass
134	5670	7.70	7.92	12.083	10.82	24.00	Pass
142	5710 (For U-NII-2C)	-6.22	-7.55	0.415	-3.82	24.00	Pass
142	5710 (For U-NII-3)	7.42	7.54	11.196	10.49	30.00	Pass
151	5755	7.62	7.73	11.710	10.69	30.00	Pass
159	5795	7.70	7.83	**11.956**	10.78	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (42.37) = 27.27 > 24dBm
2. 11dBm + 10log (42.28) = 27.26 > 24dBm
3. 11dBm + 10log (42.34) = 27.26 > 24dBm
4. 11dBm + 10log (41.53) = 27.18 > 24dBm
5. 11dBm + 10log (41.97) = 27.22 > 24dBm
6. 11dBm + 10log (5725.00 - 5690.12) = 26.42 > 24dBm

Chain 1
1. 11dBm + 10log (41.69) = 27.20 > 24dBm
2. 11dBm + 10log (42.09) = 27.24 > 24dBm
3. 11dBm + 10log (42.17) = 27.25 > 24dBm
4. 11dBm + 10log (42.47) = 27.28 > 24dBm
5. 11dBm + 10log (41.89) = 27.22 > 24dBm
6. 11dBm + 10log (5725.00 - 5690.20) = 26.41 > 24dBm

802.11ax (HE80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	7.61	7.70	11.656	10.67	24.00	Pass
58	5290	7.63	7.77	11.778	10.71	24.00	Pass
106	5530	7.70	7.81	11.928	10.77	24.00	Pass
122	5610	7.67	7.87	11.971	10.78	24.00	Pass
138	5690 (For U-NII-2C)	7.73	7.82	11.983	10.79	24.00	Pass
138	5690 (For U-NII-3)	7.62	7.74	11.724	10.69	30.00	Pass
155	5775	7.61	7.70	11.656	10.67	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (83.24) = 30.20 > 24dBm
2. 11dBm + 10log (83.27) = 30.20 > 24dBm
3. 11dBm + 10log (83.84) = 30.23 > 24dBm
4. 11dBm + 10log (5725.00 - 5650.51) = 29.72 > 24dBm

Chain 1
1. 11dBm + 10log (83.37) = 30.21 > 24dBm
2. 11dBm + 10log (82.97) = 30.18 > 24dBm
3. 11dBm + 10log (83.44) = 30.21 > 24dBm
4. 11dBm + 10log (5725.00 - 5650.46) = 29.72 > 24dBm

802.11ax (HE160)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
*50	5250 (U-NII-1 Band)	7.12	7.74	11.095	10.45	24.00	Pass
*50	5250 (U-NII-2A Band)	-33.17	-33.48	0.001	-30.31	24.00	Pass
114	5570	7.71	7.56	11.604	10.65	24.00	Pass

Note:
For U-NII-2A Band:
Chain 0
1. 11dBm + 10log (88.61) = 30.47 > 24dBm
2. 11dBm + 10log (169.33) = 33.28 > 24dBm

Chain 1
1. 11dBm + 10log (87.37) = 30.41 > 24dBm
2. 11dBm + 10log (169.69) = 33.29 > 24dBm

RU106

802.11ax (HE20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	7.51	7.82	11.690	10.68	24.00	Pass
40	5200	7.52	7.70	11.538	10.62	24.00	Pass
48	5240	7.64	7.74	11.751	10.70	24.00	Pass
52	5260	7.52	7.80	11.675	10.67	24.00	Pass
60	5300	7.64	7.73	11.737	10.70	24.00	Pass
64	5320	7.67	7.82	**11.901**	10.76	24.00	Pass
100	5500	7.61	7.76	11.738	10.70	24.00	Pass
116	5580	7.60	7.77	11.739	10.70	24.00	Pass
140	5700	7.71	7.84	11.983	10.79	24.00	Pass
144	5720 (For U-NII-2C)	4.22	4.35	5.365	7.30	22.73	Pass
144	5720 (For U-NII-3)	4.81	5.09	6.255	7.96	30.00	Pass
149	5745	7.53	7.79	11.674	10.67	30.00	Pass
157	5785	7.51	7.84	11.718	10.69	30.00	Pass
165	5825	7.62	7.86	11.890	10.75	30.00	Pass

Note:

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

Chain 0

1. 11dBm + 10log (22.38) = 24.49 > 24dBm
2. 11dBm + 10log (22.19) = 24.46 > 24dBm
3. 11dBm + 10log (21.75) = 24.37 > 24dBm
4. 11dBm + 10log (22.65) = 24.55 > 24dBm
5. 11dBm + 10log (22.15) = 24.45 > 24dBm
6. 11dBm + 10log (22.22) = 24.46 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.53) = 22.89 < 24dBm

Chain 1

1. 11dBm + 10log (21.63) = 24.35 > 24dBm
2. 11dBm + 10log (21.53) = 24.33 > 24dBm
3. 11dBm + 10log (21.71) = 24.36 > 24dBm
4. 11dBm + 10log (22.05) = 24.43 > 24dBm
5. 11dBm + 10log (21.81) = 24.38 > 24dBm
6. 11dBm + 10log (21.60) = 24.34 > 24dBm
7. 11dBm + 10log (5725.00 - 5710.09) = 22.73 < 24dBm

802.11ax (HE40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	7.54	7.86	**11.785**	10.71	24.00	Pass
46	5230	7.65	7.70	11.709	10.69	24.00	Pass
54	5270	7.62	7.81	11.820	10.73	24.00	Pass
62	5310	7.69	7.76	11.845	10.74	24.00	Pass
102	5510	7.66	7.77	11.819	10.73	24.00	Pass
110	5550	7.60	7.80	11.780	10.71	24.00	Pass
134	5670	7.69	7.91	**12.055**	10.81	24.00	Pass
142	5710 (For U-NII-2C)	4.48	4.45	5.592	7.48	24.00	Pass
142	5710 (For U-NII-3)	4.22	4.33	5.353	7.29	30.00	Pass
151	5755	7.60	7.71	11.656	10.67	30.00	Pass
159	5795	7.69	7.81	**11.914**	10.76	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (42.37) = 27.27 > 24dBm
2. 11dBm + 10log (42.28) = 27.26 > 24dBm
3. 11dBm + 10log (42.34) = 27.26 > 24dBm
4. 11dBm + 10log (41.53) = 27.18 > 24dBm
5. 11dBm + 10log (41.97) = 27.22 > 24dBm
6. 11dBm + 10log (5725.00 - 5690.12) = 26.42 > 24dBm

