



7. On Time, Duty Cycle and Measurement methods

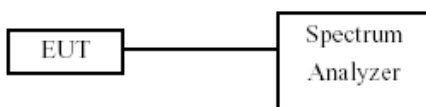
7.1. Test Limit

None; for reporting purposes only.

7.2. Test Procedure

KDB 789033 Zero-Span Spectrum Analyzer Method.

7.3. Test Setup Layout



7.4. Test Result and Data

Temperature: 22°C

Humidity: 64%

Test Date: Jun. 10, 2018

Modulation Type	On Time (msec)	Period Time (msec)	Duty Cycle (%)
802.11a	2.11	2.15	98.14%
802.11ac VHT20	5.06	5.10	99.22%
802.11ac VHT40	2.51	2.56	98.05%
802.11ac VHT80	1.18	1.24	95.15%

7.5. Measurement Methods

26 dB and 6dB Emission BW	KDB 789033 D02 v01, Section C
99% Occupied BW	KDB 789033 D02 v01, Section D
Conducted Output Power	KDB 789033 D02 v01, Section E.2.d and E.3.b (Method PM-G)
Power Spectral Density	KDB 789033 D02 v01, Section F
Unwanted emissions in restricted bands	KDB 789033 D02 v01, Sections G and H
Unwanted emissions in non-restricted bands	KDB 789033 D02 v01, Sections G and H



8. 26dB Bandwidth & 99% Bandwidth

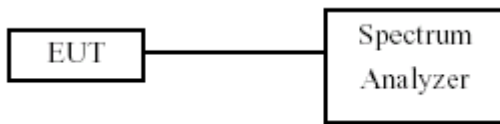
8.1. Test Limit

None; for reporting purposes only.

8.2. Test Procedure

Reference to 789033 D02 General UNII Test Procedures New Rules v01: The transmitter output is connected to a spectrum analyzer with the RBW = approximately 1% of the emission bandwidth, the VBW >= 3 x RBW, peak detector and max hold.

8.3. Test Setup Layout



8.4. Test Result and Data (26dB Bandwidth)

Temperature: 22°C

Humidity: 64%

Test Date: Jun. 10, 2018

In the 5.3GHz Band

Modulation Type	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
			ANT A	ANT B
802.11a	52	5260	19.50	19.00
	60	5300	19.50	19.20
	64	5320	19.40	19.10
802.11ac VHT20	52	5260	20.40	20.20
	60	5300	20.50	20.30
	64	5320	20.50	20.20
802.11ac VHT40	54	5270	40.80	41.00
	62	5310	40.80	41.00
802.11ac VHT80	58	5290	83.84	83.52

**In the 5.5GHz Band**

Modulation Type	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
			ANT A	ANT B
802.11a	100	5500	20.00	19.80
	116	5580	19.90	19.60
	140	5700	20.20	19.80
802.11ac VHT20	100	5500	20.50	20.70
	116	5580	20.90	20.80
	140	5700	20.80	20.70
802.11ac VHT40	102	5510	41.00	41.00
	110	5550	41.00	40.80
	134	5670	40.80	41.00
802.11ac VHT80	106	5530	83.84	83.20

Within 5470-5725MHz Band, Straddle Channel

Modulation Type	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
			ANT A	ANT B
802.11a	144	5720	15.13	14.71
802.11ac VHT20	144	5720	15.13	15.22
802.11ac VHT40	142	5710	35.14	35.42
802.11ac VHT80	138	5690	77.10	77.10

Extends across 5725MHz Band, Straddle Channel

Modulation Type	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
			ANT A	ANT B
802.11a	144	5720	5.19	5.10
802.11ac VHT20	144	5720	5.49	5.52
802.11ac VHT40	142	5710	5.76	5.68
802.11ac VHT80	138	5690	7.50	7.20



8.5. Test Result and Data (99% Bandwidth)

Temperature: 22°C

Humidity: 64%

Test Date: Jun. 10, 2018

In the 5.3GHz Band

Modulation Type	Channel	Frequency (MHz)	99% Bandwidth (MHz)	
			ANT A	ANT B
802.11a	52	5260	16.50	16.50
	60	5300	16.50	16.50
	64	5320	16.60	16.50
802.11ac VHT20	52	5260	17.70	17.70
	60	5300	17.70	17.70
	64	5320	17.70	17.60
802.11ac VHT40	54	5270	36.20	36.20
	62	5310	36.20	36.20
802.11ac VHT80	58	5290	75.84	75.84

In the 5.5GHz Band

Modulation Type	Channel	Frequency (MHz)	99% Bandwidth (MHz)	
			ANT A	ANT B
802.11a	100	5500	16.50	16.50
	116	5580	16.50	16.50
	140	5700	16.50	16.50
802.11ac VHT20	100	5500	17.60	17.80
	116	5580	17.70	17.70
	140	5700	17.70	17.80
802.11ac VHT40	102	5510	36.40	36.40
	110	5550	36.20	36.00
	134	5670	36.40	36.40
802.11ac VHT80	106	5530	75.84	75.52



Within 5470-5725MHz Band, Straddle Channel

Modulation Type	Channel	Frequency (MHz)	99% Bandwidth (MHz)	
			ANT A	ANT B
802.11a	144	5720	13.26	13.26
802.11ac VHT20	144	5720	13.77	13.86
802.11ac VHT40	142	5710	32.90	32.90
802.11ac VHT80	138	5690	73.40	73.40

*802.11ac VHT80:

ANT A: 5725MHz-5651.6MHz=73.4MHz

ANT B: 5725MHz-5651.6MHz=73.4MHz

Extends across 5725MHz Band, Straddle Channel

Modulation Type	Channel	Frequency (MHz)	99% Bandwidth (MHz)	
			ANT A	ANT B
802.11a	144	5720	3.87	3.78
802.11ac VHT20	144	5720	4.29	4.29
802.11ac VHT40	142	5710	4.48	4.48
802.11ac VHT80	138	5690	2.76	3.08

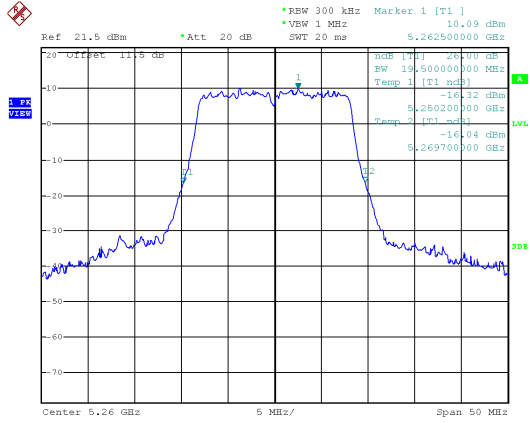
*802.11ac VHT80:

ANT A: 5727.76MHz-5725MHz=2.76MHz

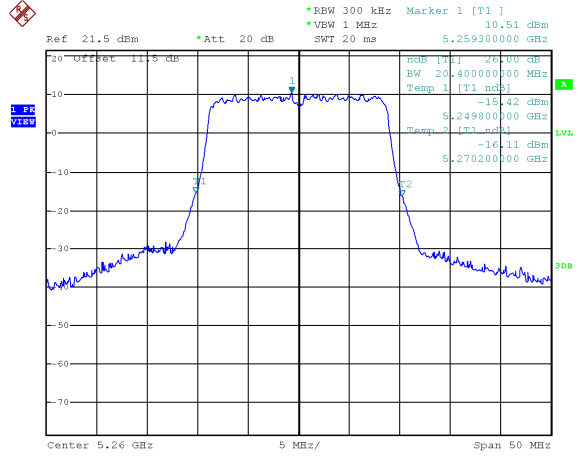
ANT B: 5728.08MHz-5725MHz=3.08MHz



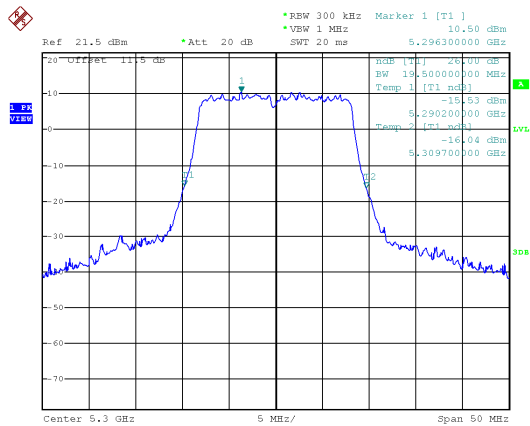
26dB Bandwidth
Band 2, ANT A
Modulation Standard: 802.11a (6Mbps)
CH52



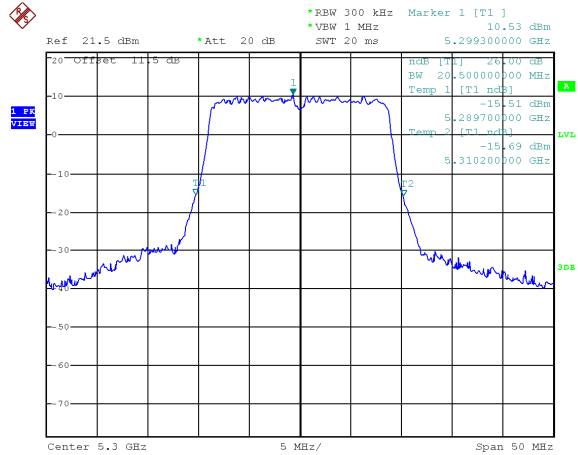
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH52



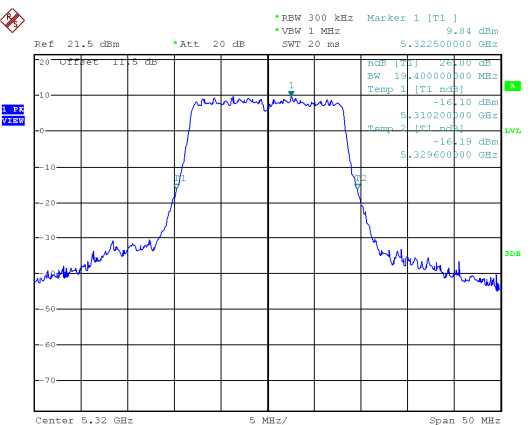
CH60



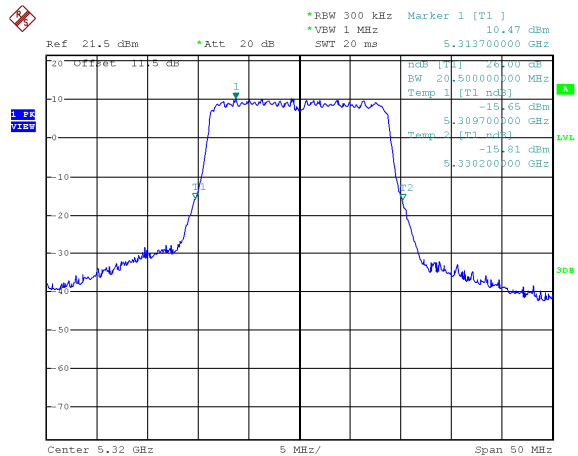
CH60



CH64



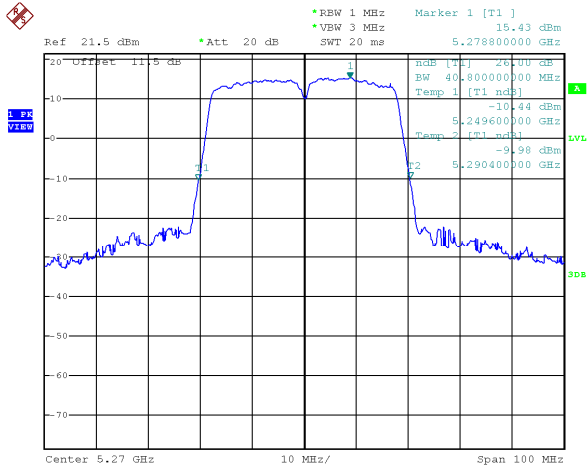
CH64



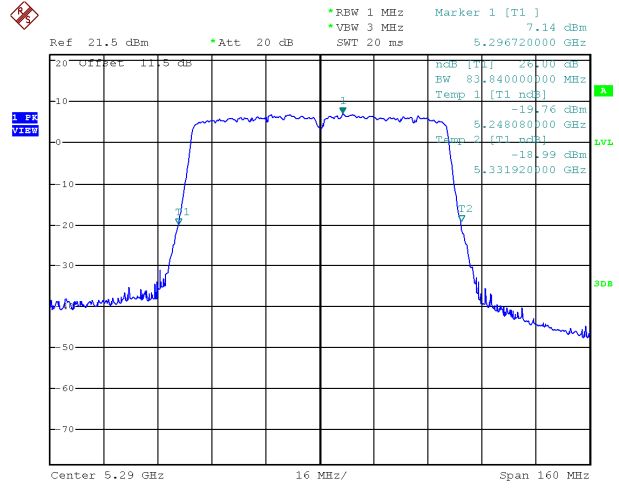


Band 2, ANT A

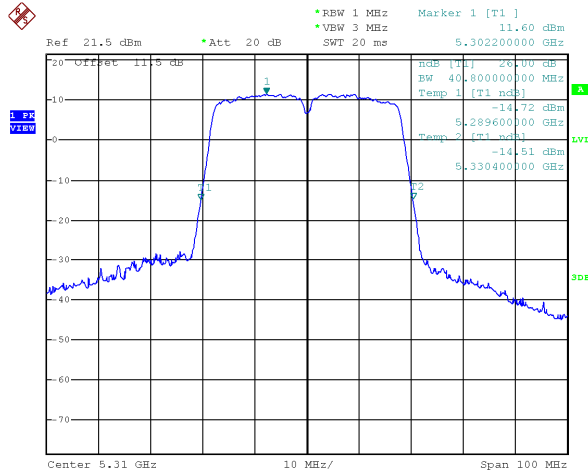
Modulation Standard: 802.11ac VHT40 (13.5Mbps) CH54



Modulation Standard: 802.11ac VHT80 (29.3Mbps) CH58

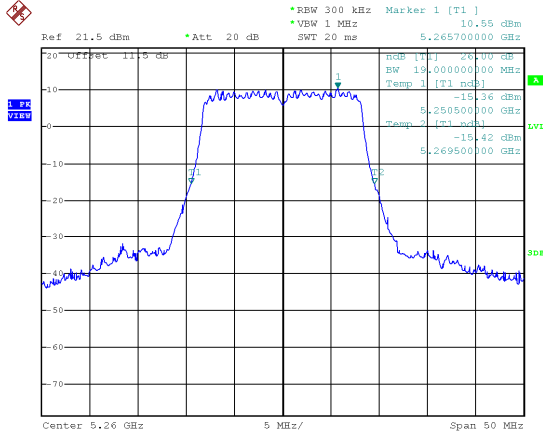


CH62

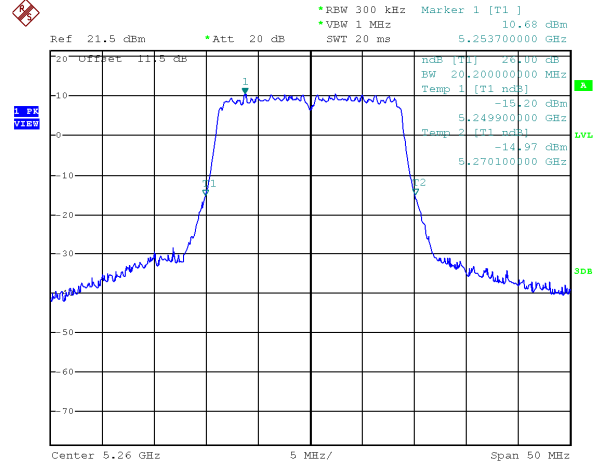




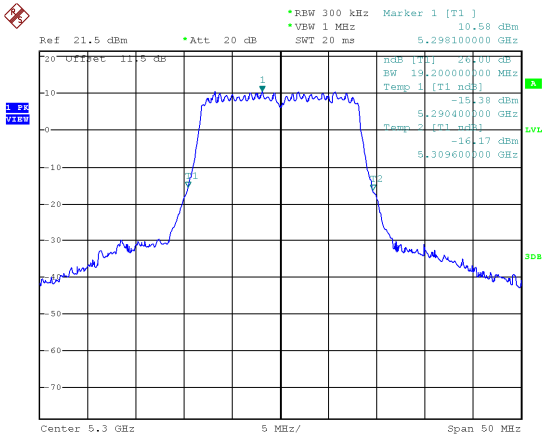
Band 2, ANT B
Modulation Standard: 802.11a (6Mbps)
CH52



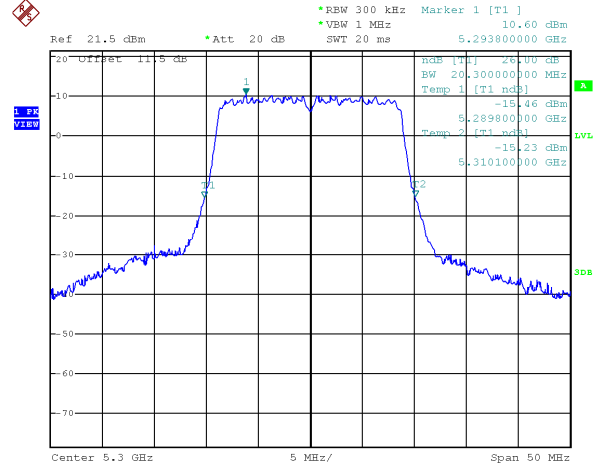
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH52



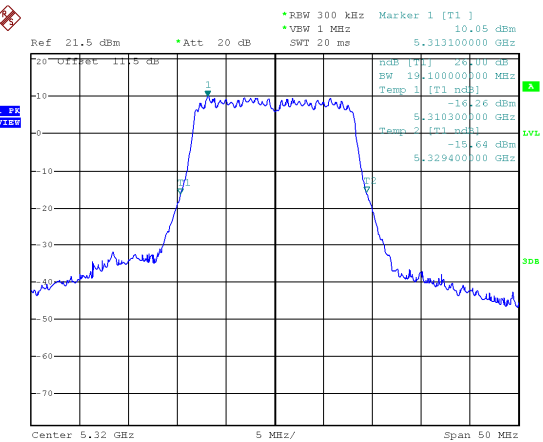
CH60



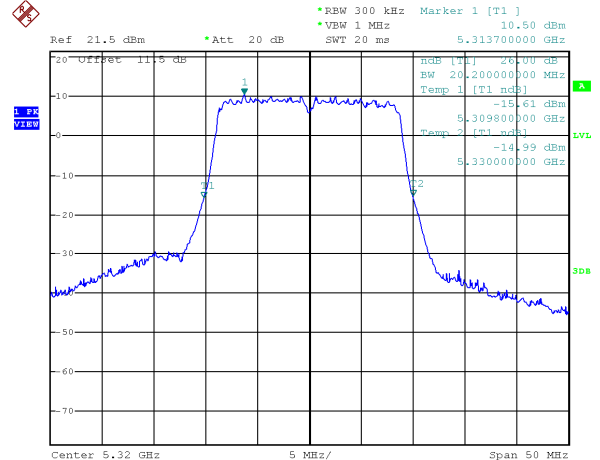
CH60



CH64



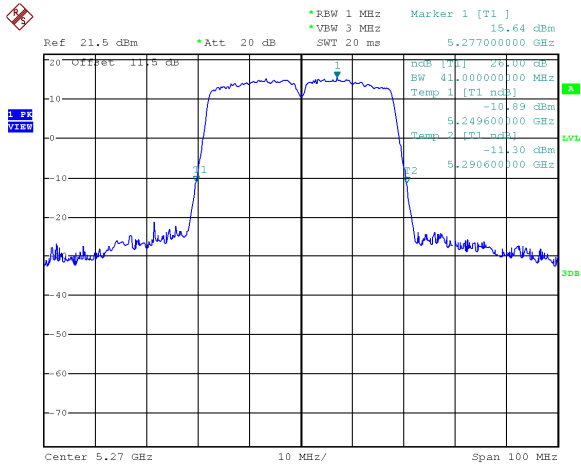
CH64



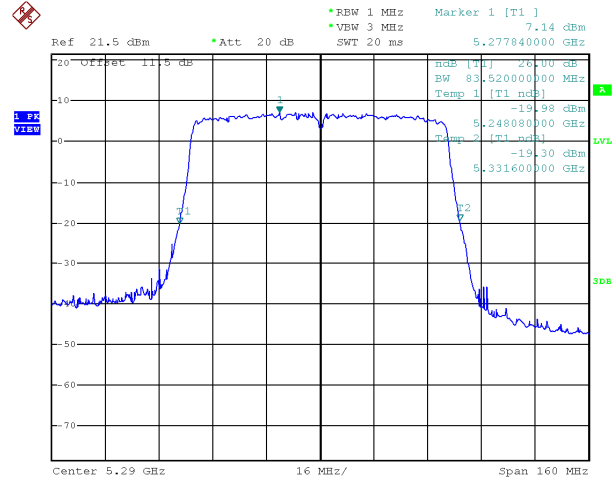


Band 2, ANT B

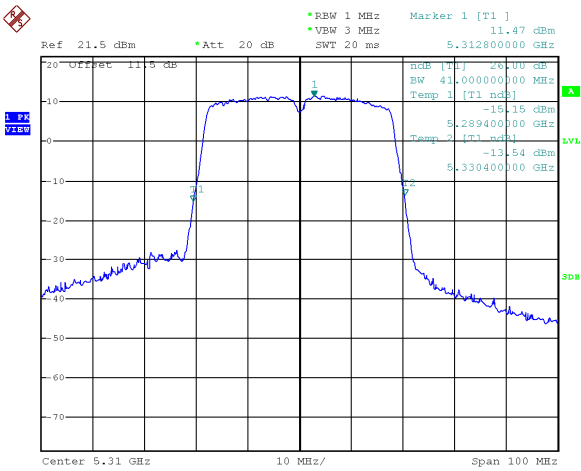
Modulation Standard: 802.11ac VHT40 (13.5Mbps) CH54



Modulation Standard: 802.11ac VHT80 (29.3Mbps) CH58

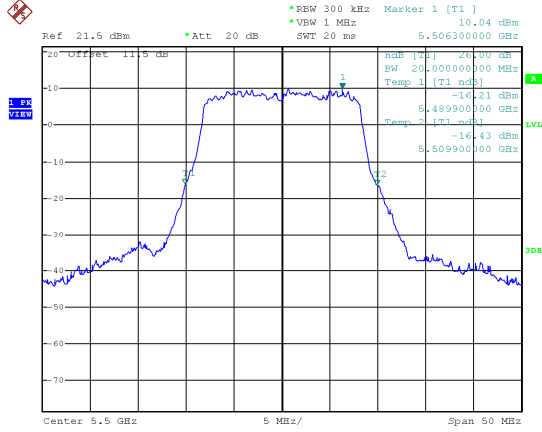


CH62

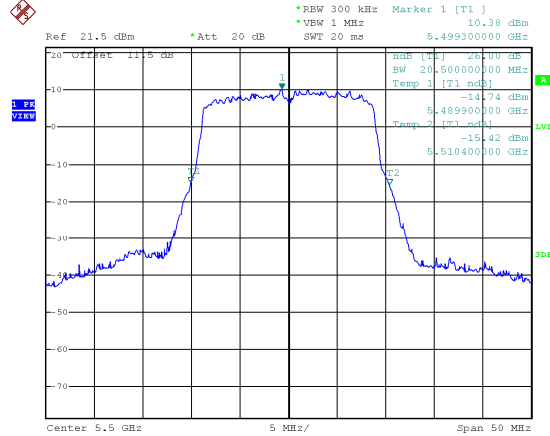




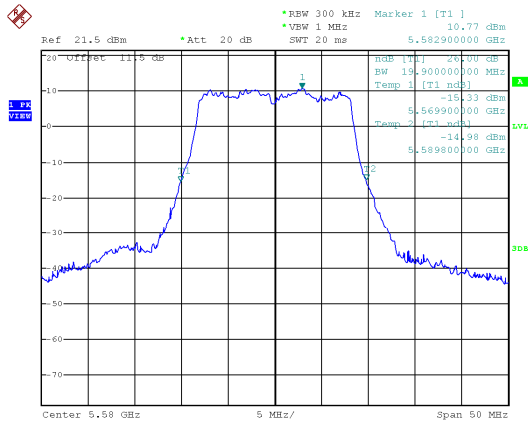
Band 3, ANT A
Modulation Standard: 802.11a (6Mbps)
CH100



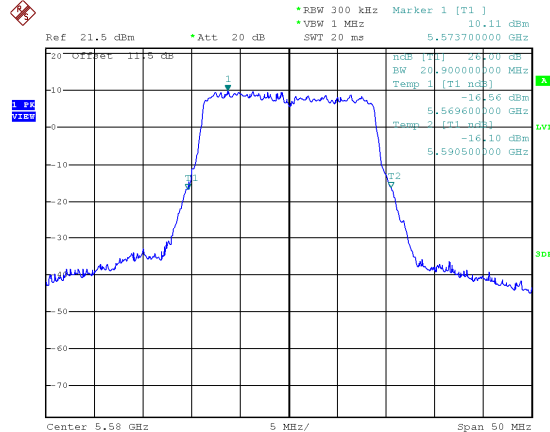
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH100



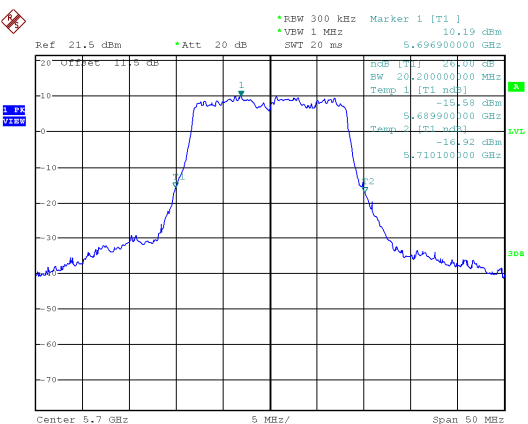
CH116



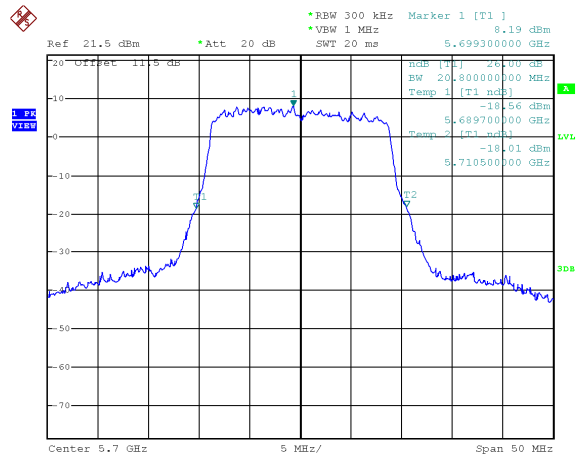
CH116



CH140

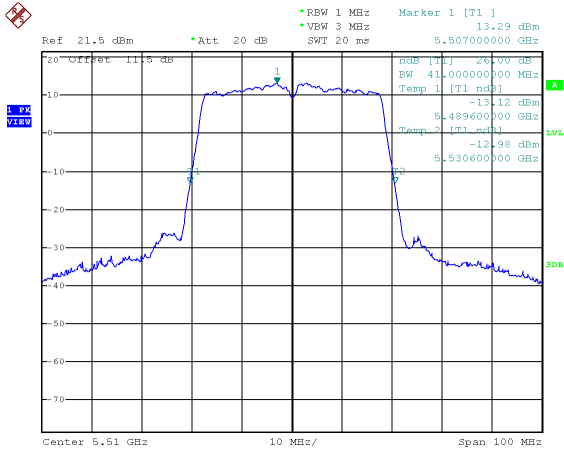


CH140

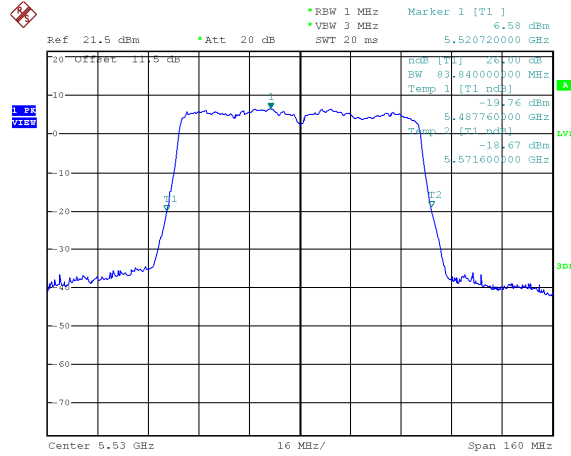




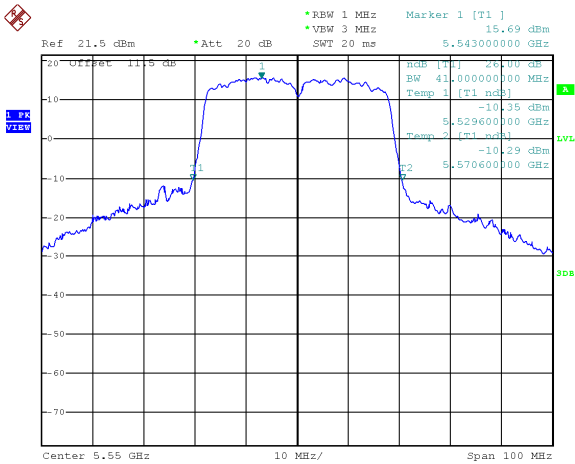
Band 3, ANT A
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH102



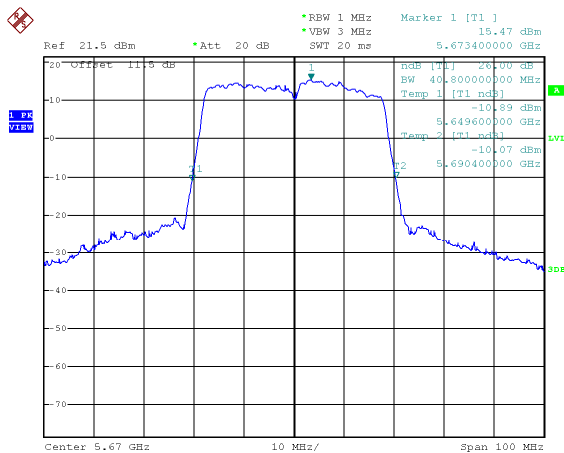
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH106



CH110

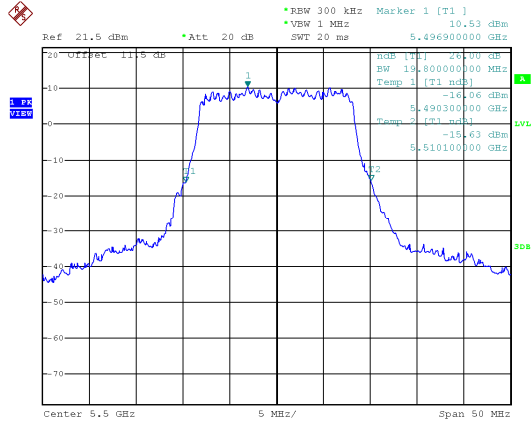


CH134

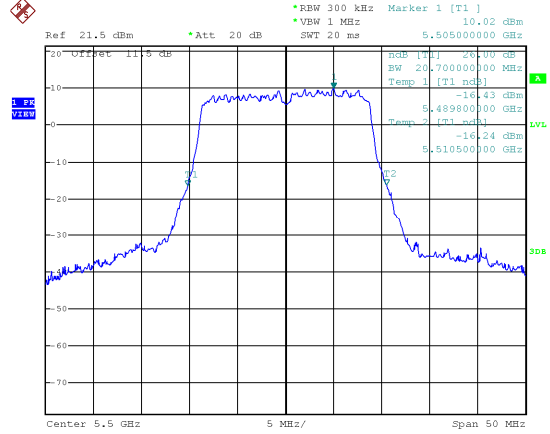




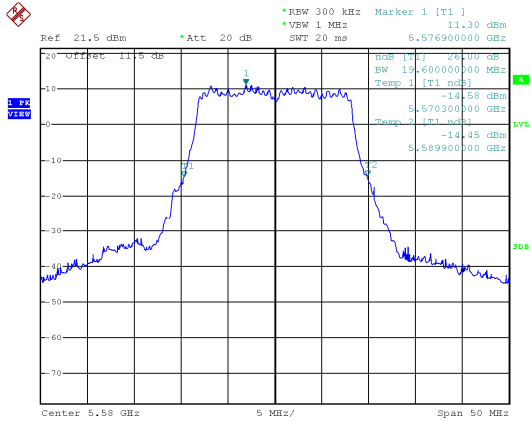
Band 3, ANT B
Modulation Standard: 802.11a (6Mbps)
CH100



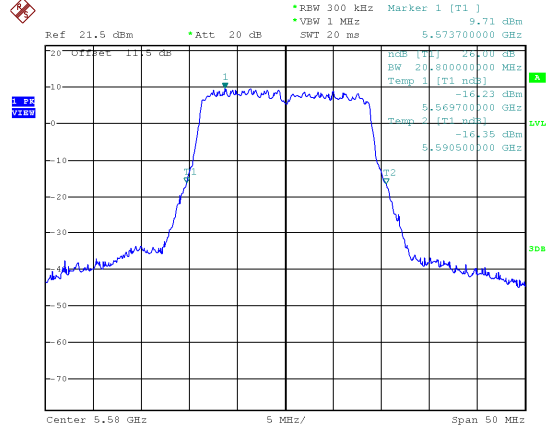
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH100



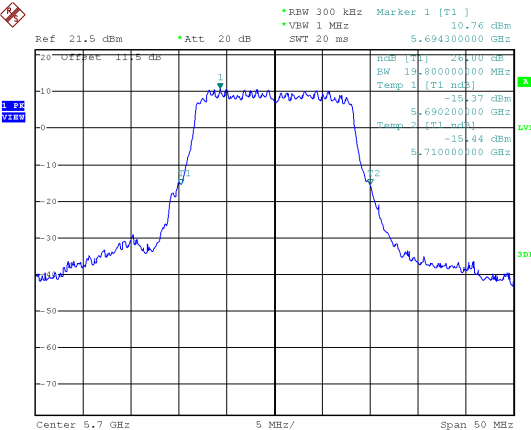
CH116



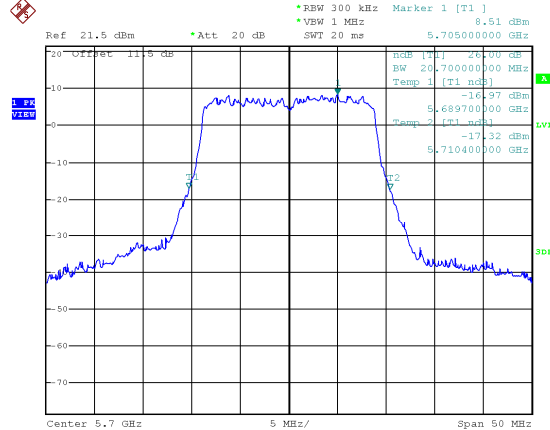
CH116



CH140



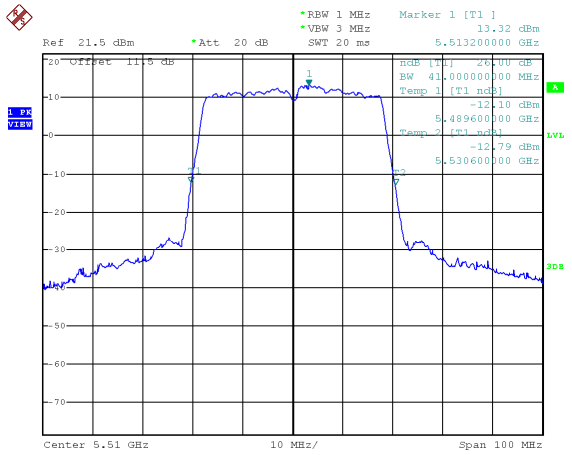
CH140



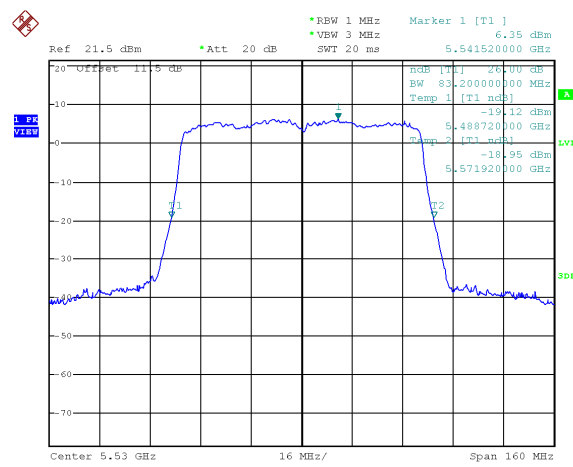


Band 3, ANT B

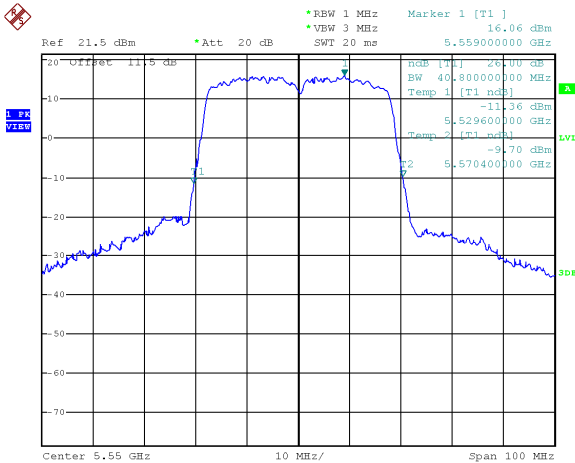
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH102



