

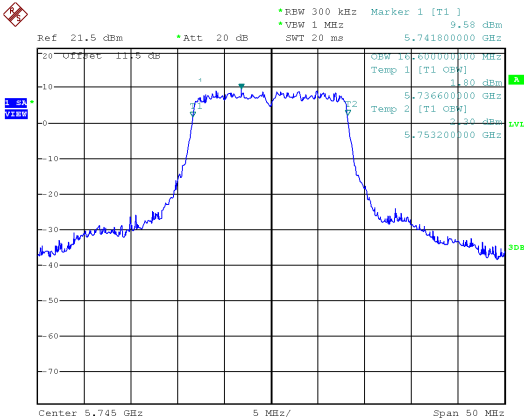


99% Bandwidth

ANT A

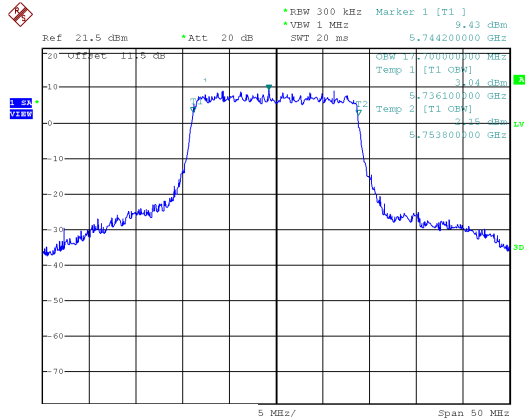
Modulation Standard: 802.11a (6Mbps)

CH149

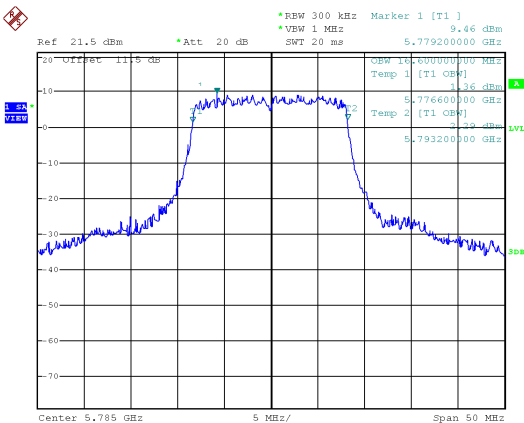


Modulation Standard: 802.11ac, VHT20 (6.5Mbps)

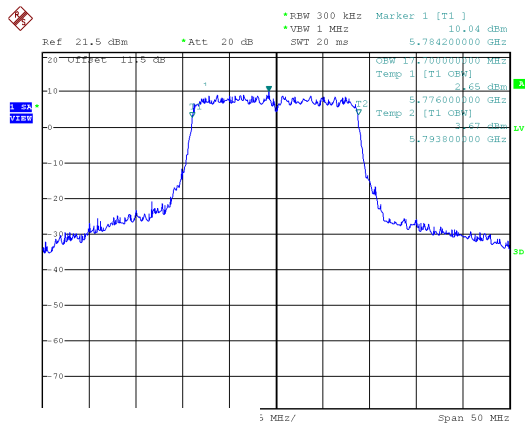
CH149



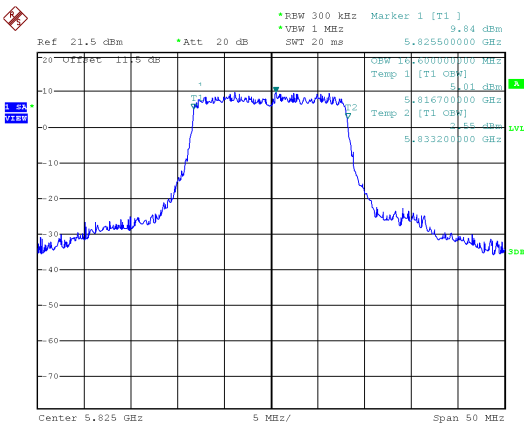
CH157



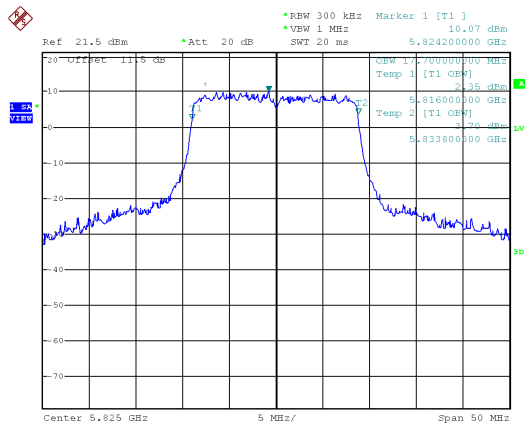
CH157



CH165

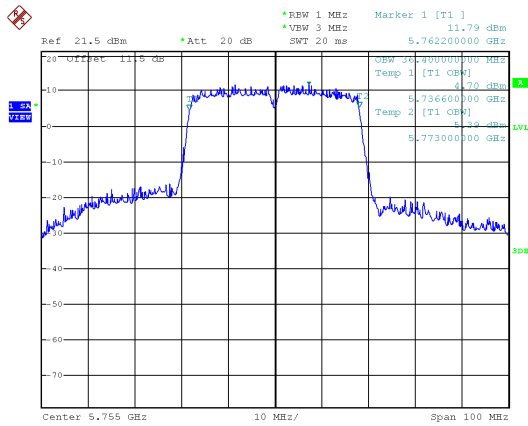


CH165

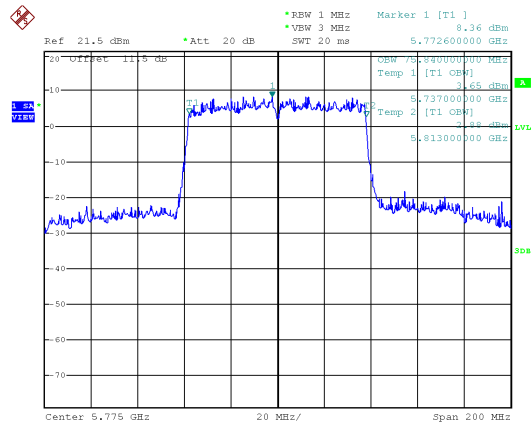




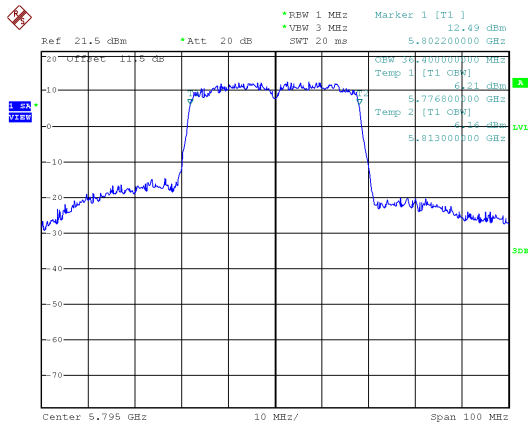
Modulation Standard: 802.11ac, VHT40 (13.5Mbps)
CH151



Modulation Standard: 802.11ac, VHT80 (29.3Mbps)
CH155



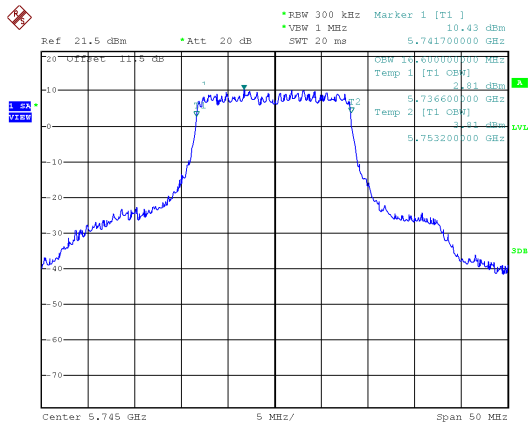
CH159



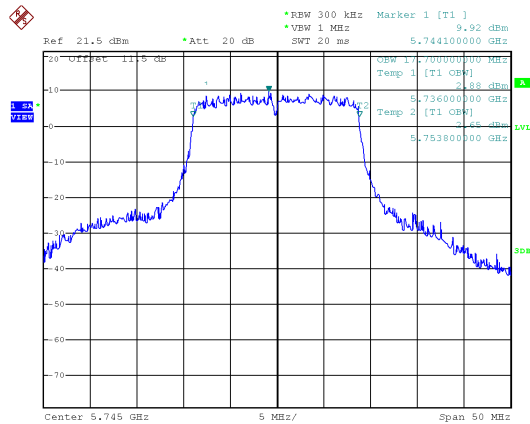


ANT B

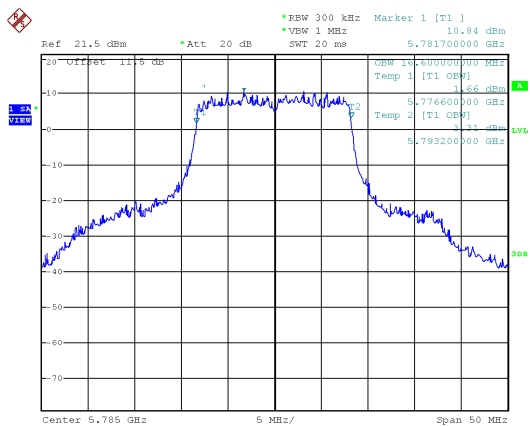
Modulation Standard: 802.11a (6Mbps)
CH149



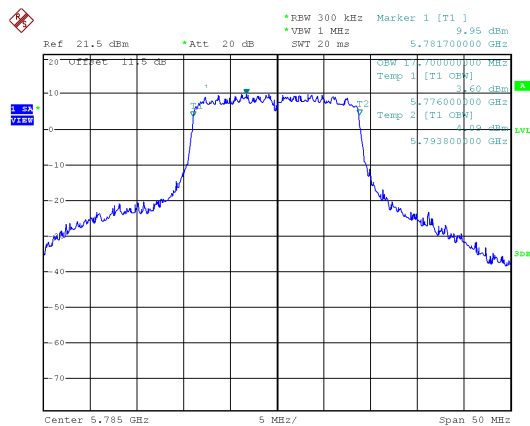
Modulation Standard: 802.11ac, VHT20 (6.5Mbps)
CH149