Chain 1
1. 11dBm + 10log (41.69) = 27.20 > 24dBm
2. 11dBm + 10log (42.09) = 27.24 > 24dBm
3. 11dBm + 10log (42.17) = 27.25 > 24dBm
4. 11dBm + 10log (42.47) = 27.28 > 24dBm
5. 11dBm + 10log (41.89) = 27.22 > 24dBm
6. 11dBm + 10log (5725.00 - 5690.20) = 26.41 > 24dBm

802.11ax (HE80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	7.60	7.69	11.629	10.66	24.00	Pass
58	5290	7.62	7.76	11.751	10.70	24.00	Pass
106	5530	7.69	7.80	11.900	10.76	24.00	Pass
122	5610	7.62	7.81	11.820	10.73	24.00	Pass
138	5690 (For U-NII-2C)	4.90	4.70	6.042	7.81	24.00	Pass
138	5690 (For U-NII-3)	4.42	4.43	5.540	7.44	30.00	Pass
155	5775	7.58	7.73	11.657	10.67	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (83.24) = 30.20 > 24dBm
2. 11dBm + 10log (83.27) = 30.20 > 24dBm
3. 11dBm + 10log (83.84) = 30.23 > 24dBm
4. 11dBm + 10log (5725.00 - 5650.51) = 29.72 > 24dBm

Chain 1
1. 11dBm + 10log (83.37) = 30.21 > 24dBm
2. 11dBm + 10log (82.97) = 30.18 > 24dBm
3. 11dBm + 10log (83.44) = 30.21 > 24dBm
4. 11dBm + 10log (5725.00 - 5650.46) = 29.72 > 24dBm

802.11ax (HE160)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
*50	5250 (U-NII-1 Band)	7.23	7.54	10.960	10.40	24.00	Pass
*50	5250 (U-NII-2A Band)	-34.48	-34.25	0.001	-31.35	24.00	Pass
114	5570	7.68	7.55	11.550	10.63	24.00	Pass

Note:
For U-NII-2A Band:
Chain 0
1. 11dBm + 10log (89.32) = 30.50 > 24dBm
2. 11dBm + 10log (169.33) = 33.28 > 24dBm

Chain 1
1. 11dBm + 10log (90.31) = 30.55 > 24dBm
2. 11dBm + 10log (169.69) = 33.29 > 24dBm

RU242

802.11ax (HE40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	7.53	7.81	**11.702**	10.68	24.00	Pass
46	5230	7.64	7.68	11.669	10.67	24.00	Pass
54	5270	7.61	7.79	11.779	10.71	24.00	Pass
62	5310	7.68	7.74	**11.804**	10.72	24.00	Pass
102	5510	7.62	7.75	11.738	10.70	24.00	Pass
110	5550	7.59	7.79	11.753	10.70	24.00	Pass
134	5670	7.68	7.85	**11.957**	10.78	24.00	Pass
142	5710 (For U-NII-2C)	6.33	6.47	8.731	9.41	24.00	Pass
142	5710 (For U-NII-3)	0.74	1.01	2.448	3.89	30.00	Pass
151	5755	7.59	7.69	11.616	10.65	30.00	Pass
159	5795	7.67	7.79	**11.860**	10.74	30.00	Pass

Note:

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

Chain 0

1. 11dBm + 10log (42.37) = 27.27 > 24dBm
2. 11dBm + 10log (42.28) = 27.26 > 24dBm
3. 11dBm + 10log (42.34) = 27.26 > 24dBm
4. 11dBm + 10log (41.53) = 27.18 > 24dBm
5. 11dBm + 10log (41.97) = 27.22 > 24dBm
6. 11dBm + 10log (5725.00 - 5690.12) = 26.42 > 24dBm

Chain 1

1. 11dBm + 10log (41.69) = 27.20 > 24dBm
2. 11dBm + 10log (42.09) = 27.24 > 24dBm
3. 11dBm + 10log (42.17) = 27.25 > 24dBm
4. 11dBm + 10log (42.47) = 27.28 > 24dBm
5. 11dBm + 10log (41.89) = 27.22 > 24dBm
6. 11dBm + 10log (5725.00 - 5690.20) = 26.41 > 24dBm

802.11ax (HE80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	7.58	7.67	11.576	10.64	24.00	Pass
58	5290	7.60	7.74	11.697	10.68	24.00	Pass
106	5530	7.60	7.77	11.739	10.70	24.00	Pass
122	5610	7.58	7.71	11.630	10.66	24.00	Pass
138	5690 (For U-NII-2C)	6.88	7.11	10.016	10.01	24.00	Pass
138	5690 (For U-NII-3)	-2.38	-2.24	1.175	0.70	30.00	Pass
155	5775	7.53	7.57	11.377	10.56	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (83.24) = 30.20 > 24dBm
2. 11dBm + 10log (83.27) = 30.20 > 24dBm
3. 11dBm + 10log (83.84) = 30.23 > 24dBm
4. 11dBm + 10log (5725.00 - 5650.51) = 29.72 > 24dBm

Chain 1
1. 11dBm + 10log (83.37) = 30.21 > 24dBm
2. 11dBm + 10log (82.97) = 30.18 > 24dBm
3. 11dBm + 10log (83.44) = 30.21 > 24dBm
4. 11dBm + 10log (5725.00 - 5650.46) = 29.72 > 24dBm

802.11ax (HE160)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
*50	5250 (U-NII-1 Band)	7.18	7.44	10.770	10.32	24.00	Pass
*50	5250 (U-NII-2A Band)	-33.36	-33.35	0.001	-30.34	24.00	Pass
114	5570	7.64	7.53	11.470	10.60	24.00	Pass

Note:
For U-NII-2A Band:
Chain 0
1. 11dBm + 10log (89.17) = 30.50 > 24dBm
2. 11dBm + 10log (169.33) = 33.28 > 24dBm

Chain 1
1. 11dBm + 10log (89.64) = 30.52 > 24dBm
2. 11dBm + 10log (169.69) = 33.29 > 24dBm

RU484

802.11ax (HE80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	7.58	7.67	**11.576**	10.64	24.00	Pass
58	5290	7.60	7.74	**11.697**	10.68	24.00	Pass
106	5530	7.60	7.77	**11.739**	10.70	24.00	Pass
122	5610	7.58	7.71	11.630	10.66	24.00	Pass
138	5690 (For U-NII-2C)	6.88	7.11	10.016	10.01	24.00	Pass
138	5690 (For U-NII-3)	-2.38	-2.24	1.175	0.70	30.00	Pass
155	5775	7.53	7.57	11.377	10.56	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (83.24) = 30.20 > 24dBm
2. 11dBm + 10log (83.27) = 30.20 > 24dBm
3. 11dBm + 10log (83.84) = 30.23 > 24dBm
4. 11dBm + 10log (5725.00 - 5650.51) = 29.72 > 24dBm