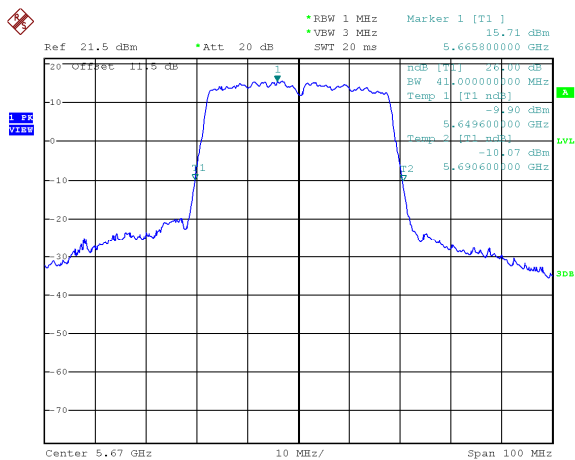
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH106



CH110

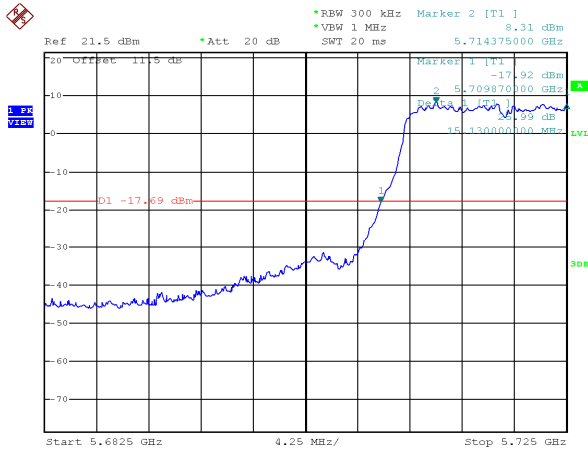


CH134

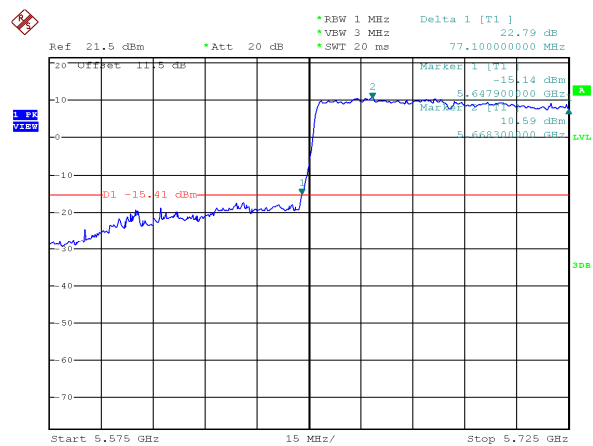




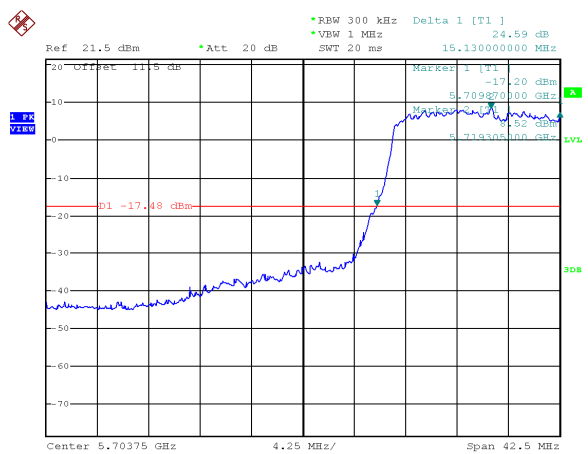
Within 5470-5725MHz Band, Straddle Channel, ANT A
Modulation Standard: 802.11a (6Mbps)
CH144



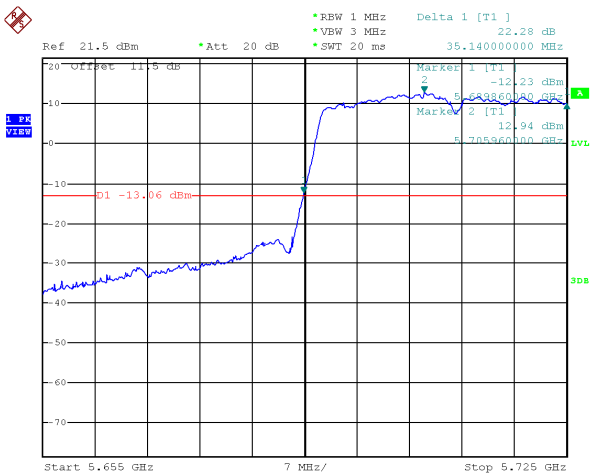
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH138



Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH144

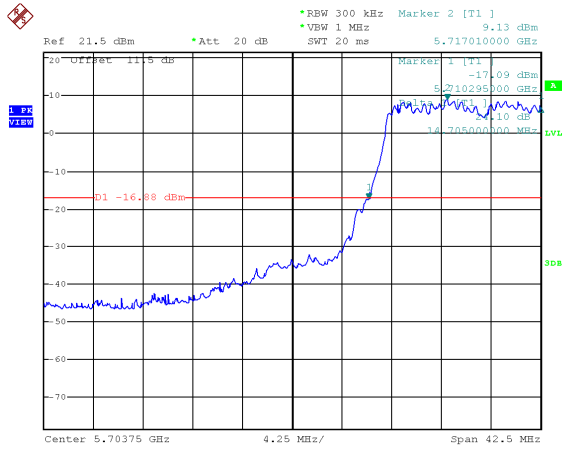


Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH142

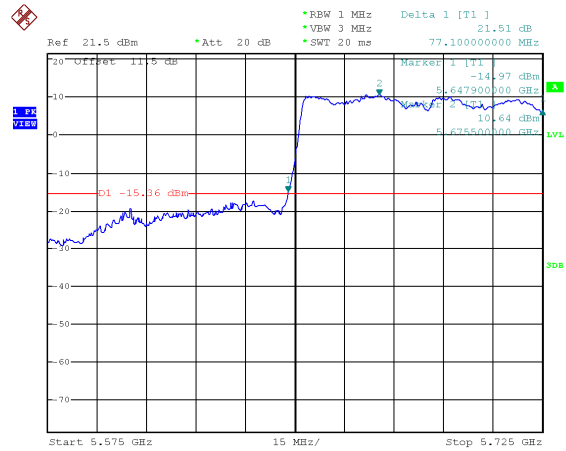




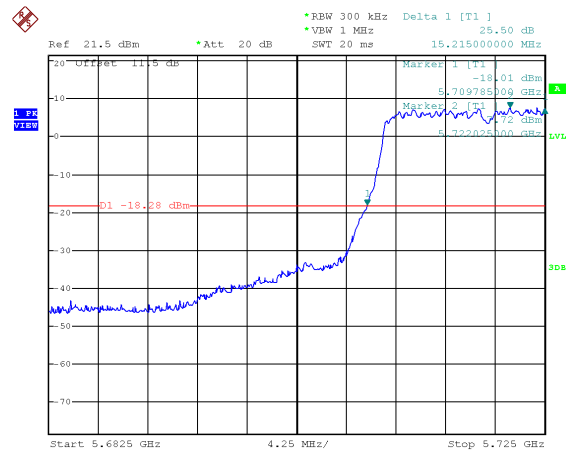
Modulation Standard: 802.11a (6Mbps)
CH144



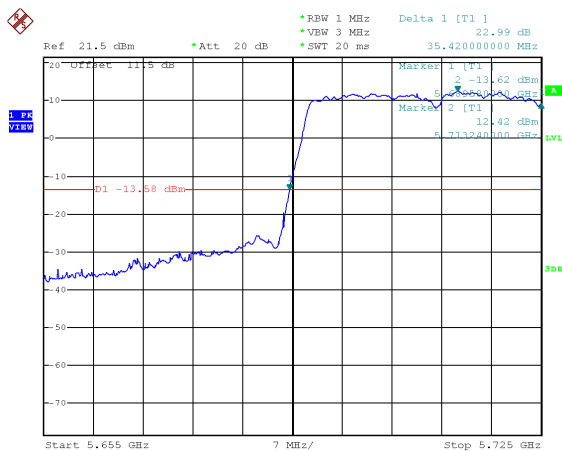
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH138



Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH144



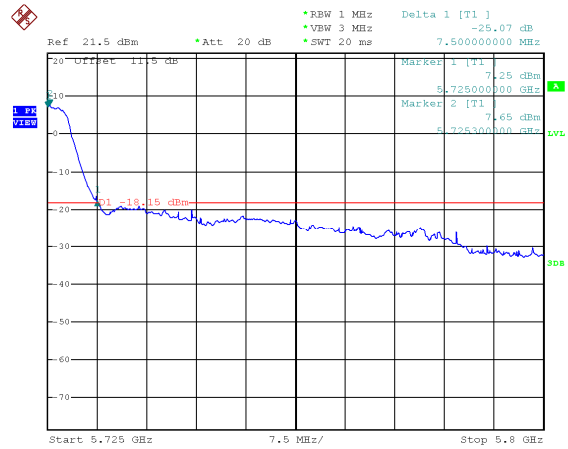
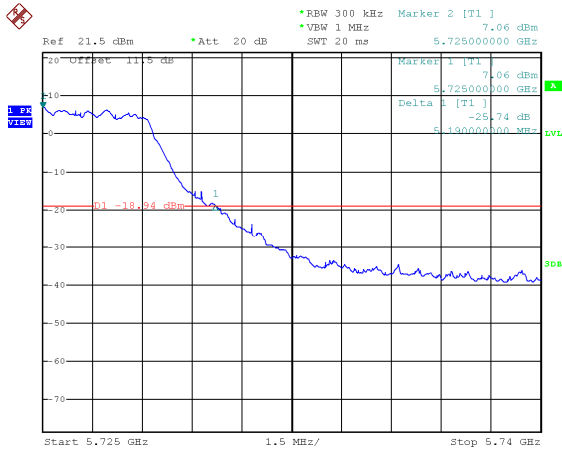
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH142



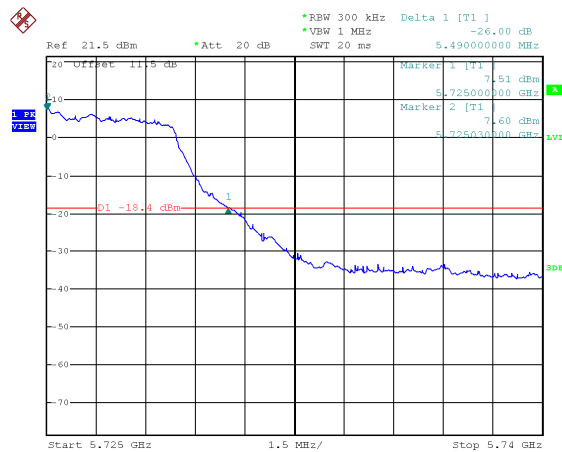


Extends across 5725MHz Band, Straddle Channel, ANT A
Modulation Standard: 802.11a (6Mbps)
CH144

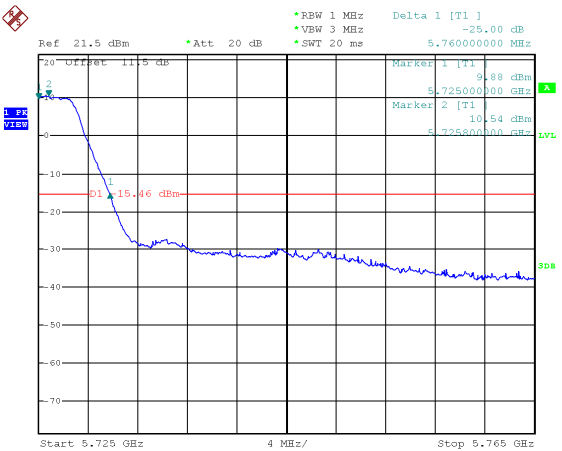
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH138



Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH144



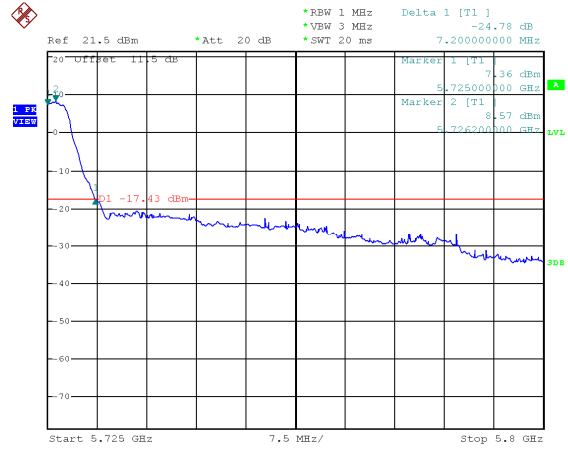
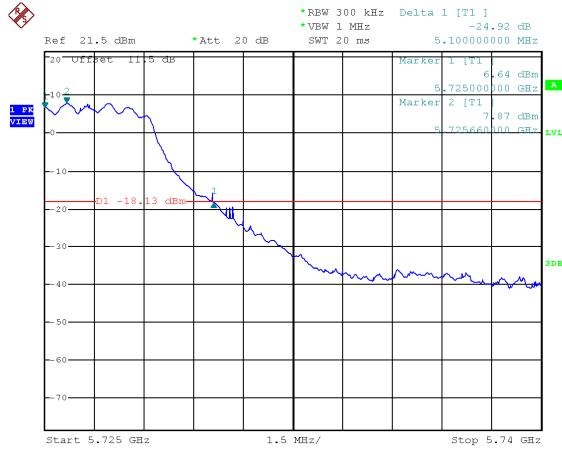
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH142



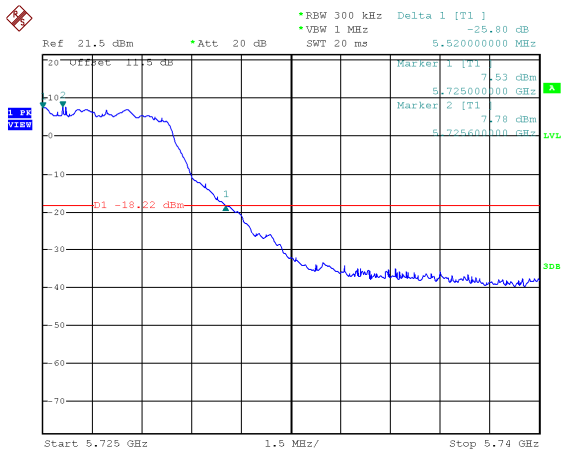


Extends across 5725MHz Band, Straddle Channel, ANT B
Modulation Standard: 802.11a (6Mbps)
CH144

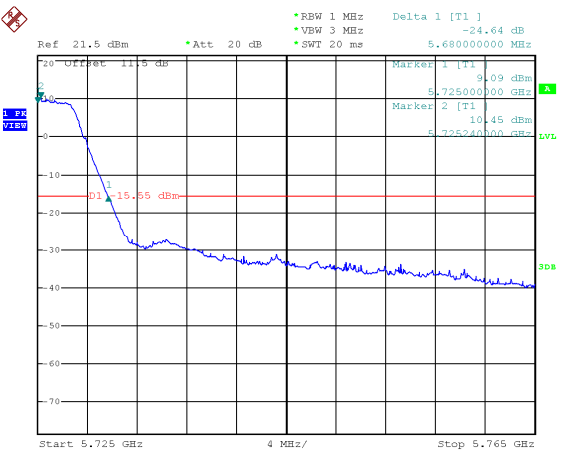
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH138



Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH144



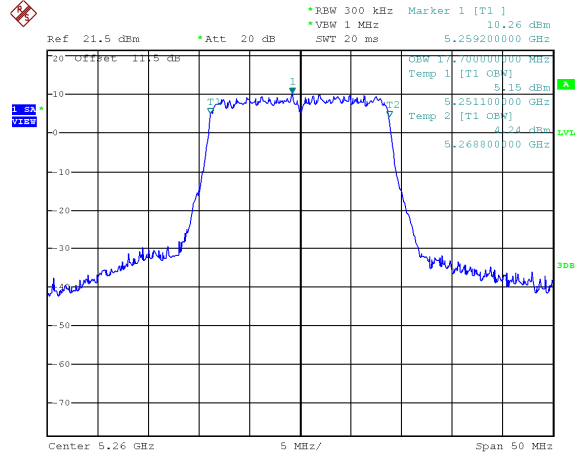
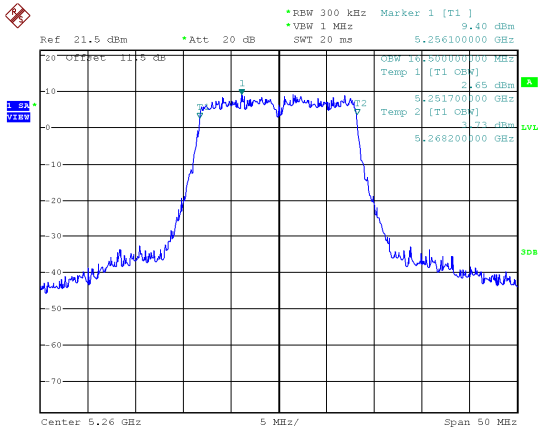
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH142



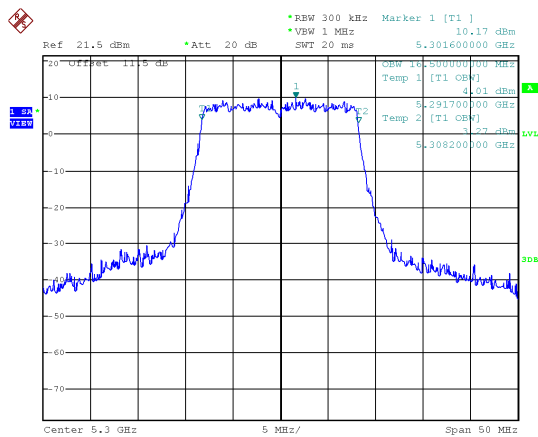


99% Bandwidth
Band 2, ANT A
Modulation Standard: 802.11a (6Mbps)
CH52

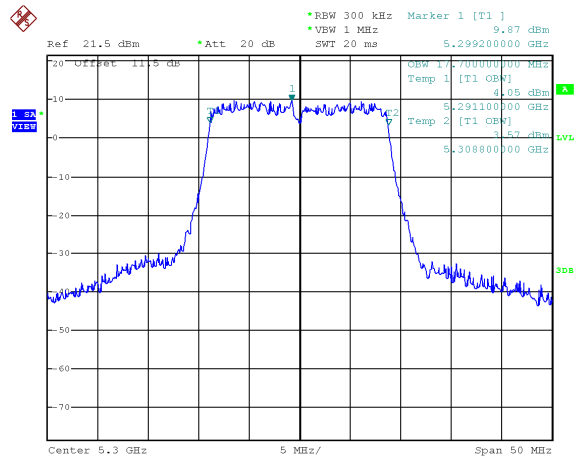
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH52



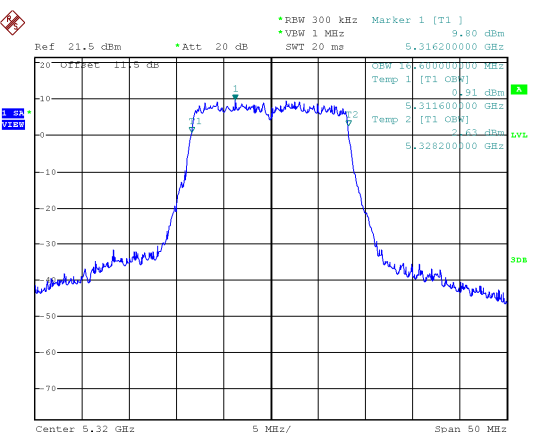
CH60



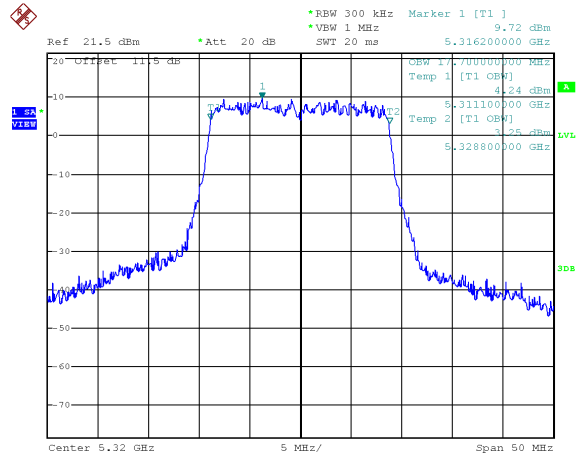
CH60



CH64



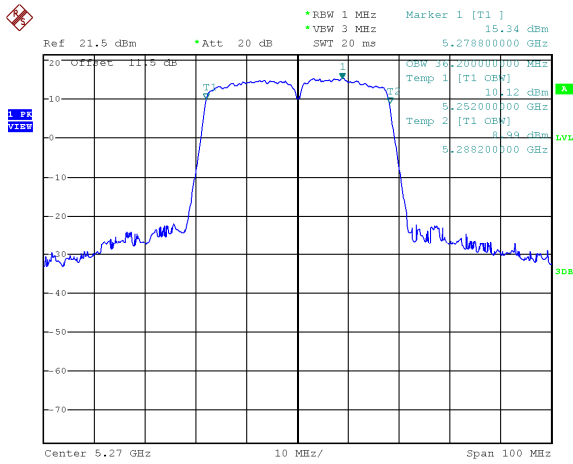
CH64



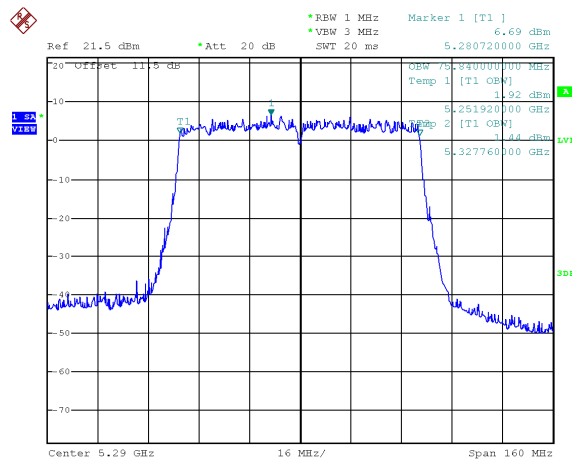


Band 2, ANT A

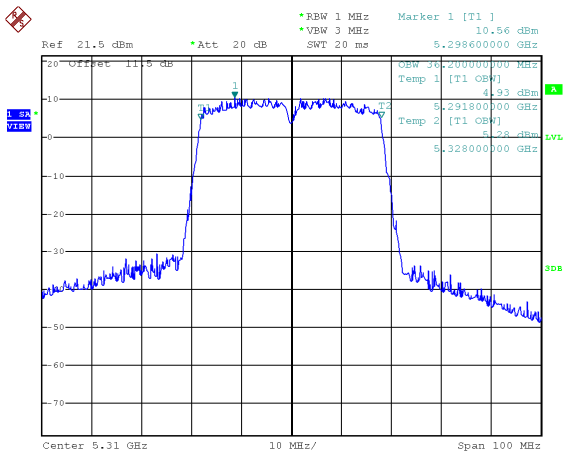
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH54



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH58

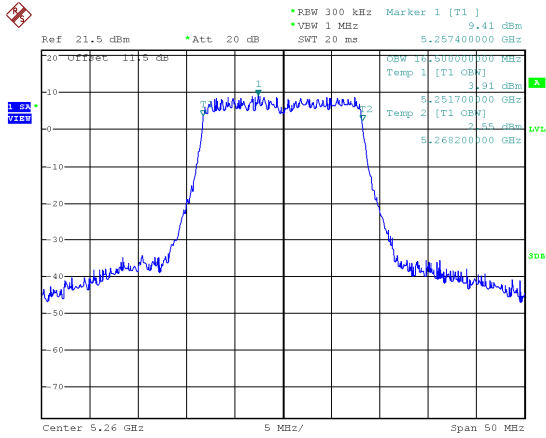


CH62

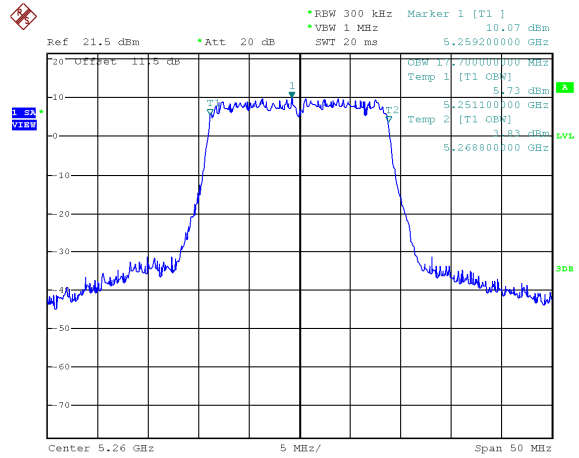




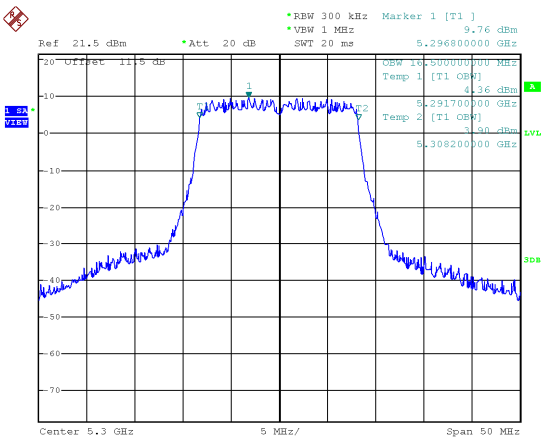
Band 2, ANT B
Modulation Standard: 802.11a (6Mbps)
CH52



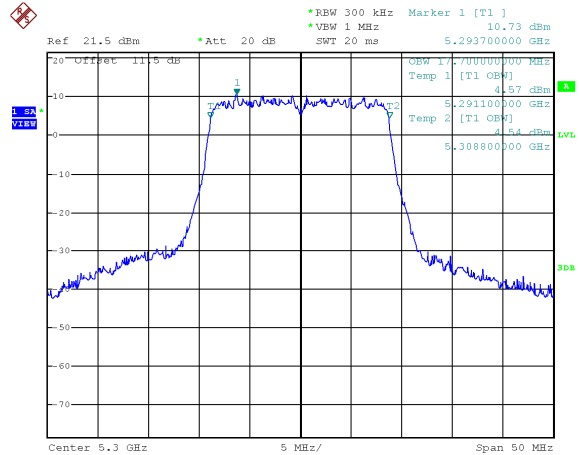
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH52



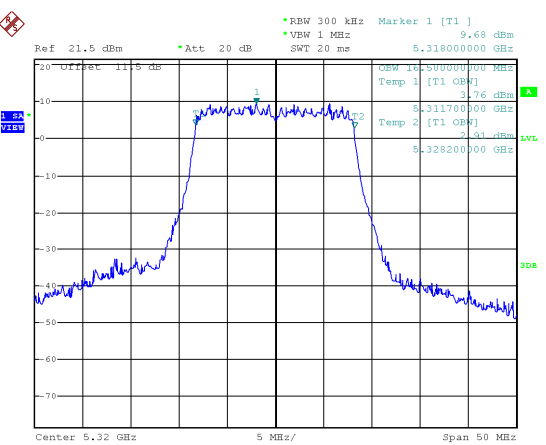
CH60



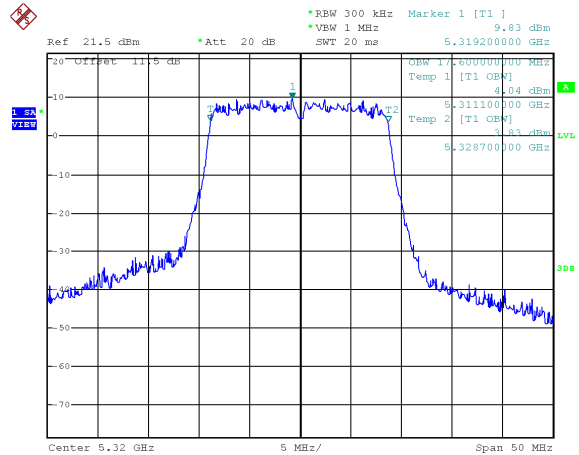
CH60



CH64



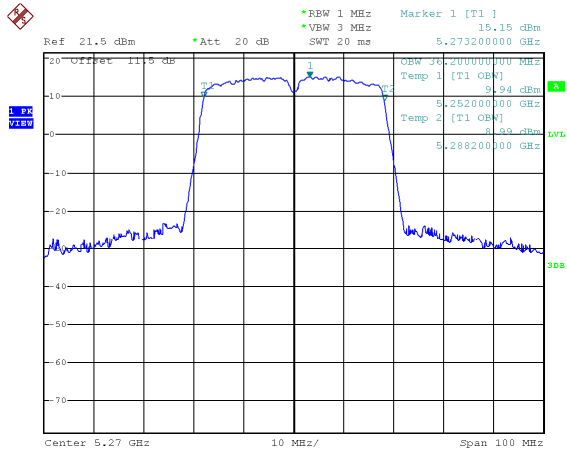
CH64



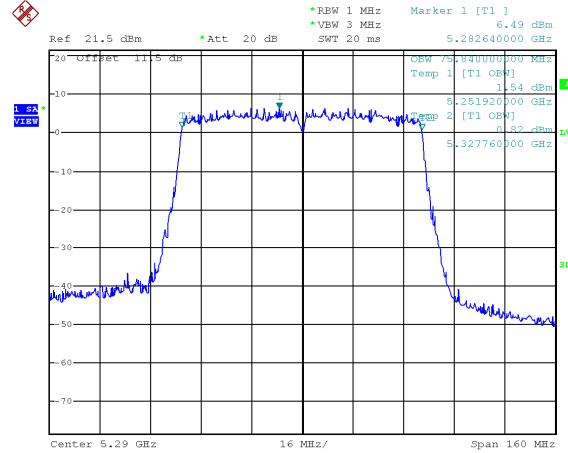


Band 2, ANT B

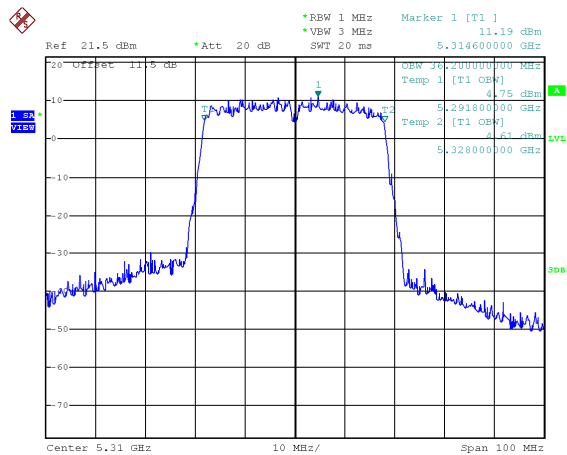
Modulation Standard: 802.11ac VHT40 (13.5Mbps) CH54



Modulation Standard: 802.11ac VHT80 (29.3Mbps) CH58

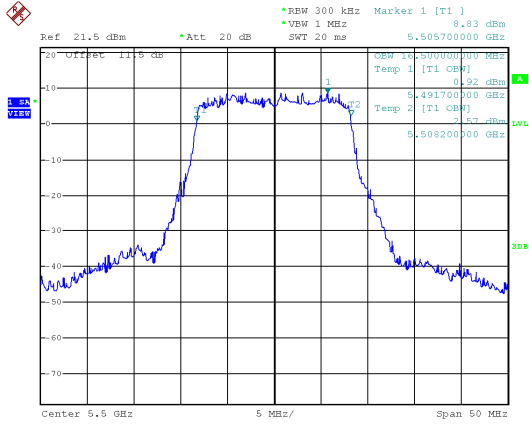


CH62

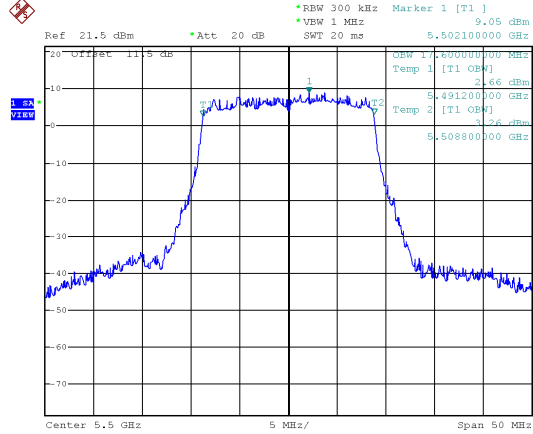




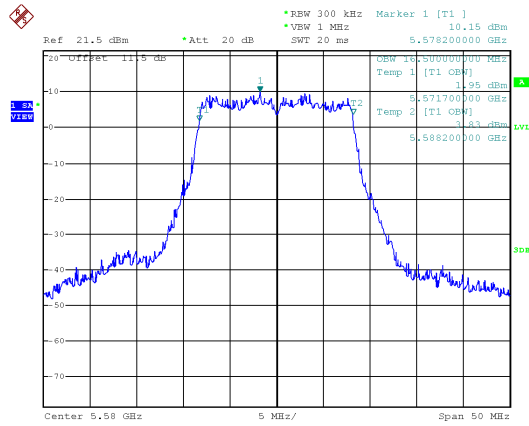
Band 3, ANT A
Modulation Standard: 802.11a (6Mbps)
CH100



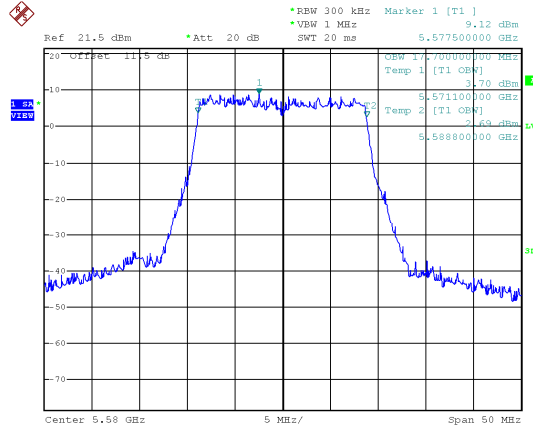
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH100