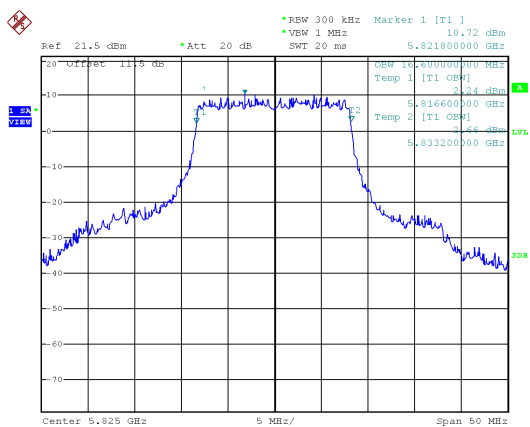
CH157



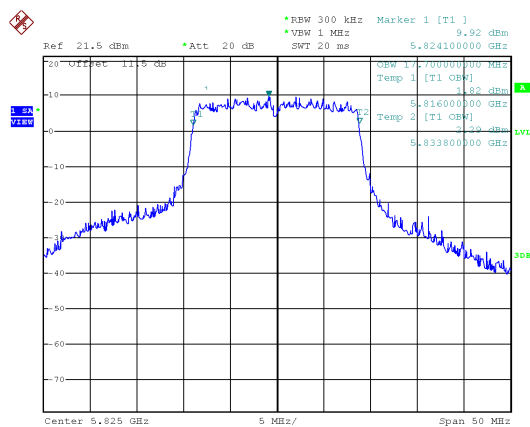
CH157

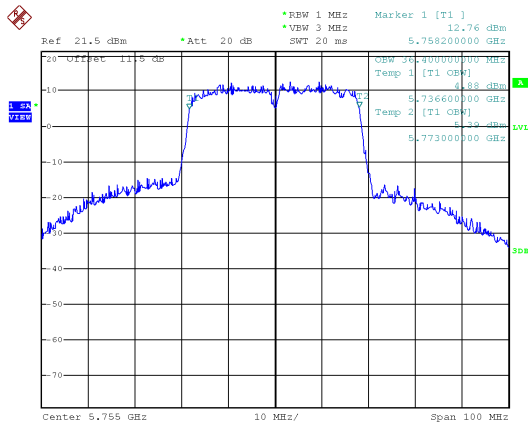
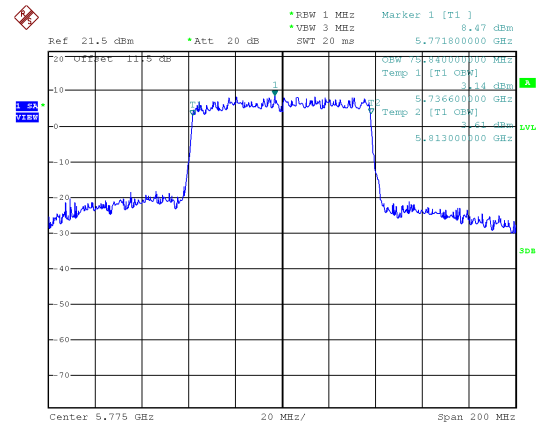


CH165

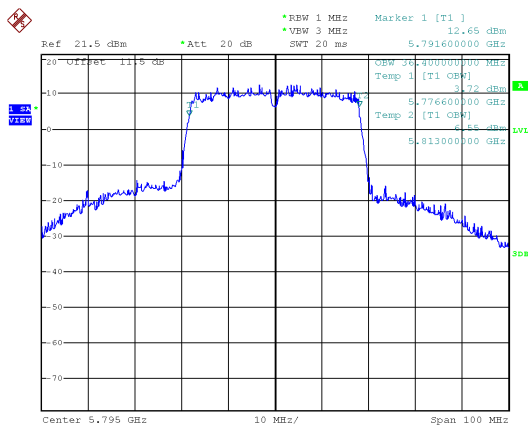


CH165



Modulation Standard: 802.11ac, VHT40 (13.5Mbps)
CH151Modulation Standard: 802.11ac, VHT80 (29.3Mbps)
CH155

CH159





9. 26dB Bandwidth & 99% Bandwidth

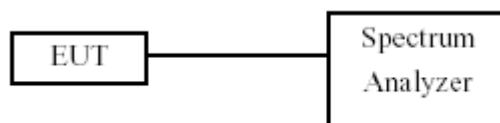
9.1. Test Limit

None; for reporting purposes only.

9.2. Test Procedure

Reference to 789033 D02 General UNII Test Procedures New Rules: The transmitter output is connected to a spectrum analyzer with the RBW = approximately 1% of the emission bandwidth, the VBW $\geq 3 \times$ RBW, peak detector and max hold.

9.3. Test Setup Layout



9.4. Test Result and Data (26dB Bandwidth)

Temperature : 21°C

Humidity : 62%

Test Date : Jan. 29, 2019

:

In the 5.2G Band

Modulation Type	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
			ANT A	ANT B
802.11a	36	5180	20.10	20.50
	44	5220	20.10	20.60
	48	5240	20.00	20.60
802.11ac VHT20	36	5180	20.80	21.50
	44	5220	20.70	21.60
	48	5240	20.80	21.50
802.11ac VHT40	38	5190	41.20	41.20
	46	5230	40.80	41.20
802.11ac VHT80	42	5210	84.80	85.20

**9.5. Test Result and Data (99% Bandwidth)**

Temperature : 23°C

Humidity : 64%

Test Date : Dec. 19, 2018

:

In the 5.2G Band

Modulation Type	Channel	Frequency (MHz)	99% Bandwidth (MHz)	
			ANT A	ANT B
802.11a	36	5180	16.50	16.60
	44	5220	16.50	16.60
	48	5240	16.60	16.60
802.11ac VHT20	36	5180	17.70	17.70
	44	5220	17.60	17.70
	48	5240	17.60	17.70
802.11ac VHT40	38	5190	36.40	36.40
	46	5230	36.40	36.40
802.11ac VHT80	42	5210	75.84	75.52

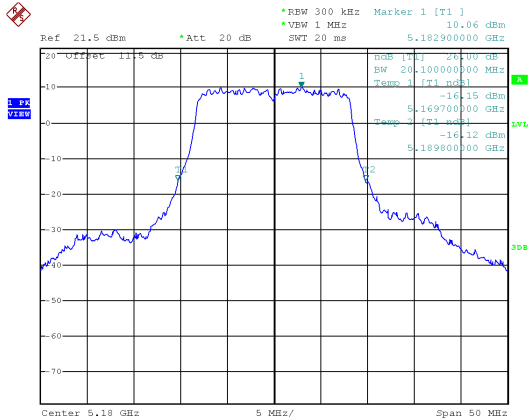


26dB Bandwidth

ANT A

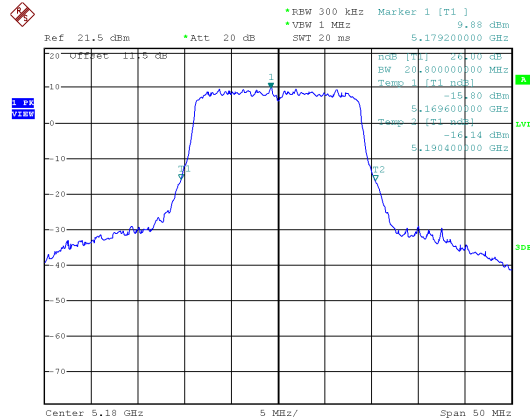
Modulation Standard: 802.11a (6Mbps)

CH36



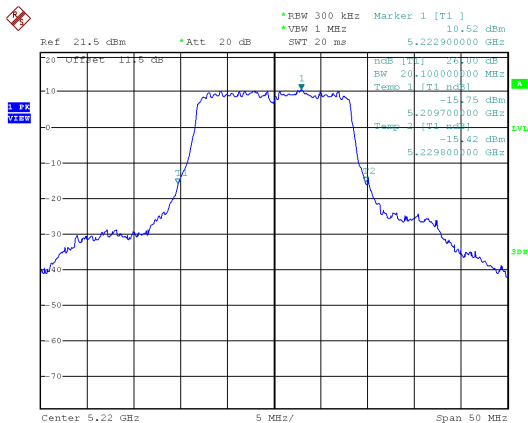
802.11ac VHT20 (6.5Mbps)