Chain 1
1. 11dBm + 10log (83.37) = 30.21 > 24dBm
2. 11dBm + 10log (82.97) = 30.18 > 24dBm
3. 11dBm + 10log (83.44) = 30.21 > 24dBm
4. 11dBm + 10log (5725.00 - 5650.46) = 29.72 > 24dBm

802.11ax (HE160)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
*50	5250 (U-NII-1 Band)	7.18	7.44	10.770	10.32	24.00	Pass
*50	5250 (U-NII-2A Band)	-33.36	-33.35	0.001	-30.34	24.00	Pass
114	5570	7.64	7.53	**11.470**	10.60	24.00	Pass

Note:
For U-NII-2A Band:
Chain 0
1. 11dBm + 10log (89.17) = 30.50 > 24dBm
2. 11dBm + 10log (169.33) = 33.28 > 24dBm

Chain 1
1. 11dBm + 10log (89.64) = 30.52 > 24dBm
2. 11dBm + 10log (169.69) = 33.29 > 24dBm

RU996

802.11ax (HE160)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
*50	5250 (U-NII-1 Band)	7.17	7.55	**10.900**	10.37	24.00	Pass
*50	5250 (U-NII-2A Band)	-28.63	-28.26	**0.003**	-25.43	24.00	Pass
114	5570	7.61	7.51	**11.404**	10.57	24.00	Pass

Note:
For U-NII-2A Band:
Chain 0
1. 11dBm + 10log (88.15) = 30.45 > 24dBm
2. 11dBm + 10log (169.33) = 33.28 > 24dBm
Chain 1
1. 11dBm + 10log (88.11) = 30.45 > 24dBm
2. 11dBm + 10log (169.69) = 33.29 > 24dBm

26dB Bandwidth:

802.11a

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	19.56	19.41
60	5300	19.55	19.35
64	5320	19.65	19.51
100	5500	19.73	19.65
116	5580	19.57	19.40
140	5700	19.53	19.42
144	5720 (For U-NII-2C)	15.05	14.85

For CH144 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

Full RU

802.11ax (HE20)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	21.41	21.52
60	5300	21.52	21.62
64	5320	21.22	21.33
100	5500	21.49	21.26
116	5580	21.49	21.68
140	5700	21.39	21.27
144	5720 (For U-NII-2C)	15.80	15.89

For CH144 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

802.11ax (HE40)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	42.37	41.69
62	5310	42.28	42.09
102	5510	42.34	42.17
110	5550	41.53	42.47
134	5670	41.97	41.89
142	5710 (For U-NII-2C)	35.81	35.81

For CH142 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

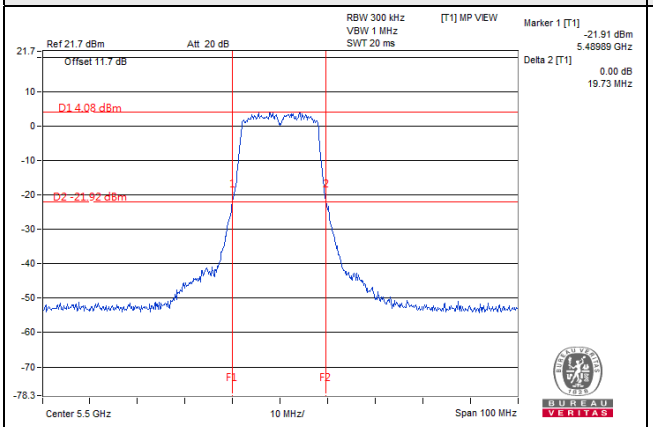
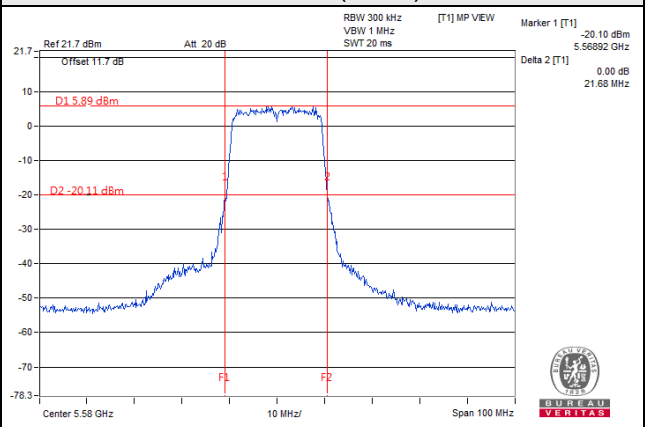
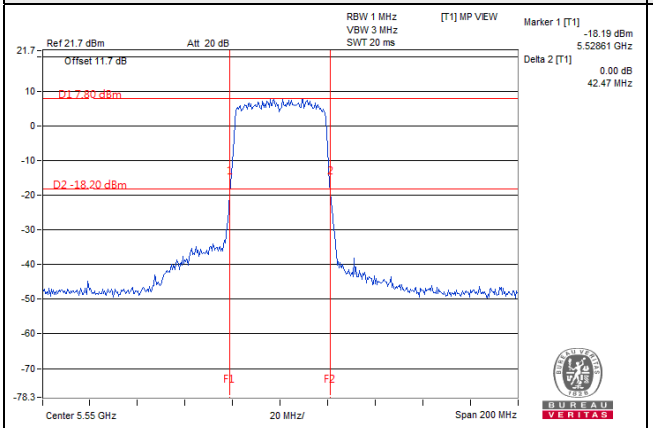
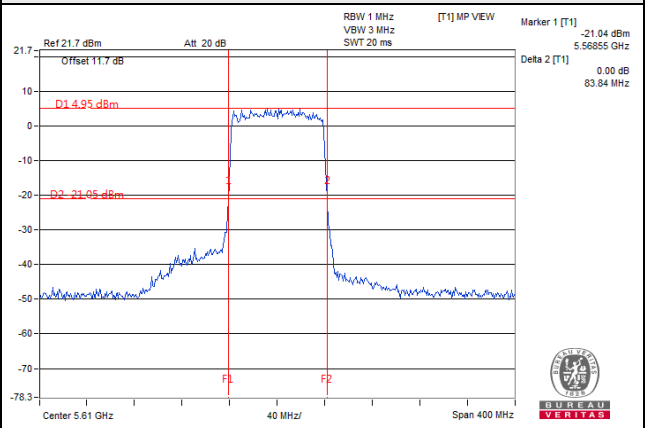
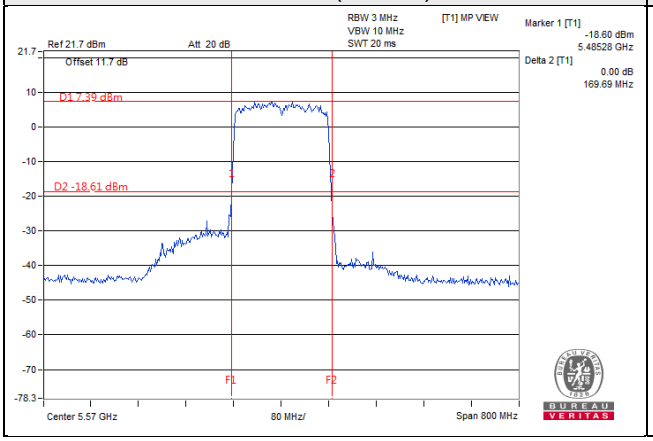
802.11ax (HE80)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	83.24	83.37
106	5530	83.27	82.97
122	5610	83.84	83.44
138	5690 (For U-NII-2C)	75.93	76.41