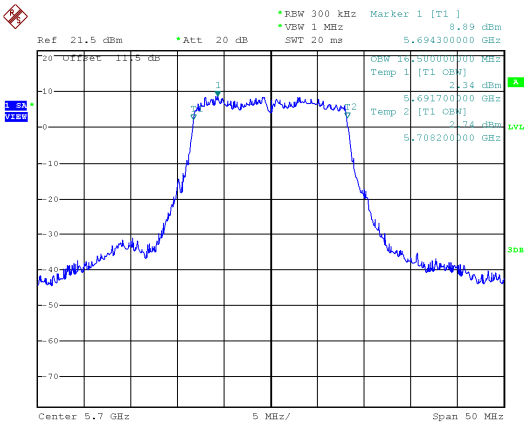
CH116



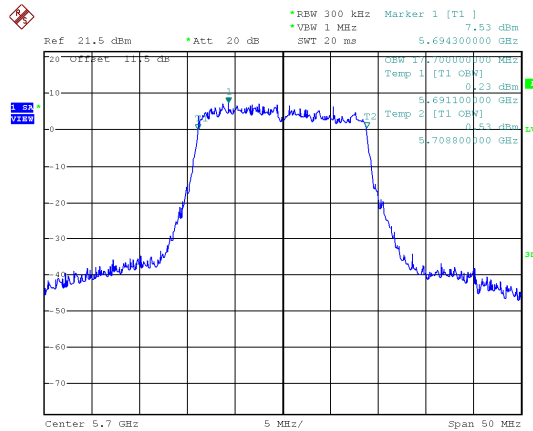
CH116



CH140

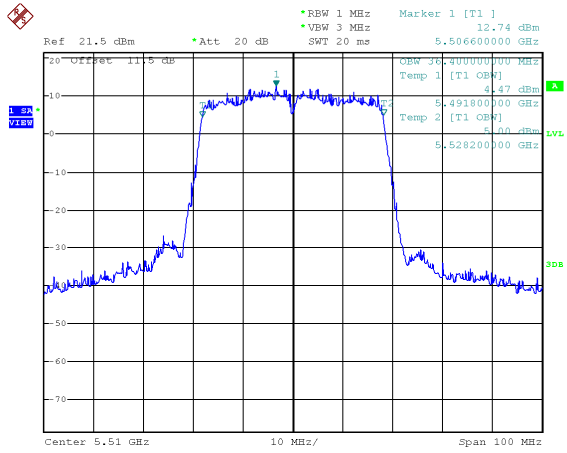


CH140

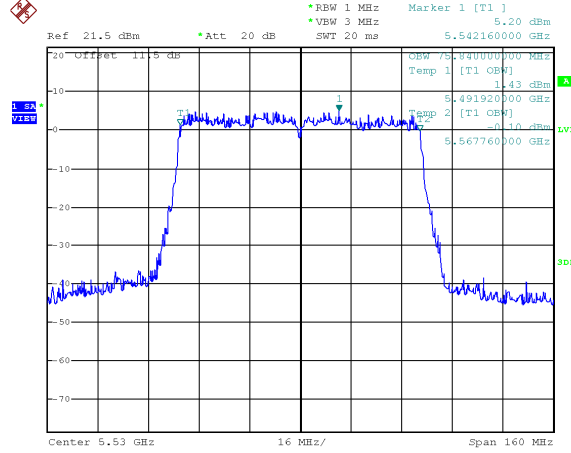




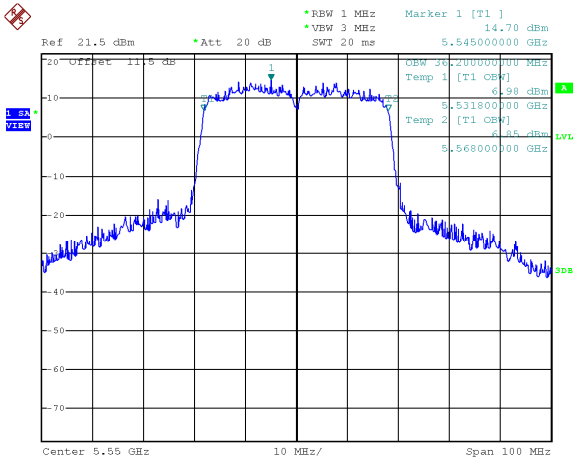
Band 3, ANT A
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH102



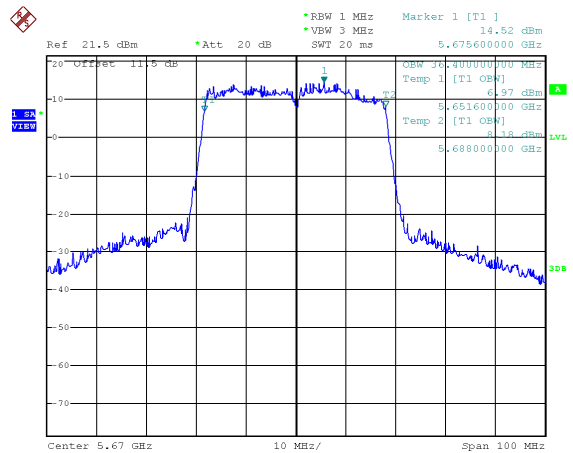
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH106



CH110

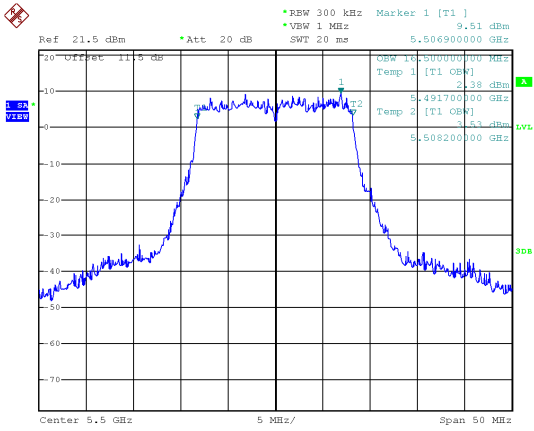


CH134

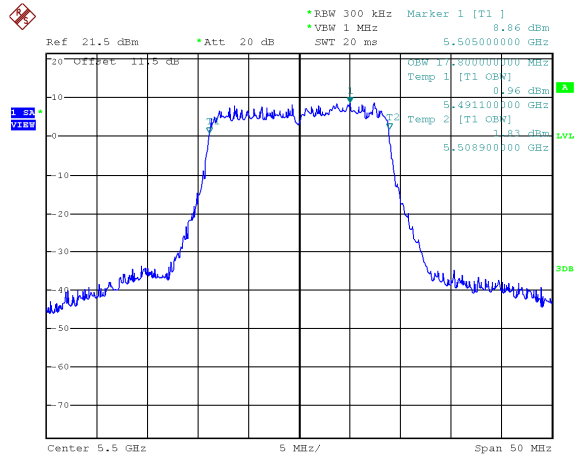




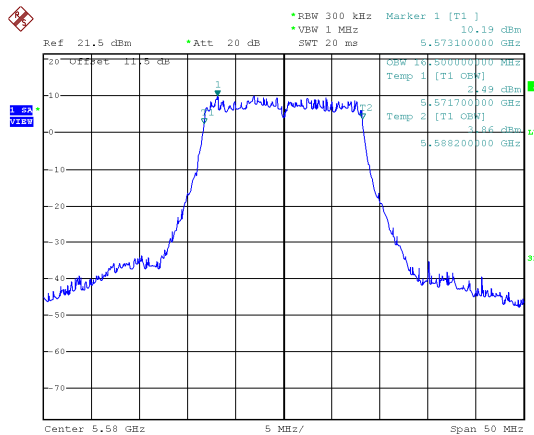
Band 3, ANT B
Modulation Standard: 802.11a (6Mbps)
CH100



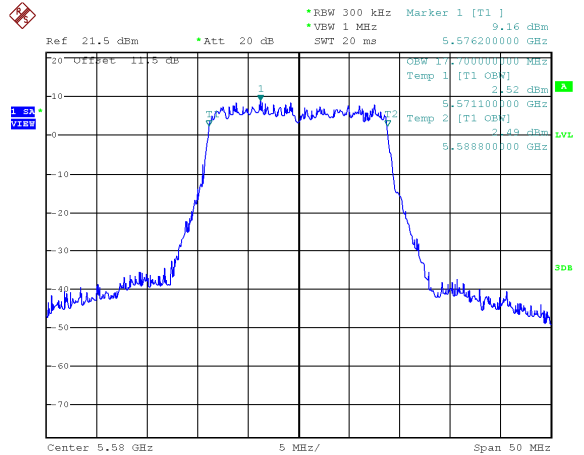
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH100



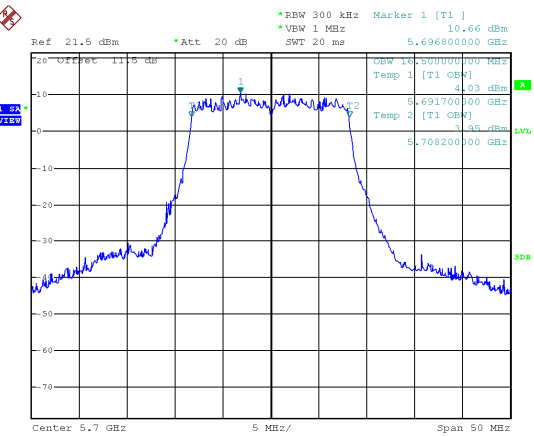
CH116



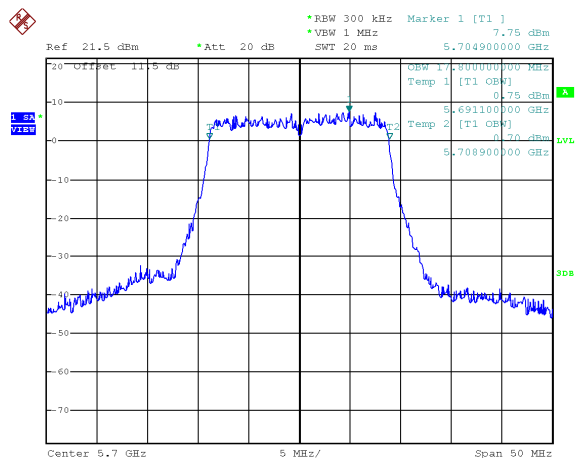
CH116



CH140

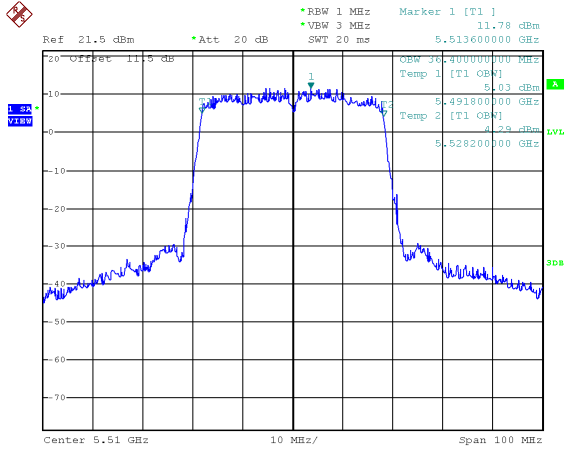


CH140

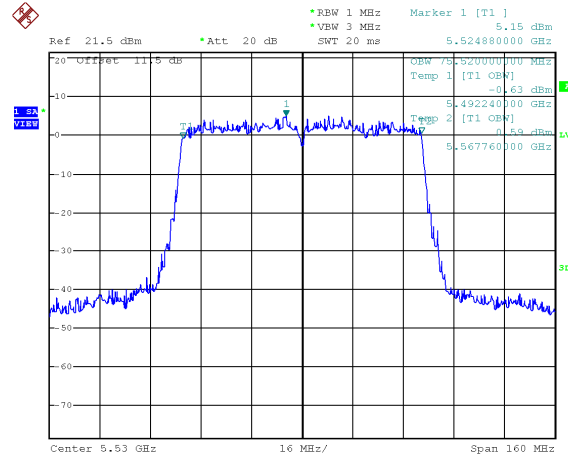




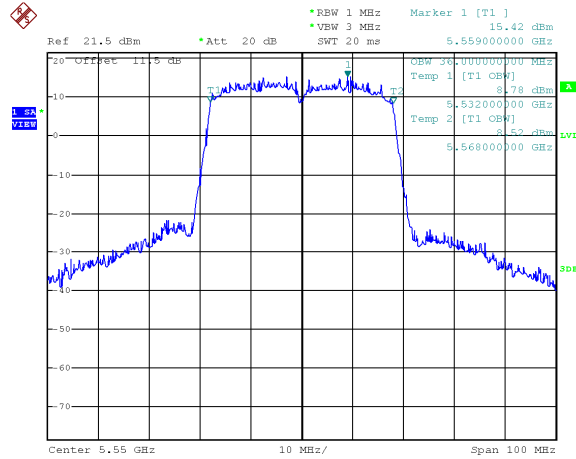
Band 3, ANT B
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH102



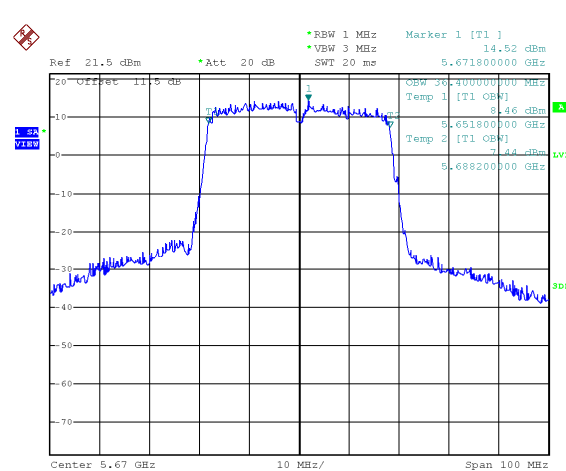
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH106



CH110

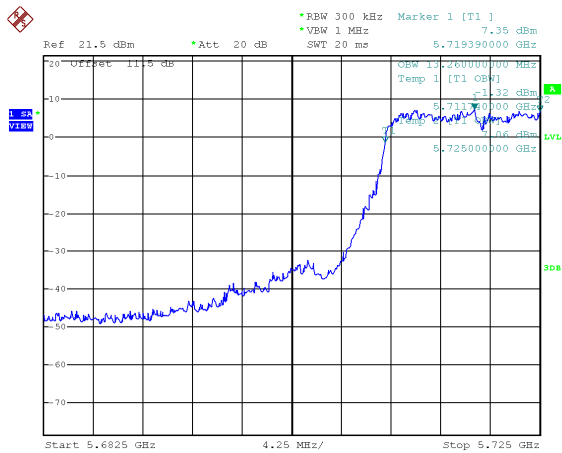


CH134

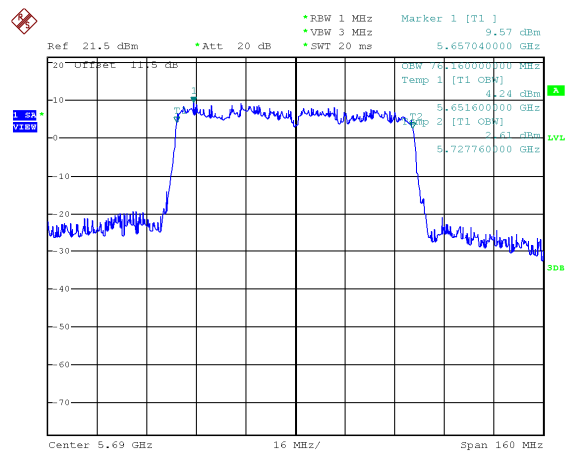




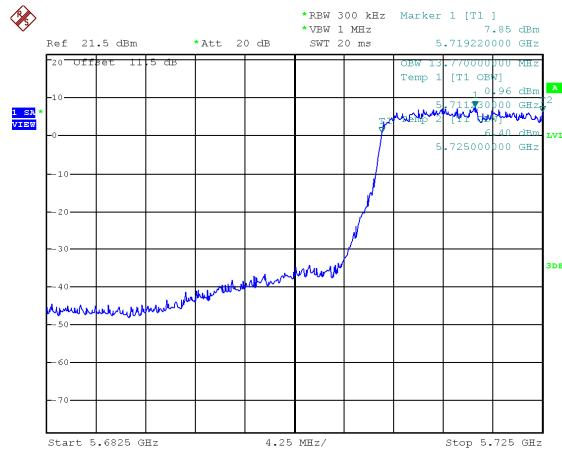
Within 5470-5725MHz Band, Straddle Channel, ANT A
Modulation Standard: 802.11a (6Mbps)
CH144



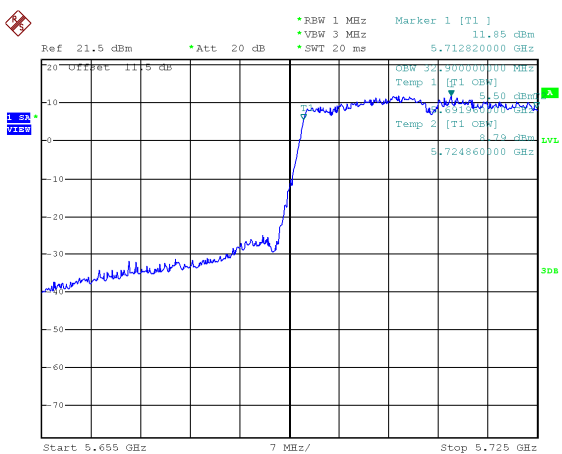
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH138



Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH144

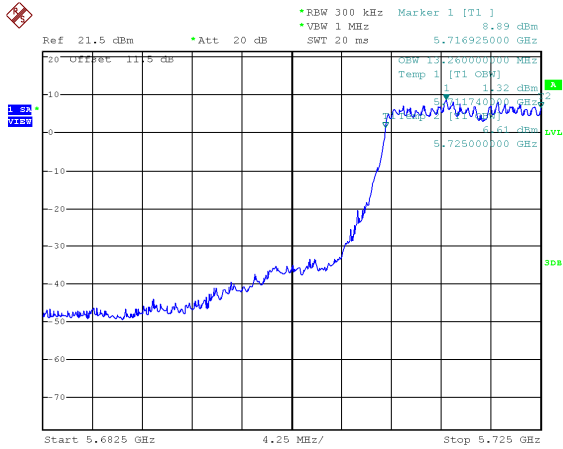


Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH142

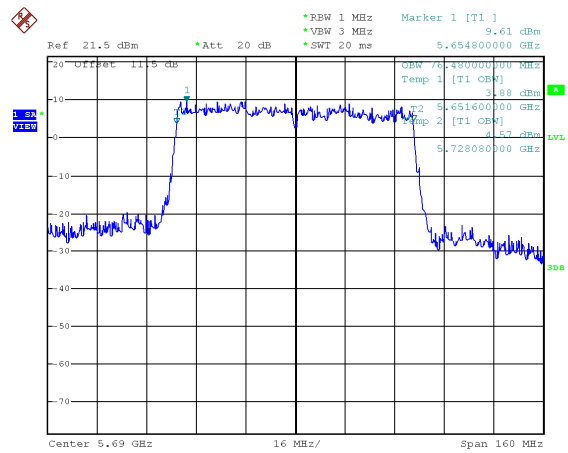




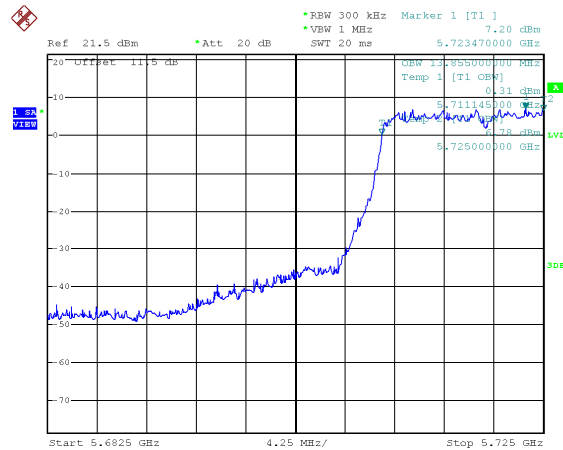
Within 5470-5725MHz Band, Straddle Channel, ANT B
Modulation Standard: 802.11a (6Mbps)
CH144



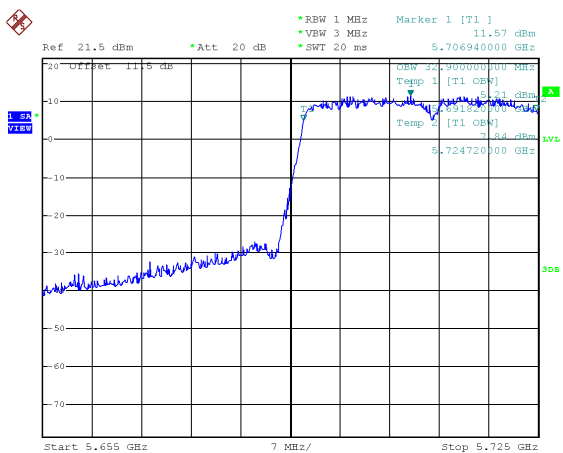
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH138



Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH144



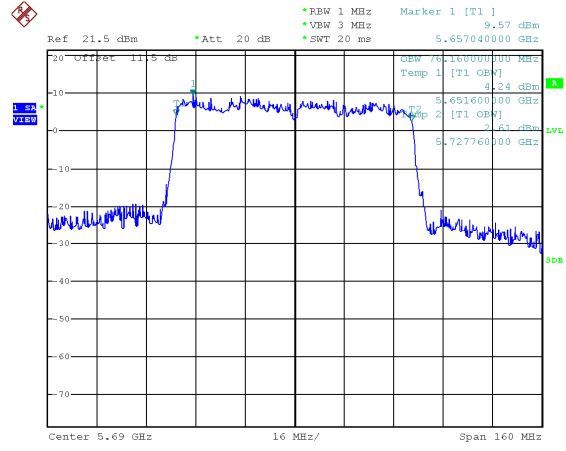
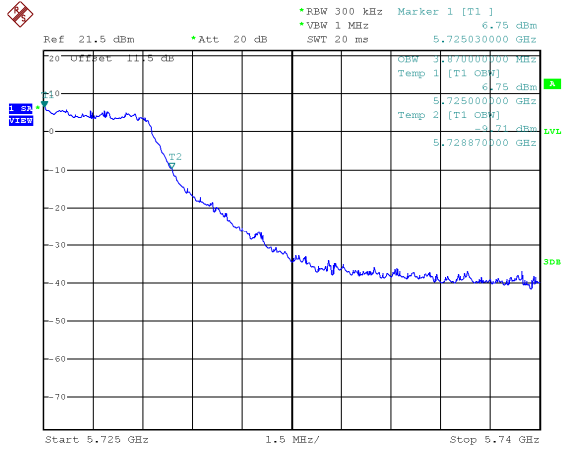
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH142



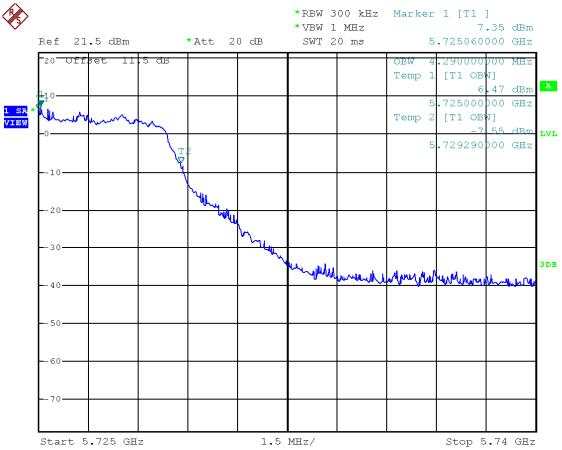


Extends across 5725MHz Band, Straddle Channel, ANT A
Modulation Standard: 802.11a (6Mbps)
CH144

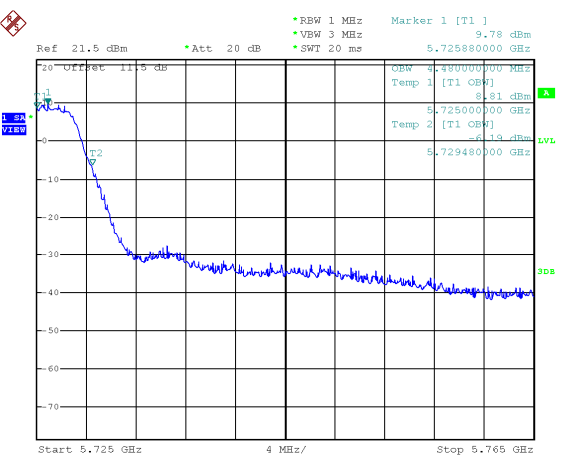
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH138



Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH144



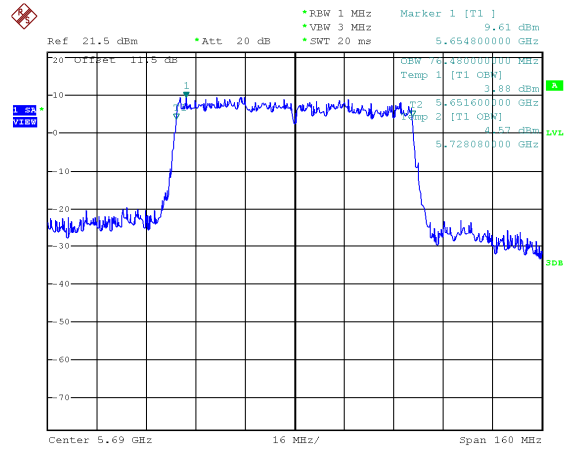
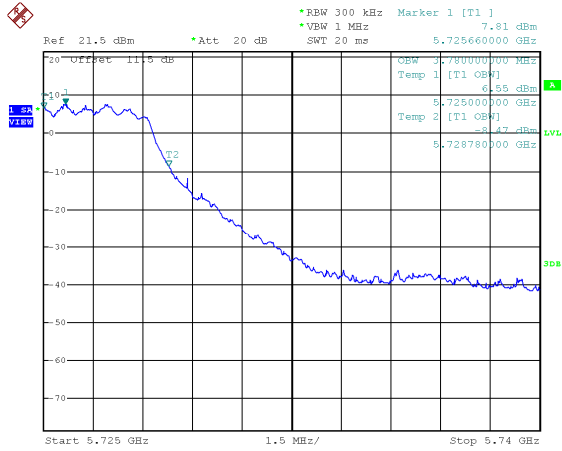
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH142



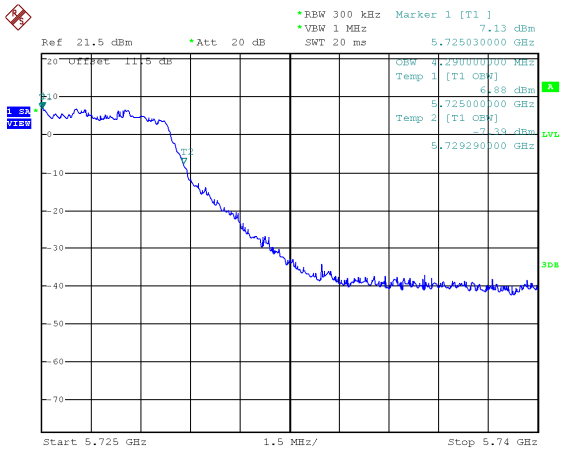


Extends across 5725MHz Band, Straddle Channel, ANT B
Modulation Standard: 802.11a (6Mbps)
CH144

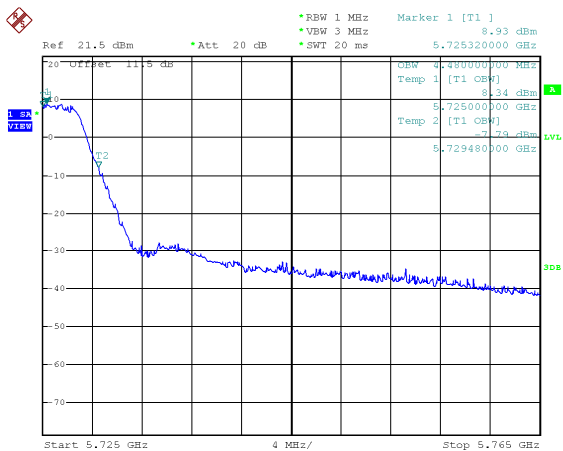
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH138



Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH144



Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH142





9. Average Power

9.1. Test Limit

Output Power:

Frequency Band		Limit
<input type="checkbox"/>	5.15~5.25GHz	
Operating Mode		
<input type="checkbox"/>	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 30degrees as measured from the horizon must not exceed 125 mW (21 dBm).
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.
<input type="checkbox"/>	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.



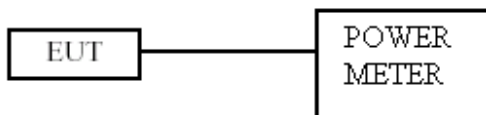
Frequency Band		Limit
<input checked="" type="checkbox"/>	5.25-5.35 GHz	The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional 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.
<input checked="" type="checkbox"/>	5.470-5.725 GHz	
<input type="checkbox"/>	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.

9.2. 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.

9.3. Test Setup Layout





9.4. Test Result and Data

Temperature: 22°C

Humidity: 64%

Test Date: Jun. 10, 2018

Test Mode: Non-Beamforming

In the 5.3GHz Band

Modulation Type	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
			ANT A	ANT B			
802.11a	52	5260	17.95	17.21	20.61	114.98	24.00
	60	5300	18.01	16.98	20.54	113.13	24.00
	64	5320	17.71	17.22	20.48	111.74	24.00
802.11an HT20	52	5260	18.27	17.66	20.99	125.49	24.00
	60	5300	18.48	17.57	21.06	127.62	24.00
	64	5320	18.01	17.69	20.86	121.99	24.00
802.11an HT40	54	5270	20.67	19.91	23.32	214.63	24.00
	62	5310	16.64	15.58	19.15	82.27	24.00
802.11ac VHT20	52	5260	18.29	17.69	21.01	126.20	24.00
	60	5300	18.5	17.61	21.09	128.47	24.00
	64	5320	18.03	17.72	20.89	122.69	24.00
802.11ac VHT40	54	5270	20.69	19.94	23.34	215.85	24.00
	62	5310	16.66	15.6	19.17	82.65	24.00
802.11ac VHT80	58	5290	15.12	14.03	17.62	57.80	24.00



Temperature: 22°C
Test Date: Jun. 10, 2018

Humidity: 64%
Test Mode: Non-Beamforming

In the 5.5GHz Band

Modulation Type	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
			ANT A	ANT B			
802.11a	100	5500	16.22	16.31	19.28	84.64	24.00
	116	5580	16.72	16.37	19.56	90.34	24.00
	140	5700	17.07	17.21	20.15	103.53	24.00
802.11an HT20	100	5500	16.6	16.72	19.67	92.70	24.00
	116	5580	16.25	16.01	19.14	82.07	24.00
	140	5700	15.16	15.2	18.19	65.92	24.00
802.11an HT40	102	5510	17.01	16.93	19.98	99.55	24.00
	110	5550	19.46	19.72	22.60	182.06	24.00
	134	5670	19.62	19.94	22.79	190.25	24.00
802.11ac VHT20	100	5500	16.63	16.75	19.70	93.34	24.00
	116	5580	16.27	16.03	19.16	82.45	24.00
	140	5700	15.18	15.22	18.21	66.23	24.00
802.11ac VHT40	102	5510	17.04	16.95	20.01	100.13	24.00
	110	5550	19.48	19.75	22.63	183.12	24.00
	134	5670	19.65	19.97	22.82	191.57	24.00
802.11ac VHT80	106	5530	13.64	13.43	16.55	45.15	24.00



Temperature: 22°C

Humidity: 64%

Test Date: Jun. 10, 2018

Test Mode: Non-Beamforming

Within 5470-5725MHz Band, Straddle Channel

Modulation Type	CH	Frequency (MHz)	W/O Duty Factor Measured value of each antenna port (dBm)		W/O duty factor Total power (dBm)	Duty Factor (dB)	With duty factor Total power (mW)	With duty factor Total power (dBm)	FCC Limit (dBm)
			ANT A	ANT B					
802.11a	144	5720	14.55	14.95	17.76	0.00	59.771	17.76	22.67
802.11an HT20	144	5720	13.54	14.88	17.27	0.00	53.355	17.27	22.82
802.11an HT40	142	5710	16.32	16.98	19.67	0.00	92.743	19.67	24.00
802.11ac VHT20	144	5720	13.98	15.22	17.65	0.00	58.269	17.65	22.80
802.11ac VHT40	142	5710	16.55	17.02	19.80	0.00	95.536	19.80	24.00
802.11ac VHT80	138	5690	19.50	18.71	22.13	0.22	171.919	22.35	24.00

Extends across 5725MHz Band, Straddle Channel

Modulation Type	CH	Frequency (MHz)	W/O Duty Factor Measured value of each antenna port (dBm)		W/O duty factor Total power (dBm)	Duty Factor (dB)	With duty factor Total power (mW)	With duty factor Total power (dBm)	FCC Limit (dBm)
			ANT A	ANT B					
802.11a	144	5720	7.90	8.86	11.42	0.00	13.857	11.42	30.00
802.11an HT20	144	5720	9.58	8.66	12.15	0.00	16.423	12.15	30.00
802.11an HT40	142	5710	4.02	5.44	7.80	0.00	6.023	7.80	30.00
802.11ac VHT20	144	5720	9.78	8.87	12.36	0.00	17.215	12.36	30.00
802.11ac VHT40	142	5710	4.06	5.64	7.93	0.00	6.211	7.93	30.00
802.11ac VHT80	138	5690	4.10	3.39	6.77	0.22	5.000	6.99	30.00



Reference Power Meter

Modulation Type	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)
			ANT A	ANT B	
802.11a	144	5720	15.99	16.35	19.18
802.11an HT20	144	5720	15.44	15.98	18.73
802.11an HT40	142	5710	17.12	17.55	20.35
802.11ac VHT20	144	5720	15.81	16.00	18.92
802.11ac VHT40	142	5710	17.43	17.82	20.64
802.11ac VHT80	138	5690	19.38	19.66	22.53

*For reference only



Temperature: 22°C
Test Date: Jun. 10, 2018

Humidity: 64%
Test Mode: Beamforming

In the 5.3GHz Band

Modulation Type	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
			ANT A	ANT B			
802.11a	52	5260	14.94	14.2	17.60	57.49	22.49
	60	5300	15.00	13.97	17.53	56.57	22.49
	64	5320	14.70	14.21	17.47	55.88	22.49
802.11an HT20	52	5260	15.26	14.65	17.98	62.75	22.49
	60	5300	15.47	14.56	18.05	63.81	22.49
	64	5320	15.00	14.68	17.85	61.00	22.49
802.11an HT40	54	5270	17.66	16.9	20.31	107.32	22.49
	62	5310	13.63	12.57	16.14	41.14	22.49
802.11ac VHT20	52	5260	15.28	14.68	18.00	63.11	22.49
	60	5300	15.49	14.6	18.08	64.24	22.49
	64	5320	15.02	14.71	17.88	61.35	22.49
802.11ac VHT40	54	5270	17.68	16.93	20.33	107.93	22.49
	62	5310	13.65	12.59	16.16	41.33	22.49
802.11ac VHT80	58	5290	12.11	11.02	14.61	28.90	22.49



Temperature: 22°C
Test Date: Jun. 10, 2018

Humidity: 64%
Test Mode: Beamforming

In the 5.5GHz Band

Modulation Type	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)	Total Power (mW)	Power Limit (dBm)
			ANT A	ANT B			
802.11a	100	5500	13.21	13.30	16.27	42.32	22.44
	116	5580	13.71	13.36	16.55	45.17	22.44
	140	5700	14.06	14.20	17.14	51.77	22.44
802.11an HT20	100	5500	13.59	13.71	16.66	46.35	22.44
	116	5580	13.24	13.00	16.13	41.04	22.44
	140	5700	12.15	12.19	15.18	32.96	22.44
802.11an HT40	102	5510	14.00	13.92	16.97	49.78	22.44
	110	5550	16.45	16.71	19.59	91.04	22.44
	134	5670	16.61	16.93	19.78	95.13	22.44
802.11ac VHT20	100	5500	13.62	13.74	16.69	46.67	22.44
	116	5580	13.26	13.02	16.15	41.23	22.44
	140	5700	12.17	12.21	15.20	33.12	22.44
802.11ac VHT40	102	5510	14.03	13.94	17.00	50.07	22.44
	110	5550	16.47	16.74	19.62	91.57	22.44
	134	5670	16.64	16.96	19.81	95.79	22.44
802.11ac VHT80	106	5530	10.63	10.42	13.54	22.58	22.44



Temperature: 22°C

Humidity: 64%

Test Date: Jun. 10, 2018

Test Mode: Beamforming

Within 5470-5725MHz Band, Straddle Channel

Modulation Type	CH	Frequency (MHz)	W/O Duty Factor Measured value of each antenna port (dBm)		W/O duty factor Total power (dBm)	Duty Factor (dB)	With duty factor Total power (mW)	With duty factor Total power (dBm)	FCC Limit (dBm)
			ANT A	ANT B					
802.11a	144	5720	11.54	11.94	14.75	0.00	29.888	14.75	22.67
802.11an HT20	144	5720	10.53	11.87	14.26	0.00	26.680	14.26	22.82
802.11an HT40	142	5710	13.31	13.97	16.66	0.00	46.375	16.66	24.00
802.11ac VHT20	144	5720	10.97	12.21	14.64	0.00	29.137	14.64	22.80
802.11ac VHT40	142	5710	13.54	14.01	16.79	0.00	47.771	16.79	24.00
802.11ac VHT80	138	5690	16.49	15.70	19.12	0.22	85.965	19.34	24.00