CH36

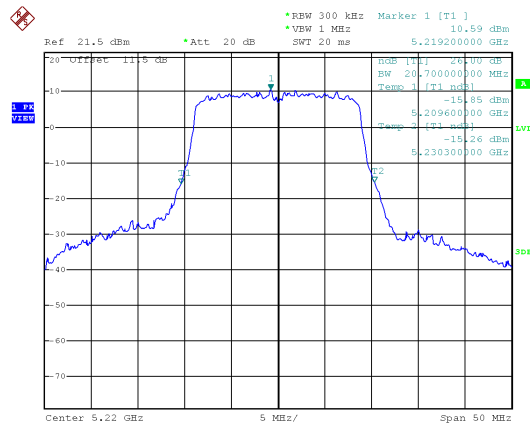


5

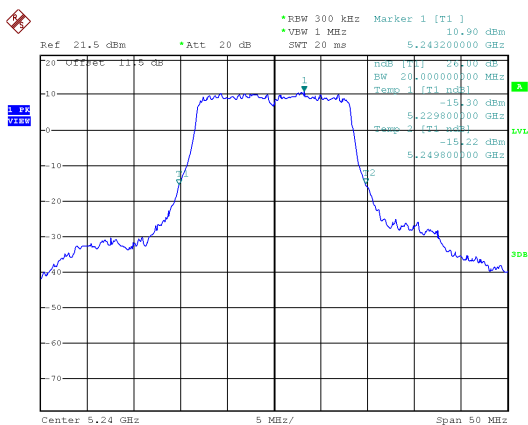
CH44



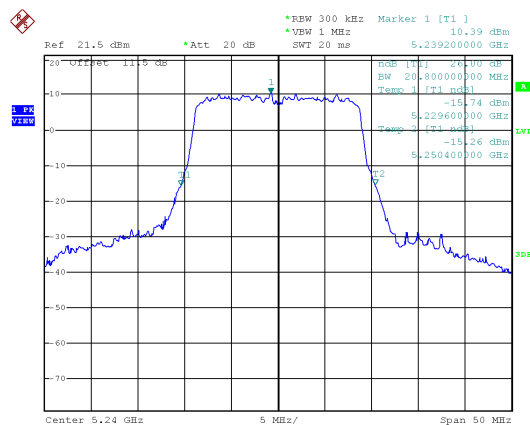
CH44



CH48



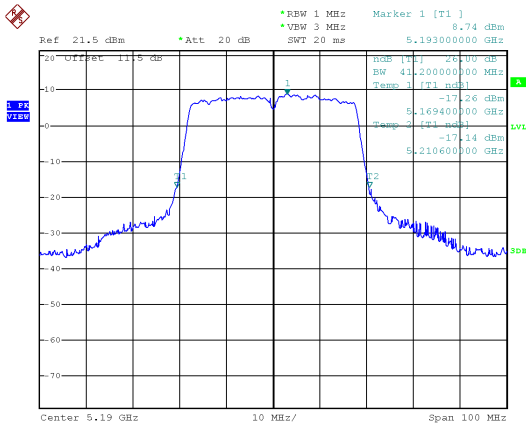
CH48



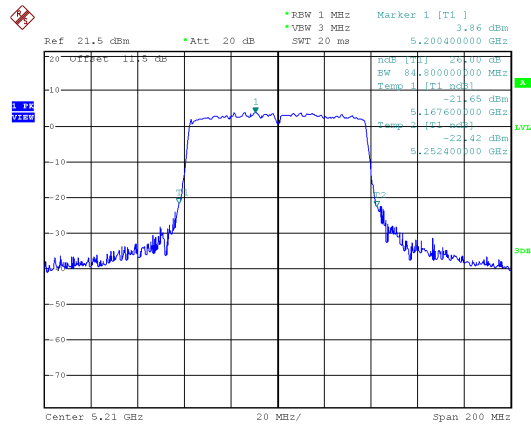
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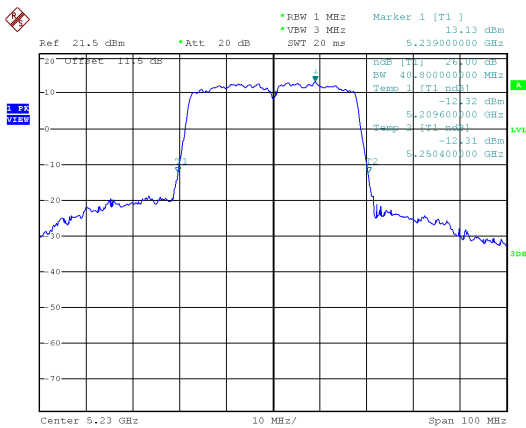
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42

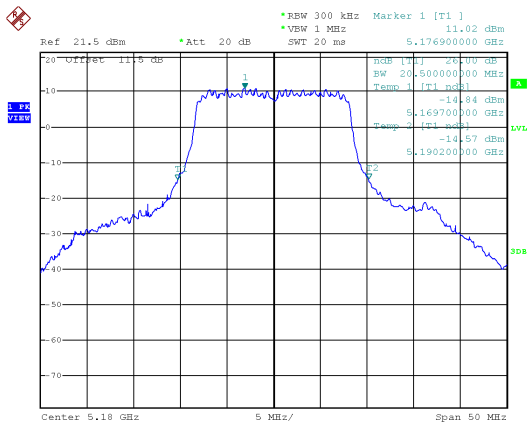
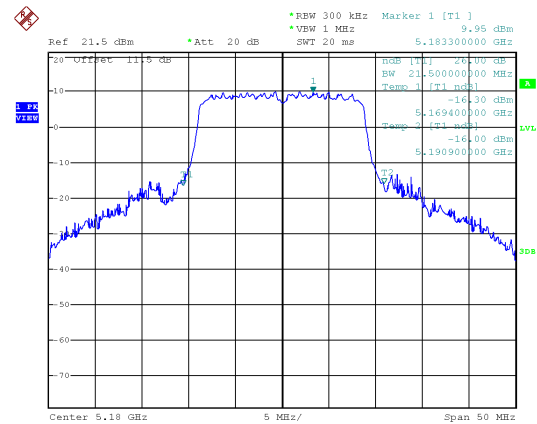


CH46

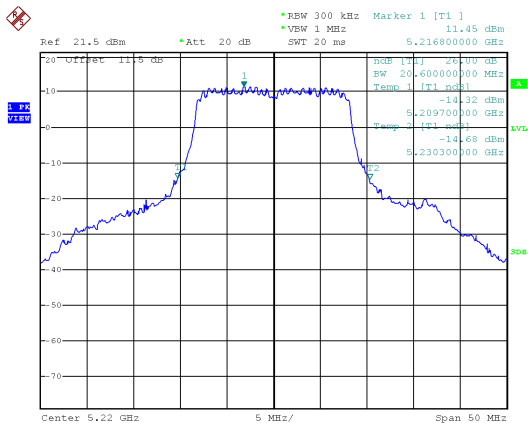




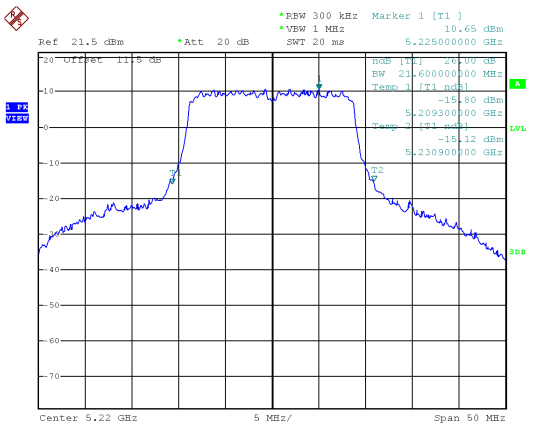
ANT B

Modulation Standard: 802.11a (6Mbps)
CH36802.11ac VHT20 (6.5Mbps)
CH36

CH44

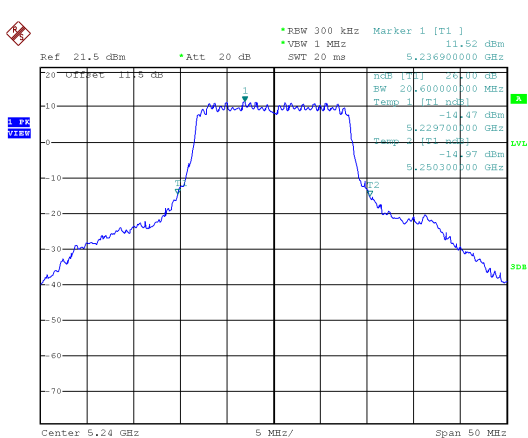


CH44

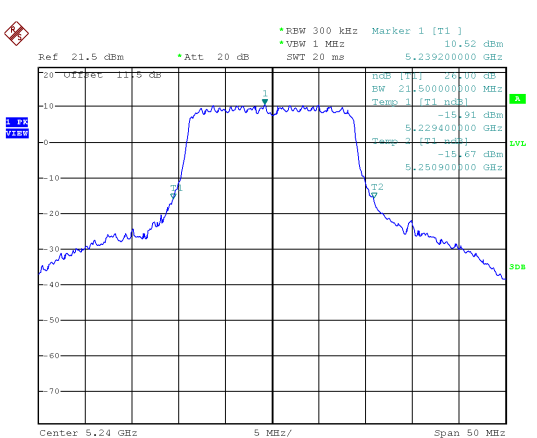


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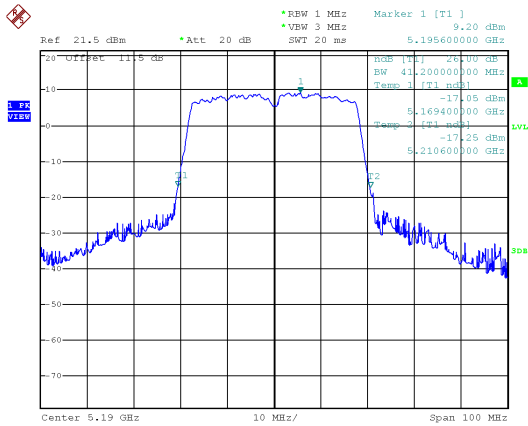
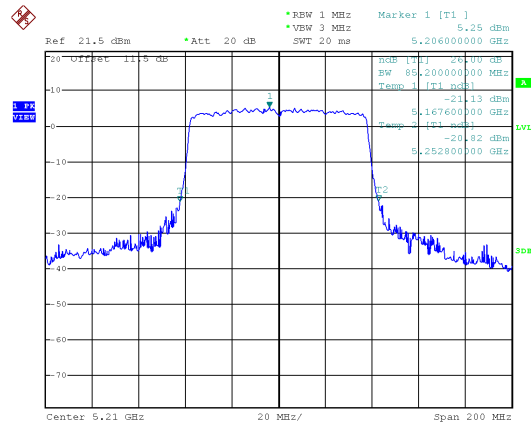
CH48



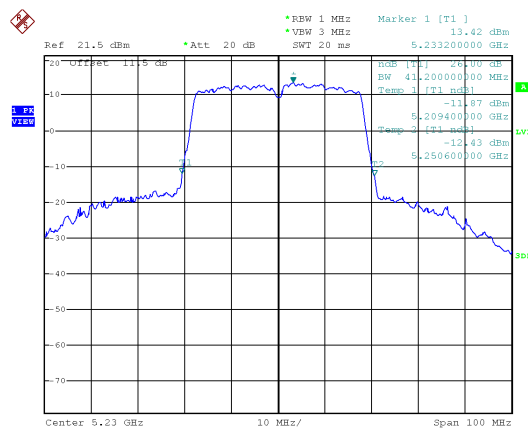
CH48



Dat

Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42

CH46



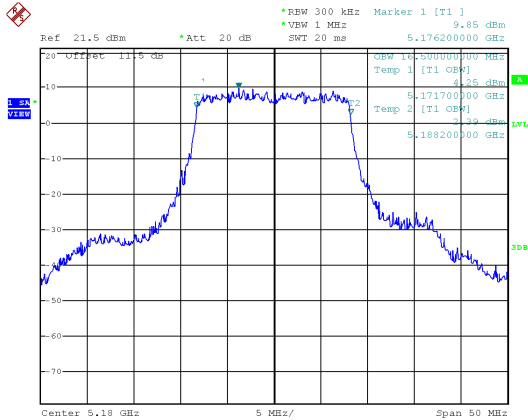


99% Bandwidth

ANT A

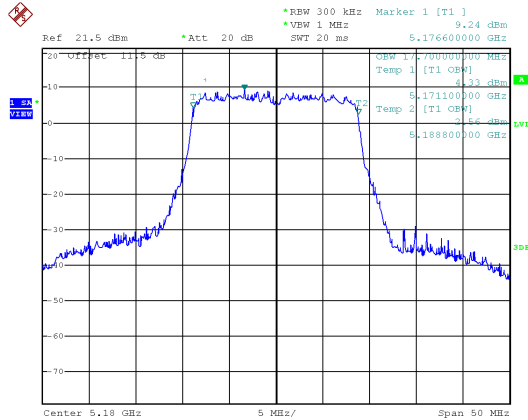
Modulation Standard: 802.11a (6Mbps)