For CH138 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

802.11ax (HE160)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
50	5250 (U-NII-2A Band)	84.67	84.30
114	5570	169.33	169.69

Spectrum Plot of Worst Value	
802.11a	802.11ax (HE20)
	
802.11ax (HE40)	802.11ax (HE80)
	
802.11ax (HE160)	
	

Partial RU
RU26

802.11ax (HE20)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	21.11	20.82
60	5300	21.06	21.23
64	5320	20.74	20.88
100	5500	21.04	21.00
116	5580	21.19	20.87
140	5700	21.31	20.97
144	5720 (For U-NII-2C)	14.64	14.47

For CH144 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

802.11ax (HE40)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	42.37	41.69
62	5310	42.28	42.09
102	5510	42.34	42.17
110	5550	41.53	42.47
134	5670	41.97	41.89
142	5710 (For U-NII-2C)	34.88	34.80

For CH142 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

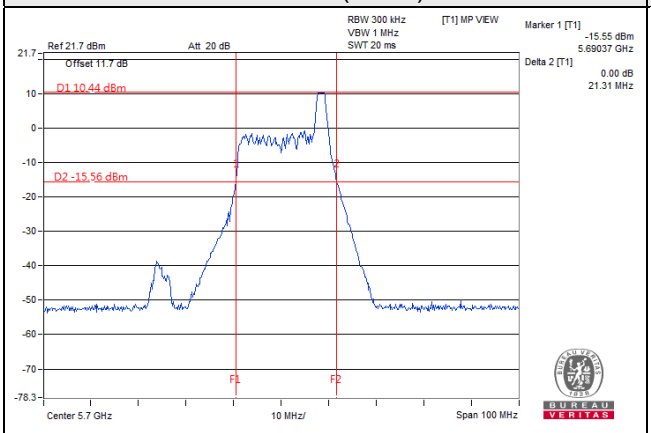
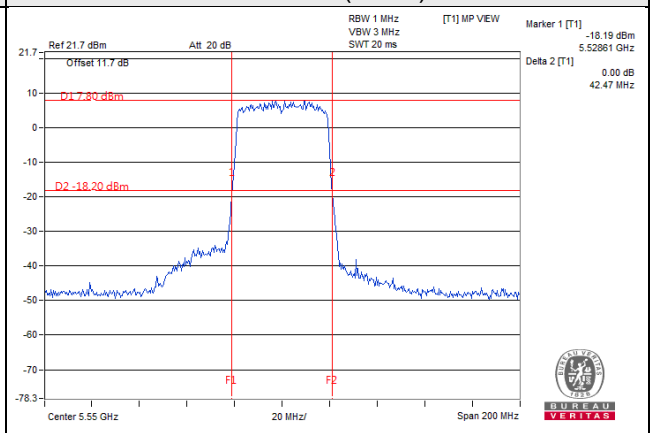
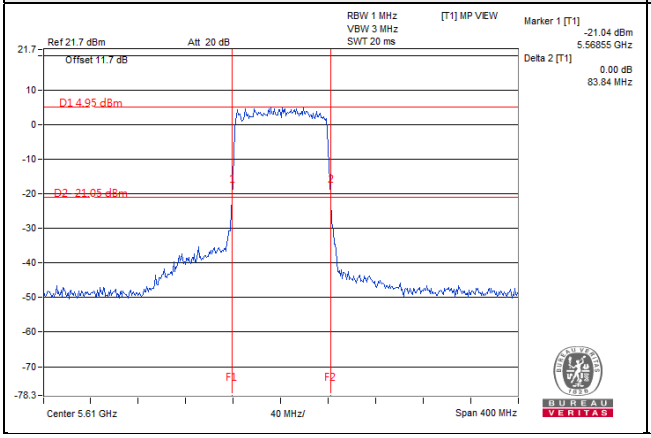
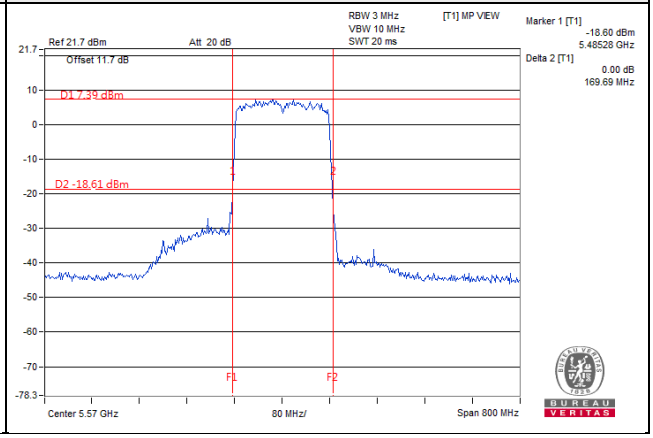
802.11ax (HE80)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	83.24	83.37
106	5530	83.27	82.97
122	5610	83.84	83.44
138	5690 (For U-NII-2C)	74.49	74.54

For CH138 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

802.11ax (HE160)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
50	5250 (U-NII-2A Band)	88.18	88.52
114	5570	169.33	169.69

Spectrum Plot of Worst Value	
802.11ax (HE20)	802.11ax (HE40)
	
802.11ax (HE80)	802.11ax (HE160)
	

RU52

802.11ax (HE20)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	22.02	21.45
60	5300	21.64	20.98
64	5320	21.31	20.91
100	5500	21.41	21.38
116	5580	21.70	21.42
140	5700	21.56	21.13
144	5720 (For U-NII-2C)	14.95	14.58

For CH144 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

802.11ax (HE40)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	42.37	41.69
62	5310	42.28	42.09
102	5510	42.34	42.17
110	5550	41.53	42.47
134	5670	41.97	41.89
142	5710 (For U-NII-2C)	34.88	34.80