Extends across 5725MHz Band, Straddle Channel

Modulation Type	CH	Frequency (MHz)	W/O Duty Factor Measured value of each antenna port (dBm)		W/O duty factor Total power (dBm)	Duty Factor (dB)	With duty factor Total power (mW)	With duty factor Total power (dBm)	FCC Limit (dBm)
			ANT A	ANT B					
802.11a	144	5720	4.89	5.85	8.41	0.00	6.929	8.41	30.00
802.11an HT20	144	5720	6.57	5.65	9.14	0.00	8.212	9.14	30.00
802.11an HT40	142	5710	1.01	2.43	4.79	0.00	3.012	4.79	30.00
802.11ac VHT20	144	5720	6.77	5.86	9.35	0.00	8.608	9.35	30.00
802.11ac VHT40	142	5710	1.05	2.63	4.92	0.00	3.106	4.92	30.00
802.11ac VHT80	138	5690	1.09	0.38	3.76	0.22	2.500	3.98	30.00



Reference Power Meter

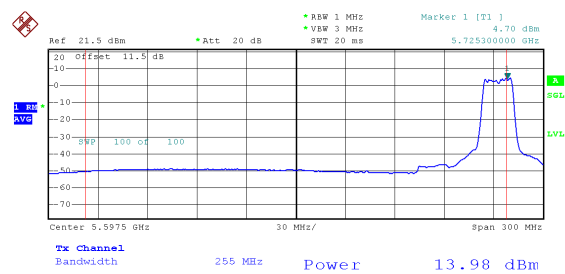
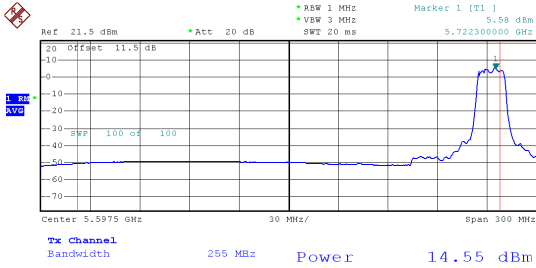
Modulation Type	Channel	Frequency (MHz)	Avg Power Output (dBm)		Total Power (dBm)
			ANT A	ANT B	
802.11a	144	5720	12.98	13.34	16.17
802.11an HT20	144	5720	12.43	12.97	15.72
802.11an HT40	142	5710	14.11	14.54	17.34
802.11ac VHT20	144	5720	12.8	12.99	15.91
802.11ac VHT40	142	5710	14.42	14.81	17.63
802.11ac VHT80	138	5690	16.37	16.65	19.52

*For reference only



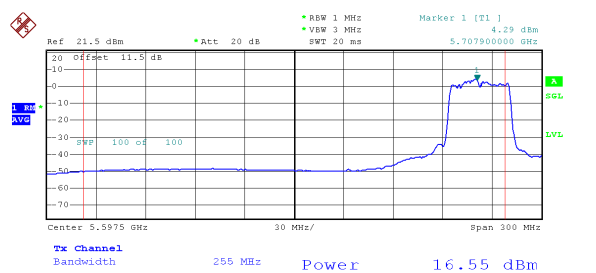
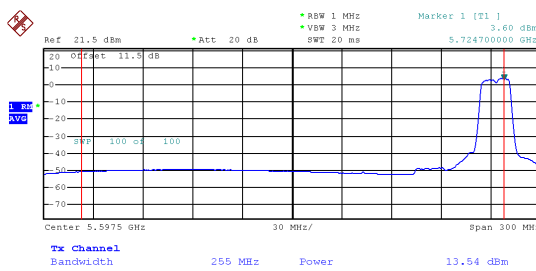
Within 5470-5725MHz Band, Straddle Channel, ANT A
Modulation Standard: 802.11a (6Mbps)
CH144

Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH144



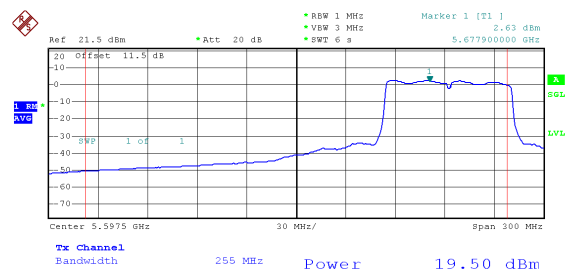
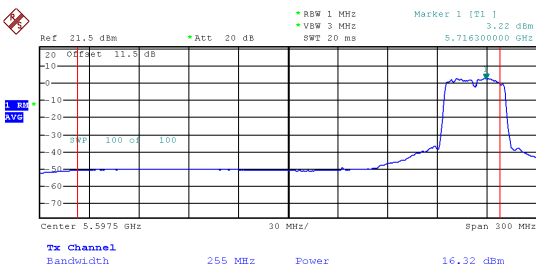
Modulation Standard: 802.11an HT20 (6.5Mbps)
CH144

Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH142



Modulation Standard: 802.11an HT40 (13.5Mbps)
CH142

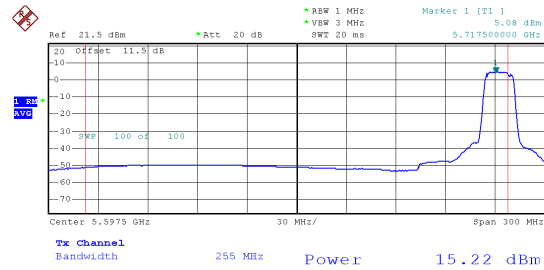
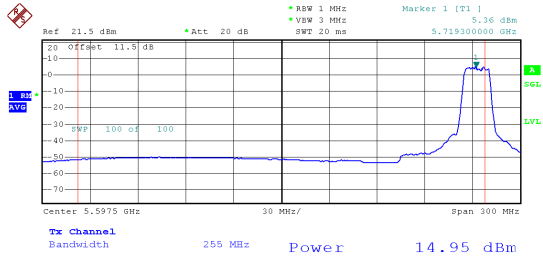
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH138





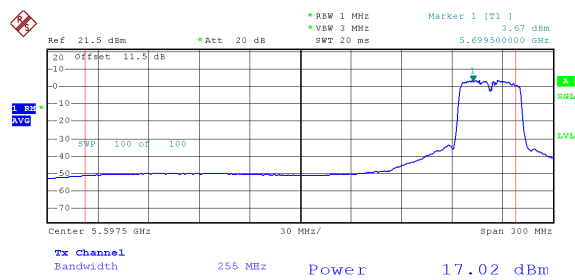
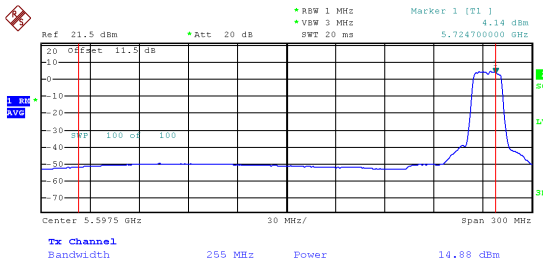
Within 5470-5725MHz Band, Straddle Channel, ANT B
Modulation Standard: 802.11a (6Mbps)
CH144

Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH144



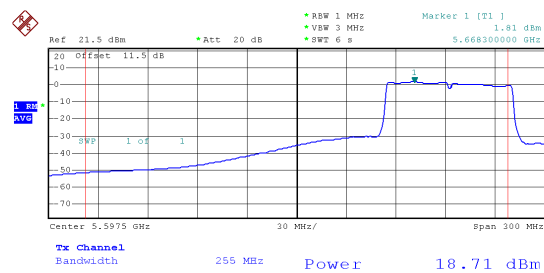
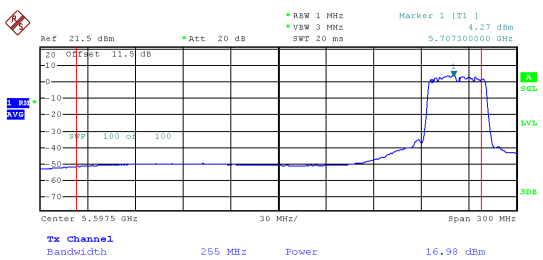
Modulation Standard: 802.11an HT20 (6.5Mbps)
CH144

Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH142



Modulation Standard: 802.11an HT40 (13.5Mbps)
CH142

Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH138

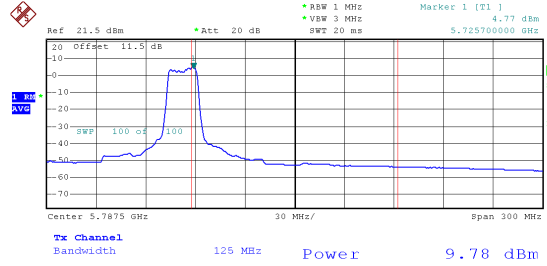
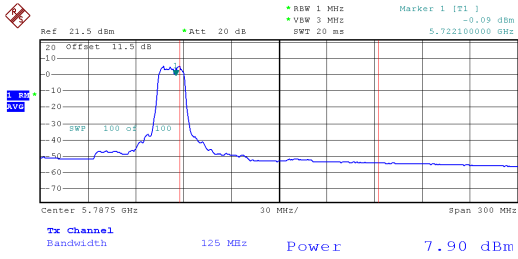




Extends across 5725MHz Band, Straddle Channel, ANT A

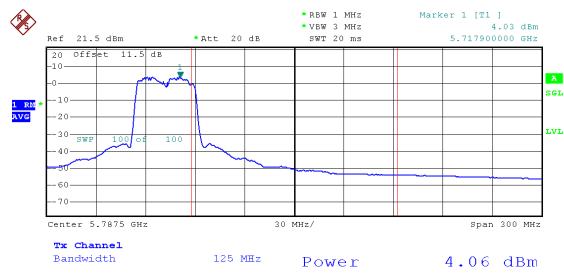
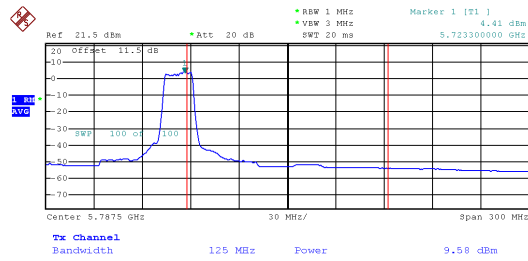
Modulation Standard: 802.11a (6Mbps)
CH144

Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH144



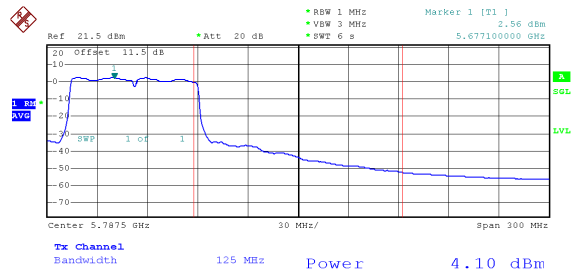
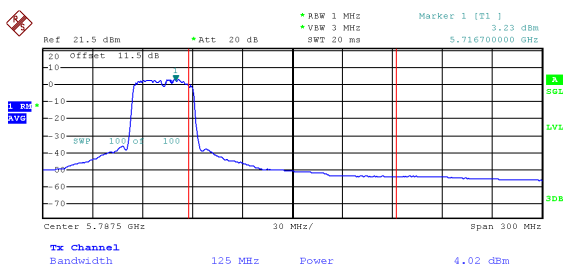
Modulation Standard: 802.11an HT20 (6.5Mbps)
CH144

Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH142



Modulation Standard: 802.11an HT40 (13.5Mbps)
CH142

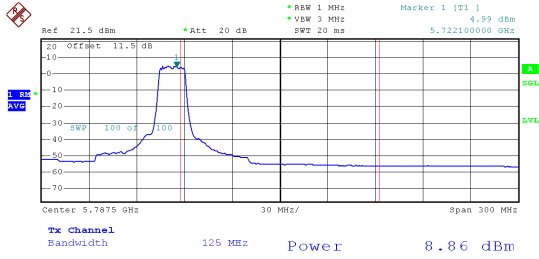
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH138



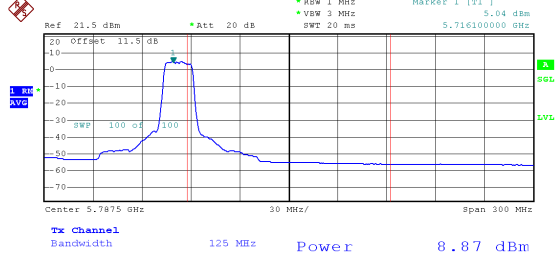


Extends across 5725MHz Band, Straddle Channel, ANT B

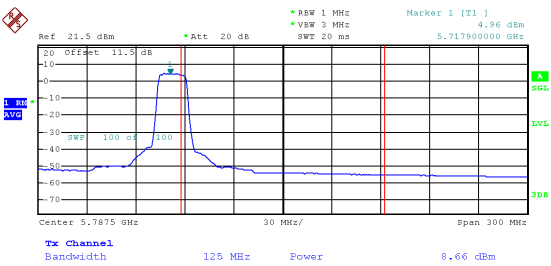
Modulation Standard: 802.11a (6Mbps)
CH144



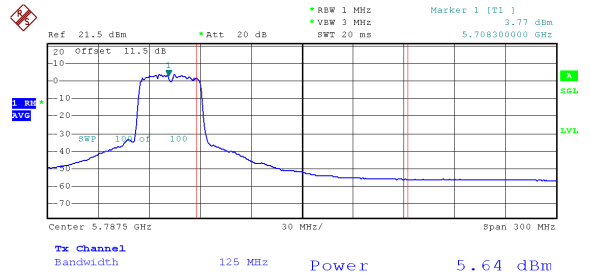
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH144



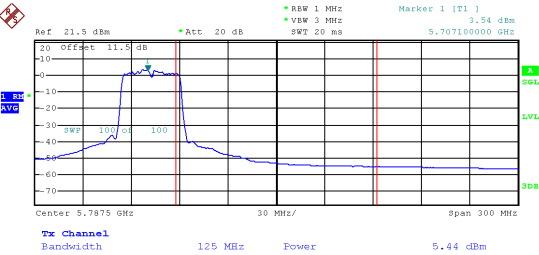
Modulation Standard: 802.11an HT20 (6.5Mbps)
CH144



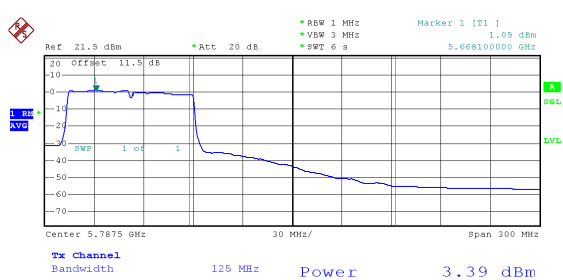
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH142



Modulation Standard: 802.11an HT40 (13.5Mbps)
CH142



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH138





10. Maximum Power Spectral Density

10.1. Test Limit

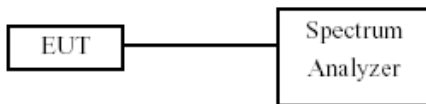
PSD:

Frequency Band	Limit
<input type="checkbox"/> 5.15~5.25GHz	
Operating Mode	
<input type="checkbox"/> Outdoor access point	17 dBm/MHz
<input type="checkbox"/> Indoor access point	17 dBm/MHz
<input type="checkbox"/> Fixed point-to-point access points	17 dBm/MHz
<input type="checkbox"/> client devices	11 dBm/MHz
<input checked="" type="checkbox"/> 5.250~5.350 GHz	11 dBm/MHz
<input checked="" type="checkbox"/> 5.470~5.725 GHz	11 dBm/MHz
<input type="checkbox"/> 5.725~5.85 GHz	30 dBm/500kHz

10.2. Test Procedure

Reference to KDB789033 D02 General UNII Test Procedures New Rules v02r01

10.3. Test Setup Layout





10.4. Test Result and Data

Temperature: 22°C

Humidity: 64%

Test Date: Jun. 10, 2018

In the 5.3GHz Band

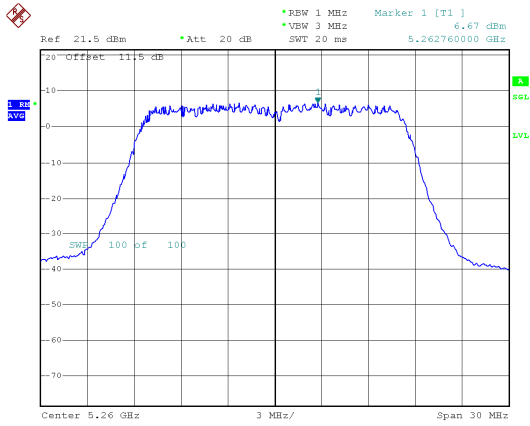
Modulation Type	CH	Freq. (MHz)	Meas PSD (dBm/MHz)		Sum chain (dBm)	Duty Cycle CF(dB)	Total Corr'd PSD (dBm/MHz)	PSD Limit (dBm/MHz)
			ANT A	ANT B				
802.11a	52	5260	6.67	5.96	9.34	0.00	9.34	9.88
	60	5300	6.33	5.50	8.95	0.00	8.95	9.88
	64	5320	6.15	5.72	8.95	0.00	8.95	9.88
802.11ac VHT20	52	5260	6.50	6.23	9.38	0.00	9.38	9.88
	60	5300	6.57	5.82	9.22	0.00	9.22	9.88
	64	5320	6.00	5.90	8.96	0.00	8.96	9.88
802.11ac VHT40	54	5270	6.14	5.68	8.93	0.00	8.93	9.88
	62	5310	6.15	5.67	8.93	0.00	8.93	9.88
802.11ac VHT80	58	5290	3.25	2.33	5.82	0.22	6.04	9.88

In the 5.5GHz Band

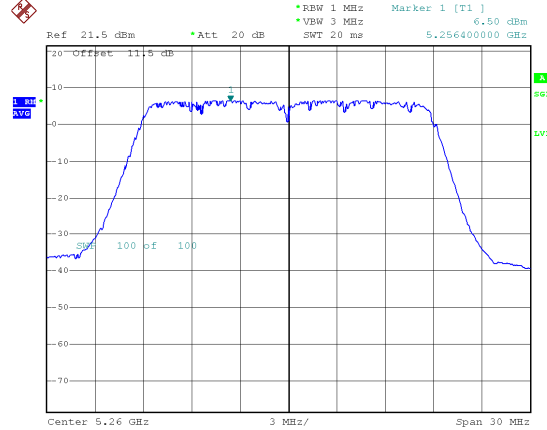
Modulation Type	CH	Freq. (MHz)	Meas PSD (dBm/MHz)		Sum chain (dBm)	Duty Cycle CF(dB)	Total Corr'd PSD (dBm/MHz)	PSD Limit (dBm/MHz)
			ANT A	ANT B				
802.11a	100	5500	6.06	6.04	9.06	0.00	9.06	9.54
	116	5580	6.23	6.30	9.28	0.00	9.28	9.54
	140	5700	6.28	6.51	9.41	0.00	9.41	9.54
	144	5720	5.66	5.40	8.54	0.00	8.54	9.54
802.11ac VHT20	100	5500	6.22	6.09	9.17	0.00	9.17	9.54
	116	5580	6.06	6.16	9.12	0.00	9.12	9.54
	140	5700	5.68	6.17	8.94	0.00	8.94	9.54
	144	5720	4.81	5.06	7.95	0.00	7.95	9.54
802.11ac VHT40	102	5510	6.27	6.46	9.38	0.00	9.38	9.54
	110	5550	5.92	6.19	9.07	0.00	9.07	9.54
	134	5670	6.15	6.18	9.18	0.00	9.18	9.54
	142	5710	4.38	3.87	7.14	0.00	7.14	9.54
802.11ac VHT80	106	5530	4.04	3.17	6.64	0.22	6.86	9.54
	138	5690	2.77	2.44	5.62	0.22	5.84	9.54



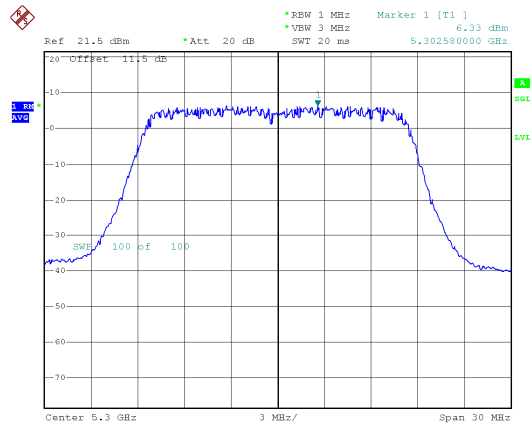
Band 2, ANT A
Modulation Standard: 802.11a (6Mbps)
CH52



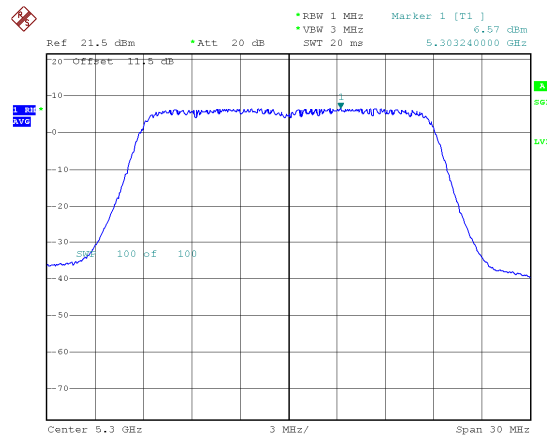
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH52



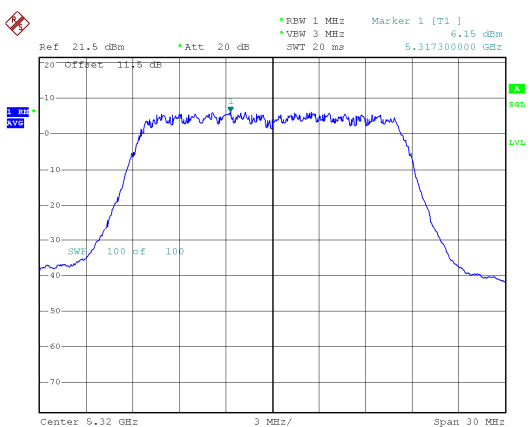
CH60



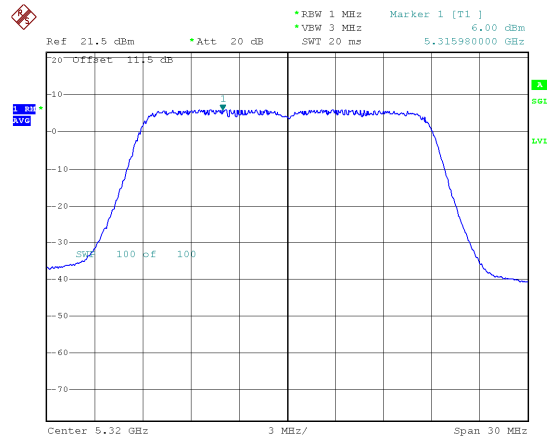
CH60



CH64

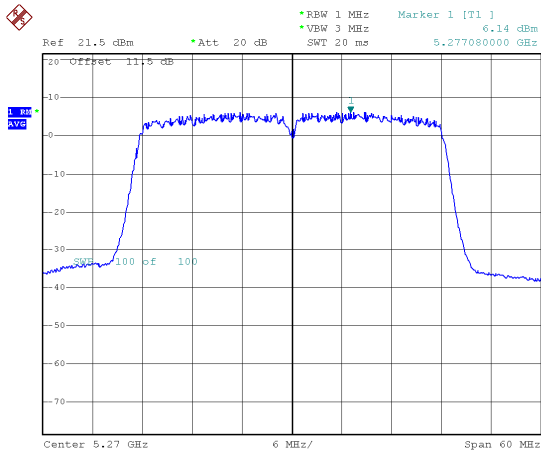


CH64

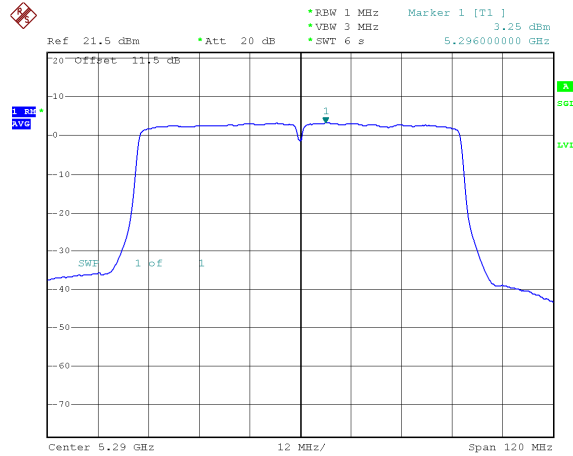




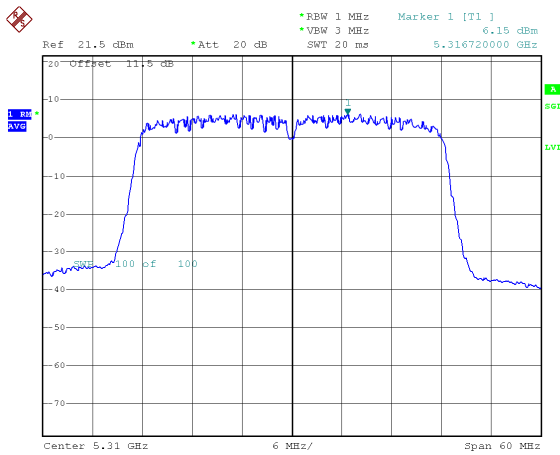
Band 2, ANT A
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH54



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH58

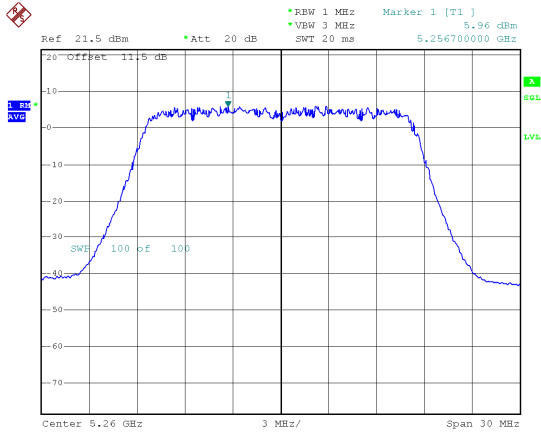


CH62

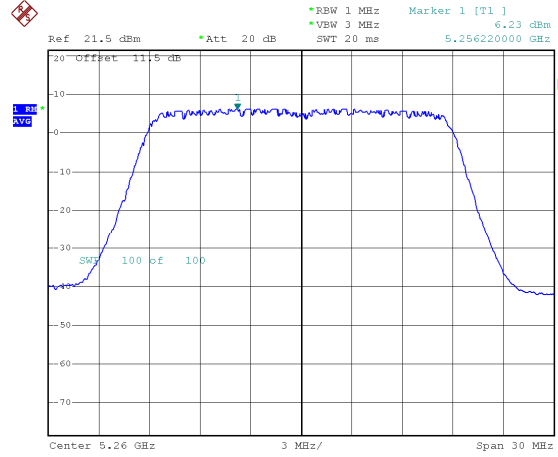




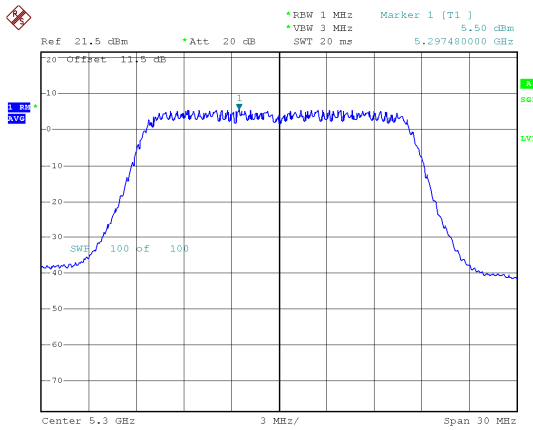
Band 2, ANT B
Modulation Standard: 802.11a (6Mbps)
CH52



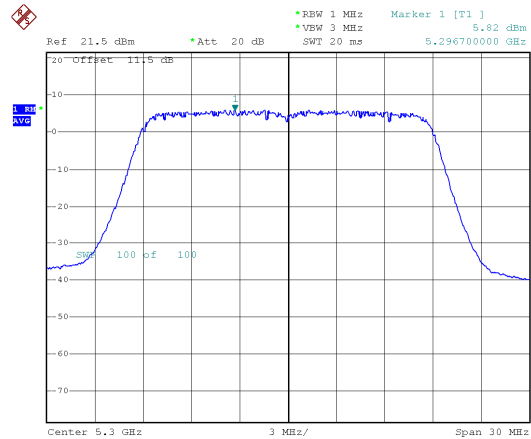
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH52



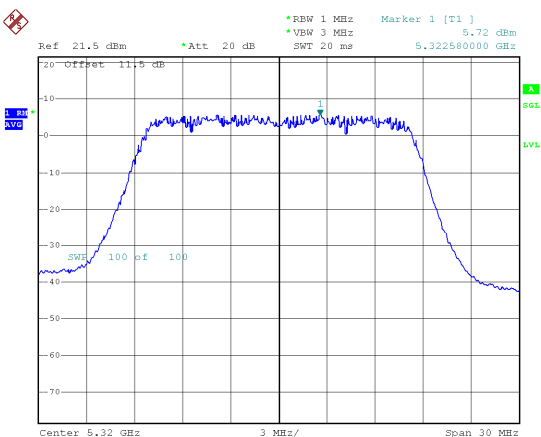
CH60



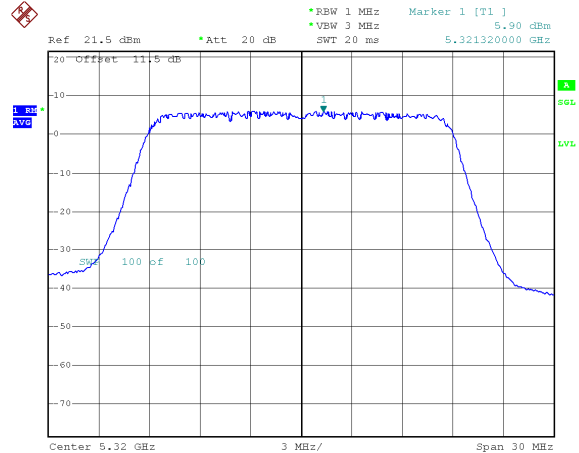
CH60



CH64



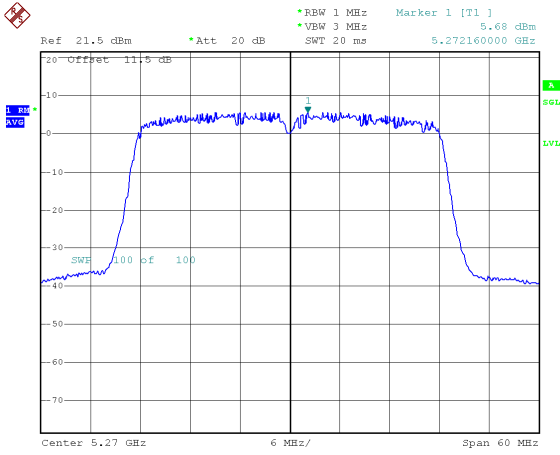
CH64



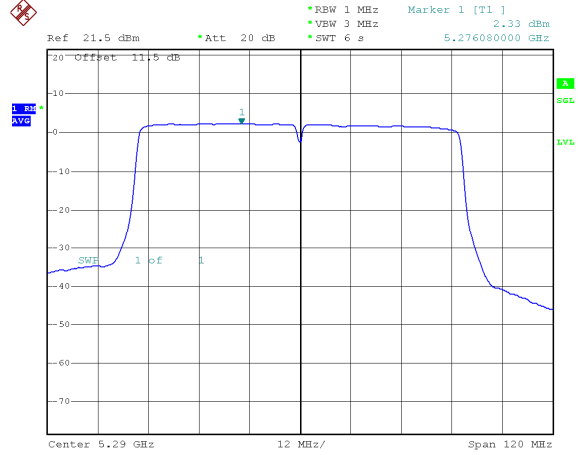


Band 2, ANT B

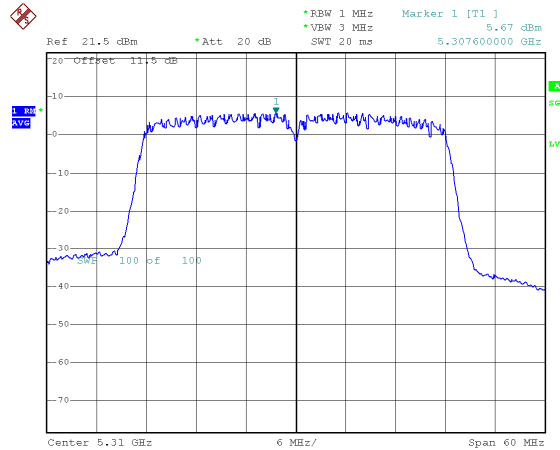
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH54



Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH58

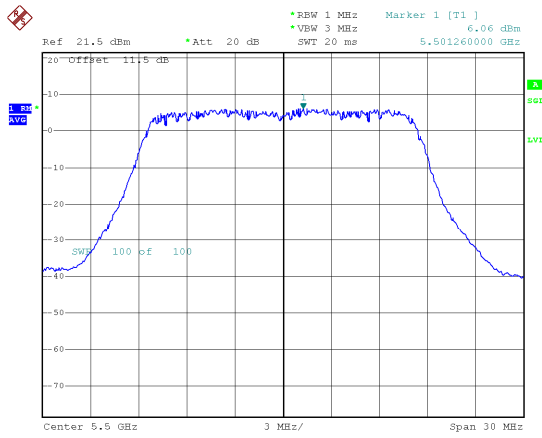


CH62

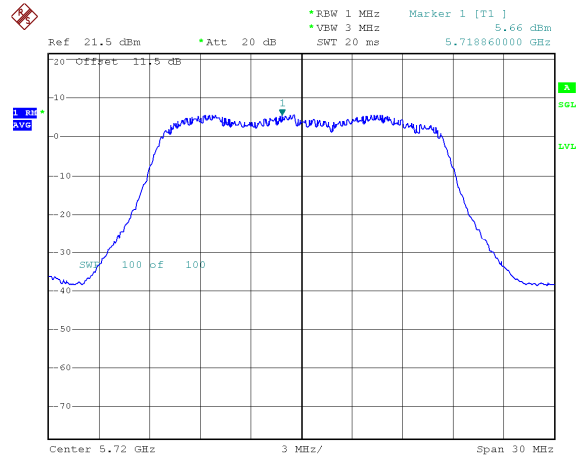




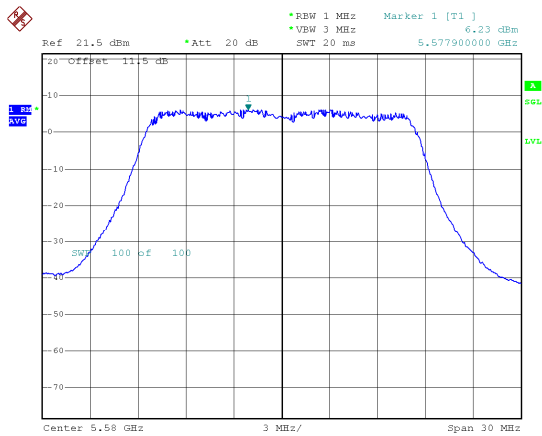
Band 3, ANT A
Modulation Standard: 802.11a (6Mbps)
CH100



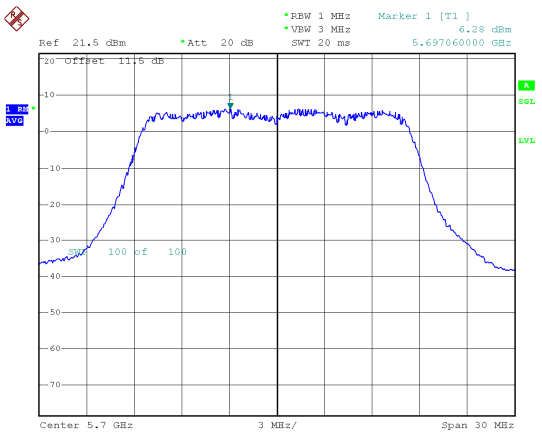
Modulation Standard: 802.11a (6Mbps)
CH144