CH36

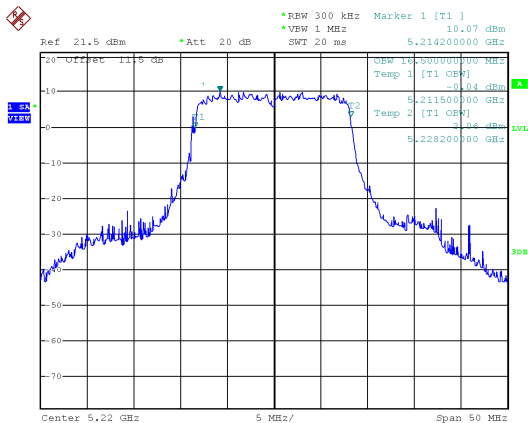


802.11ac VHT20 (6.5Mbps)

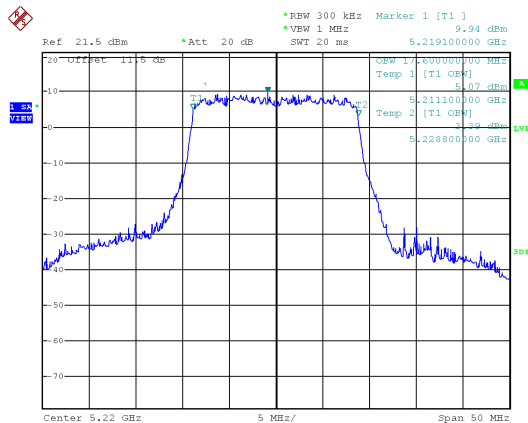
CH36



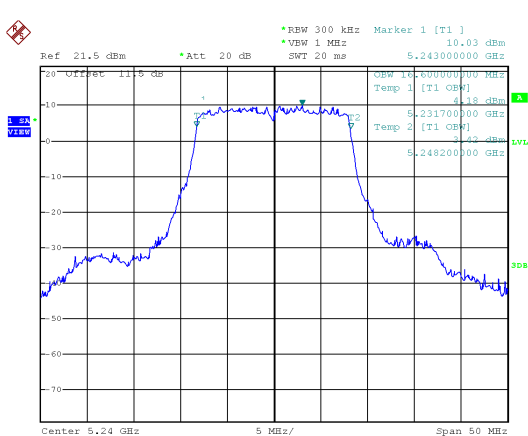
CH44



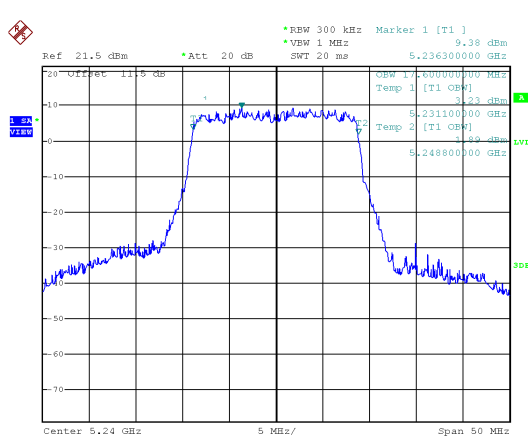
CH44



CH48

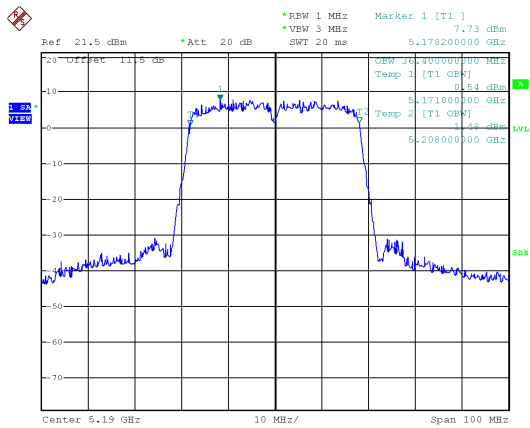


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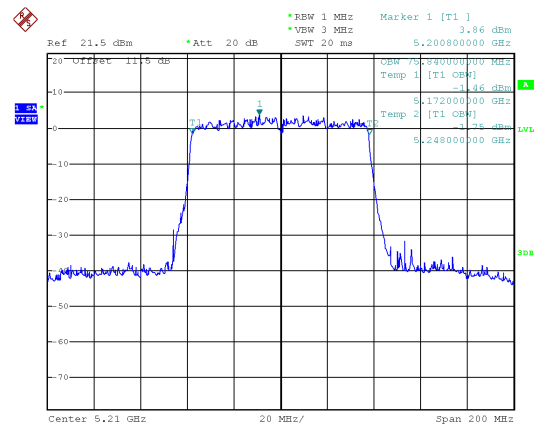




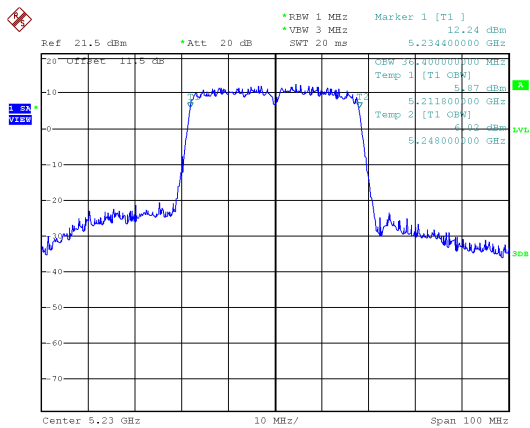
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42



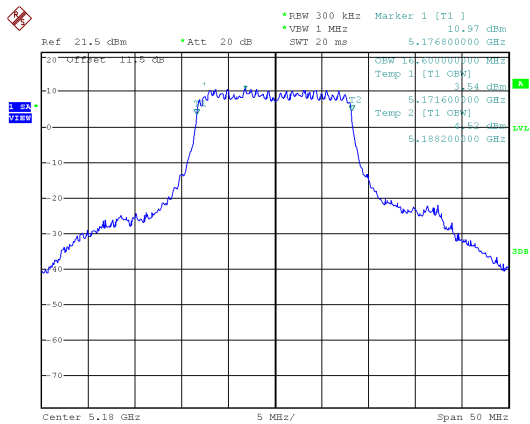
CH46



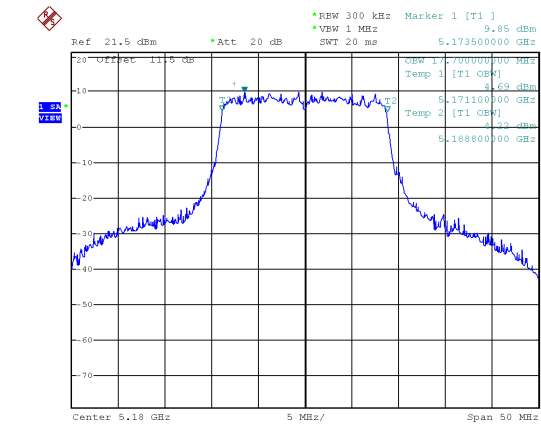


ANT B

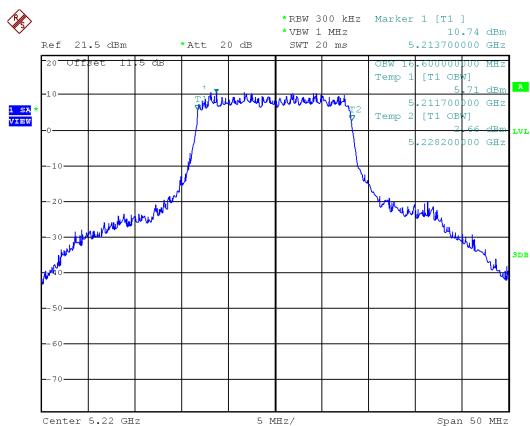
Modulation Standard: 802.11a (6Mbps)
CH36