For CH142 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

802.11ax (HE80)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	83.24	83.37
106	5530	83.27	82.97
122	5610	83.84	83.44
138	5690 (For U-NII-2C)	74.49	74.54

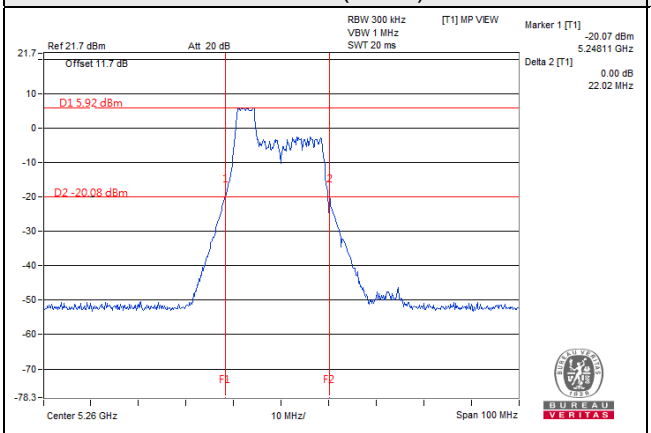
For CH138 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

802.11ax (HE160)

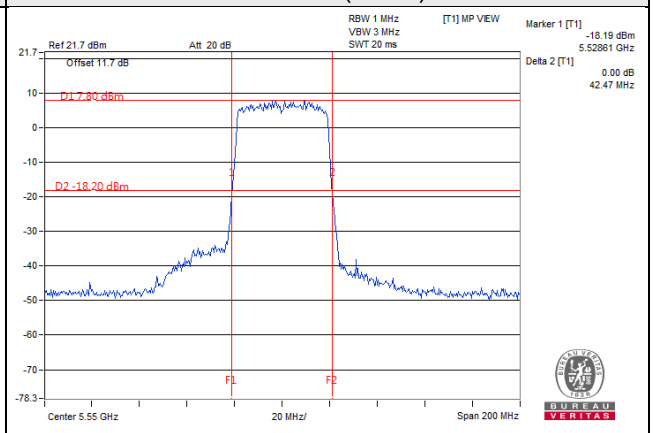
Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
50	5250 (U-NII-2A Band)	88.61	87.37
114	5570	169.33	169.69

Spectrum Plot of Worst Value

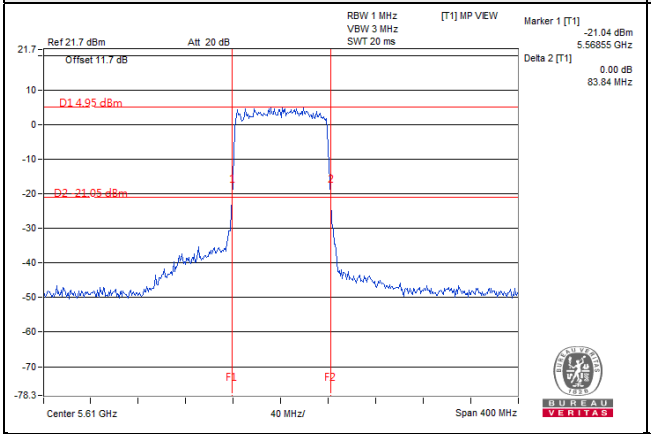
802.11ax (HE20)



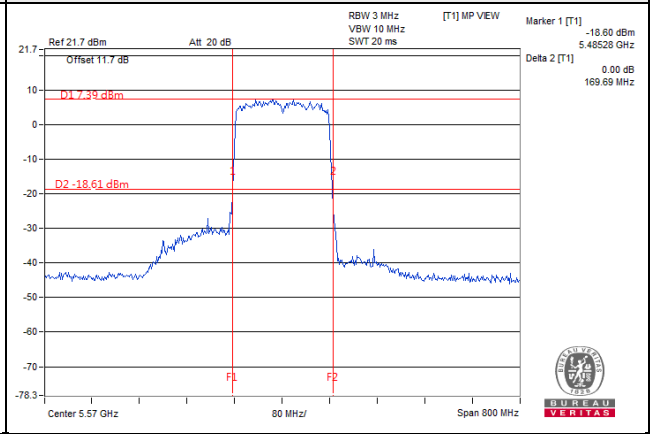
802.11ax (HE40)



802.11ax (HE80)



802.11ax (HE160)



RU106

802.11ax (HE20)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	22.38	21.63
60	5300	22.19	21.53
64	5320	21.75	21.71
100	5500	22.65	22.05
116	5580	22.15	21.81
140	5700	22.22	21.60
144	5720 (For U-NII-2C)	15.47	14.91

For CH144 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

802.11ax (HE40)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	42.37	41.69
62	5310	42.28	42.09
102	5510	42.34	42.17
110	5550	41.53	42.47
134	5670	41.97	41.89
142	5710 (For U-NII-2C)	34.88	34.80

For CH142 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

802.11ax (HE80)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	83.24	83.37
106	5530	83.27	82.97
122	5610	83.84	83.44
138	5690 (For U-NII-2C)	74.49	74.54

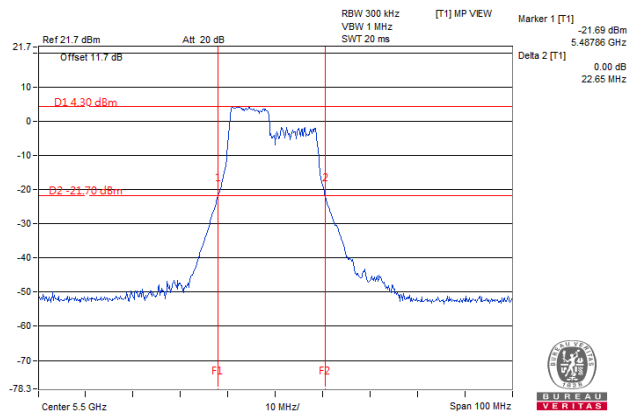
For CH138 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

802.11ax (HE160)

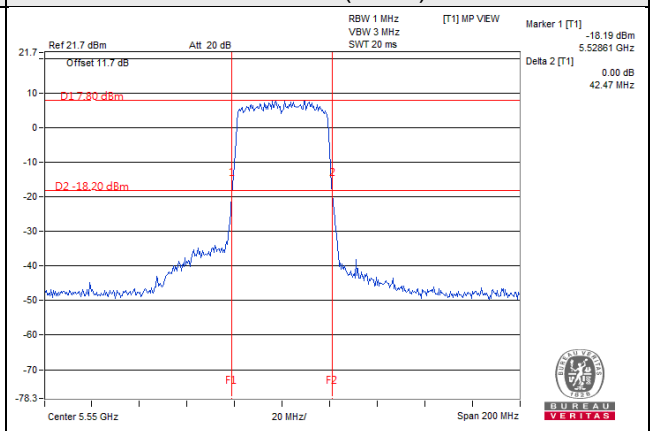
Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
50	5250 (U-NII-2A Band)	89.32	90.31
114	5570	169.33	169.69