CH116



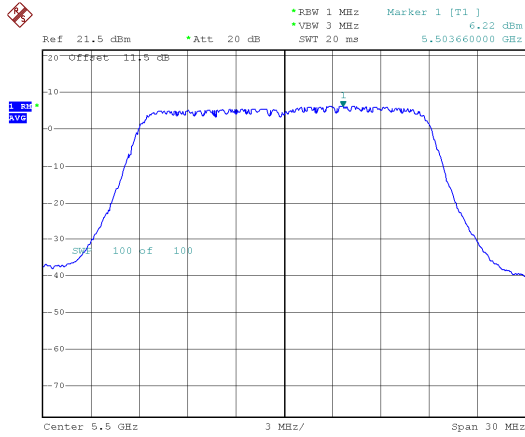
CH140



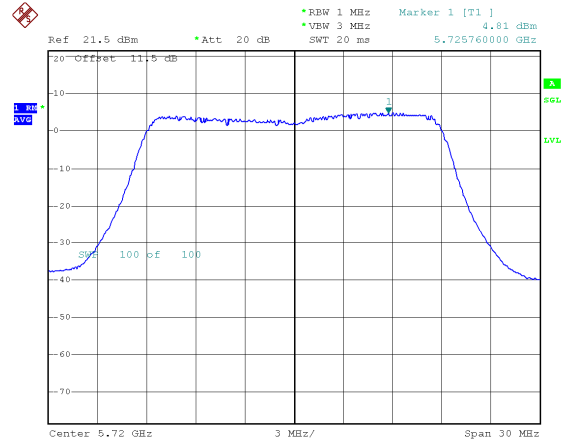


Band 3, ANT A

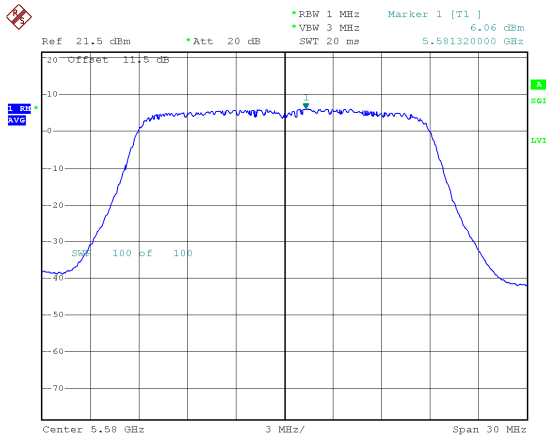
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH100



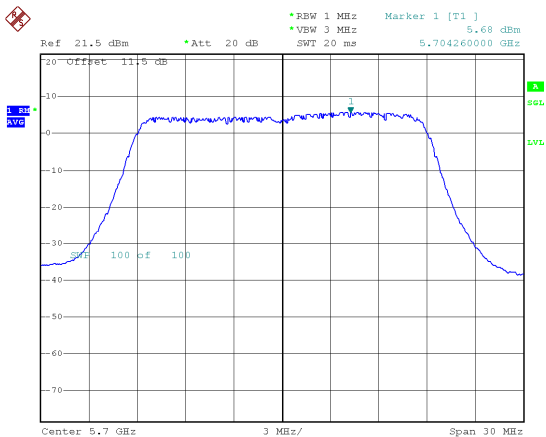
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH144



CH116



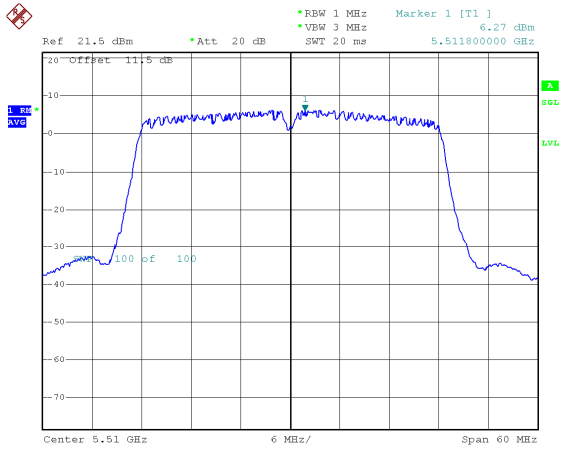
CH140



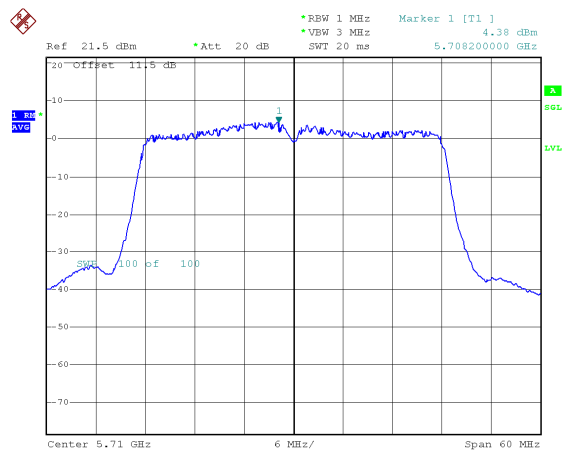


Band 3, ANT A

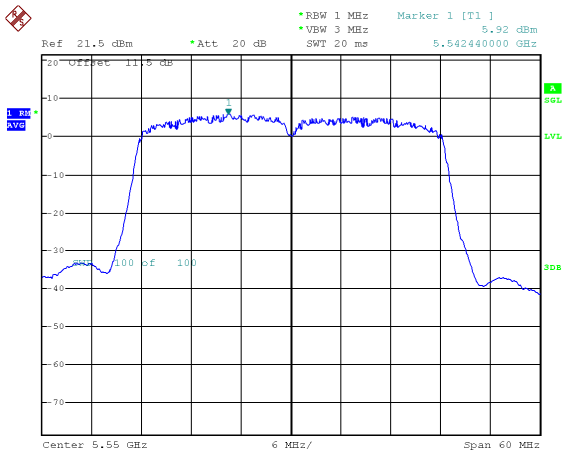
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH102



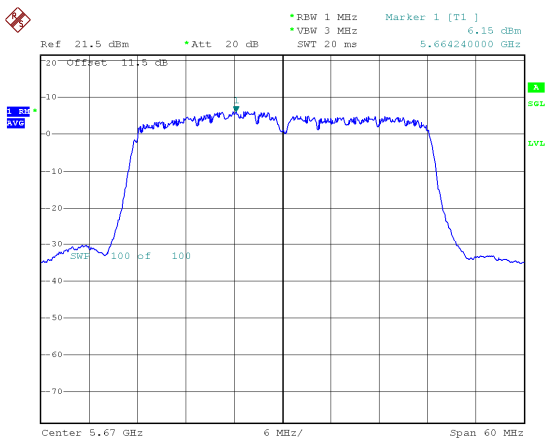
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH142



CH110

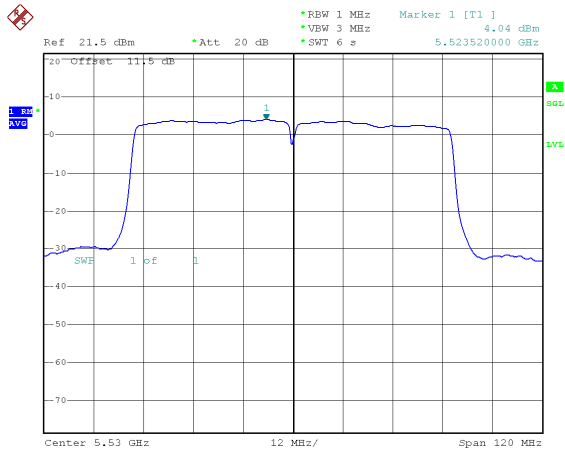


CH134

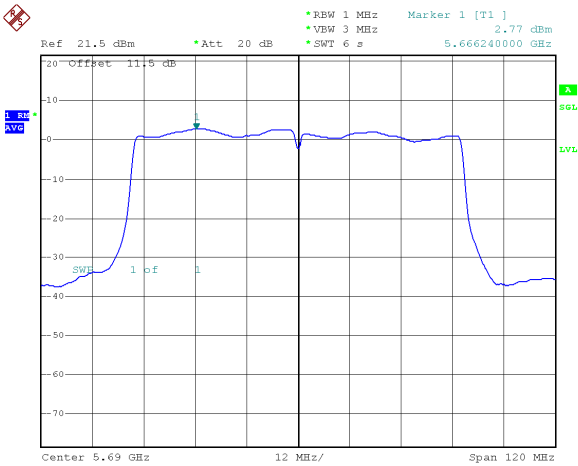




Band 3, ANT A
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH106

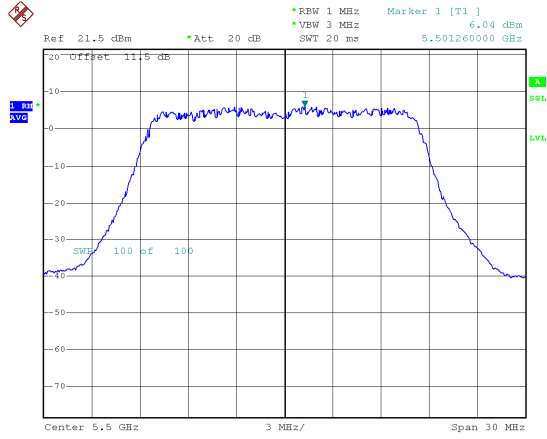


CH138

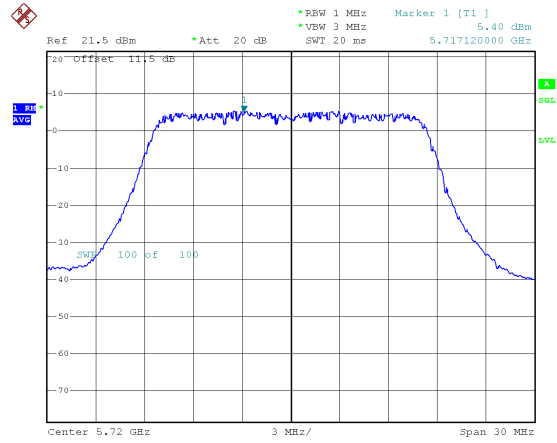




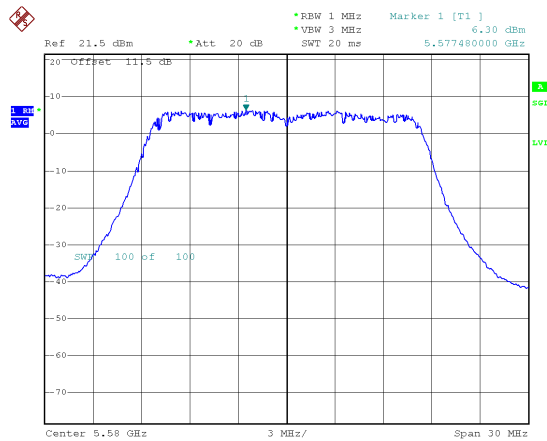
Band 3, ANT B
Modulation Standard: 802.11a (6Mbps)
CH100



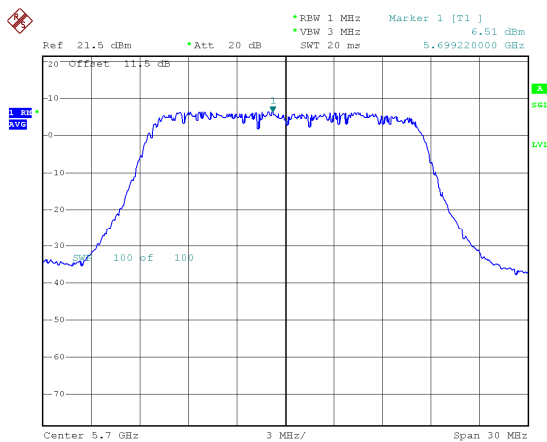
Modulation Standard: 802.11a (6Mbps)
CH144



CH116



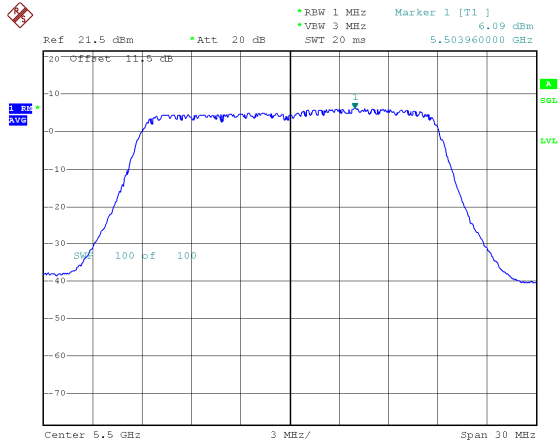
CH140



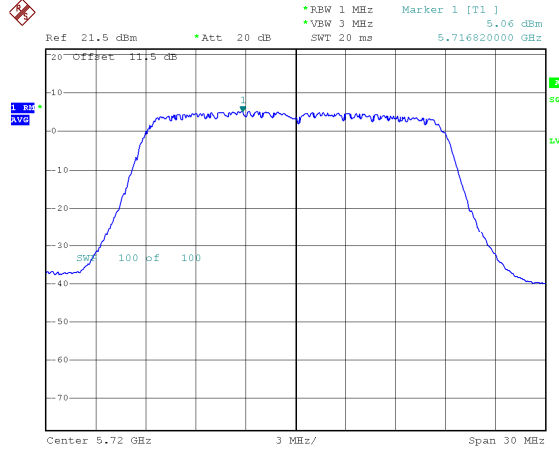


Band 3, ANT B

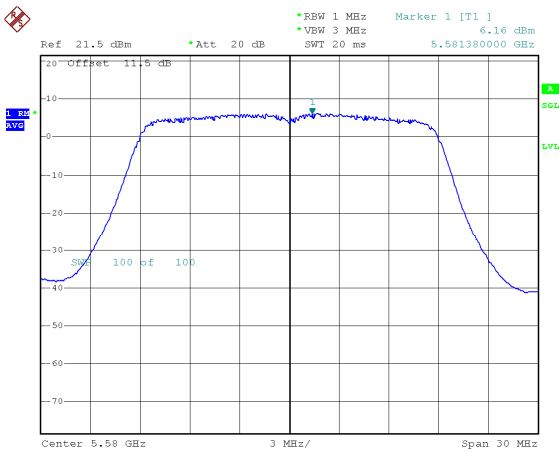
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH100



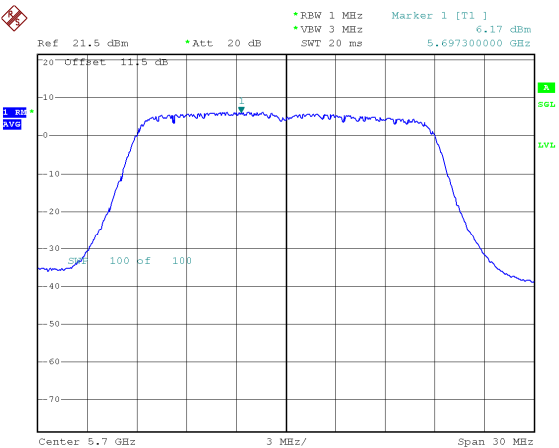
Modulation Standard: 802.11ac VHT20 (6.5Mbps)
CH144



CH116

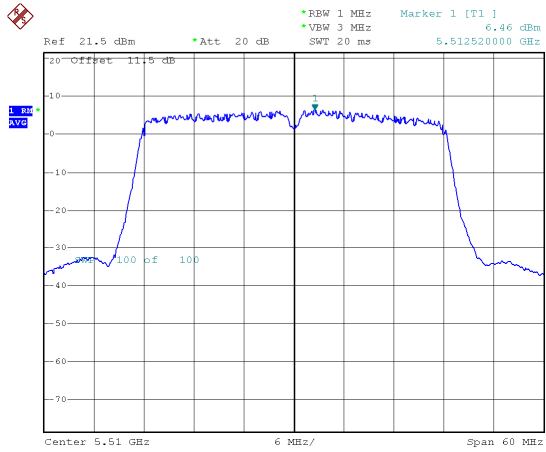


CH140

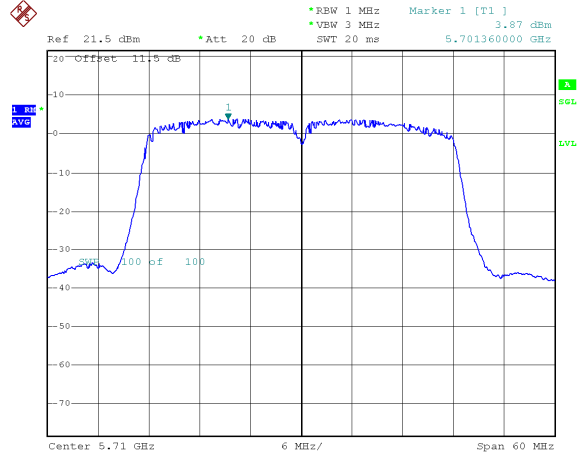




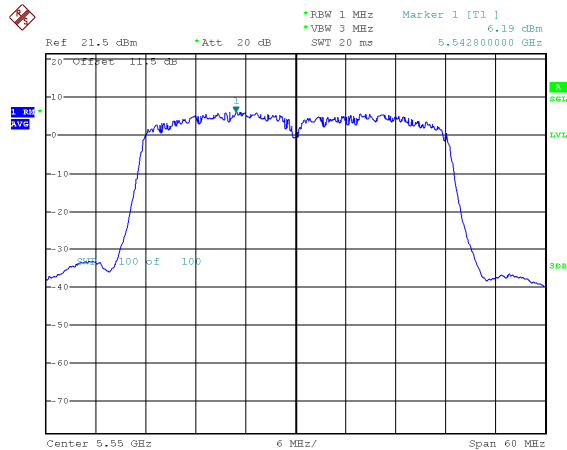
Band 3, ANT B
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH102



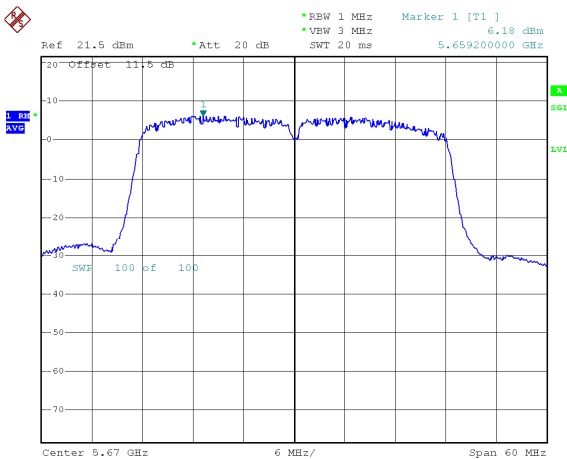
Modulation Standard: 802.11ac VHT40 (13.5Mbps)
CH142



CH110

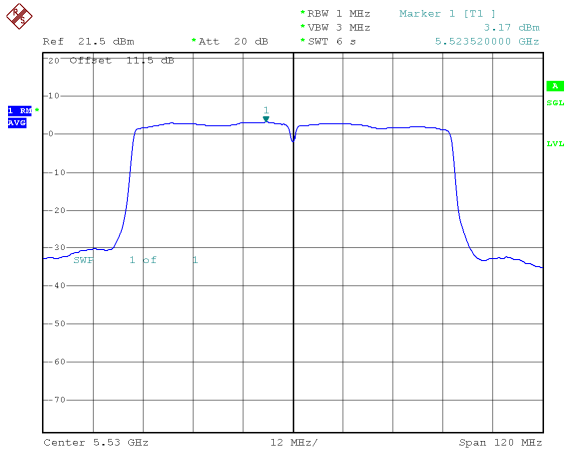


CH134

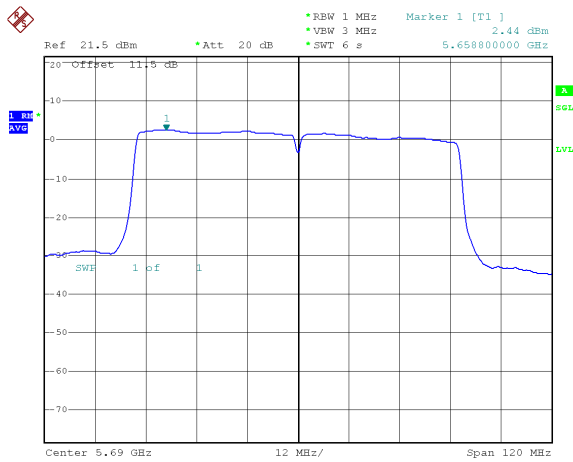




Band 3, ANT B
Modulation Standard: 802.11ac VHT80 (29.3Mbps)
CH106



CH138



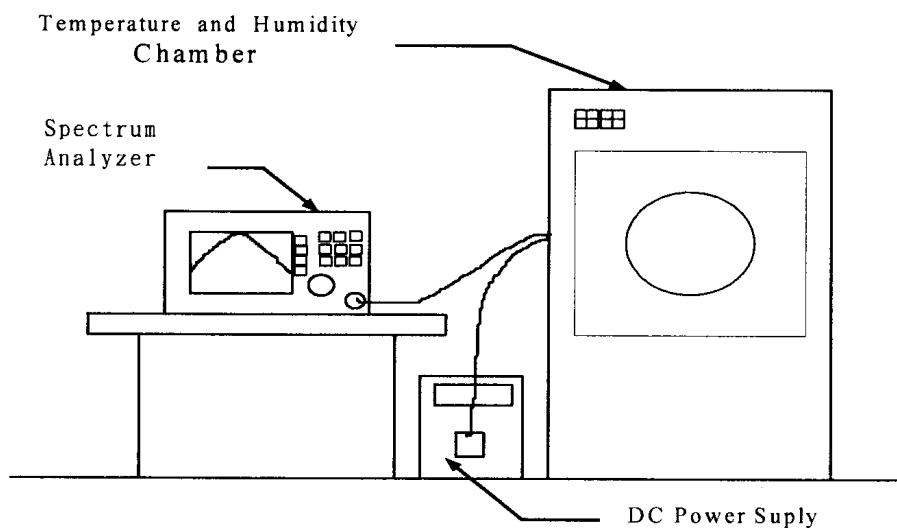


11. Frequency Stability

11.1. 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.

11.2. Test Setup Layout





11.3. Test Result and Data

Temperature: 22°C

Humidity: 64%

Test Date: Jun. 10, 2018

Operating frequency: 5270 MHz							
Temp	Power supply	2 minute		5 minute		10 minute	
(°C)	(V)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	102	5270.0043	0.000081	5270.0039	0.000074	5270.0043	0.000812
	120	5270.0071	0.000134	5270.0076	0.000143	5270.0074	0.001396
	138	5270.0047	0.000089	5270.0052	0.000098	5270.0054	0.001018
40	102	5270.0056	0.000107	5270.0051	0.000098	5270.0055	0.001046
	120	5270.0038	0.000072	5270.0041	0.000078	5270.0041	0.000769
	138	5270.0079	0.000150	5270.0075	0.000143	5270.0073	0.001386
30	102	5270.0085	0.000161	5270.0091	0.000173	5270.0092	0.001744
	120	5270.0062	0.000117	5270.0066	0.000125	5270.0059	0.001111
	138	5270.0091	0.000174	5270.0092	0.000175	5270.0096	0.001829
20	102	5270.0077	0.000147	5270.0072	0.000136	5270.0075	0.001418
	120	5270.0049	0.000093	5270.0052	0.000099	5270.0056	0.001057
	138	5270.0082	0.000155	5270.0081	0.000154	5270.0085	0.001614
10	102	5270.0048	0.000090	5270.0048	0.000092	5270.0049	0.000926
	120	5270.0066	0.000124	5270.0070	0.000133	5270.0072	0.001366
	138	5270.0058	0.000110	5270.0054	0.000102	5270.0057	0.001076
0	102	5270.0075	0.000142	5270.0076	0.000145	5270.0075	0.001417
	120	5270.0076	0.000143	5270.0075	0.000141	5270.0074	0.001400
	138	5270.0054	0.000102	5270.0060	0.000114	5270.0060	0.001147
-10	102	5270.0084	0.000160	5270.0084	0.000159	5270.0087	0.001655
	120	5270.0076	0.000143	5270.0077	0.000146	5270.0083	0.001568
	138	5270.0074	0.000140	5270.0079	0.000150	5270.0083	0.001566
-20	102	5270.0089	0.000168	5270.0090	0.000170	5270.0092	0.001749
	120	5270.0076	0.000144	5270.0075	0.000142	5270.0079	0.001495
	138	5270.0078	0.000148	5270.0077	0.000145	5270.0083	0.001583
-30	102	5270.0083	0.000158	5270.0083	0.000157	5270.0092	0.001745
	120	5270.0076	0.000145	5270.0081	0.000153	5270.0078	0.001472
	138	5270.0092	0.000175	5270.0095	0.000180	5270.0097	0.001836

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.



12. Automatically Discontinue Transmission

12.1. 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.

12.2. 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.



13. Dynamic Frequency Selection

13.1. Working Modes and Required Test Items

The manufacturer shall state whether the UUT is capable of operating as a Master and/or a Client. If the UUT is capable of operating in more than one operating mode then each operating mode shall be tested separately. See tables 6 and 7 for the applicability of DFS requirements for each of the operational modes.

Table 6: Applicability of DFS Requirements Prior to Use a Channel

Requirement	Operational Mode		
	Master	Client without radar detection	Client with radar detection
Non-Occupancy Period	V	V ^{Note}	V
DFS Detection Threshold	V	Not required	V
Channel Availability Check Time	V	Not required	Not required
U-NII Detection Bandwidth	V	Not required	V

Note: Per KDB 905462 D03 UNII Clients Without Radar Detection New Rules v01r02 section (b)(5/6), If the client moves with the master, the device is considered compliant if nothing appears in the client non-occupancy period test. For devices that shut down (rather than moving channels), no beacons should appear. An analyzer plot that contains a single 30-minute sweep on the original channel.

Table 7: Applicability of DFS Requirements during Normal Operation

Requirement	Operational Mode	
	Master or Client with radar detection	Client without radar detection
DFS Detection Threshold	V	Not required
Channel Closing Transmission Time	V	V
Channel Move Time	V	V
U-NII Detection Bandwidth	V	Not required

Additional requirements for devices with multiple bandwidth modes	Master or Client with radar detection	Client without radar detection
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required

Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.



13.2. Test Limits and Radar Signal Parameters

Detection Threshold Values

Table 8: DFS Detection Thresholds for Master Devices and Client Devices with Radar Detection

Maximum Transmit Power	Value (See Notes 1, 2, and 3)
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm

Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna.
 Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.
 Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.

Table 9: DFS Response Requirement Values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3

Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.
 Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.
 Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.



Parameters of DFS Test Signals

Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1 MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

Table 10: Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a	$\text{Roundup} \left\{ \left(\frac{1}{360} \right) \cdot \left(\frac{19 \cdot 10^6}{\text{PRI}_{\mu \text{sec}}} \right) \right\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066μ sec, with a minimum increment of 1μ sec, excluding PRI values selected in Test A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120
Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.					



Table 11: Long Pulse Radar Test Waveform

Radar Type	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Number of Pulses Per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

Three subsets of trials will be performed with a minimum of ten trials per subset. The subset of trials differ in where the Long Pulse Type 5 Signal is tuned in frequency.

- the Channel center frequency
- tuned frequencies such that 90% of the Long Pulse Type 5 frequency modulation is within the low edge of the UUT Occupied Bandwidth
- tuned frequencies such that 90% of the Long Pulse Type 5 frequency modulation is within the high edge of the UUT Occupied Bandwidth

It include 10 trails for every subset, the formula as below,

For subset case 1: the center frequency of the signal generator will remain fixed at the center of the UUT Channel.

For subset case 2: to retain 90% frequency overlap between the radar signal and the UUT Occupied Bandwidth, the center frequency of the signal generator will vary for each of the ten trials in subset case 2. The center frequency of the signal generator for each trial is calculated by:
 $FL+(0.4*Chirp\ Width\ [in\ MHz])$

For subset case 3: to retain 90% frequency overlap between the radar signal and the UUT Occupied Bandwidth, the center frequency of the signal generator will vary for each of the ten trials in subset case 3. The center frequency of the signal generator for each trial is calculated by:
 $FL-(0.4*Chirp\ Width\ [in\ MHz])$

Table 12: Frequency Hopping Radar Test Waveform

Radar Type	Pulse Width (µsec)	PRI (µsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Number of Trials
6	1	333	9	0.333	300	70%	30

Note: EUT Version: 5.0.0.A19

13.3. Test Setup

Setup for Master with injection at the Master

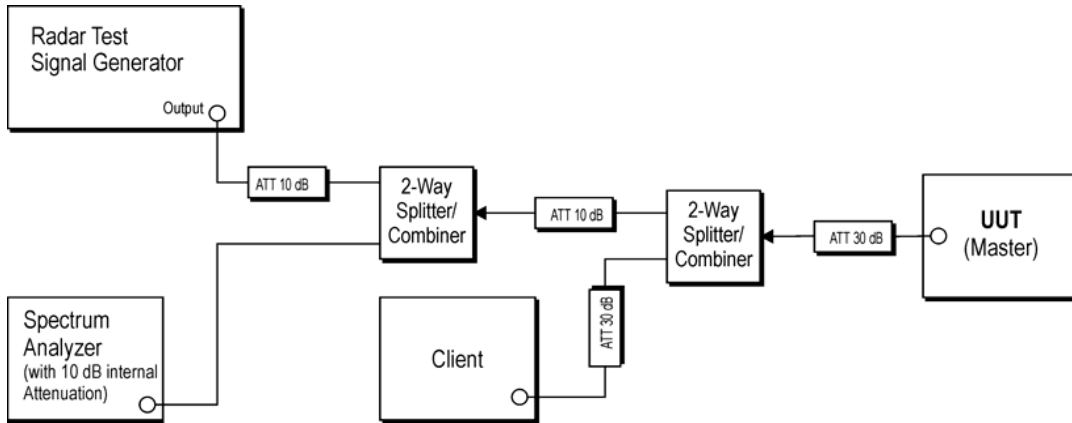


Figure 2: Example Conducted Setup where UUT is a Master and Radar Test Waveforms are injected into the Master

Setup for Client with injection at the Master

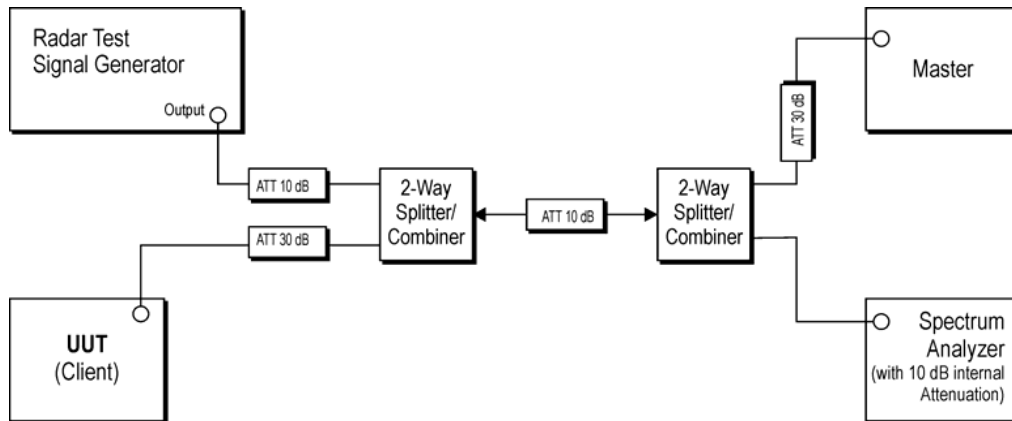


Figure 3: Example Conducted Setup where UUT is a Client and Radar Test Waveforms are injected into the Master



Setup for Client with injection at the Client

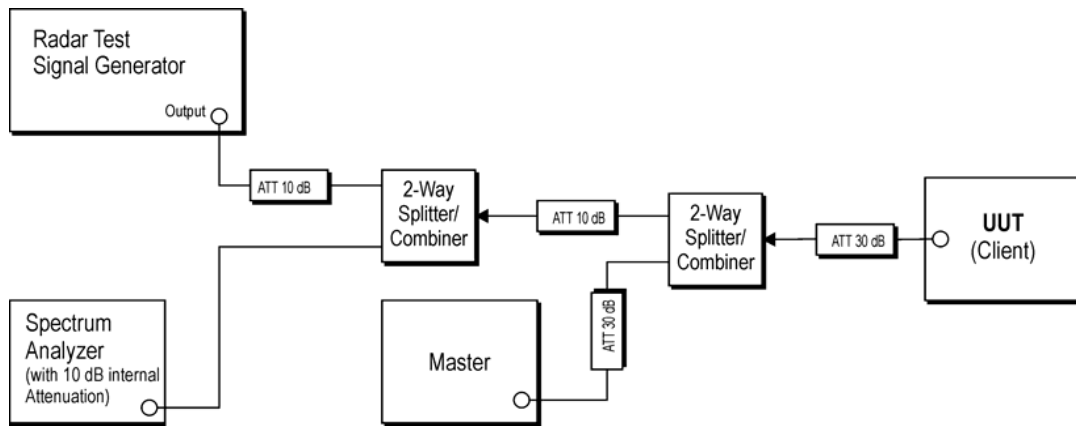


Figure 4: Example Conducted Setup where UUT is a Client and Radar Test Waveforms are injected into the Client

Radiated Tests Setup for Master with injection at the Master

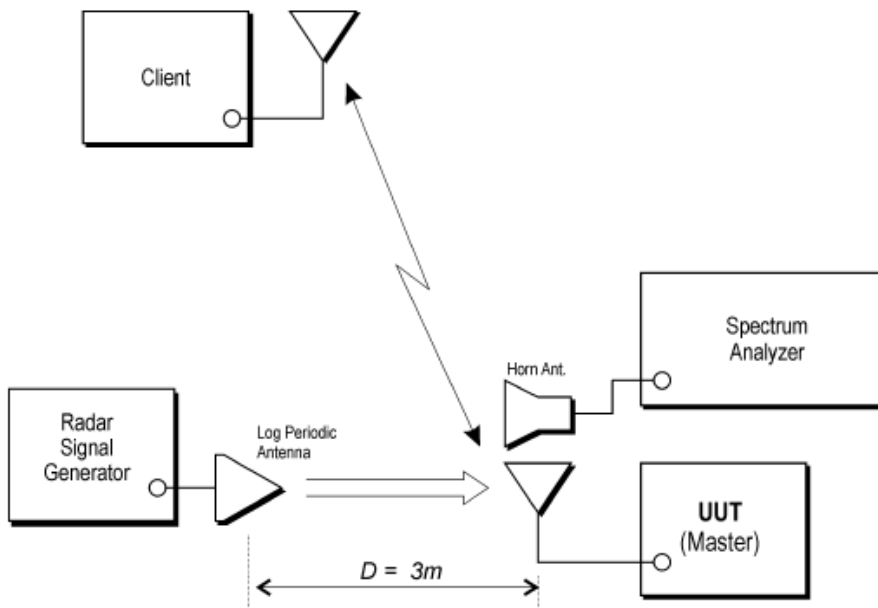


Figure 5: Example Radiated Setup where UUT is a Master and Radar Test Waveforms are injected into the Master.