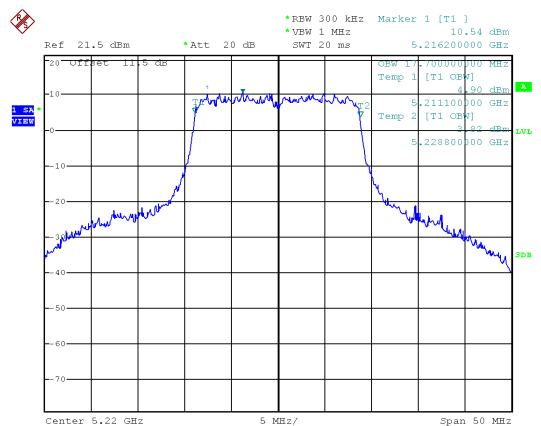
802.11ac VHT20 (6.5Mbps)
CH36



CH44

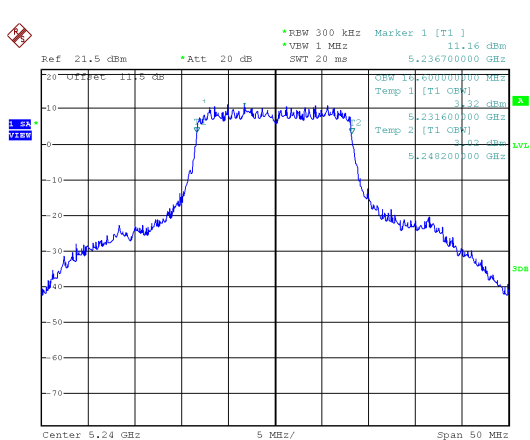


CH44

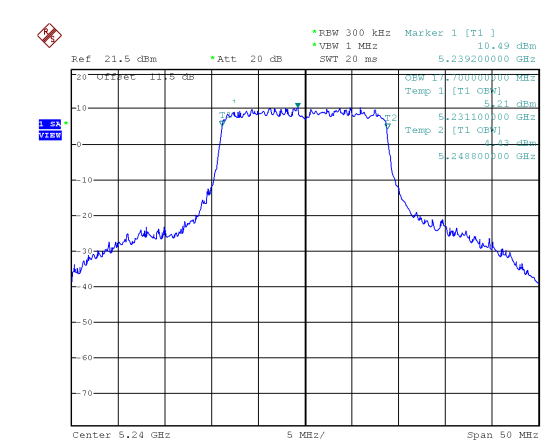


Da

CH48

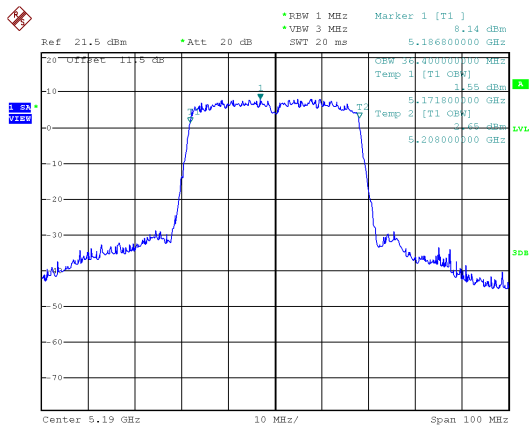


CH48

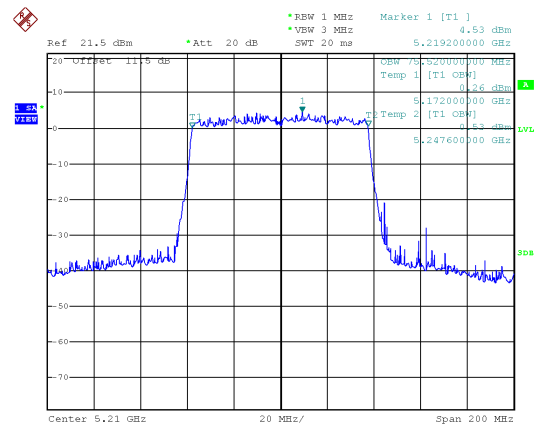




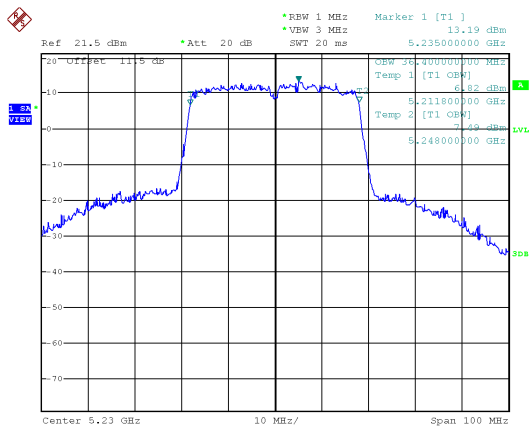
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42



CH46





10. Average Power

10.1. Test Limit

Output Power:

Frequency Band		Limit
☒	5.15~5.25GHz	
	Operating Mode	
☐	Outdoor access point	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).
☒	Indoor access point	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
☐	Fixed point-to-point access points	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.
☐	client devices	The maximum conducted output power over the frequency band of operation shall not exceed 250 mW (24dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.



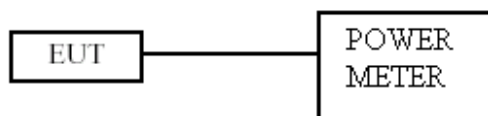
Frequency Band		Limit
☐	5.25-5.35 GHz	The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
☐	5.470-5.725 GHz	
☒	5.725~5.85 GHz	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.

10.2.Test Procedure

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

10.3.Test Setup Layout



**10.4. Test Result and Data**

Temperature: 21°C
Test Date: Jan. 29, 2019

Humidity: 62%
Test Mode: Non-Beamforming

In the 5.2G Band

Modulation	Data Rate	Channel	Frequency (MHz)	Measured value of each antenna port (dBm)		Total power (dBm)	Total power (mW)	FCC Limit (dBm)
				ANT A	ANT B			
802.11a	6 Mbps	36	5180	18.67	18.88	21.79	150.889	30
	6 Mbps	44	5220	18.83	18.91	21.88	154.187	30
	6 Mbps	48	5240	18.68	18.98	21.84	152.858	30
802.11an HT20	MCS 0	36	5180	18.44	18.65	21.56	143.106	30
	MCS 0	44	5220	18.55	18.57	21.57	143.559	30
	MCS 0	48	5240	18.51	18.75	21.64	145.947	30
802.11an HT40	MCS 0	38	5190	14.87	14.92	17.91	61.736	30
	MCS 0	46	5230	18.68	18.86	21.78	150.703	30
802.11ac VHT20	MCS0-NSS1	36	5180	18.47	18.70	21.60	144.438	30
	MCS0-NSS1	44	5220	18.64	18.65	21.66	146.396	30
	MCS0-NSS1	48	5240	18.57	18.87	21.73	149.035	30
802.11ac VHT40	MCS0-NSS1	38	5190	14.91	14.94	17.94	62.163	30
	MCS0-NSS1	46	5230	18.73	18.97	21.86	153.531	30
802.11ac VHT80	MCS0-NSS1	42	5210	13.26	13.76	16.53	44.952	30

In the 5.8G Band

Modulation	Data Rate	Channel	Frequency (MHz)	Measured value of each antenna port (dBm)		Total power (dBm)	Total power (mW)	FCC Limit (dBm)
				ANT A	ANT B			
802.11a	6 Mbps	149	5745	18.55	18.43	21.50	141.277	30
	6 Mbps	157	5785	18.66	18.58	21.63	145.562	30
	6 Mbps	165	5825	18.83	18.55	21.70	147.998	30
802.11an HT20	MCS 0	149	5745	18.87	18.52	21.71	148.212	30
	MCS 0	157	5785	18.90	18.63	21.78	150.570	30
	MCS 0	165	5825	18.91	18.80	21.87	153.661	30
802.11an HT40	MCS 0	151	5755	18.94	18.85	21.91	155.079	30
	MCS 0	159	5795	18.96	18.78	21.88	154.214	30
802.11ac VHT20	MCS0-NSS1	149	5745	18.92	18.58	21.76	150.094	30
	MCS0-NSS1	157	5785	18.94	18.66	21.81	151.794	30
	MCS0-NSS1	165	5825	18.98	18.83	21.92	155.451	30
802.11ac VHT40	MCS0-NSS1	151	5755	18.97	18.89	21.94	156.332	30
	MCS0-NSS1	159	5795	18.98	18.90	21.95	156.693	30
802.11ac VHT80	MCS0-NSS1	155	5775	18.24	18.51	21.39	137.638	30



Temperature: 21°C
Test Date: Jan. 29, 2019

Humidity: 62%
Test Mode: Beamforming

In the 5.2G Band

Modulation	Data Rate	Channel	Frequency (MHz)	Measured value of each antenna port (dBm)		Total power (dBm)	Total power (mW)	FCC Limit (dBm)
				ANT A	ANT B			
802.11a	6 Mbps	36	5180	15.66	15.87	18.78	75.450	29.68
	6 Mbps	44	5220	15.82	15.90	18.87	77.099	29.68
	6 Mbps	48	5240	15.67	15.97	18.83	76.434	29.68
802.11an HT20	MCS 0	36	5180	15.43	15.64	18.55	71.558	29.68
	MCS 0	44	5220	15.54	15.56	18.56	71.785	29.68
	MCS 0	48	5240	15.50	15.74	18.63	72.979	29.68
802.11an HT40	MCS 0	38	5190	11.86	11.91	14.90	30.870	30.00
	MCS 0	46	5230	15.67	15.85	18.77	75.357	30.00
802.11ac VHT20	MCS0-NSS1	36	5180	15.46	15.69	18.59	72.224	29.68
	MCS0-NSS1	44	5220	15.63	15.64	18.65	73.203	29.68
	MCS0-NSS1	48	5240	15.56	15.86	18.72	74.523	29.68
802.11ac VHT40	MCS0-NSS1	38	5190	11.90	11.93	14.93	31.084	30.00
	MCS0-NSS1	46	5230	15.72	15.96	18.85	76.771	30.00
802.11ac VHT80	MCS0-NSS1	42	5210	10.25	10.75	13.52	22.478	30.00

In the 5.8G Band

Modulation	Data Rate	Channel	Frequency (MHz)	Measured value of each antenna port (dBm)		Total power (dBm)	Total power (mW)	FCC Limit (dBm)
				ANT A	ANT B			
802.11a	6 Mbps	149	5745	15.54	15.42	18.49	70.643	29.29
	6 Mbps	157	5785	15.65	15.57	18.62	72.786	29.29
	6 Mbps	165	5825	15.82	15.54	18.69	74.004	29.29
802.11an HT20	MCS 0	149	5745	15.86	15.51	18.70	74.111	29.29
	MCS 0	157	5785	15.89	15.62	18.77	75.290	29.29
	MCS 0	165	5825	15.90	15.79	18.86	76.836	29.29
802.11an HT40	MCS 0	151	5755	15.93	15.84	18.90	77.545	30.00
	MCS 0	159	5795	15.95	15.77	18.87	77.112	30.00
802.11ac VHT20	MCS0-NSS1	149	5745	15.91	15.57	18.75	75.052	29.29
	MCS0-NSS1	157	5785	15.93	15.65	18.80	75.902	29.29
	MCS0-NSS1	165	5825	15.97	15.82	18.91	77.731	29.29
802.11ac VHT40	MCS0-NSS1	151	5755	15.96	15.88	18.93	78.171	30.00
	MCS0-NSS1	159	5795	15.97	15.89	18.94	78.352	30.00
802.11ac VHT80	MCS0-NSS1	155	5775	15.23	15.50	18.38	68.824	30.00



11. PSD

11.1. Test Limit

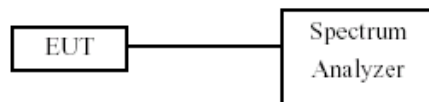
PSD:

Frequency Band		Limit
☒	5.15~5.25GHz	
	Operating Mode	
☐	Outdoor access point	17 dBm/MHz
☒	Indoor access point	17 dBm/MHz
☐	Fixed point-to-point access points	17 dBm/MHz
☐	client devices	11 dBm/MHz
☐	5.725~5.85 GHz	11 dBm/MHz
☐	5.470-5.725 GHz	11 dBm/MHz
☒	5.725~5.85 GHz	30 dBm/500kHz

11.2. Test Procedure

Reference to KDB789033 D02 General UNII Test Procedures New Rules v02r01

11.3. Test Setup Layout



**11.4. Test Result and Data**

Temperature : 21°C Humidity : 62%
 Test Date : Jan. 29, 2019 :

In the 5.2G Band

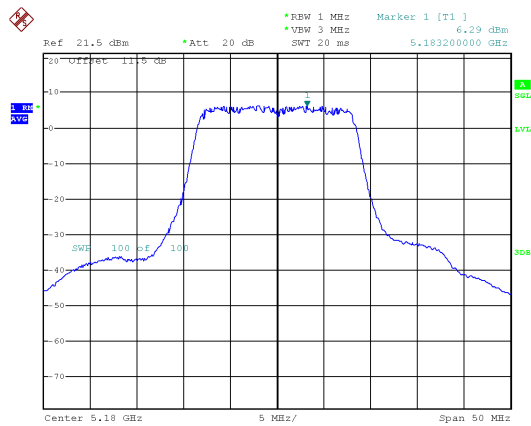
Mode	Channel (MHz)	Frequency (MHz)	Meas PSD (dBm/MHz)		Sum chain (dBm)	Duty Cycle CF(dB)	Total Corr'd PSD (dBm/MHz)	PSD Limit (dBm/MHz)
			ANT A	ANT B				
802.11a	36	5180	6.29	6.66	9.49	0.00	9.49	16.68
	44	5220	6.78	7.18	9.99	0.00	9.99	16.68
	48	5240	6.68	7.31	10.02	0.00	10.02	16.68
802.11ac VHT20	36	5180	5.98	6.03	9.02	0.00	9.02	16.68
	44	5220	6.47	6.55	9.52	0.00	9.52	16.68
	48	5240	6.43	6.70	9.58	0.00	9.58	16.68
802.11ac VHT40	38	5190	-0.72	-0.59	2.36	0.00	2.36	16.68
	46	5230	3.62	3.83	6.74	0.00	6.74	16.68
802.11ac VHT80	42	5210	-5.38	-4.67	-2.00	0.15	-1.85	16.68