Spectrum Plot of Worst Value

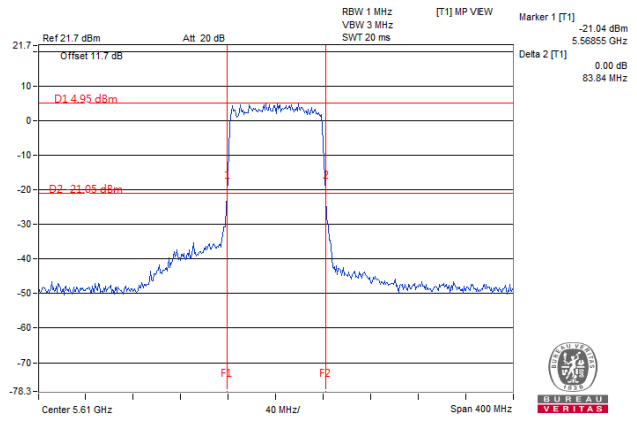
802.11ax (HE20)



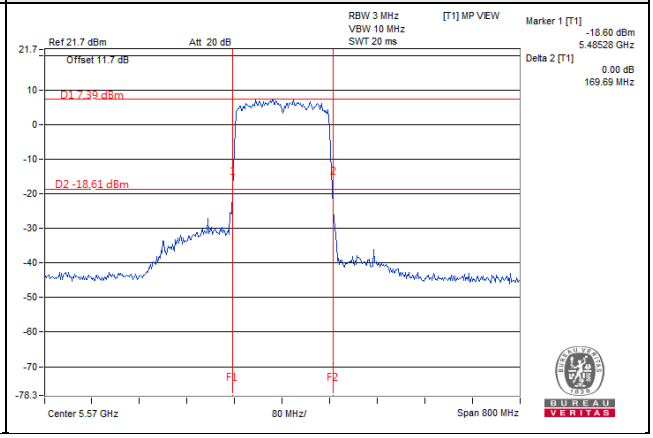
802.11ax (HE40)



802.11ax (HE80)



802.11ax (HE160)



RU242

802.11ax (HE40)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	42.37	41.69
62	5310	42.28	42.09
102	5510	42.34	42.17
110	5550	41.53	42.47
134	5670	41.97	41.89
142	5710 (For U-NII-2C)	34.88	34.80

For CH142 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

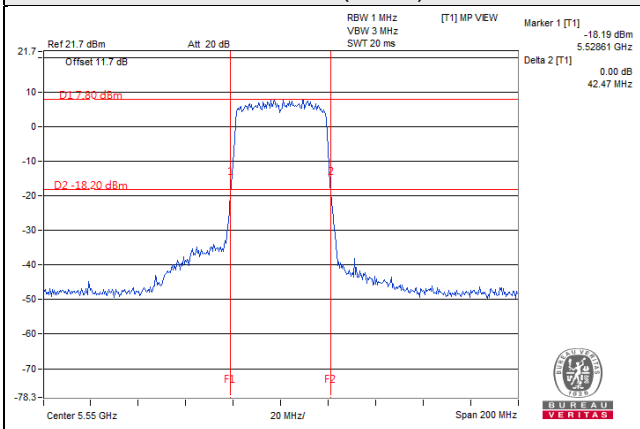
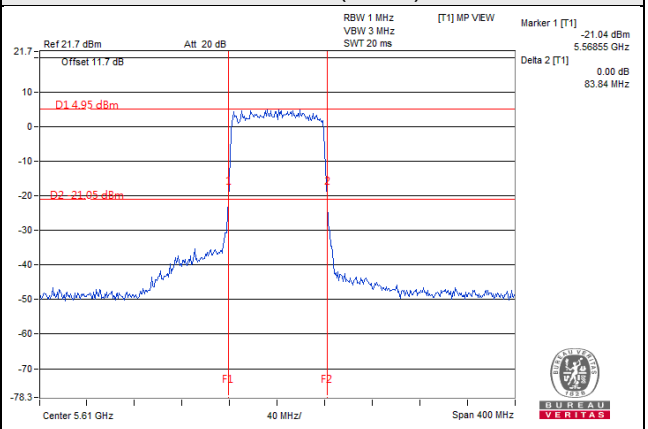
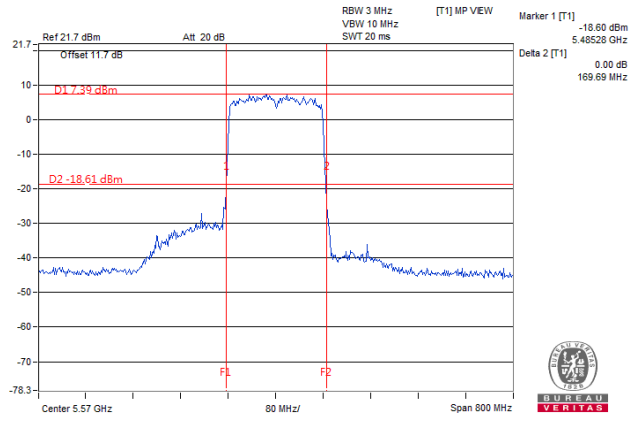
802.11ax (HE80)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	83.24	83.37
106	5530	83.27	82.97
122	5610	83.84	83.44
138	5690 (For U-NII-2C)	74.49	74.54

For CH138 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

802.11ax (HE160)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
50	5250 (U-NII-2A Band)	89.17	89.64
114	5570	169.33	169.69

Spectrum Plot of Worst Value	
802.11ax (HE40)	802.11ax (HE80)
	
802.11ax (HE160)	
	