Radiated Tests Setup for Client with injection at the Master

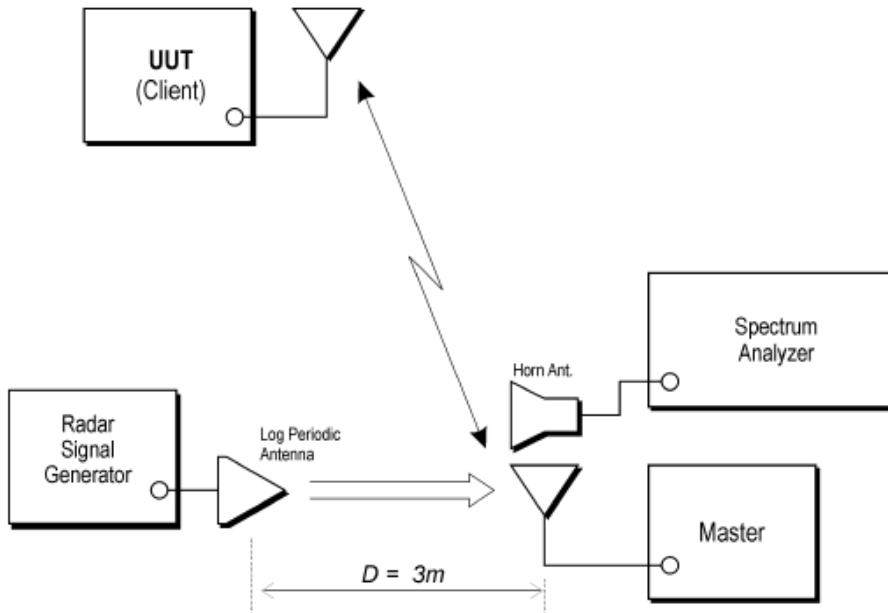


Figure 6: Example Radiated Setup where UUT is a Client and Radar Test Waveforms are injected into the Master

Radiated Tests Setup for Client with injection at the Client

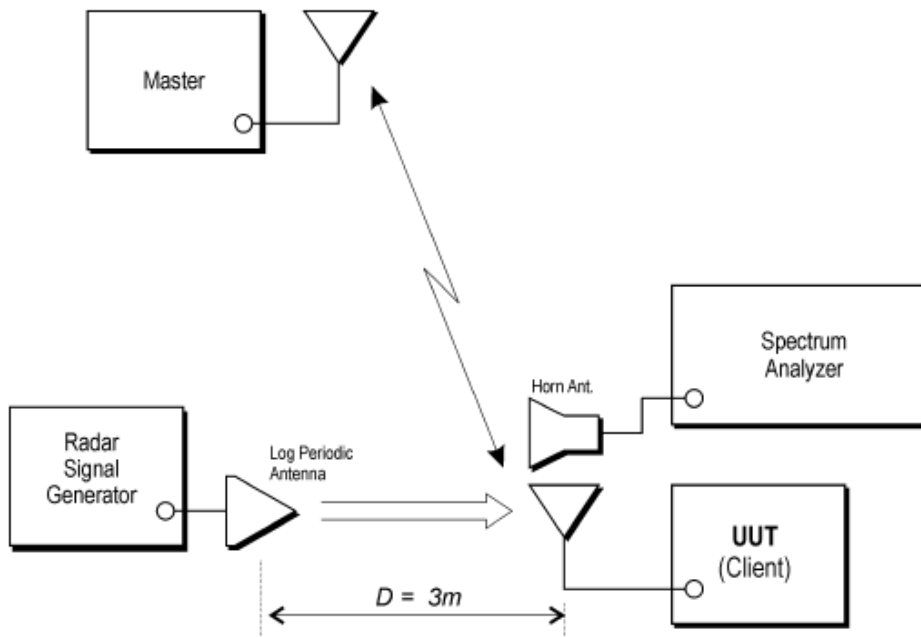


Figure 7: Example Radiated Setup where UUT is a Client and Radar Test Waveforms are injected into the Client



13.4.DFS Detection Threshold

DFS Detection Threshold is the level used by the DFS mechanism to detect radar interference.

13.4.1. Test Limit

Limits Clause 4.7.2.1.2

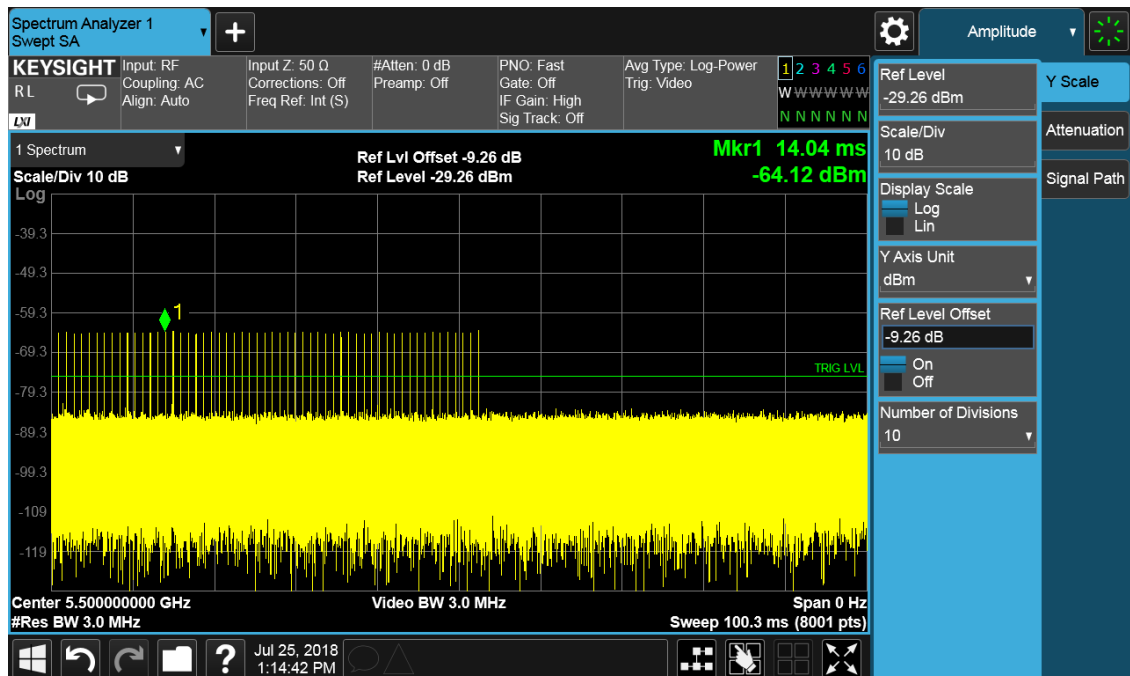
DFS Detection Thresholds for Master Devices and Client Devices with Radar Detection

MAXIMUM TRANSMIT POWER	VALUE (SEE Note 1 and 2)
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm

Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna.
 Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.
 Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911

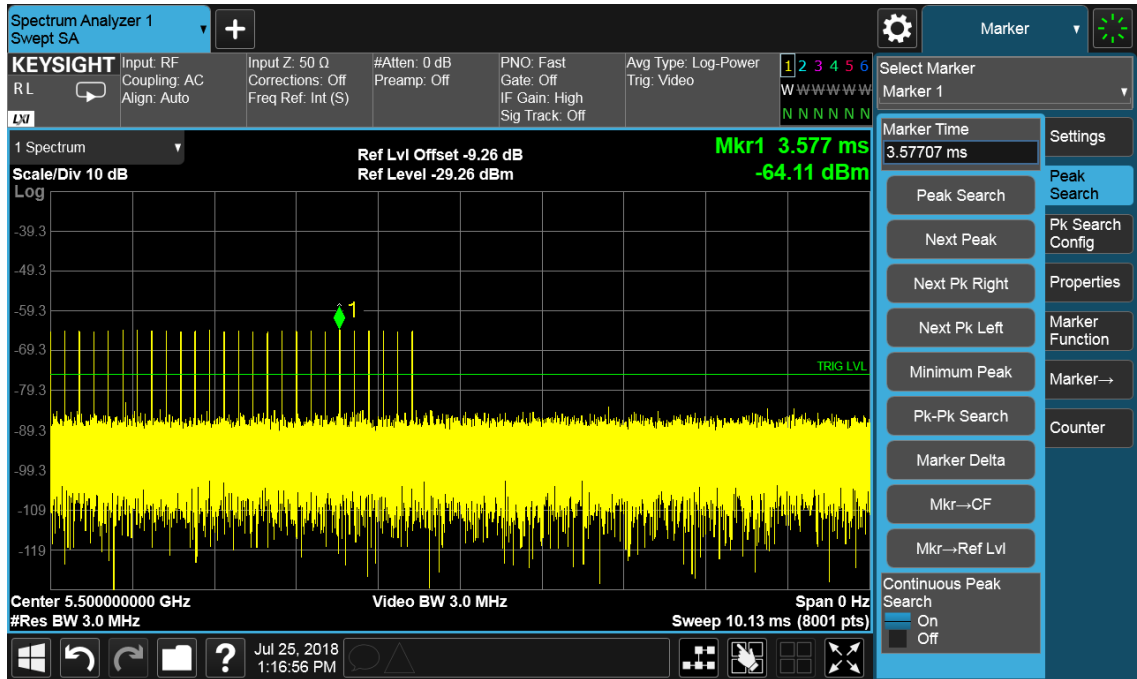
13.4.2. Test Result of DFS Detection Threshold

Radar Type 1 Calibration Plot

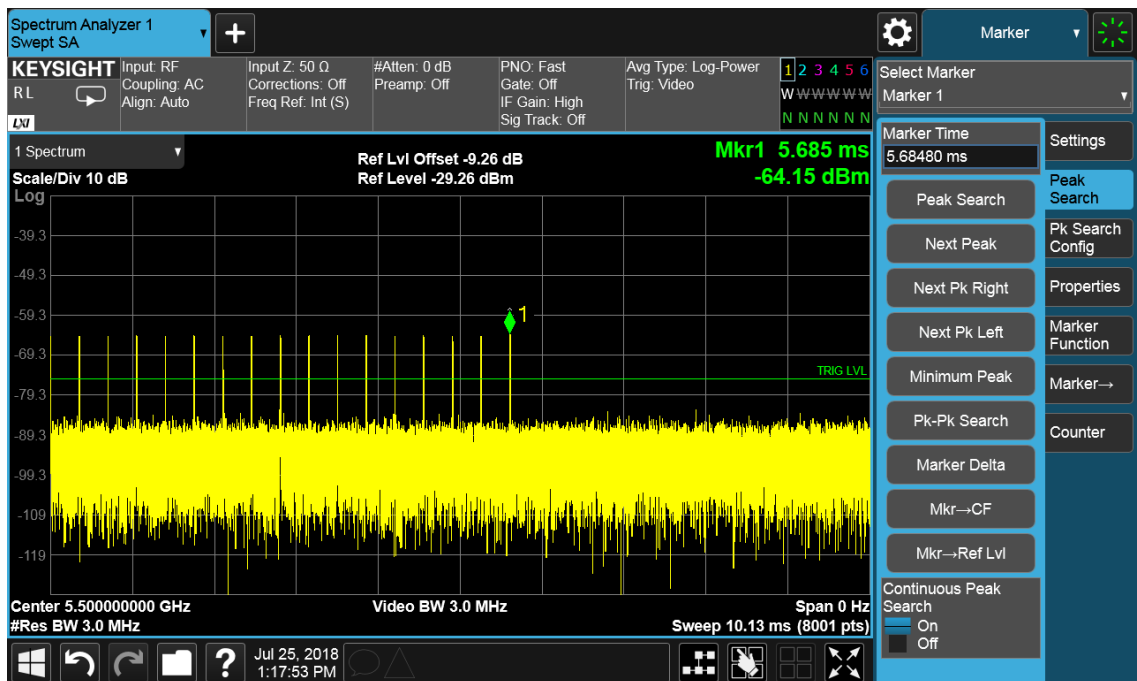




Radar Type 2 Calibration Plot

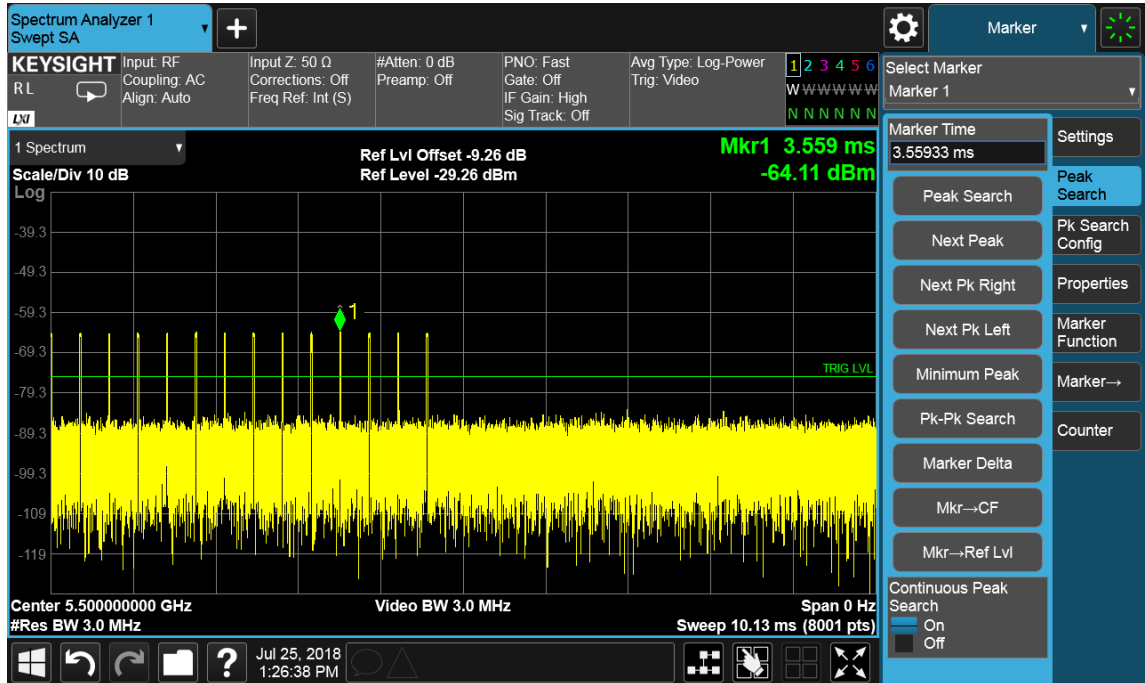


Radar Type 3 Calibration Plot

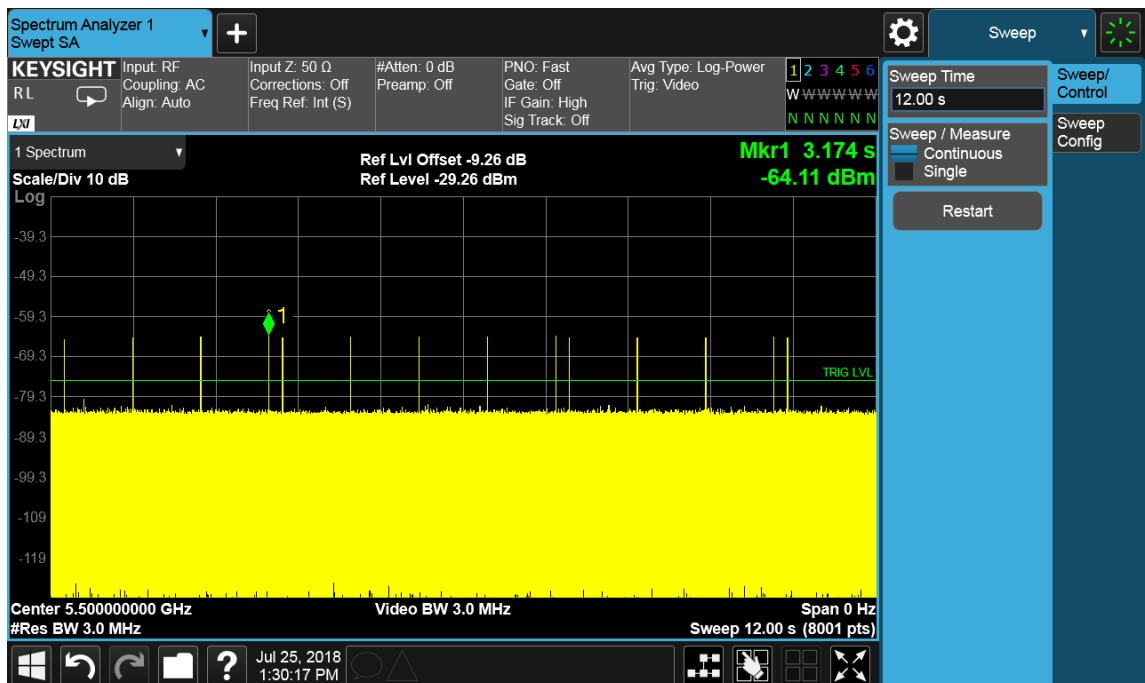




Radar Type 4 Calibration Plot

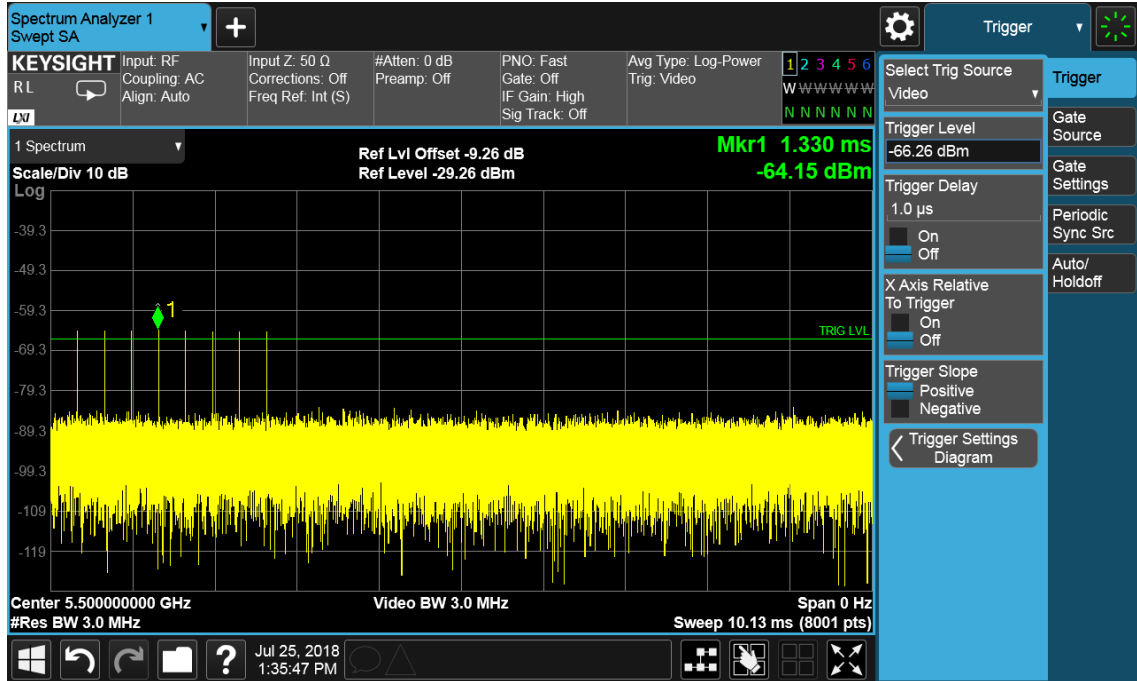


Radar Type 5 Calibration Plot





Radar Type 6 Calibration Plot





13.5.Channel Availability Check Time

The Channel Availability Check is defined as the mechanism by which an RLAN device checks a channel for the presence of radar signals.

There shall be no transmissions by the device within the channel being checked during this process.

If no radars have been detected, the channel becomes an Available Channel valid for a period of time.

The RLAN shall only start transmissions on Available Channels.

At power-up, the RLAN is assumed to have no Available Channels.

13.5.1.Test Limit

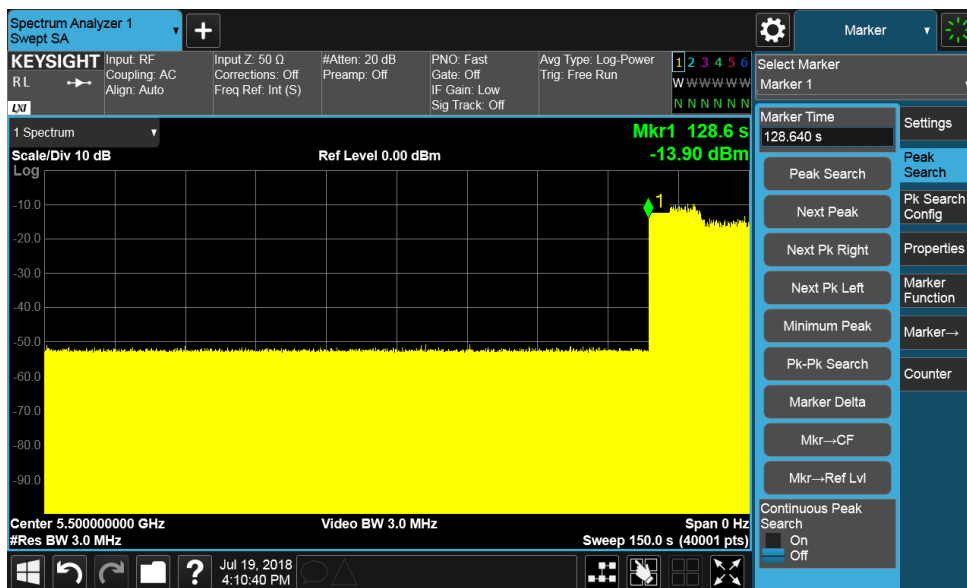
Limits Clause 4.7.2.1.2

Table D.2: DFS requirement values

Parameter	Value
Channel Availability Check	> 60s

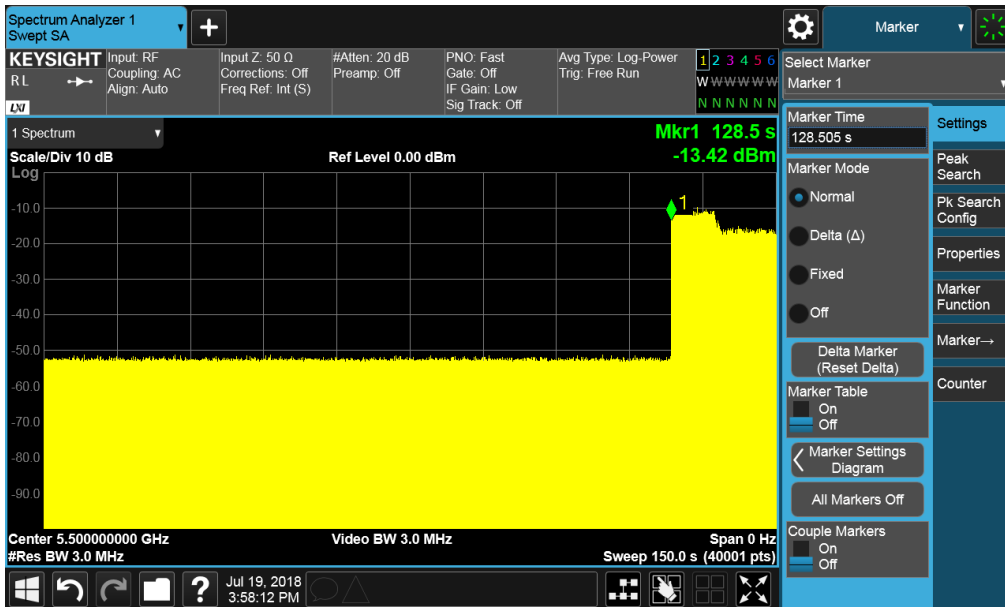
13.5.2.Test Result of Channel Availability Check

Modulation Standard: 802.11ac VHT20

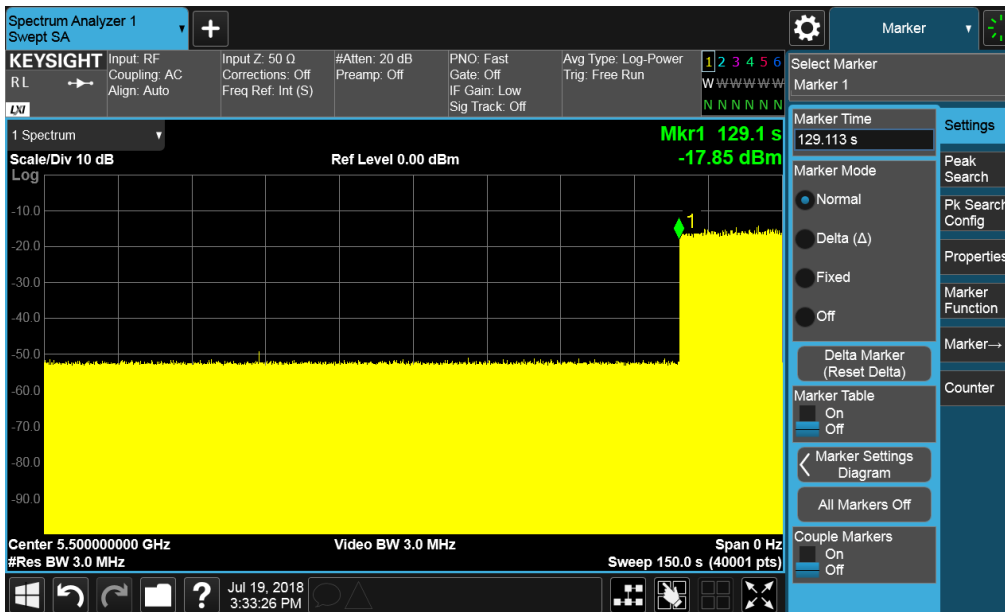




Modulation Standard: 802.11ac VHT40



Modulation Standard: 802.11ac VHT80





13.6. Radar Burst at the Beginning of the Channel Availability Check Time

The steps below define the procedure to verify successful radar detection on the test Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold + 1 dB occurs at the beginning of the Channel Availability Check Time. This is illustrated in **Figure 15**.

- a) The Radar Waveform generator and UUT are connected using the applicable test setup described in the sections on configuration for Conducted Tests or Radiated Tests and the power of the UUT is switched off.
- b) The UUT is powered on at T_0 . T_1 denotes the instant when the UUT has completed its power-up sequence (T_{power_up}). The Channel Availability Check Time commences on Chr at instant T_1 and will end no sooner than $T_1 + T_{ch_avail_check}$.
- c) A single Burst of one of the Short Pulse Radar Types 0-4 will commence within a 6 second window starting at T_1 . An additional 1 dB is added to the radar test signal to ensure it is at or above the DFS Detection Threshold, accounting for equipment variations/errors.
- d) Visual indication or measured results on the UUT of successful detection of the radar Burst will be recorded and reported. Observation of Chr for UUT emissions will continue for 2.5 minutes after the radar Burst has been generated.
- e) Verify that during the 2.5 minute measurement window no UUT transmissions occurred on Chr. The Channel Availability Check results will be recorded.

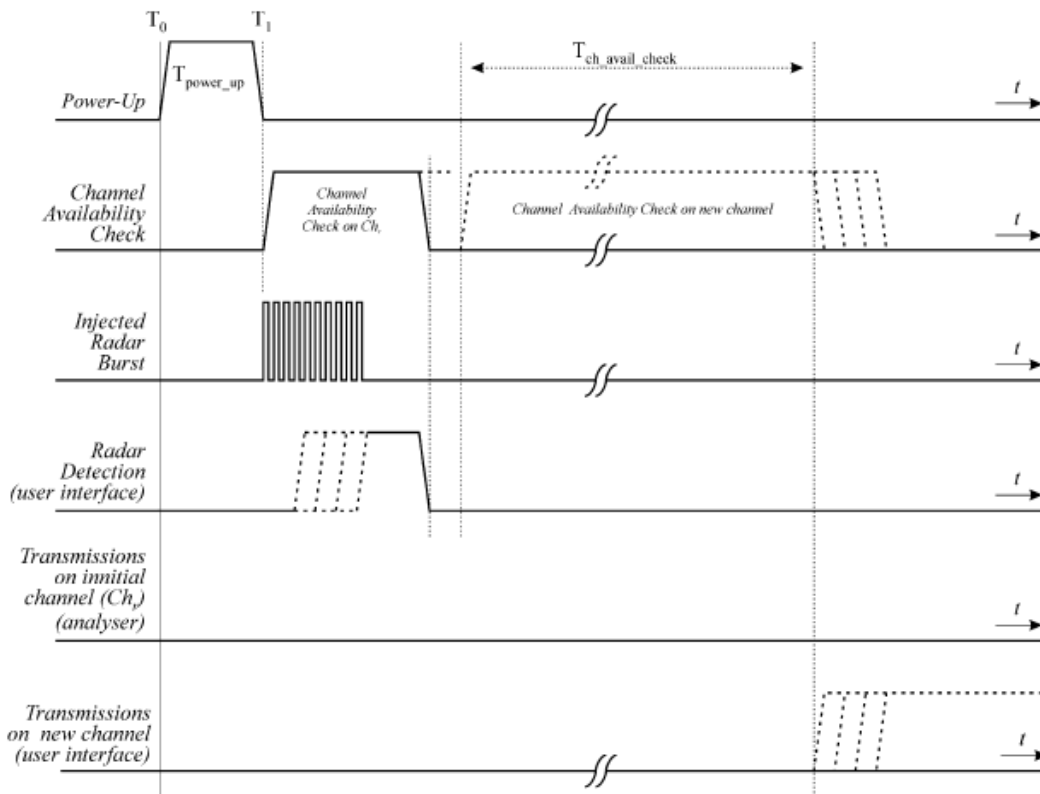
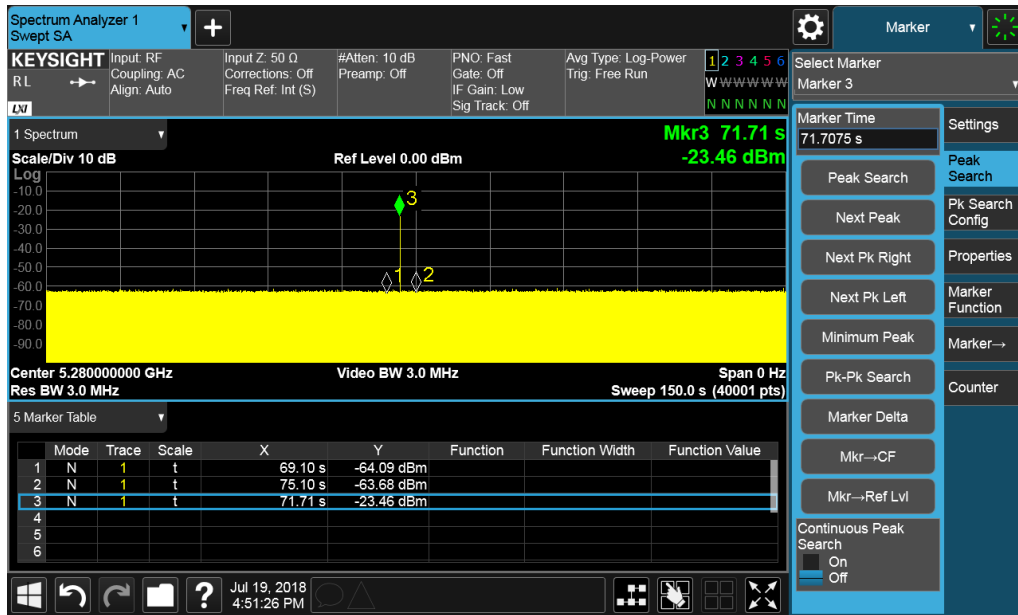


Figure 15: Example of timing for radar testing at the beginning of the Channel Availability Check Time

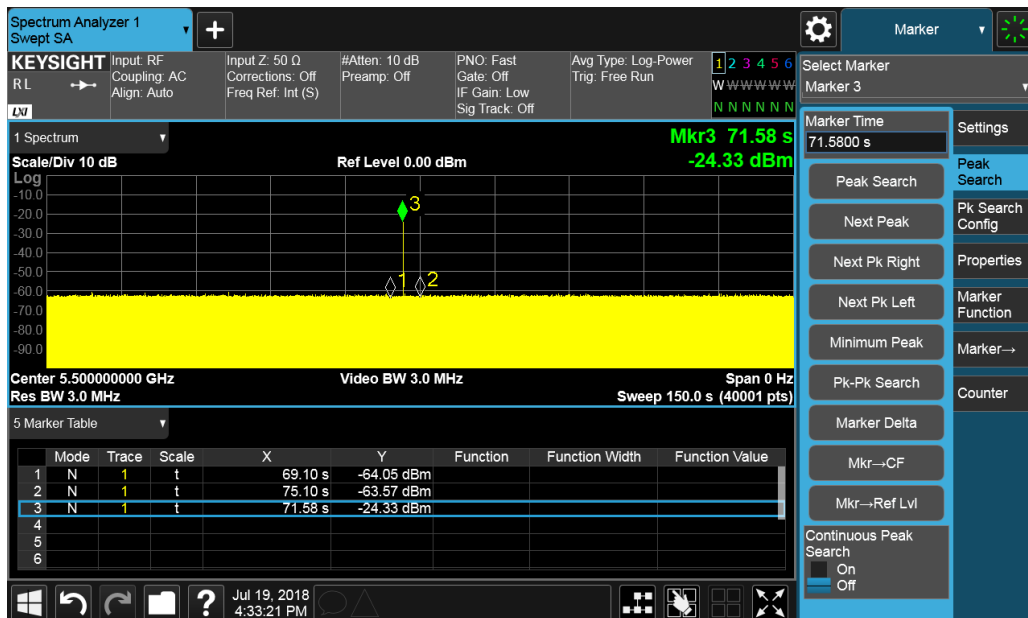


13.6.1. Test Result of radar burst at the beginning of the Channel Availability Check Time

Modulation Standard: 802.11ac VHT80, 5280MHz



Modulation Standard: 802.11ac VHT80, 5500MHz





13.7. Radar Burst at the End of the Channel Availability Check Time

The steps below define the procedure to verify successful radar detection on the test Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold + 1dB occurs at the end of the Channel Availability Check Time. This is illustrated in **Figure 16**.

- a) The Radar Waveform generator and UUT are connected using the applicable test setup described in the sections for Conducted Tests or Radiated Tests and the power of the UUT is switched off.
- b) The UUT is powered on at T_0 . T_1 denotes the instant when the UUT has completed its power-up sequence (T_{power_up}). The Channel Availability Check Time commences on Chr at instant T_1 and will end no sooner than $T_1 + T_{ch_avail_check}$.
- c) A single Burst of one of the Short Pulse Radar Types 0-4 will commence within a 6 second window starting at $T_1 + 54$ seconds. An additional 1 dB is added to the radar test signal to ensure it is at or above the DFS Detection Threshold, accounting for equipment variations/errors.
- d) Visual indication or measured results on the UUT of successful detection of the radar Burst will be recorded and reported. Observation of Chr for UUT emissions will continue for 2.5 minutes after the radar Burst has been generated.
- e) Verify that during the 2.5 minute measurement window no UUT transmissions occurred on Chr. The Channel Availability Check results will be recorded.