In the 5.8G Band

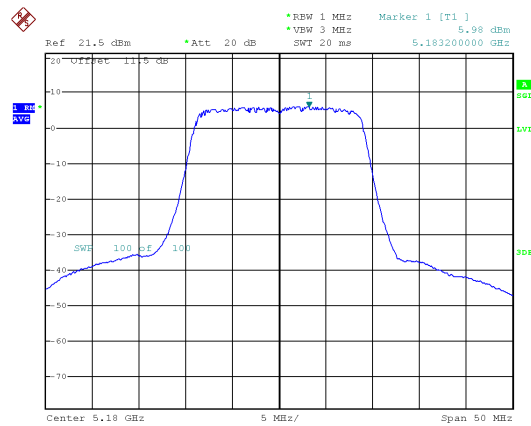
Mode	Channel (MHz)	Frequency (MHz)	Meas PSD (dBm/MHz)		Sum chain (dBm)	Duty Cycle CF(dB)	10log(500K Hz/RBW) CF (dB)	Total Corr'd PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)
			ANT A	ANT B					
802.11a	149	5745	6.26	6.08	9.18	0.00	-3.01	6.17	29.29
	157	5785	6.68	6.38	9.54	0.00	-3.01	6.53	29.29
	165	5825	6.53	6.82	9.69	0.00	-3.01	6.68	29.29
802.11ac VHT20	149	5745	6.42	6.08	9.26	0.00	-3.01	6.25	29.29
	157	5785	6.75	6.34	9.56	0.00	-3.01	6.55	29.29
	165	5825	6.51	6.63	9.58	0.00	-3.01	6.57	29.29
802.11ac VHT40	151	5755	3.60	3.74	6.68	0.00	-3.01	3.67	29.29
	159	5795	3.96	3.97	6.98	0.00	-3.01	3.97	29.29
802.11ac VHT80	155	5775	-0.09	-0.20	2.87	0.15	-3.01	0.01	29.29



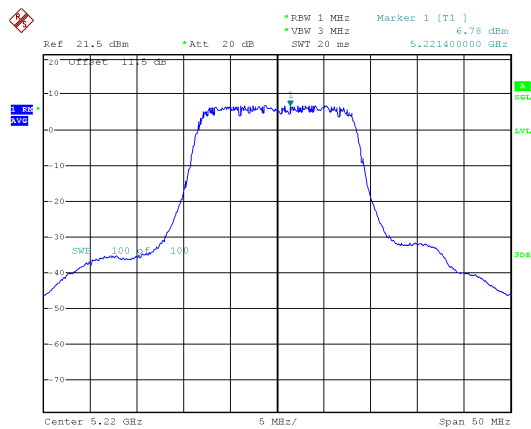
5.2G Band 1, ANT A
Modulation Standard: 802.11a (6Mbps)
CH36



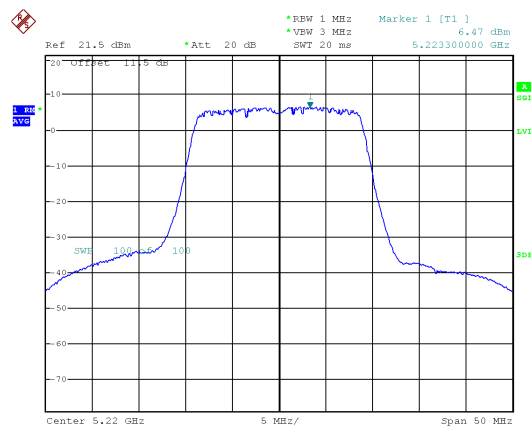
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH36



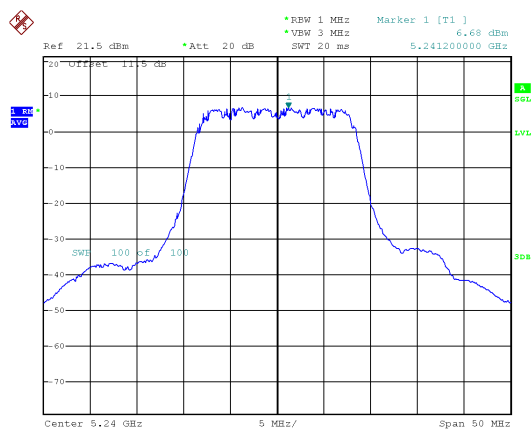
CH44



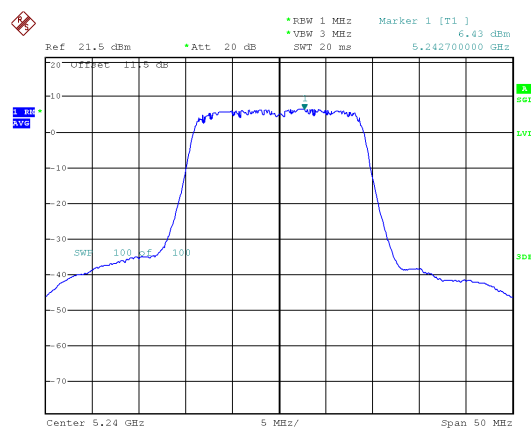
CH44



CH48

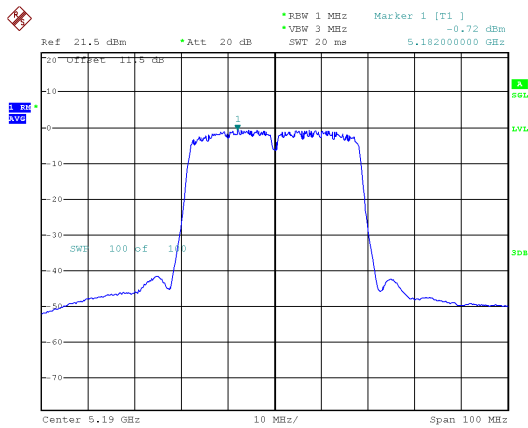


CH48

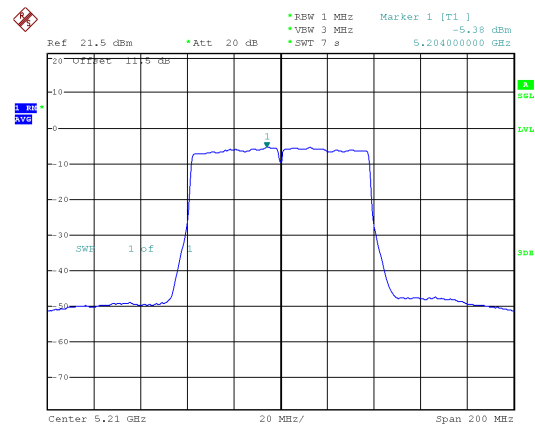




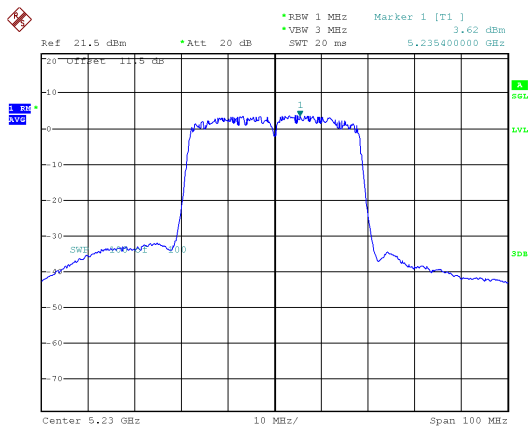
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42



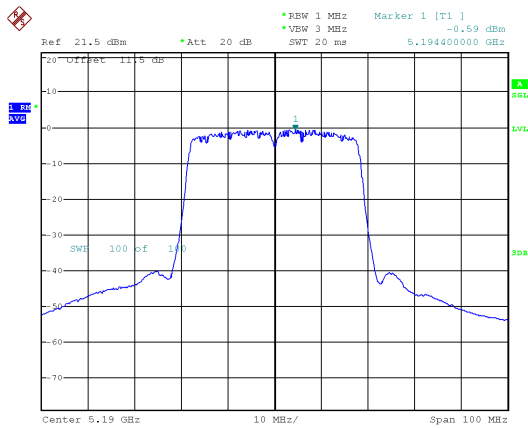
CH46



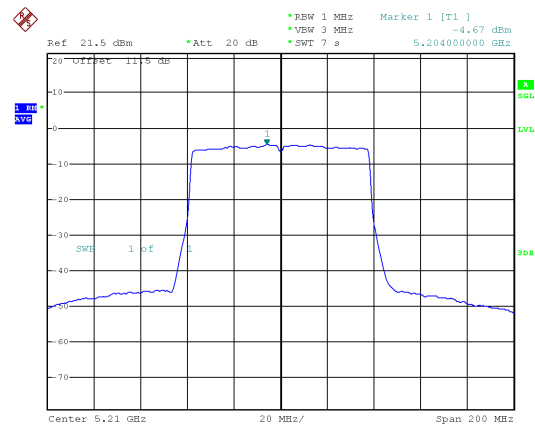




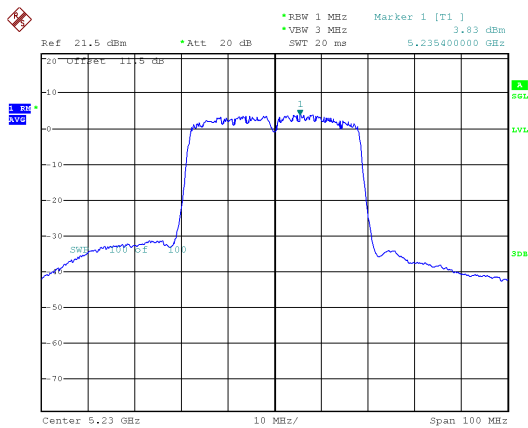
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH38