RU484

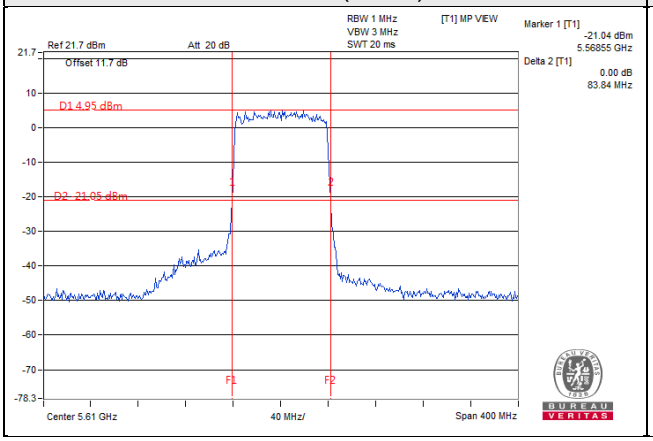
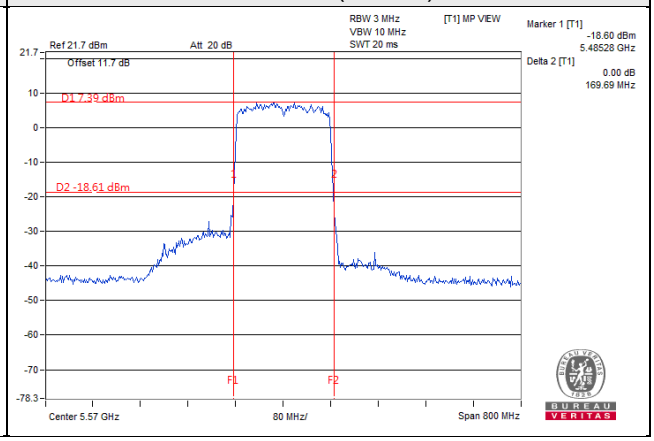
802.11ax (HE80)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	83.24	83.37
106	5530	83.27	82.97
122	5610	83.84	83.44
138	5690 (For U-NII-2C)	74.49	74.54

For CH138 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

802.11ax (HE160)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
50	5250 (U-NII-2A Band)	89.17	89.64
114	5570	169.33	169.69

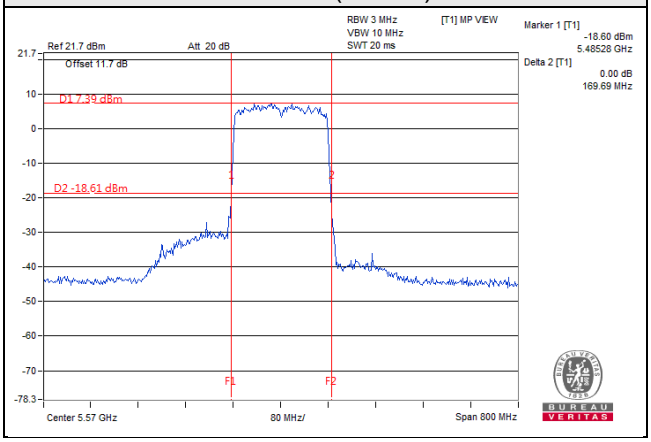
Spectrum Plot of Worst Value	
802.11ax (HE80)	802.11ax (HE160)
	

RU996

802.11ax (HE160)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
50	5250 (U-NII-2A Band)	88.15	88.11
114	5570	169.33	169.69

Spectrum Plot of Worst Value
802.11ax (HE160)



EUT Average Power

802.11a

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	29.995	14.77
5470~5725	30.202	14.80

802.11n (HT20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	29.894	14.76
5470~5725	30.133	14.79

802.11n (HT40)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	29.753	14.74
5470~5725	30.029	14.78

802.11ac (VHT20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	30.068	14.78
5470~5725	30.376	14.83

802.11ac (VHT40)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	29.925	14.76
5470~5725	30.098	14.79

802.11ac (VHT80)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	29.930	14.76
5470~5725	30.032	14.78

802.11ac (VHT160)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	14.775	11.70
5470~5725	30.588	14.86

802.11ax (HE20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	30.242	14.81
5470~5725	30.517	14.85

802.11ax (HE40)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	30.167	14.80
5470~5725	30.307	14.82

802.11ax (HE80)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	30.834	14.89
5470~5725	30.622	14.86

802.11ax (HE160)

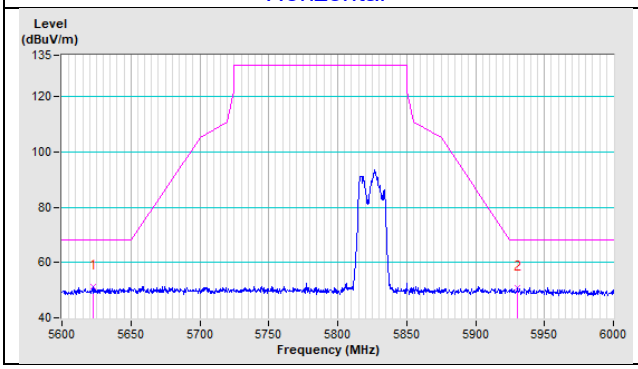
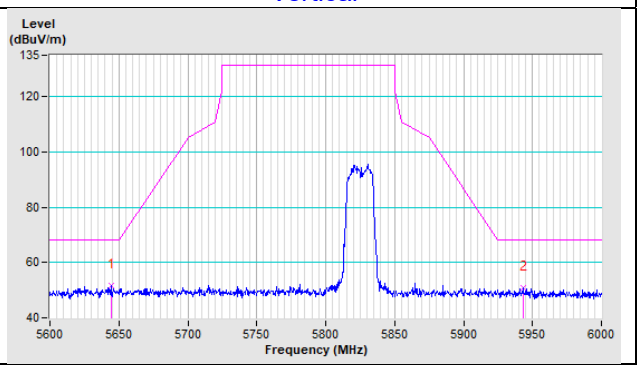
Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	14.946	11.75
5470~5725	30.729	14.88

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)