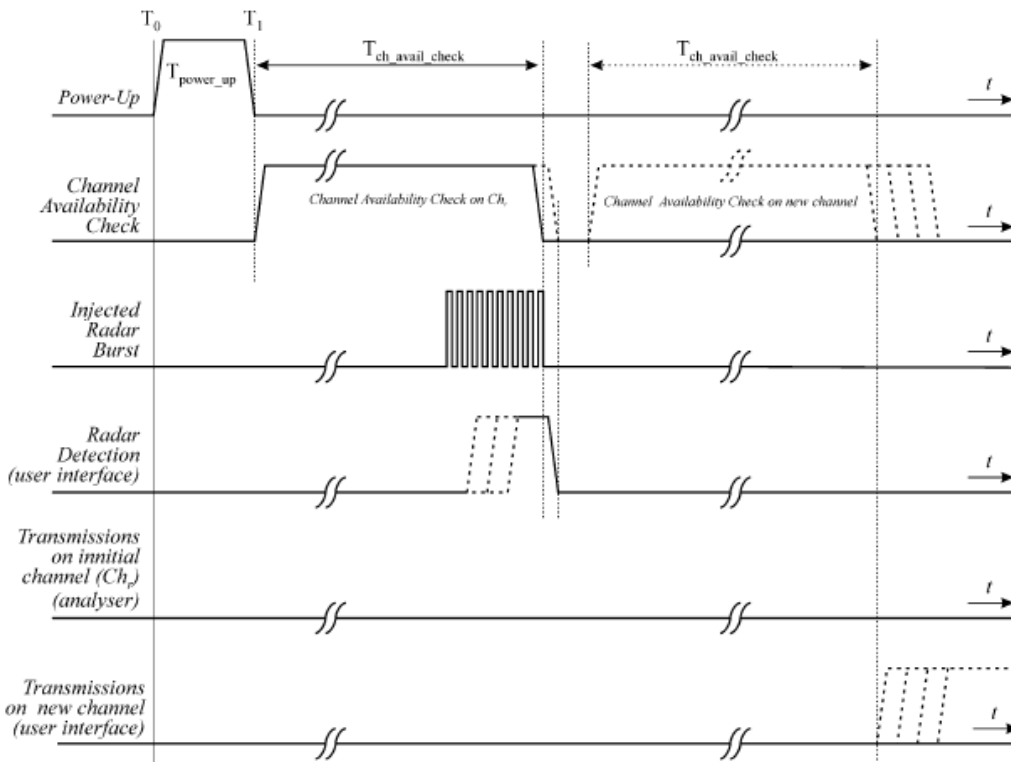
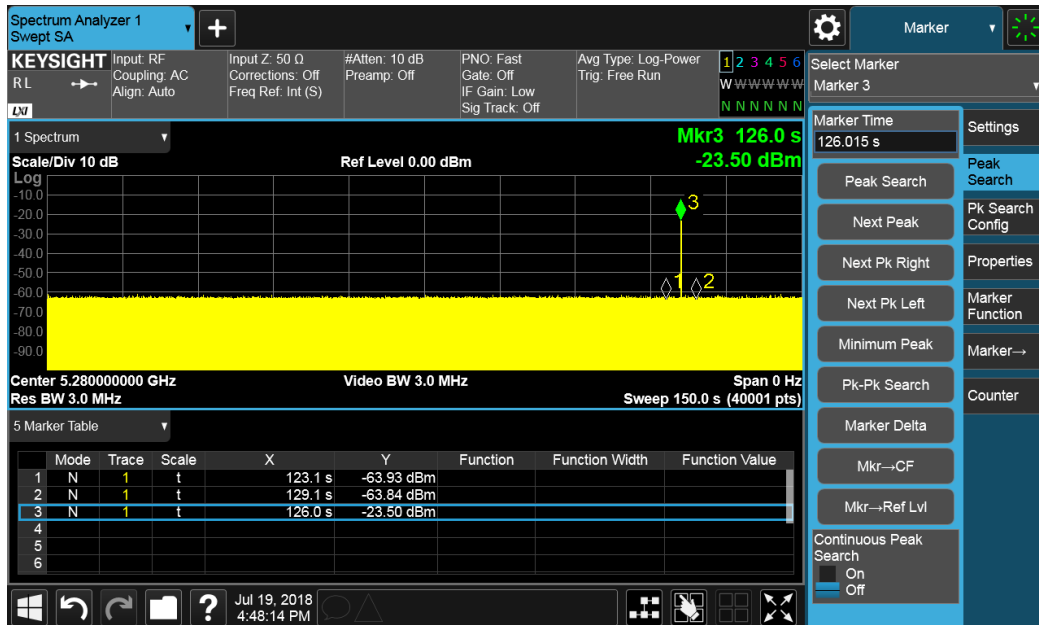


Figure 16: Example of timing for radar testing towards the end of the Channel Availability Check Time

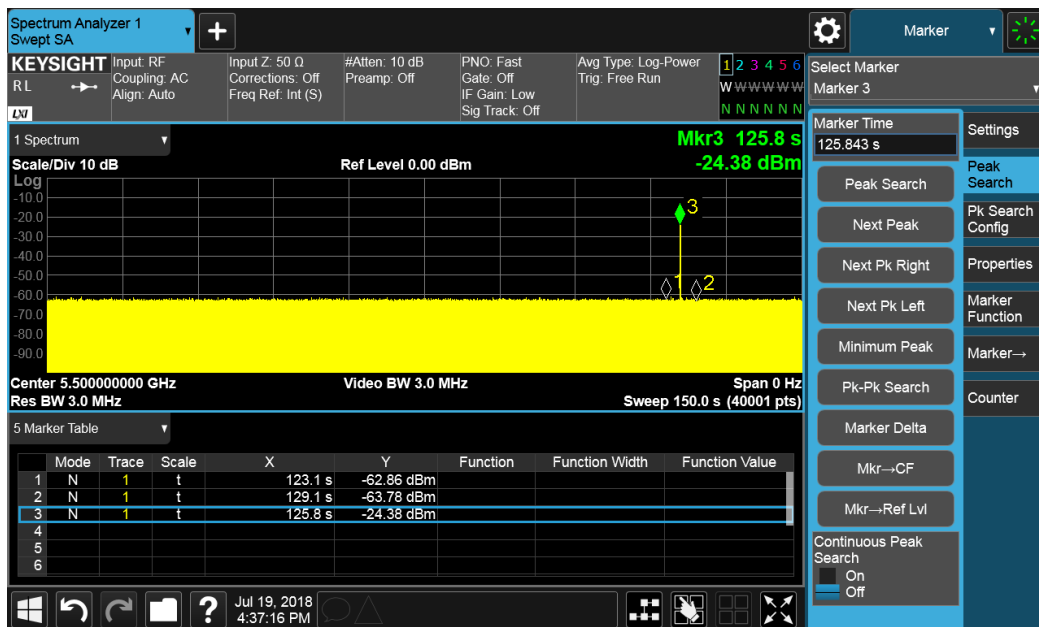


13.7.1. Test Result of radar burst at the end of the Channel Availability Check Time

Modulation Standard: 802.11ac VHT80, 5280MHz



Modulation Standard: 802.11ac VHT80, 5500MHz





13.8.U-NII Detection Bandwidth

Additional requirements for devices with multiple bandwidth modes	Master or Client with radar detection	Client without radar detection
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.		

13.8.1. Test Limit

Limits Clause 4.7.2.1.2 Table D.2: DFS requirement values

Parameter	Value
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission
Note : During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.	



13.8.2. Test Result of U-NII Detection Bandwidth

20 MHz Signal Bandwidth											
EUT Frequency = 5320MHz											
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, Blank= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5310(FL)	1	1	1	1	1	1	1	1	1	1	100%
5311	1	1	1	1	1	1	1	1	1	1	100%
5312	1	1	1	1	1	1	1	1	1	1	100%
5313	1	1	1	1	1	1	1	1	1	1	100%
5314	1	1	1	1	1	1	1	1	1	1	100%
5315	1	1	1	1	1	1	1	1	1	1	100%
5316	1	1	1	1	1	1	1	1	1	1	100%
5317	1	1	1	1	1	1	1	1	1	1	100%
5318	1	1	1	1	1	1	1	1	1	1	100%
5319	1	1	1	1	1	1	1	1	1	1	100%
5320	1	1	1	1	1	1	1	1	1	1	100%
5321	1	1	1	1	1	1	1	1	1	1	100%
5322	1	1	1	1	1	1	1	1	1	1	100%
5323	1	1	1	1	1	1	1	1	1	1	100%
5324	1	1	1	1	1	1	1	1	1	1	100%
5325	1	1	1	1	1	1	1	1	1	1	100%
5326	1	1	1	1	1	1	1	1	1	1	100%
5327	1	1	1	1	1	1	1	1	1	1	100%
5328	1	1	1	1	1	1	1	1	1	1	100%
5329	1	1	1	1	1	1	1	1	1	1	100%
5330(FH)	1	1	1	1	1	1	1	1	1	1	100%
20 MHz Detection Bandwidth = Fh - Fl = 5330MHz - 5310MHz = 20MHz											
EUT 99% Bandwidth = 18.795MHz											



20 MHz Signal Bandwidth											
EUT Frequency = 5500MHz											
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, Blank= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5490(FL)	1	1	1	1	1	1	1	1	1	1	100%
5491	1	1	1	1	1	1	1	1	1	1	100%
5492	1	1	1	1	1	1	1	1	1	1	100%
5493	1	1	1	1	1	1	1	1	1	1	100%
5494	1	1	1	1	1	1	1	1	1	1	100%
5495	1	1	1	1	1	1	1	1	1	1	100%
5496	1	1	1	1	1	1	1	1	1	1	100%
5497	1	1	1	1	1	1	1	1	1	1	100%
5498	1	1	1	1	1	1	1	1	1	1	100%
5499	1	1	1	1	1	1	1	1	1	1	100%
5500	1	1	1	1	1	1	1	1	1	1	100%
5501	1	1	1	1	1	1	1	1	1	1	100%
5502	1	1	1	1	1	1	1	1	1	1	100%
5503	1	1	1	1	1	1	1	1	1	1	100%
5504	1	1	1	1	1	1	1	1	1	1	100%
5505	1	1	1	1	1	1	1	1	1	1	100%
5506	1	1	1	1	1	1	1	1	1	1	100%
5507	1	1	1	1	1	1	1	1	1	1	100%
5508	1	1	1	1	1	1	1	1	1	1	100%
5509	1	1	1	1	1	1	1	1	1	1	100%
5510(FH)	1	1	1	1	1	1	1	1	1	1	100%
20 MHz Detection Bandwidth = Fh - Fl = 5510MHz - 5490MHz = 20MHz											
EUT 99% Bandwidth = 18.795MHz											



40 MHz Signal Bandwidth											
EUT Frequency = 5310MHz											
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, Blank= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5291(FL)	1	1	1	1	1	1	1	1	1	1	100%
5292	1	1	1	1	1	1	1	1	1	1	100%
5293	1	1	1	1	1	1	1	1	1	1	100%
5294	1	1	1	1	1	1	1	1	1	1	100%
5295	1	1	1	1	1	1	1	1	1	1	100%
5296	1	1	1	1	1	1	1	1	1	1	100%
5297	1	1	1	1	1	1	1	1	1	1	100%
5298	1	1	1	1	1	1	1	1	1	1	100%
5299	1	1	1	1	1	1	1	1	1	1	100%
5300	1	1	1	1	1	1	1	1	1	1	100%
5301	1	1	1	1	1	1	1	1	1	1	100%
5302	1	1	1	1	1	1	1	1	1	1	100%
5303	1	1	1	1	1	1	1	1	1	1	100%
5304	1	1	1	1	1	1	1	1	1	1	100%
5305	1	1	1	1	1	1	1	1	1	1	100%
5306	1	1	1	1	1	1	1	1	1	1	100%
5307	1	1	1	1	1	1	1	1	1	1	100%
5308	1	1	1	1	1	1	1	1	1	1	100%
5309	1	1	1	1	1	1	1	1	1	1	100%
5310	1	1	1	1	1	1	1	1	1	1	100%
5311	1	1	1	1	1	1	1	1	1	1	100%
5312	1	1	1	1	1	1	1	1	1	1	100%
5313	1	1	1	1	1	1	1	1	1	1	100%
5314	1	1	1	1	1	1	1	1	1	1	100%
5315	1	1	1	1	1	1	1	1	1	1	100%
5316	1	1	1	1	1	1	1	1	1	1	100%
5317	1	1	1	1	1	1	1	1	1	1	100%



40 MHz Signal Bandwidth											
EUT Frequency = 5310MHz											
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, Blank= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5318	1	1	1	1	1	1	1	1	1	1	100%
5319	1	1	1	1	1	1	1	1	1	1	100%
5320	1	1	1	1	1	1	1	1	1	1	100%
5321	1	1	1	1	1	1	1	1	1	1	100%
5322	1	1	1	1	1	1	1	1	1	1	100%
5323	1	1	1	1	1	1	1	1	1	1	100%
5324	1	1	1	1	1	1	1	1	1	1	100%
5325	1	1	1	1	1	1	1	1	1	1	100%
5326	1	1	1	1	1	1	1	1	1	1	100%
5327	1	1	1	1	1	1	1	1	1	1	100%
5328	1	1	1	1	1	1	1	1	1	1	100%
5329(FH)	1	1	1	1	1	1	1	1	1	1	100%
40 MHz Detection Bandwidth = Fh - Fl = 5329MHz - 5291MHz = 38MHz											
EUT 99% Bandwidth = 36.506MHz											



40 MHz Signal Bandwidth											
EUT Frequency = 5510MHz											
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, Blank= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5491(FL)	1	1	1	1	1	1	1	1	1	1	100%
5492	1	1	1	1	1	1	1	1	1	1	100%
5493	1	1	1	1	1	1	1	1	1	1	100%
5494	1	1	1	1	1	1	1	1	1	1	100%
5495	1	1	1	1	1	1	1	1	1	1	100%
5496	1	1	1	1	1	1	1	1	1	1	100%
5497	1	1	1	1	1	1	1	1	1	1	100%
5498	1	1	1	1	1	1	1	1	1	1	100%
5499	1	1	1	1	1	1	1	1	1	1	100%
5500	1	1	1	1	1	1	1	1	1	1	100%
5501	1	1	1	1	1	1	1	1	1	1	100%
5502	1	1	1	1	1	1	1	1	1	1	100%
5503	1	1	1	1	1	1	1	1	1	1	100%
5504	1	1	1	1	1	1	1	1	1	1	100%
5505	1	1	1	1	1	1	1	1	1	1	100%
5506	1	1	1	1	1	1	1	1	1	1	100%
5507	1	1	1	1	1	1	1	1	1	1	100%
5508	1	1	1	1	1	1	1	1	1	1	100%
5509	1	1	1	1	1	1	1	1	1	1	100%
5510	1	1	1	1	1	1	1	1	1	1	100%
5511	1	1	1	1	1	1	1	1	1	1	100%
5512	1	1	1	1	1	1	1	1	1	1	100%
5513	1	1	1	1	1	1	1	1	1	1	100%
5514	1	1	1	1	1	1	1	1	1	1	100%
5515	1	1	1	1	1	1	1	1	1	1	100%
5516	1	1	1	1	1	1	1	1	1	1	100%
5517	1	1	1	1	1	1	1	1	1	1	100%



40 MHz Signal Bandwidth											
EUT Frequency = 5510MHz											
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, Blank= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5518	1	1	1	1	1	1	1	1	1	1	100%
5519	1	1	1	1	1	1	1	1	1	1	100%
5520	1	1	1	1	1	1	1	1	1	1	100%
5521	1	1	1	1	1	1	1	1	1	1	100%
5522	1	1	1	1	1	1	1	1	1	1	100%
5523	1	1	1	1	1	1	1	1	1	1	100%
5524	1	1	1	1	1	1	1	1	1	1	100%
5525	1	1	1	1	1	1	1	1	1	1	100%
5526	1	1	1	1	1	1	1	1	1	1	100%
5527	1	1	1	1	1	1	1	1	1	1	100%
5528	1	1	1	1	1	1	1	1	1	1	100%
5529(FH)	1	1	1	1	1	1	1	1	1	1	100%
40 MHz Detection Bandwidth = Fh - Fl = 5529MHz - 5491MHz = 38MHz											
EUT 99% Bandwidth = 36.506MHz											



80 MHz Signal Bandwidth											
EUT Frequency = 5290MHz											
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, Blank= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5251(FL)	1	1	1	1	1	1	1	1	1	1	100%
5252	1	1	1	1	1	1	1	1	1	1	100%
5253	1	1	1	1	1	1	1	1	1	1	100%
5254	1	1	1	1	1	1	1	1	1	1	100%
5255	1	1	1	1	1	1	1	1	1	1	100%
5256	1	1	1	1	1	1	1	1	1	1	100%
5257	1	1	1	1	1	1	1	1	1	1	100%
5258	1	1	1	1	1	1	1	1	1	1	100%
5259	1	1	1	1	1	1	1	1	1	1	100%
5260	1	1	1	1	1	1	1	1	1	1	100%
5261	1	1	1	1	1	1	1	1	1	1	100%
5262	1	1	1	1	1	1	1	1	1	1	100%
5263	1	1	1	1	1	1	1	1	1	1	100%
5264	1	1	1	1	1	1	1	1	1	1	100%
5265	1	1	1	1	1	1	1	1	1	1	100%
5266	1	1	1	1	1	1	1	1	1	1	100%
5267	1	1	1	1	1	1	1	1	1	1	100%
5268	1	1	1	1	1	1	1	1	1	1	100%
5269	1	1	1	1	1	1	1	1	1	1	100%
5270	1	1	1	1	1	1	1	1	1	1	100%
5271	1	1	1	1	1	1	1	1	1	1	100%
5272	1	1	1	1	1	1	1	1	1	1	100%
5273	1	1	1	1	1	1	1	1	1	1	100%
5274	1	1	1	1	1	1	1	1	1	1	100%
5275	1	1	1	1	1	1	1	1	1	1	100%
5276	1	1	1	1	1	1	1	1	1	1	100%



80 MHz Signal Bandwidth											
EUT Frequency = 5290MHz											
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, Blank= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5277	1	1	1	1	1	1	1	1	1	1	100%
5278	1	1	1	1	1	1	1	1	1	1	100%
5279	1	1	1	1	1	1	1	1	1	1	100%
5280	1	1	1	1	1	1	1	1	1	1	100%
5281	1	1	1	1	1	1	1	1	1	1	100%
5282	1	1	1	1	1	1	1	1	1	1	100%
5283	1	1	1	1	1	1	1	1	1	1	100%
5284	1	1	1	1	1	1	1	1	1	1	100%
5285	1	1	1	1	1	1	1	1	1	1	100%
5286	1	1	1	1	1	1	1	1	1	1	100%
5287	1	1	1	1	1	1	1	1	1	1	100%
5288	1	1	1	1	1	1	1	1	1	1	100%
5289	1	1	1	1	1	1	1	1	1	1	100%
5290	1	1	1	1	1	1	1	1	1	1	100%
5291	1	1	1	1	1	1	1	1	1	1	100%
5292	1	1	1	1	1	1	1	1	1	1	100%
5293	1	1	1	1	1	1	1	1	1	1	100%
5294	1	1	1	1	1	1	1	1	1	1	100%
5295	1	1	1	1	1	1	1	1	1	1	100%
5296	1	1	1	1	1	1	1	1	1	1	100%
5297	1	1	1	1	1	1	1	1	1	1	100%
5298	1	1	1	1	1	1	1	1	1	1	100%
5299	1	1	1	1	1	1	1	1	1	1	100%
5300	1	1	1	1	1	1	1	1	1	1	100%
5301	1	1	1	1	1	1	1	1	1	1	100%
5302	1	1	1	1	1	1	1	1	1	1	100%
5303	1	1	1	1	1	1	1	1	1	1	100%
5304	1	1	1	1	1	1	1	1	1	1	100%
5305	1	1	1	1	1	1	1	1	1	1	100%
5306	1	1	1	1	1	1	1	1	1	1	100%



80 MHz Signal Bandwidth											
EUT Frequency = 5290MHz											
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, Blank= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5307	1	1	1	1	1	1	1	1	1	1	100%
5308	1	1	1	1	1	1	1	1	1	1	100%
5309	1	1	1	1	1	1	1	1	1	1	100%
5310	1	1	1	1	1	1	1	1	1	1	100%
5311	1	1	1	1	1	1	1	1	1	1	100%
5312	1	1	1	1	1	1	1	1	1	1	100%
5313	1	1	1	1	1	1	1	1	1	1	100%
5314	1	1	1	1	1	1	1	1	1	1	100%
5315	1	1	1	1	1	1	1	1	1	1	100%
5316	1	1	1	1	1	1	1	1	1	1	100%
5317	1	1	1	1	1	1	1	1	1	1	100%
5318	1	1	1	1	1	1	1	1	1	1	100%
5319	1	1	1	1	1	1	1	1	1	1	100%
5320	1	1	1	1	1	1	1	1	1	1	100%
5321	1	1	1	1	1	1	1	1	1	1	100%
5322	1	1	1	1	1	1	1	1	1	1	100%
5323	1	1	1	1	1	1	1	1	1	1	100%
5324	1	1	1	1	1	1	1	1	1	1	100%
5325	1	1	1	1	1	1	1	1	1	1	100%
5326	1	1	1	1	1	1	1	1	1	1	100%
5327	1	1	1	1	1	1	1	1	1	1	100%
5328	1	1	1	1	1	1	1	1	1	1	100%
5329(FH)	1	1	1	1	1	1	1	1	1	1	100%
80 MHz Detection Bandwidth = Fh - Fl = 5329MHz - 5251MHz = 78MHz											
EUT 99% Bandwidth = 76.03MHz											



80 MHz Signal Bandwidth											
EUT Frequency = 5530MHz											
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, Blank= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5491(FL)	1	1	1	1	1	1	1	1	1	1	100%
5492	1	1	1	1	1	1	1	1	1	1	100%
5493	1	1	1	1	1	1	1	1	1	1	100%
5494	1	1	1	1	1	1	1	1	1	1	100%
5495	1	1	1	1	1	1	1	1	1	1	100%
5496	1	1	1	1	1	1	1	1	1	1	100%
5497	1	1	1	1	1	1	1	1	1	1	100%
5498	1	1	1	1	1	1	1	1	1	1	100%
5499	1	1	1	1	1	1	1	1	1	1	100%
5500	1	1	1	1	1	1	1	1	1	1	100%
5501	1	1	1	1	1	1	1	1	1	1	100%
5502	1	1	1	1	1	1	1	1	1	1	100%
5503	1	1	1	1	1	1	1	1	1	1	100%
5504	1	1	1	1	1	1	1	1	1	1	100%
5505	1	1	1	1	1	1	1	1	1	1	100%
5506	1	1	1	1	1	1	1	1	1	1	100%
5507	1	1	1	1	1	1	1	1	1	1	100%
5508	1	1	1	1	1	1	1	1	1	1	100%
5509	1	1	1	1	1	1	1	1	1	1	100%
5510	1	1	1	1	1	1	1	1	1	1	100%
5511	1	1	1	1	1	1	1	1	1	1	100%
5512	1	1	1	1	1	1	1	1	1	1	100%
5513	1	1	1	1	1	1	1	1	1	1	100%
5514	1	1	1	1	1	1	1	1	1	1	100%
5515	1	1	1	1	1	1	1	1	1	1	100%
5516	1	1	1	1	1	1	1	1	1	1	100%



80 MHz Signal Bandwidth											
EUT Frequency = 5530MHz											
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, Blank= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5517	1	1	1	1	1	1	1	1	1	1	100%
5518	1	1	1	1	1	1	1	1	1	1	100%
5519	1	1	1	1	1	1	1	1	1	1	100%
5520	1	1	1	1	1	1	1	1	1	1	100%
5521	1	1	1	1	1	1	1	1	1	1	100%
5522	1	1	1	1	1	1	1	1	1	1	100%
5523	1	1	1	1	1	1	1	1	1	1	100%
5524	1	1	1	1	1	1	1	1	1	1	100%
5525	1	1	1	1	1	1	1	1	1	1	100%
5526	1	1	1	1	1	1	1	1	1	1	100%
5527	1	1	1	1	1	1	1	1	1	1	100%
5528	1	1	1	1	1	1	1	1	1	1	100%
5529	1	1	1	1	1	1	1	1	1	1	100%
5530	1	1	1	1	1	1	1	1	1	1	100%
5531	1	1	1	1	1	1	1	1	1	1	100%
5532	1	1	1	1	1	1	1	1	1	1	100%
5533	1	1	1	1	1	1	1	1	1	1	100%
5534	1	1	1	1	1	1	1	1	1	1	100%
5535	1	1	1	1	1	1	1	1	1	1	100%
5536	1	1	1	1	1	1	1	1	1	1	100%
5537	1	1	1	1	1	1	1	1	1	1	100%
5538	1	1	1	1	1	1	1	1	1	1	100%
5539	1	1	1	1	1	1	1	1	1	1	100%
5540	1	1	1	1	1	1	1	1	1	1	100%
5541	1	1	1	1	1	1	1	1	1	1	100%
5542	1	1	1	1	1	1	1	1	1	1	100%
5543	1	1	1	1	1	1	1	1	1	1	100%
5544	1	1	1	1	1	1	1	1	1	1	100%
5545	1	1	1	1	1	1	1	1	1	1	100%
5546	1	1	1	1	1	1	1	1	1	1	100%



80 MHz Signal Bandwidth											
EUT Frequency = 5290MHz											
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, Blank= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5547	1	1	1	1	1	1	1	1	1	1	100%
5548	1	1	1	1	1	1	1	1	1	1	100%
5549	1	1	1	1	1	1	1	1	1	1	100%
5550	1	1	1	1	1	1	1	1	1	1	100%
5551	1	1	1	1	1	1	1	1	1	1	100%
5552	1	1	1	1	1	1	1	1	1	1	100%
5553	1	1	1	1	1	1	1	1	1	1	100%
5554	1	1	1	1	1	1	1	1	1	1	100%
5555	1	1	1	1	1	1	1	1	1	1	100%
5556	1	1	1	1	1	1	1	1	1	1	100%
5557	1	1	1	1	1	1	1	1	1	1	100%
5558	1	1	1	1	1	1	1	1	1	1	100%
5559	1	1	1	1	1	1	1	1	1	1	100%
5560	1	1	1	1	1	1	1	1	1	1	100%
5561	1	1	1	1	1	1	1	1	1	1	100%
5562	1	1	1	1	1	1	1	1	1	1	100%
5563	1	1	1	1	1	1	1	1	1	1	100%
5564	1	1	1	1	1	1	1	1	1	1	100%
5565	1	1	1	1	1	1	1	1	1	1	100%
5566	1	1	1	1	1	1	1	1	1	1	100%
5567	1	1	1	1	1	1	1	1	1	1	100%
5568	1	1	1	1	1	1	1	1	1	1	100%
5569(FH)	1	1	1	1	1	1	1	1	1	1	100%
80 MHz Detection Bandwidth = Fh - Fl = 5569MHz - 5492MHz = 77MHz											
EUT 99% Bandwidth = 76.622MHz											



13.9. Statistical Performance Check

Additional requirements for devices with multiple bandwidth modes	Master or Client with radar detection	Client without radar detection
Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.		

**13.9.1. Test Result (For 802.11ac VHT20, Band 2)**

Type 1 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	1	938	57	53466	1
2	1	698	76	53048	1
3	1	618	86	53148	1
4	1	538	99	53262	1
5	1	878	61	53558	1
6	1	3066	18	55188	1
7	1	638	83	52954	1
8	1	918	58	53244	1
9	1	838	63	52794	1
10	1	858	62	53196	1
11	1	798	67	53466	1
12	1	718	74	53132	1
13	1	578	92	53176	1
14	1	598	89	53222	1
15	1	558	95	53010	1
16	1	2536	21	53256	1
17	1	966	55	53130	1
18	1	827	64	52928	1
19	1	2501	22	55022	1
20	1	2595	21	54495	1
21	1	1114	48	53472	1
22	1	1302	41	53382	1
23	1	3045	18	54810	1
24	1	1624	33	53592	1
25	1	2878	19	54682	1
26	1	1027	52	53404	1
27	1	2485	22	54670	1
28	1	1600	33	52800	1
29	1	1172	46	53912	1
30	1	1177	45	52965	1
Detection Percentage				Limit >60%	100%



Type 2 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	3.2	179	26	4654	1
2	1.1	207	23	4761	1
3	2.1	230	24	5520	1
4	4.8	200	29	5800	1
5	3.9	214	28	5992	1
6	2.9	222	26	5772	1
7	3.2	204	26	5304	1
8	2.5	192	25	4800	1
9	3.1	164	26	4264	1
10	1.2	156	23	3588	1
11	3.9	210	27	5670	1
12	4.6	201	29	5829	1
13	3.2	162	26	4212	1
14	2.2	197	25	4925	1
15	4.5	163	29	4727	1
16	3	203	26	5278	1
17	5	168	29	4872	1
18	2.4	217	25	5425	1
19	2.9	191	26	4966	1
20	2.3	166	25	4150	1
21	3.7	150	27	4050	1
22	2.2	176	25	4400	1
23	4.9	195	29	5655	1
24	2.9	202	26	5252	1
25	2.5	178	25	4450	1
26	1.1	206	23	4738	1
27	3.8	155	27	4185	1
28	4.7	157	29	4553	1
29	2.4	224	25	5600	1
30	4.2	159	28	4452	1
Detection Percentage				Limit >60%	100%



Type 3 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	8.2	355	17	6035	1
2	6.1	487	16	7792	1
3	7.1	344	16	5504	1
4	9.8	288	18	5184	1
5	8.9	230	18	4140	1
6	7.9	432	17	7344	1
7	8.2	207	17	3519	1
8	7.5	443	17	7531	1
9	8.1	439	17	7463	1
10	6.2	223	16	3568	1
11	8.9	208	18	3744	1
12	9.6	463	18	8334	1
13	8.2	441	17	7497	1
14	7.2	323	16	5168	1
15	9.5	297	18	5346	1
16	8	412	17	7004	1
17	10	324	18	5832	1
18	7.4	271	17	4607	1
19	7.9	349	17	5933	1
20	7.3	409	16	6544	1
21	8.7	373	18	6714	1
22	7.2	254	16	4064	1
23	9.9	274	18	4932	1
24	7.9	278	17	4726	1
25	7.5	317	17	5389	1
26	6.1	260	16	4160	1
27	8.8	211	18	3798	1
28	9.7	272	18	4896	1
29	7.4	264	17	4488	1
30	9.2	284	18	5112	1
Detection Percentage				Limit >60%	100%



Type 4 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	16	355	14	4970	1
2	11.3	487	12	5844	1
3	13.5	344	13	4472	1
4	19.4	288	16	4608	1
5	17.5	230	15	3450	1
6	15.3	432	14	6048	1
7	15.9	207	14	2898	1
8	14.3	443	13	5759	1
9	15.8	439	14	6146	1
10	11.5	223	12	2676	1
11	17.4	208	15	3120	1
12	19	463	16	7408	1
13	16	441	14	6174	1
14	13.8	323	13	4199	1
15	18.9	297	16	4752	1
16	15.5	412	14	5768	1
17	19.9	324	16	5184	1
18	14.1	271	13	3523	1
19	15.2	349	14	4886	1
20	13.8	409	13	5317	1
21	17.1	373	15	5595	1
22	13.8	254	13	3302	1
23	19.8	274	16	4384	1
24	15.3	278	14	3892	1
25	14.5	317	13	4121	1
26	11.3	260	12	3120	1
27	17.3	211	15	3165	1
28	19.2	272	16	4352	1
29	14.2	264	13	3432	1
30	18.2	284	15	4260	1
Detection Percentage				Limit >60%	100%

In addition an average minimum percentage of successful detection across all four

Short pulse radar test waveforms is as follows: $\frac{P_d1 + P_d2 + P_d3 + P_d4}{4} =$

$(100\% + 100\% + 100\% + 100\%) / 4 = 100\%$ (>80%)



Type 5 Radar Statistical Performance		
Trial Number	1=Detection Blank=No Detection	
1	1	
2	1	
3	1	
4	1	
5	1	
6	1	
7	1	
8	1	
9	1	
10	1	
11	0	
12	0	
13	1	
14	1	
15	0	
16	1	
17	0	
18	1	
19	1	
20	1	
21	1	
22	1	
23	1	
24	1	
25	1	
26	1	
27	1	
28	1	
29	1	
30	1	
Detection Percentage	Limit >80%	87%

See the type 5 Radar Characteristics at the Section 13.8.7 of this report



Type 6 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRF (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	1	333.335	9	0.3333	1
2	1	333.335	9	0.3333	1
3	1	333.335	9	0.3333	1
4	1	333.335	9	0.3333	1
5	1	333.335	9	0.3333	1
6	1	333.335	9	0.3333	1
7	1	333.335	9	0.3333	1
8	1	333.335	9	0.3333	1
9	1	333.335	9	0.3333	1
10	1	333.335	9	0.3333	1
11	1	333.335	9	0.3333	1
12	1	333.335	9	0.3333	1
13	1	333.335	9	0.3333	1
14	1	333.335	9	0.3333	1
15	1	333.335	9	0.3333	1
16	1	333.335	9	0.3333	1
17	1	333.335	9	0.3333	1
18	1	333.335	9	0.3333	1
19	1	333.335	9	0.3333	1
20	1	333.335	9	0.3333	1
21	1	333.335	9	0.3333	1
22	1	333.335	9	0.3333	1
23	1	333.335	9	0.3333	1
24	1	333.335	9	0.3333	1
25	1	333.335	9	0.3333	1
26	1	333.335	9	0.3333	1
27	1	333.335	9	0.3333	1
28	1	333.335	9	0.3333	1
29	1	333.335	9	0.3333	1
30	1	333.335	9	0.3333	1
Detection Percentage				Limit >70%	100%



13.9.2. Test Result (For 802.11ac VHT20, Band 3)

Type 1 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	1	938	57	53466	1
2	1	698	76	53048	1
3	1	618	86	53148	1
4	1	538	99	53262	1
5	1	878	61	53558	1
6	1	3066	18	55188	1
7	1	638	83	52954	1
8	1	918	58	53244	1
9	1	838	63	52794	1
10	1	858	62	53196	1
11	1	798	67	53466	1
12	1	718	74	53132	1
13	1	578	92	53176	1
14	1	598	89	53222	1
15	1	558	95	53010	1
16	1	2536	21	53256	1
17	1	966	55	53130	1
18	1	827	64	52928	1
19	1	2501	22	55022	1
20	1	2595	21	54495	1
21	1	1114	48	53472	1
22	1	1302	41	53382	1
23	1	3045	18	54810	1
24	1	1624	33	53592	1
25	1	2878	19	54682	1
26	1	1027	52	53404	1
27	1	2485	22	54670	1
28	1	1600	33	52800	1
29	1	1172	46	53912	1
30	1	1177	45	52965	1
Detection Percentage				Limit >60%	100%



Type 2 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRF (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	3.2	179	26	4654	1
2	1.1	207	23	4761	1
3	2.1	230	24	5520	1
4	4.8	200	29	5800	1
5	3.9	214	28	5992	1
6	2.9	222	26	5772	1
7	3.2	204	26	5304	1
8	2.5	192	25	4800	1
9	3.1	164	26	4264	1
10	1.2	156	23	3588	1
11	3.9	210	27	5670	1
12	4.6	201	29	5829	1
13	3.2	162	26	4212	1
14	2.2	197	25	4925	1
15	4.5	163	29	4727	1
16	3	203	26	5278	1
17	5	168	29	4872	1
18	2.4	217	25	5425	1
19	2.9	191	26	4966	1
20	2.3	166	25	4150	1
21	3.7	150	27	4050	1
22	2.2	176	25	4400	1
23	4.9	195	29	5655	1
24	2.9	202	26	5252	1
25	2.5	178	25	4450	1
26	1.1	206	23	4738	1
27	3.8	155	27	4185	1
28	4.7	157	29	4553	1
29	2.4	224	25	5600	1
30	4.2	159	28	4452	1
Detection Percentage				Limit >60%	100%



Type 3 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	8.2	355	17	6035	1
2	6.1	487	16	7792	1
3	7.1	344	16	5504	1
4	9.8	288	18	5184	1
5	8.9	230	18	4140	1
6	7.9	432	17	7344	1
7	8.2	207	17	3519	1
8	7.5	443	17	7531	1
9	8.1	439	17	7463	1
10	6.2	223	16	3568	1
11	8.9	208	18	3744	1
12	9.6	463	18	8334	1
13	8.2	441	17	7497	1
14	7.2	323	16	5168	1
15	9.5	297	18	5346	1
16	8	412	17	7004	1
17	10	324	18	5832	1
18	7.4	271	17	4607	1
19	7.9	349	17	5933	1
20	7.3	409	16	6544	1
21	8.7	373	18	6714	1
22	7.2	254	16	4064	1
23	9.9	274	18	4932	1
24	7.9	278	17	4726	1
25	7.5	317	17	5389	1
26	6.1	260	16	4160	1
27	8.8	211	18	3798	1
28	9.7	272	18	4896	1
29	7.4	264	17	4488	1
30	9.2	284	18	5112	1
Detection Percentage				Limit >60%	100%



Type 4 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	16	355	14	4970	1
2	11.3	487	12	5844	1
3	13.5	344	13	4472	1
4	19.4	288	16	4608	1
5	17.5	230	15	3450	1
6	15.3	432	14	6048	1
7	15.9	207	14	2898	1
8	14.3	443	13	5759	1
9	15.8	439	14	6146	1
10	11.5	223	12	2676	1
11	17.4	208	15	3120	1
12	19	463	16	7408	1
13	16	441	14	6174	1
14	13.8	323	13	4199	1
15	18.9	297	16	4752	1
16	15.5	412	14	5768	1
17	19.9	324	16	5184	1
18	14.1	271	13	3523	1
19	15.2	349	14	4886	1
20	13.8	409	13	5317	1
21	17.1	373	15	5595	1
22	13.8	254	13	3302	1
23	19.8	274	16	4384	1
24	15.3	278	14	3892	1
25	14.5	317	13	4121	1
26	11.3	260	12	3120	1
27	17.3	211	15	3165	1
28	19.2	272	16	4352	1
29	14.2	264	13	3432	1
30	18.2	284	15	4260	1
Detection Percentage				Limit >60%	100%

In addition an average minimum percentage of successful detection across all four