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH42

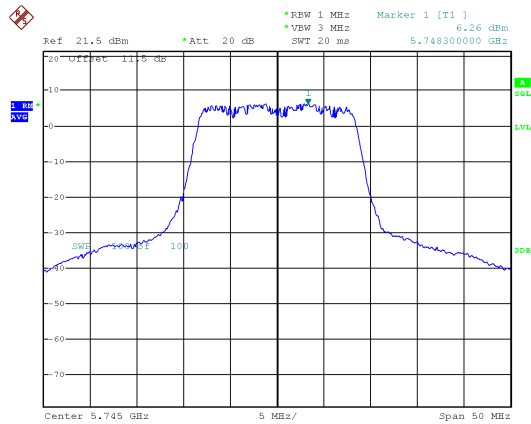


CH46

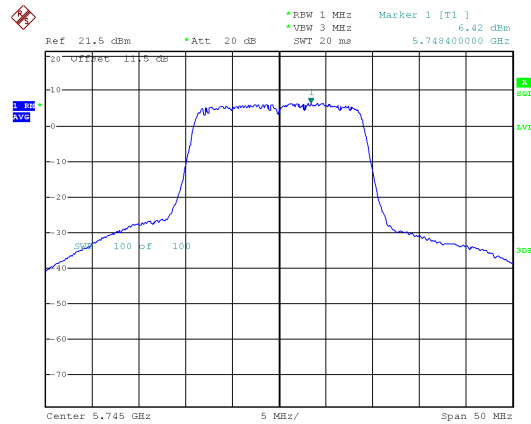




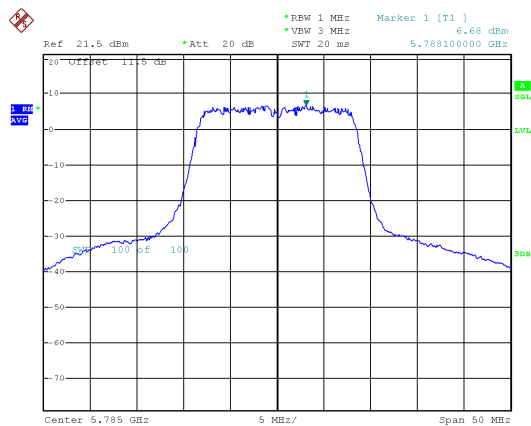
5.8G Band 4, ANT A
Modulation Standard: 802.11a (6Mbps)
CH149



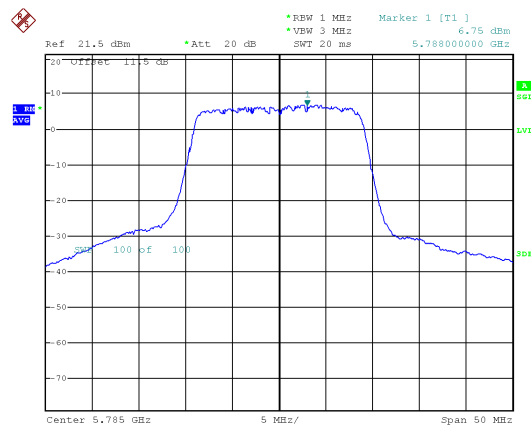
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH149



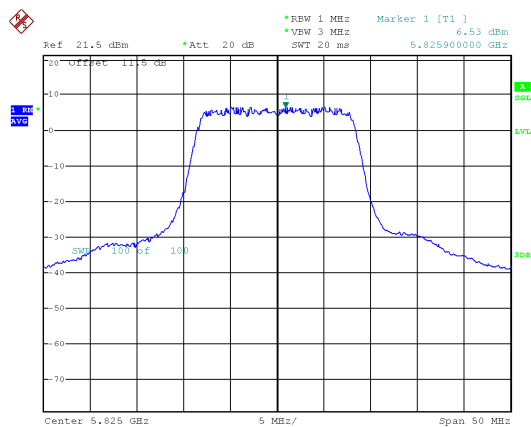
CH157



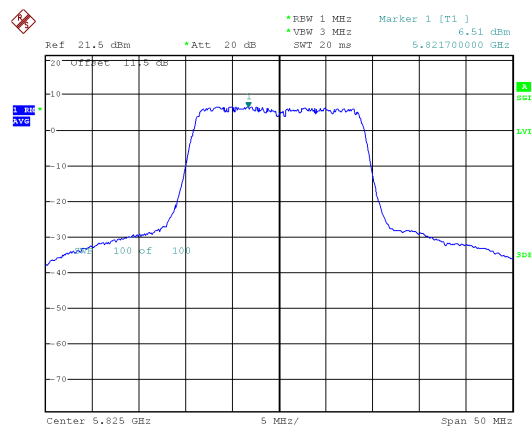
CH157



CH165

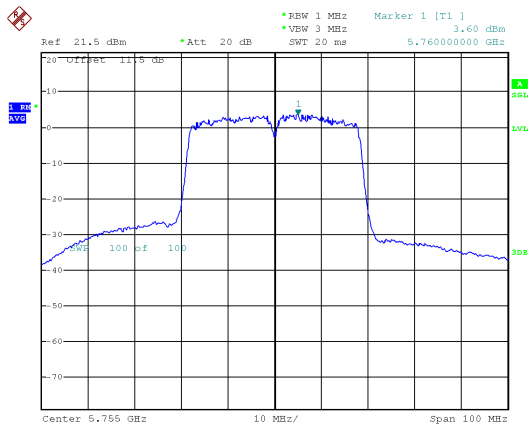


CH165

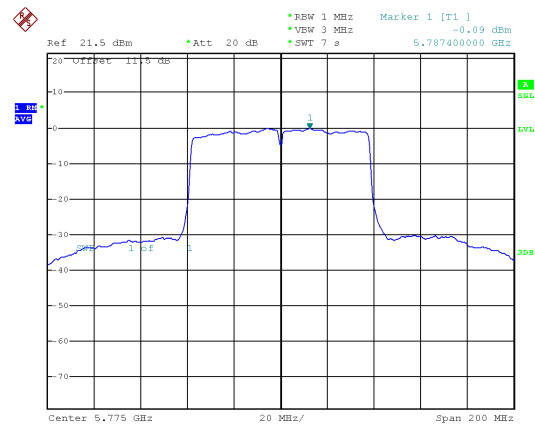




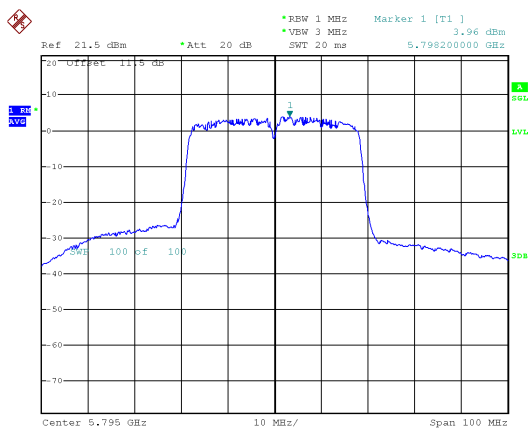
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH151



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH155

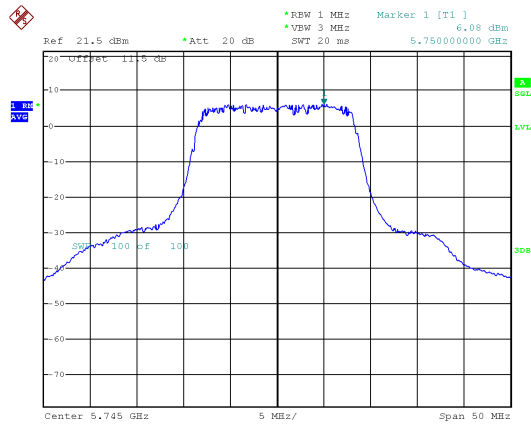


CH159

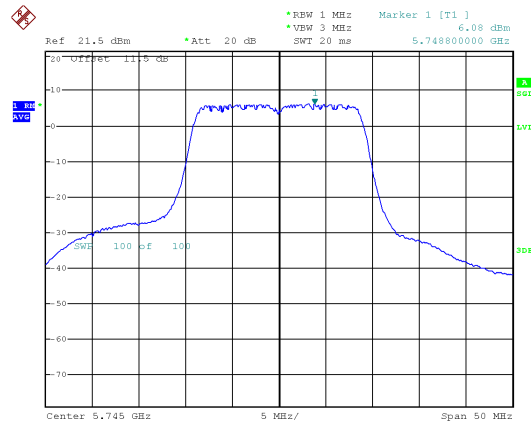




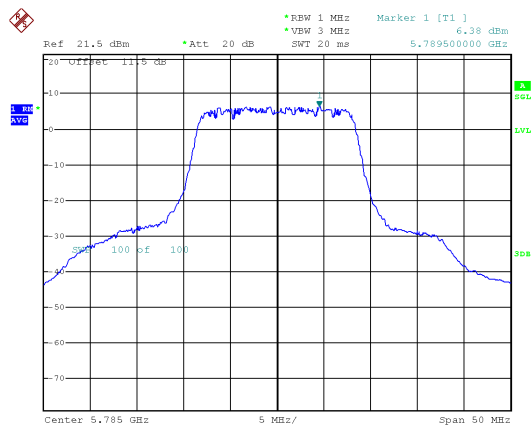
5.8G Band 4, ANT B
Modulation Standard: 802.11a (6Mbps)
CH149



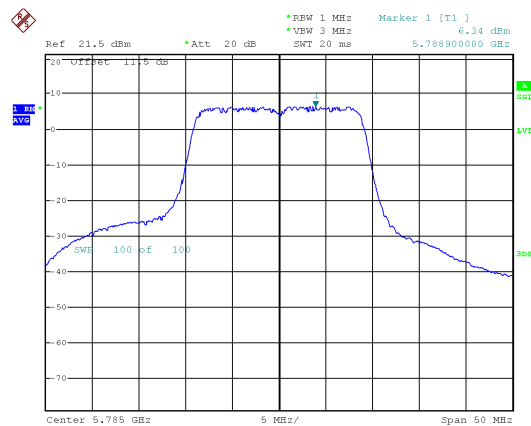
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH149