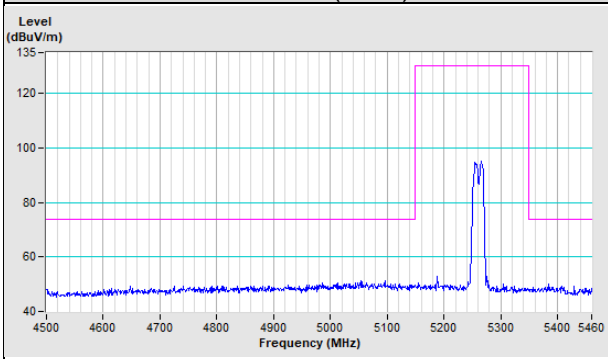
802.11ax (HE20) CH 165：5825 MHz

Horizontal	Vertical
	

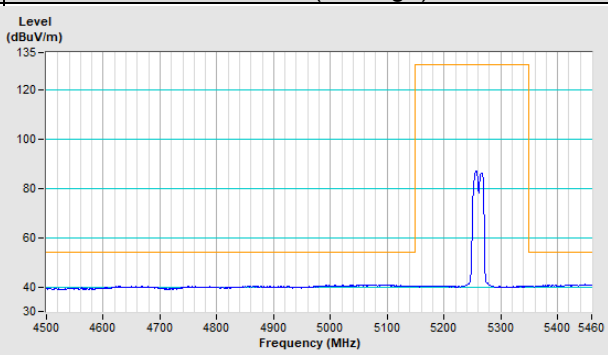
Annex B - Band Edge Measurement

802.11ax (HE20) Channel 52

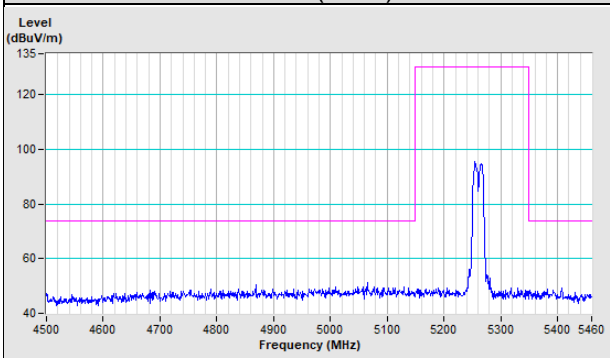
Horizontal (Peak)



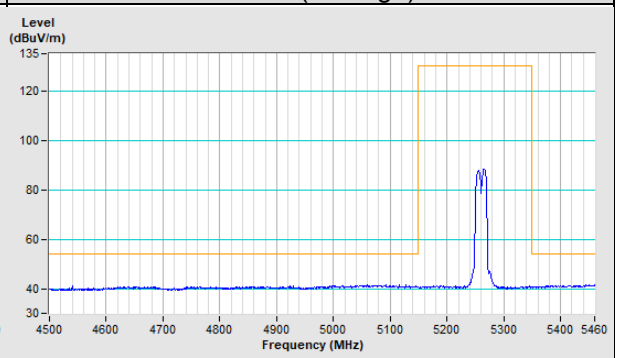
Horizontal (Average)



Vertical (Peak)

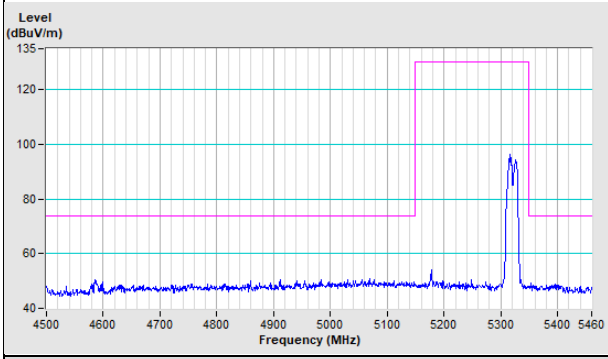


Vertical (Average)

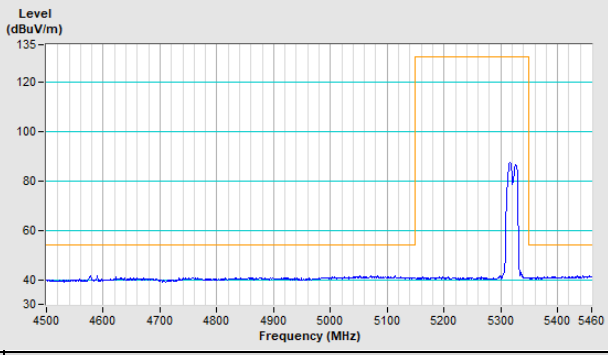


802.11ax (HE20) Channel 64

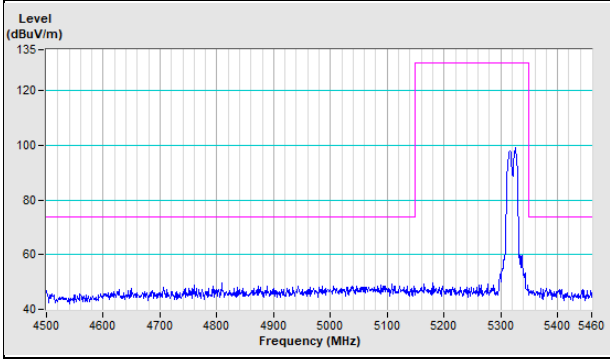
Horizontal (Peak)



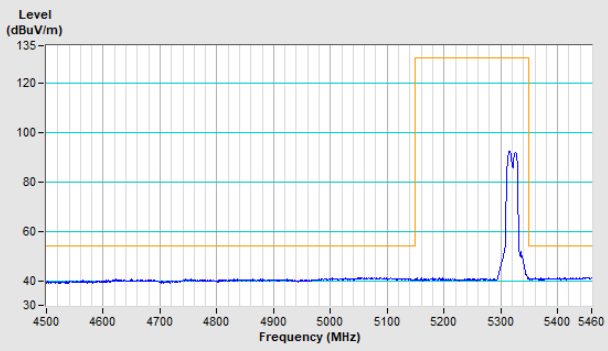
Horizontal (Average)

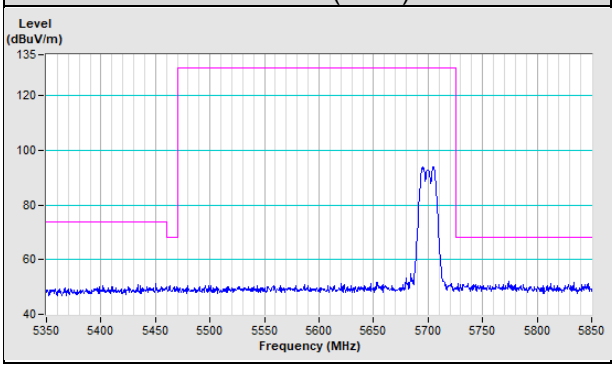
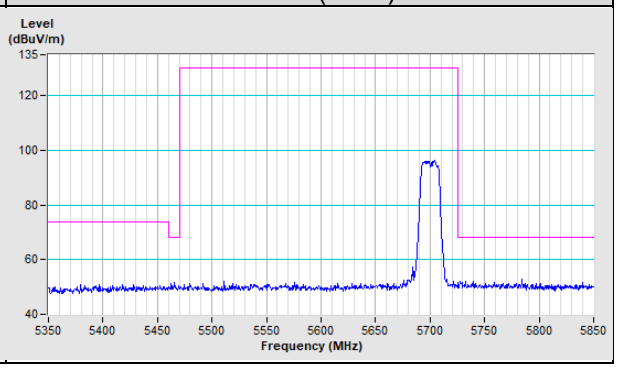


Vertical (Peak)



Vertical (Average)



802.11ax (HE20) Channel 140	
Horizontal (Peak)	Vertical (Peak)
	

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 and approved according to ISO/IEC 17025.

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

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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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