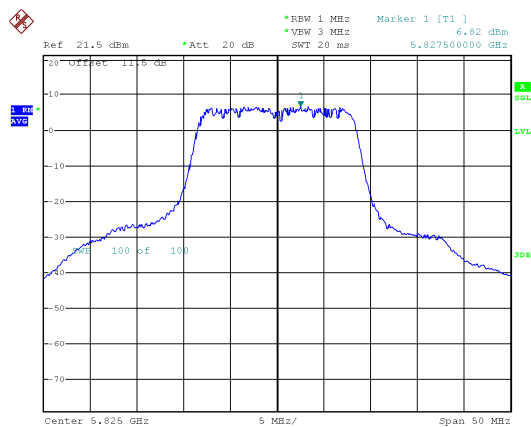
CH157



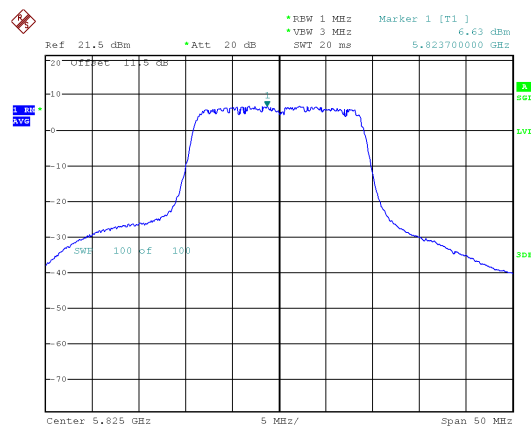
CH157



CH165

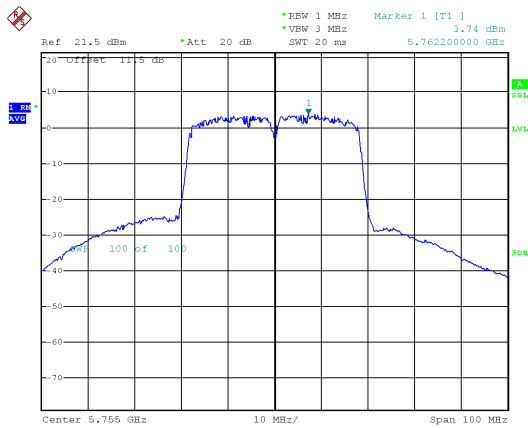


CH165

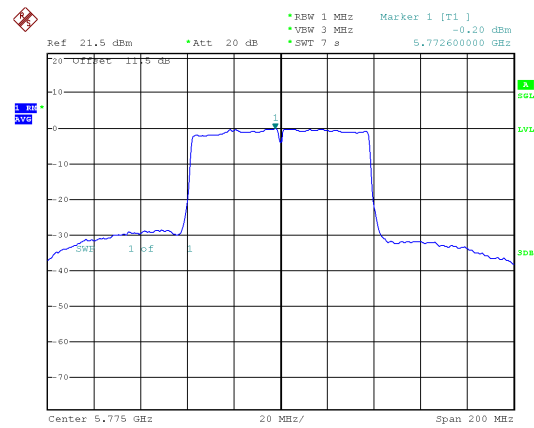




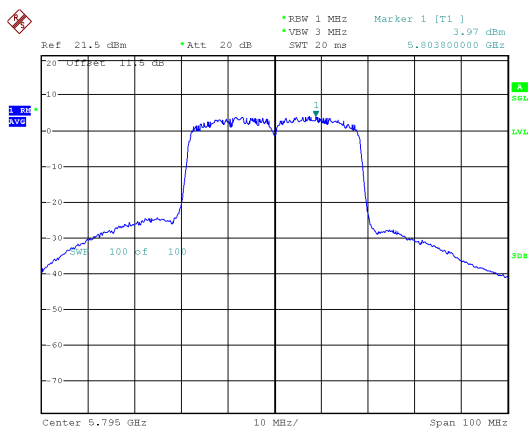
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH151



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH155



CH159



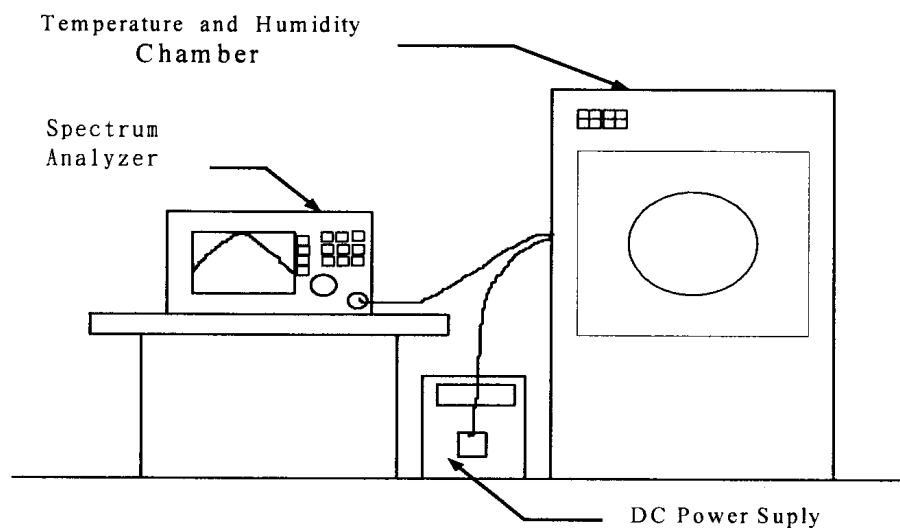


12. Frequency Stability

12.1. Test Procedure

1. The EUT was placed inside the Temperature and Humidity chamber.
2. The transmitter output was connected to spectrum analyzer.
3. Turn the EUT on and couple its output to a spectrum analyzer.
4. Turn the EUT off and set the chamber to the highest temperature specified.
5. 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.
6. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
7. 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.

12.2. Test Setup Layout



**12.3. Test Result and Data**

Temperature : 21°C

Humidity : 62%

Test Date : Jan. 29, 2019

:

Operating frequency: 5180 MHz							
Temp(°C)	Power supply(V)	2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	102	5180.0158	0.000304	5180.0601	0.001161	5179.9527	-0.000913
	120	5180.0835	0.001612	5180.0607	0.001172	5179.9225	-0.001496
	138	5180.0345	0.000666	5180.0619	0.001194	5180.0751	0.001451
40	102	5179.9342	-0.001269	5179.9684	-0.000610	5180.0133	0.000256
	120	5180.0083	0.000160	5179.9274	-0.001402	5179.9314	-0.001325
	138	5179.9146	-0.001650	5180.0074	0.000143	5180.0286	0.000552
30	102	5179.9373	-0.001210	5179.9340	-0.001273	5179.9316	-0.001320
	120	5180.0232	0.000448	5180.0917	0.001770	5179.9769	-0.000446
	138	5179.9233	-0.001481	5179.9420	-0.001119	5179.9587	-0.000797
20	102	5180.0625	0.001207	5180.0383	0.000738	5180.0054	0.000104
	120	5180.0263	0.000507	5180.0801	0.001546	5179.9531	-0.000905
	138	5180.0548	0.001057	5179.9180	-0.001583	5179.9337	-0.001280
10	102	5179.9824	-0.000339	5180.0713	0.001377	5180.0224	0.000433
	120	5180.0136	0.000263	5180.0994	0.001919	5179.9179	-0.001586
	138	5179.9595	-0.000782	5179.9405	-0.001148	5180.0095	0.000182
0	102	5180.0801	0.001546	5179.9356	-0.001244	5179.9692	-0.000594
	120	5180.0990	0.001911	5180.0680	0.001312	5179.9830	-0.000328
	138	5180.0288	0.000556	5179.9849	-0.000292	5180.0222	0.000428
-10	102	5179.9541	-0.000887	5179.9153	-0.001634	5179.9902	-0.000189
	120	5179.9567	-0.000836	5179.9777	-0.000431	5179.9455	-0.001052
	138	5180.0322	0.000622	5179.9935	-0.000126	5180.0802	0.001549
-20	102	5180.0248	0.000478	5179.9053	-0.001829	5179.9831	-0.000327
	120	5179.9683	-0.000613	5180.0512	0.000988	5180.0584	0.001126
	138	5179.9785	-0.000414	5180.0083	0.000161	5179.9090	-0.001756
-30	102	5180.0669	0.001292	5179.9524	-0.000918	5180.0718	0.001387
	120	5180.0578	0.001116	5179.9265	-0.001418	5180.0999	0.001929
	138	5180.0939	0.001813	5180.0092	0.000177	5179.9604	-0.000765

Limit: Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.



13. Automatically Discontinue Transmission

13.1.Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

13.2.Test Result of Automatically Discontinue Transmission

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.



14. Radio Frequency Exposure

14.1.Applicable Standards

The measurements shown in this test report were made in accordance with the procedures given in FCC Part 2 (Section 2.1091)
KDB 447498

14.2.EUT Specification

Frequency band (Operating)	☒ WLAN: 2412MHz ~ 2462MHz ☒ WLAN: 5150MHz ~ 5250MHz ☐ WLAN: 5250MHz ~ 5350MHz ☐ WLAN: 5470MHz ~ 5725MHz ☒ WLAN: 5725MHz ~ 5850MHz ☐ Bluetooth: 2402MHz ~ 2480MHz
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation)
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm ²) ☒ General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna diversity	☐ Single antenna ☒ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☒ Tx/Rx diversity
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A

Remark:

1. The maximum output power is 21.95dBm at 5795MHz (with 3.7 antenna gain.)
2. DTS device is not subject to routine RF evaluation; MPE estimate is used to justify the compliance.
3. For mobile or fixed location transmitters, no SAR consideration applied. The maximum power density is 0.073 mW/cm² even if the calculation indicates that the power density would be larger.

14.3.Test Results

No non-compliance noted.



14.4.Calculation

$$\text{Given } E = \frac{\sqrt{30 \times P \times G}}{d} \quad \& \quad S = \frac{E^2}{3770}$$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{3770 d^2}$$

Changing to units of mW and cm, using:

$P \text{ (mW)} = P \text{ (W)} / 1000$ and

$d \text{ (cm)} = d \text{ (m)} / 100$

Yields

$$S = \frac{30 \times (P/1000) \times G}{3770 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²



14.5. Maximum Permissible Exposure

Maximum Permissible Exposure (Non-Beamforming)

Channel Frequency (MHz)	Max. Conducted output power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
5180-5240	21.88	3.7	20	0.072	1
5745-5825	21.95	3.7	20	0.073	1

Maximum Permissible Exposure (Beamforming)

Channel Frequency (MHz)	Max. Conducted output power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
5180-5240	18.87	6.32	20	0.066	1
5745-5825	18.94	6.71	20	0.073	1

**Maximum Permissible Exposure (Co-location)****(2.4G Non-Beamforming + 5G Non-Beamforming)**

Modulation Mode	Channel Frequency (MHz)	Max. Conducted output power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm ²)
802.11g	2412-2462	29.97	1.9	20	0.306
802.11ac VHT40	5725-5850	21.95	3.7	20	0.073
Co-location Total					0.379
Maximum Permissible Exposure Limit					1

(2.4G Non-Beamforming + 5G Beamforming)

Modulation Mode	Channel Frequency (MHz)	Max. Conducted output power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm ²)
802.11g	2412-2462	29.97	1.9	20	0.306
802.11ac VHT40	5725-5850	18.94	6.71	20	0.073
Co-location Total					0.379
Maximum Permissible Exposure Limit					1