Short pulse radar test waveforms is as follows: $\frac{P_d1 + P_d2 + P_d3 + P_d4}{4} =$

$(100\% + 100\% + 100\% + 100\%) / 4 = 100\%$ (>80%)



Type 5 Radar Statistical Performance		
Trial Number	1=Detection Blank=No Detection	
1	1	
2	1	
3	1	
4	1	
5	1	
6	1	
7	1	
8	1	
9	1	
10	1	
11	1	
12	1	
13	1	
14	1	
15	1	
16	1	
17	1	
18	1	
19	1	
20	1	
21	1	
22	1	
23	1	
24	1	
25	1	
26	1	
27	1	
28	1	
29	1	
30	1	
Detection Percentage	Limit >80%	100%

See the type 5 Radar Characteristics at the Section 13.8.7 of this report



Type 6 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	1	333.335	9	0.3333	1
2	1	333.335	9	0.3333	1
3	1	333.335	9	0.3333	1
4	1	333.335	9	0.3333	1
5	1	333.335	9	0.3333	1
6	1	333.335	9	0.3333	1
7	1	333.335	9	0.3333	1
8	1	333.335	9	0.3333	1
9	1	333.335	9	0.3333	1
10	1	333.335	9	0.3333	1
11	1	333.335	9	0.3333	1
12	1	333.335	9	0.3333	1
13	1	333.335	9	0.3333	1
14	1	333.335	9	0.3333	1
15	1	333.335	9	0.3333	1
16	1	333.335	9	0.3333	1
17	1	333.335	9	0.3333	1
18	1	333.335	9	0.3333	1
19	1	333.335	9	0.3333	1
20	1	333.335	9	0.3333	1
21	1	333.335	9	0.3333	1
22	1	333.335	9	0.3333	1
23	1	333.335	9	0.3333	1
24	1	333.335	9	0.3333	1
25	1	333.335	9	0.3333	1
26	1	333.335	9	0.3333	1
27	1	333.335	9	0.3333	1
28	1	333.335	9	0.3333	1
29	1	333.335	9	0.3333	1
30	1	333.335	9	0.3333	1
Detection Percentage				Limit >70%	100%



13.9.3. Test Result (For 802.11ac VHT40, Band 2)

Type 1 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	1	938	57	53466	1
2	1	698	76	53048	1
3	1	618	86	53148	1
4	1	538	99	53262	1
5	1	878	61	53558	1
6	1	3066	18	55188	1
7	1	638	83	52954	1
8	1	918	58	53244	1
9	1	838	63	52794	1
10	1	858	62	53196	1
11	1	798	67	53466	1
12	1	718	74	53132	1
13	1	578	92	53176	1
14	1	598	89	53222	1
15	1	558	95	53010	1
16	1	2536	21	53256	1
17	1	966	55	53130	1
18	1	827	64	52928	1
19	1	2501	22	55022	1
20	1	2595	21	54495	1
21	1	1114	48	53472	1
22	1	1302	41	53382	1
23	1	3045	18	54810	1
24	1	1624	33	53592	1
25	1	2878	19	54682	1
26	1	1027	52	53404	1
27	1	2485	22	54670	1
28	1	1600	33	52800	1
29	1	1172	46	53912	1
30	1	1177	45	52965	1
Detection Percentage				Limit >60%	100%



Type 2 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRF (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	3.2	179	26	4654	1
2	1.1	207	23	4761	1
3	2.1	230	24	5520	1
4	4.8	200	29	5800	1
5	3.9	214	28	5992	1
6	2.9	222	26	5772	1
7	3.2	204	26	5304	1
8	2.5	192	25	4800	1
9	3.1	164	26	4264	1
10	1.2	156	23	3588	1
11	3.9	210	27	5670	1
12	4.6	201	29	5829	1
13	3.2	162	26	4212	1
14	2.2	197	25	4925	1
15	4.5	163	29	4727	1
16	3	203	26	5278	1
17	5	168	29	4872	1
18	2.4	217	25	5425	1
19	2.9	191	26	4966	1
20	2.3	166	25	4150	1
21	3.7	150	27	4050	1
22	2.2	176	25	4400	1
23	4.9	195	29	5655	1
24	2.9	202	26	5252	1
25	2.5	178	25	4450	1
26	1.1	206	23	4738	1
27	3.8	155	27	4185	1
28	4.7	157	29	4553	1
29	2.4	224	25	5600	1
30	4.2	159	28	4452	1
Detection Percentage				Limit >60%	100%



Type 3 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	8.2	355	17	6035	1
2	6.1	487	16	7792	1
3	7.1	344	16	5504	1
4	9.8	288	18	5184	1
5	8.9	230	18	4140	1
6	7.9	432	17	7344	1
7	8.2	207	17	3519	1
8	7.5	443	17	7531	1
9	8.1	439	17	7463	1
10	6.2	223	16	3568	1
11	8.9	208	18	3744	1
12	9.6	463	18	8334	1
13	8.2	441	17	7497	1
14	7.2	323	16	5168	1
15	9.5	297	18	5346	1
16	8	412	17	7004	1
17	10	324	18	5832	1
18	7.4	271	17	4607	1
19	7.9	349	17	5933	1
20	7.3	409	16	6544	1
21	8.7	373	18	6714	1
22	7.2	254	16	4064	1
23	9.9	274	18	4932	1
24	7.9	278	17	4726	1
25	7.5	317	17	5389	1
26	6.1	260	16	4160	1
27	8.8	211	18	3798	1
28	9.7	272	18	4896	1
29	7.4	264	17	4488	1
30	9.2	284	18	5112	1
Detection Percentage				Limit >60%	100%



Type 4 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	16	355	14	4970	1
2	11.3	487	12	5844	1
3	13.5	344	13	4472	1
4	19.4	288	16	4608	1
5	17.5	230	15	3450	1
6	15.3	432	14	6048	1
7	15.9	207	14	2898	1
8	14.3	443	13	5759	1
9	15.8	439	14	6146	1
10	11.5	223	12	2676	1
11	17.4	208	15	3120	1
12	19	463	16	7408	1
13	16	441	14	6174	1
14	13.8	323	13	4199	1
15	18.9	297	16	4752	1
16	15.5	412	14	5768	1
17	19.9	324	16	5184	1
18	14.1	271	13	3523	1
19	15.2	349	14	4886	1
20	13.8	409	13	5317	1
21	17.1	373	15	5595	1
22	13.8	254	13	3302	1
23	19.8	274	16	4384	1
24	15.3	278	14	3892	1
25	14.5	317	13	4121	1
26	11.3	260	12	3120	1
27	17.3	211	15	3165	1
28	19.2	272	16	4352	1
29	14.2	264	13	3432	1
30	18.2	284	15	4260	1
Detection Percentage				Limit >60%	100%

In addition an average minimum percentage of successful detection across all four

Short pulse radar test waveforms is as follows: $\frac{P_d1 + P_d2 + P_d3 + P_d4}{4} =$

$(100\% + 100\% + 100\% + 100\%) / 4 = 100\% (>80\%)$



Type 5 Radar Statistical Performance		
Trial Number	1=Detection Blank=No Detection	
1	1	
2	1	
3	1	
4	1	
5	1	
6	1	
7	1	
8	1	
9	1	
10	1	
11	1	
12	1	
13	1	
14	1	
15	1	
16	1	
17	1	
18	1	
19	1	
20	1	
21	1	
22	1	
23	1	
24	1	
25	1	
26	1	
27	1	
28	1	
29	1	
30	1	
Detection Percentage	Limit >80%	100%

See the type 5 Radar Characteristics at the Section 13.8.7 of this report



Type 6 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	1	333.335	9	0.3333	1
2	1	333.335	9	0.3333	1
3	1	333.335	9	0.3333	1
4	1	333.335	9	0.3333	1
5	1	333.335	9	0.3333	1
6	1	333.335	9	0.3333	1
7	1	333.335	9	0.3333	1
8	1	333.335	9	0.3333	1
9	1	333.335	9	0.3333	1
10	1	333.335	9	0.3333	1
11	1	333.335	9	0.3333	1
12	1	333.335	9	0.3333	1
13	1	333.335	9	0.3333	1
14	1	333.335	9	0.3333	1
15	1	333.335	9	0.3333	1
16	1	333.335	9	0.3333	1
17	1	333.335	9	0.3333	1
18	1	333.335	9	0.3333	1
19	1	333.335	9	0.3333	1
20	1	333.335	9	0.3333	1
21	1	333.335	9	0.3333	1
22	1	333.335	9	0.3333	1
23	1	333.335	9	0.3333	1
24	1	333.335	9	0.3333	1
25	1	333.335	9	0.3333	1
26	1	333.335	9	0.3333	1
27	1	333.335	9	0.3333	1
28	1	333.335	9	0.3333	1
29	1	333.335	9	0.3333	1
30	1	333.335	9	0.3333	1
Detection Percentage				Limit >70%	100%



13.9.4. Test Result (For 802.11ac VHT40, Band 3)

Type 1 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	1	938	57	53466	1
2	1	698	76	53048	1
3	1	618	86	53148	1
4	1	538	99	53262	1
5	1	878	61	53558	1
6	1	3066	18	55188	1
7	1	638	83	52954	1
8	1	918	58	53244	1
9	1	838	63	52794	1
10	1	858	62	53196	1
11	1	798	67	53466	1
12	1	718	74	53132	1
13	1	578	92	53176	1
14	1	598	89	53222	1
15	1	558	95	53010	1
16	1	2536	21	53256	1
17	1	966	55	53130	1
18	1	827	64	52928	1
19	1	2501	22	55022	1
20	1	2595	21	54495	1
21	1	1114	48	53472	1
22	1	1302	41	53382	1
23	1	3045	18	54810	1
24	1	1624	33	53592	1
25	1	2878	19	54682	1
26	1	1027	52	53404	1
27	1	2485	22	54670	1
28	1	1600	33	52800	1
29	1	1172	46	53912	1
30	1	1177	45	52965	1
Detection Percentage				Limit >60%	100%



Type 2 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	3.2	179	26	4654	1
2	1.1	207	23	4761	1
3	2.1	230	24	5520	1
4	4.8	200	29	5800	1
5	3.9	214	28	5992	1
6	2.9	222	26	5772	1
7	3.2	204	26	5304	1
8	2.5	192	25	4800	1
9	3.1	164	26	4264	1
10	1.2	156	23	3588	1
11	3.9	210	27	5670	1
12	4.6	201	29	5829	1
13	3.2	162	26	4212	1
14	2.2	197	25	4925	1
15	4.5	163	29	4727	1
16	3	203	26	5278	1
17	5	168	29	4872	1
18	2.4	217	25	5425	1
19	2.9	191	26	4966	1
20	2.3	166	25	4150	1
21	3.7	150	27	4050	1
22	2.2	176	25	4400	1
23	4.9	195	29	5655	1
24	2.9	202	26	5252	1
25	2.5	178	25	4450	1
26	1.1	206	23	4738	1
27	3.8	155	27	4185	1
28	4.7	157	29	4553	1
29	2.4	224	25	5600	1
30	4.2	159	28	4452	1
Detection Percentage				Limit >60%	100%



Type 3 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	8.2	355	17	6035	1
2	6.1	487	16	7792	1
3	7.1	344	16	5504	1
4	9.8	288	18	5184	1
5	8.9	230	18	4140	1
6	7.9	432	17	7344	1
7	8.2	207	17	3519	1
8	7.5	443	17	7531	1
9	8.1	439	17	7463	1
10	6.2	223	16	3568	1
11	8.9	208	18	3744	1
12	9.6	463	18	8334	1
13	8.2	441	17	7497	1
14	7.2	323	16	5168	1
15	9.5	297	18	5346	1
16	8	412	17	7004	1
17	10	324	18	5832	1
18	7.4	271	17	4607	1
19	7.9	349	17	5933	1
20	7.3	409	16	6544	1
21	8.7	373	18	6714	1
22	7.2	254	16	4064	1
23	9.9	274	18	4932	1
24	7.9	278	17	4726	1
25	7.5	317	17	5389	1
26	6.1	260	16	4160	1
27	8.8	211	18	3798	1
28	9.7	272	18	4896	1
29	7.4	264	17	4488	1
30	9.2	284	18	5112	1
Detection Percentage				Limit >60%	100%



Type 4 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRF (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	16	355	14	4970	1
2	11.3	487	12	5844	1
3	13.5	344	13	4472	1
4	19.4	288	16	4608	1
5	17.5	230	15	3450	1
6	15.3	432	14	6048	1
7	15.9	207	14	2898	1
8	14.3	443	13	5759	1
9	15.8	439	14	6146	1
10	11.5	223	12	2676	1
11	17.4	208	15	3120	1
12	19	463	16	7408	1
13	16	441	14	6174	1
14	13.8	323	13	4199	1
15	18.9	297	16	4752	1
16	15.5	412	14	5768	1
17	19.9	324	16	5184	1
18	14.1	271	13	3523	1
19	15.2	349	14	4886	1
20	13.8	409	13	5317	1
21	17.1	373	15	5595	1
22	13.8	254	13	3302	1
23	19.8	274	16	4384	1
24	15.3	278	14	3892	1
25	14.5	317	13	4121	1
26	11.3	260	12	3120	1
27	17.3	211	15	3165	1
28	19.2	272	16	4352	1
29	14.2	264	13	3432	1
30	18.2	284	15	4260	1
Detection Percentage				Limit >60%	100%

In addition an average minimum percentage of successful detection across all four

Short pulse radar test waveforms is as follows: $\frac{P_d1 + P_d2 + P_d3 + P_d4}{4} =$

$(100\% + 100\% + 100\% + 100\%) / 4 = 100\%$ (>80%)



Type 5 Radar Statistical Performance		
Trial Number	1=Detection Blank=No Detection	
1	1	
2	1	
3	1	
4	1	
5	1	
6	1	
7	1	
8	1	
9	1	
10	1	
11	1	
12	1	
13	1	
14	1	
15	1	
16	1	
17	1	
18	1	
19	1	
20	1	
21	1	
22	1	
23	1	
24	1	
25	1	
26	1	
27	1	
28	1	
29	1	
30	1	
Detection Percentage	Limit >80%	100%

See the type 5 Radar Characteristics at the Section 13.8.7 of this report



Type 6 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	1	333.335	9	0.3333	1
2	1	333.335	9	0.3333	1
3	1	333.335	9	0.3333	1
4	1	333.335	9	0.3333	1
5	1	333.335	9	0.3333	1
6	1	333.335	9	0.3333	1
7	1	333.335	9	0.3333	1
8	1	333.335	9	0.3333	1
9	1	333.335	9	0.3333	1
10	1	333.335	9	0.3333	1
11	1	333.335	9	0.3333	1
12	1	333.335	9	0.3333	1
13	1	333.335	9	0.3333	1
14	1	333.335	9	0.3333	1
15	1	333.335	9	0.3333	1
16	1	333.335	9	0.3333	1
17	1	333.335	9	0.3333	1
18	1	333.335	9	0.3333	1
19	1	333.335	9	0.3333	1
20	1	333.335	9	0.3333	1
21	1	333.335	9	0.3333	1
22	1	333.335	9	0.3333	1
23	1	333.335	9	0.3333	1
24	1	333.335	9	0.3333	1
25	1	333.335	9	0.3333	1
26	1	333.335	9	0.3333	1
27	1	333.335	9	0.3333	1
28	1	333.335	9	0.3333	1
29	1	333.335	9	0.3333	1
30	1	333.335	9	0.3333	1
Detection Percentage				Limit >70%	100%



13.9.5. Test Result (For 802.11ac VHT80, Band 2)

Type 1 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	1	938	57	53466	1
2	1	698	76	53048	1
3	1	618	86	53148	1
4	1	538	99	53262	1
5	1	878	61	53558	1
6	1	3066	18	55188	1
7	1	638	83	52954	1
8	1	918	58	53244	1
9	1	838	63	52794	1
10	1	858	62	53196	1
11	1	798	67	53466	1
12	1	718	74	53132	1
13	1	578	92	53176	1
14	1	598	89	53222	1
15	1	558	95	53010	1
16	1	2536	21	53256	1
17	1	966	55	53130	1
18	1	827	64	52928	1
19	1	2501	22	55022	1
20	1	2595	21	54495	1
21	1	1114	48	53472	1
22	1	1302	41	53382	1
23	1	3045	18	54810	1
24	1	1624	33	53592	1
25	1	2878	19	54682	1
26	1	1027	52	53404	1
27	1	2485	22	54670	1
28	1	1600	33	52800	1
29	1	1172	46	53912	1
30	1	1177	45	52965	1
Detection Percentage				Limit >60%	100%



Type 2 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRF (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	3.2	179	26	4654	1
2	1.1	207	23	4761	1
3	2.1	230	24	5520	1
4	4.8	200	29	5800	1
5	3.9	214	28	5992	1
6	2.9	222	26	5772	1
7	3.2	204	26	5304	1
8	2.5	192	25	4800	1
9	3.1	164	26	4264	1
10	1.2	156	23	3588	1
11	3.9	210	27	5670	1
12	4.6	201	29	5829	1
13	3.2	162	26	4212	1
14	2.2	197	25	4925	1
15	4.5	163	29	4727	1
16	3	203	26	5278	1
17	5	168	29	4872	1
18	2.4	217	25	5425	1
19	2.9	191	26	4966	1
20	2.3	166	25	4150	1
21	3.7	150	27	4050	1
22	2.2	176	25	4400	1
23	4.9	195	29	5655	1
24	2.9	202	26	5252	1
25	2.5	178	25	4450	1
26	1.1	206	23	4738	1
27	3.8	155	27	4185	1
28	4.7	157	29	4553	1
29	2.4	224	25	5600	1
30	4.2	159	28	4452	1
Detection Percentage				Limit >60%	100%



Type 3 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	8.2	355	17	6035	1
2	6.1	487	16	7792	1
3	7.1	344	16	5504	1
4	9.8	288	18	5184	1
5	8.9	230	18	4140	1
6	7.9	432	17	7344	1
7	8.2	207	17	3519	1
8	7.5	443	17	7531	1
9	8.1	439	17	7463	1
10	6.2	223	16	3568	1
11	8.9	208	18	3744	1
12	9.6	463	18	8334	1
13	8.2	441	17	7497	1
14	7.2	323	16	5168	1
15	9.5	297	18	5346	1
16	8	412	17	7004	1
17	10	324	18	5832	1
18	7.4	271	17	4607	1
19	7.9	349	17	5933	1
20	7.3	409	16	6544	1
21	8.7	373	18	6714	1
22	7.2	254	16	4064	1
23	9.9	274	18	4932	1
24	7.9	278	17	4726	1
25	7.5	317	17	5389	1
26	6.1	260	16	4160	1
27	8.8	211	18	3798	1
28	9.7	272	18	4896	1
29	7.4	264	17	4488	1
30	9.2	284	18	5112	1
Detection Percentage				Limit >60%	100%



Type 4 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	16	355	14	4970	1
2	11.3	487	12	5844	1
3	13.5	344	13	4472	1
4	19.4	288	16	4608	1
5	17.5	230	15	3450	1
6	15.3	432	14	6048	1
7	15.9	207	14	2898	1
8	14.3	443	13	5759	1
9	15.8	439	14	6146	1
10	11.5	223	12	2676	1
11	17.4	208	15	3120	1
12	19	463	16	7408	1
13	16	441	14	6174	1
14	13.8	323	13	4199	1
15	18.9	297	16	4752	1
16	15.5	412	14	5768	1
17	19.9	324	16	5184	1
18	14.1	271	13	3523	1
19	15.2	349	14	4886	1
20	13.8	409	13	5317	1
21	17.1	373	15	5595	1
22	13.8	254	13	3302	1
23	19.8	274	16	4384	1
24	15.3	278	14	3892	1
25	14.5	317	13	4121	1
26	11.3	260	12	3120	1
27	17.3	211	15	3165	1
28	19.2	272	16	4352	1
29	14.2	264	13	3432	1
30	18.2	284	15	4260	1
Detection Percentage				Limit >60%	100%

In addition an average minimum percentage of successful detection across all four

Short pulse radar test waveforms is as follows: $\frac{P_d1 + P_d2 + P_d3 + P_d4}{4} =$

$(100\% + 100\% + 100\% + 100\%) / 4 = 100\% (>80\%)$



Type 5 Radar Statistical Performance		
Trial Number	1=Detection Blank=No Detection	
1	1	
2	1	
3	1	
4	1	
5	1	
6	1	
7	1	
8	1	
9	1	
10	1	
11	1	
12	1	
13	1	
14	1	
15	1	
16	1	
17	1	
18	1	
19	1	
20	1	
21	1	
22	1	
23	1	
24	1	
25	1	
26	1	
27	1	
28	1	
29	1	
30	1	
Detection Percentage	Limit >80%	100%

See the type 5 Radar Characteristics at the Section 13.8.7 of this report



Type 6 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	1	333.335	9	0.3333	1
2	1	333.335	9	0.3333	1
3	1	333.335	9	0.3333	1
4	1	333.335	9	0.3333	1
5	1	333.335	9	0.3333	1
6	1	333.335	9	0.3333	1
7	1	333.335	9	0.3333	1
8	1	333.335	9	0.3333	1
9	1	333.335	9	0.3333	1
10	1	333.335	9	0.3333	1
11	1	333.335	9	0.3333	1
12	1	333.335	9	0.3333	1
13	1	333.335	9	0.3333	1
14	1	333.335	9	0.3333	1
15	1	333.335	9	0.3333	1
16	1	333.335	9	0.3333	1
17	1	333.335	9	0.3333	1
18	1	333.335	9	0.3333	1
19	1	333.335	9	0.3333	1
20	1	333.335	9	0.3333	1
21	1	333.335	9	0.3333	1
22	1	333.335	9	0.3333	1
23	1	333.335	9	0.3333	1
24	1	333.335	9	0.3333	1
25	1	333.335	9	0.3333	1
26	1	333.335	9	0.3333	1
27	1	333.335	9	0.3333	1
28	1	333.335	9	0.3333	1
29	1	333.335	9	0.3333	1
30	1	333.335	9	0.3333	1
Detection Percentage				Limit >70%	100%



13.9.6. Test Result (For 802.11ac VHT80, Band 3)

Type 1 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	1	938	57	53466	1
2	1	698	76	53048	1
3	1	618	86	53148	1
4	1	538	99	53262	1
5	1	878	61	53558	1
6	1	3066	18	55188	1
7	1	638	83	52954	1
8	1	918	58	53244	1
9	1	838	63	52794	1
10	1	858	62	53196	1
11	1	798	67	53466	1
12	1	718	74	53132	1
13	1	578	92	53176	1
14	1	598	89	53222	1
15	1	558	95	53010	1
16	1	2536	21	53256	1
17	1	966	55	53130	1
18	1	827	64	52928	1
19	1	2501	22	55022	1
20	1	2595	21	54495	1
21	1	1114	48	53472	1
22	1	1302	41	53382	1
23	1	3045	18	54810	1
24	1	1624	33	53592	1
25	1	2878	19	54682	1
26	1	1027	52	53404	1
27	1	2485	22	54670	1
28	1	1600	33	52800	1
29	1	1172	46	53912	1
30	1	1177	45	52965	1
Detection Percentage				Limit >60%	100%



Type 2 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRF (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	3.2	179	26	4654	1
2	1.1	207	23	4761	1
3	2.1	230	24	5520	1
4	4.8	200	29	5800	1
5	3.9	214	28	5992	1
6	2.9	222	26	5772	1
7	3.2	204	26	5304	1
8	2.5	192	25	4800	1
9	3.1	164	26	4264	1
10	1.2	156	23	3588	1
11	3.9	210	27	5670	1
12	4.6	201	29	5829	1
13	3.2	162	26	4212	1
14	2.2	197	25	4925	1
15	4.5	163	29	4727	1
16	3	203	26	5278	1
17	5	168	29	4872	1
18	2.4	217	25	5425	1
19	2.9	191	26	4966	1
20	2.3	166	25	4150	1
21	3.7	150	27	4050	1
22	2.2	176	25	4400	1
23	4.9	195	29	5655	1
24	2.9	202	26	5252	1
25	2.5	178	25	4450	1
26	1.1	206	23	4738	1
27	3.8	155	27	4185	1
28	4.7	157	29	4553	1
29	2.4	224	25	5600	1
30	4.2	159	28	4452	1
Detection Percentage				Limit >60%	100%



Type 3 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	8.2	355	17	6035	1
2	6.1	487	16	7792	1
3	7.1	344	16	5504	1
4	9.8	288	18	5184	1
5	8.9	230	18	4140	1
6	7.9	432	17	7344	1
7	8.2	207	17	3519	1
8	7.5	443	17	7531	1
9	8.1	439	17	7463	1
10	6.2	223	16	3568	1
11	8.9	208	18	3744	1
12	9.6	463	18	8334	1
13	8.2	441	17	7497	1
14	7.2	323	16	5168	1
15	9.5	297	18	5346	1
16	8	412	17	7004	1
17	10	324	18	5832	1
18	7.4	271	17	4607	1
19	7.9	349	17	5933	1
20	7.3	409	16	6544	1
21	8.7	373	18	6714	1
22	7.2	254	16	4064	1
23	9.9	274	18	4932	1
24	7.9	278	17	4726	1
25	7.5	317	17	5389	1
26	6.1	260	16	4160	1
27	8.8	211	18	3798	1
28	9.7	272	18	4896	1
29	7.4	264	17	4488	1
30	9.2	284	18	5112	1
Detection Percentage				Limit >60%	100%



Type 4 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRI (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	16	355	14	4970	1
2	11.3	487	12	5844	1
3	13.5	344	13	4472	1
4	19.4	288	16	4608	1
5	17.5	230	15	3450	1
6	15.3	432	14	6048	1
7	15.9	207	14	2898	1
8	14.3	443	13	5759	1
9	15.8	439	14	6146	1
10	11.5	223	12	2676	1
11	17.4	208	15	3120	1
12	19	463	16	7408	1
13	16	441	14	6174	1
14	13.8	323	13	4199	1
15	18.9	297	16	4752	1
16	15.5	412	14	5768	1
17	19.9	324	16	5184	1
18	14.1	271	13	3523	1
19	15.2	349	14	4886	1
20	13.8	409	13	5317	1
21	17.1	373	15	5595	1
22	13.8	254	13	3302	1
23	19.8	274	16	4384	1
24	15.3	278	14	3892	1
25	14.5	317	13	4121	1
26	11.3	260	12	3120	1
27	17.3	211	15	3165	1
28	19.2	272	16	4352	1
29	14.2	264	13	3432	1
30	18.2	284	15	4260	1
Detection Percentage				Limit >60%	100%

In addition an average minimum percentage of successful detection across all four

Short pulse radar test waveforms is as follows: $\frac{P_d1 + P_d2 + P_d3 + P_d4}{4} =$

$(100\% + 100\% + 100\% + 100\%) / 4 = 100\% (>80\%)$



Type 5 Radar Statistical Performance		
Trial Number	1=Detection Blank=No Detection	
1	1	
2	1	
3	1	
4	1	
5	1	
6	1	
7	1	
8	1	
9	1	
10	1	
11	1	
12	1	
13	1	
14	1	
15	1	
16	1	
17	1	
18	1	
19	1	
20	1	
21	1	
22	1	
23	1	
24	1	
25	1	
26	1	
27	1	
28	1	
29	1	
30	1	
Detection Percentage	Limit >80%	100%

See the type 5 Radar Characteristics at the Section 13.8.7 of this report



Type 6 Radar Statistical Performance					
Trial Number	Pulse Width (us)	PRF (us)	Number of Pulses	Waveform Length(us)	1=Detection Blank=No Detection
1	1	333.335	9	0.3333	1
2	1	333.335	9	0.3333	1
3	1	333.335	9	0.3333	1
4	1	333.335	9	0.3333	1
5	1	333.335	9	0.3333	1
6	1	333.335	9	0.3333	1
7	1	333.335	9	0.3333	1
8	1	333.335	9	0.3333	1
9	1	333.335	9	0.3333	1
10	1	333.335	9	0.3333	1
11	1	333.335	9	0.3333	1
12	1	333.335	9	0.3333	1
13	1	333.335	9	0.3333	1
14	1	333.335	9	0.3333	1
15	1	333.335	9	0.3333	1
16	1	333.335	9	0.3333	1
17	1	333.335	9	0.3333	1
18	1	333.335	9	0.3333	1
19	1	333.335	9	0.3333	1
20	1	333.335	9	0.3333	1
21	1	333.335	9	0.3333	1
22	1	333.335	9	0.3333	1
23	1	333.335	9	0.3333	1
24	1	333.335	9	0.3333	1
25	1	333.335	9	0.3333	1
26	1	333.335	9	0.3333	1
27	1	333.335	9	0.3333	1
28	1	333.335	9	0.3333	1
29	1	333.335	9	0.3333	1
30	1	333.335	9	0.3333	1
Detection Percentage				Limit >70%	100%



13.9.7. Test Result (Type 5 Radar Statistical Performance)

Trial Number 1							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	395530.0	68.4	13	2	1587.0	1114.0	-
2	588564.0	76.7	13	2	2000.0	1155.0	-
3	783794.0	53.2	13	1	1147.0	-	-
4	177933.0	85.7	13	3	1433.0	1695.0	1394.0
5	370624.0	94.3	13	3	1670.0	1426.0	1935.0
6	564893.0	77.6	13	2	1294.0	1671.0	-
7	759583.0	65.7	13	1	1512.0	-	-
8	154262.0	93.5	13	3	1444.0	1130.0	1468.0
9	395530.0	68.4	13	2	1587.0	1114.0	-
10	588564.0	76.7	13	2	2000.0	1155.0	-
11	783794.0	53.2	13	1	1147.0	-	-
12	177933.0	85.7	13	3	1433.0	1695.0	1394.0
13	370624.0	94.3	13	3	1670.0	1426.0	1935.0
14	564893.0	77.6	13	2	1294.0	1671.0	-
15	759583.0	65.7	13	1	1512.0	-	-



Trial Number 2							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	653020.0	75.0	5	2	1880.0	1527.0	-
2	1015643.0	99.4	5	3	1401.0	1262.0	1257.0
3	1379398.0	67.4	5	2	1531.0	1403.0	-
4	245489.0	73.6	5	2	1449.0	1041.0	-
5	609113.0	65.9	5	1	1432.0	-	-
6	970852.0	83.8	5	3	1356.0	1292.0	1419.0
7	1335913.0	65.5	5	1	1543.0	-	-
8	200406.0	98.6	5	3	1548.0	1796.0	1728.0



Trial Number 3							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	409565.0	73.8	9	2	1806.0	1538.0	-
2	673692.0	69.5	9	2	1117.0	1649.0	-
3	938562.0	51.9	9	1	1651.0	-	-
4	113209.0	84.6	9	3	1976.0	1032.0	1271.0
5	376726.0	95.4	9	3	1060.0	1903.0	1388.0
6	641212.0	68.0	9	2	1368.0	1351.0	-
7	903714.0	89.6	9	3	1338.0	1514.0	1573.0
8	80863.0	81.9	9	2	1022.0	1689.0	-
9	344067.0	88.3	9	3	1810.0	1330.0	1838.0
10	609331.0	53.7	9	1	1597.0	-	-
11	871542.0	91.3	9	3	1961.0	1106.0	1001.0



Trial Number 4							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	26541.0	68.1	19	2	1339.0	1355.0	-
2	171821.0	58.7	19	1	1251.0	-	-
3	316229.0	75.3	19	2	1136.0	1640.0	-
4	461864.0	56.4	19	1	1753.0	-	-
5	8677.0	99.7	19	3	1196.0	1708.0	1159.0
6	153995.0	57.7	19	1	1013.0	-	-
7	299238.0	59.5	19	1	1072.0	-	-
8	443177.0	80.0	19	2	1482.0	1369.0	-
9	587671.0	82.0	19	2	1993.0	1197.0	-
10	135674.0	82.8	19	2	1883.0	1005.0	-
11	279928.0	88.0	19	3	1061.0	1928.0	1101.0
12	424279.0	93.2	19	3	1207.0	1907.0	1223.0
13	570132.0	70.4	19	2	1526.0	1360.0	-
14	117439.0	95.3	19	3	1171.0	1955.0	1775.0
15	262502.0	81.9	19	2	1690.0	1545.0	-
16	406573.0	98.5	19	3	1975.0	1169.0	1062.0
17	553328.0	65.0	19	1	1767.0	-	-
18	99799.0	85.4	19	3	1011.0	1637.0	1425.0
19	244095.0	91.6	19	3	1878.0	1445.0	1325.0
20	390012.0	67.3	19	2	1091.0	1218.0	-



Trial Number 5							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	629614.0	67.9	16	2	1320.0	1133.0	-
2	96856.0	62.3	16	1	1957.0	-	-
3	267719.0	53.3	16	1	1592.0	-	-
4	436784.0	90.0	16	3	1900.0	1153.0	1346.0
5	608289.0	77.1	16	2	1166.0	1646.0	-
6	75610.0	83.9	16	3	1278.0	1232.0	1459.0
7	245638.0	89.1	16	3	1240.0	1384.0	1939.0
8	416355.0	81.8	16	2	1833.0	1676.0	-
9	588736.0	50.3	16	1	1075.0	-	-
10	54571.0	87.1	16	3	1116.0	1996.0	1756.0
11	225175.0	71.3	16	2	1225.0	1815.0	-
12	394825.0	97.5	16	3	1884.0	1465.0	1132.0
13	565361.0	90.6	16	3	1561.0	1040.0	1354.0
14	33643.0	86.3	16	3	1596.0	1183.0	1792.0
15	203957.0	97.6	16	3	1365.0	1073.0	1361.0
16	373812.0	84.7	16	3	1021.0	1718.0	1854.0
17	544060.0	99.7	16	3	1150.0	1244.0	1988.0



Trial Number 6							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	15438.0	92.9	12	3	1085.0	1564.0	1407.0
2	222486.0	67.7	12	2	1744.0	1747.0	-
3	430731.0	65.8	12	1	1092.0	-	-
4	637784.0	56.3	12	1	1851.0	-	-
5	845342.0	53.7	12	1	1727.0	-	-
6	196720.0	83.5	12	3	1679.0	1930.0	1025.0
7	404955.0	65.8	12	1	1519.0	-	-
8	610711.0	85.9	12	3	1134.0	1034.0	1808.0
9	818057.0	76.3	12	2	1606.0	1926.0	-
10	171459.0	81.5	12	2	1891.0	1714.0	-
11	377969.0	89.4	12	3	1310.0	1594.0	1827.0
12	586875.0	63.4	12	1	1568.0	-	-
13	792834.0	69.6	12	2	1307.0	1925.0	-
14	146044.0	74.5	12	2	1264.0	1846.0	-



Trial Number 7							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	329022.0	96.6	13	3	1182.0	1609.0	1581.0
2	521718.0	96.7	13	3	1829.0	1799.0	1154.0
3	714222.0	86.5	13	3	1923.0	1396.0	1865.0
4	112450.0	73.3	13	2	1908.0	1318.0	-
5	306283.0	55.8	13	1	1688.0	-	-
6	500239.0	55.4	13	1	1145.0	-	-
7	690932.0	85.3	13	3	1336.0	1504.0	1820.0
8	88645.0	79.4	13	2	1344.0	1893.0	-
9	282508.0	65.7	13	1	1476.0	-	-
10	475842.0	68.6	13	2	1008.0	1028.0	-
11	667887.0	77.7	13	2	1972.0	1835.0	-
12	64845.0	79.6	13	2	1882.0	1331.0	-
13	257755.0	94.9	13	3	1830.0	1070.0	1349.0
14	452335.0	61.4	13	1	1451.0	-	-
15	643395.0	90.6	13	3	1233.0	1562.0	1887.0



Trial Number 8							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	51446.0	52.6	10	1	1210.0	-	-
2	292696.0	84.1	10	3	1314.0	1725.0	1529.0
3	533989.0	97.7	10	3	1139.0	1868.0	1805.0
4	775564.0	97.3	10	3	1341.0	1446.0	1755.0
5	21542.0	98.8	10	3	1544.0	1386.0	1302.0
6	263385.0	72.2	10	2	1771.0	1184.0	-
7	505581.0	67.6	10	2	1175.0	1027.0	-
8	747058.0	75.7	10	2	1026.0	1871.0	-
9	989976.0	60.9	10	1	1798.0	-	-
10	234024.0	64.2	10	1	1138.0	-	-
11	475207.0	78.8	10	2	1784.0	1604.0	-
12	715825.0	87.5	10	3	1511.0	1712.0	1683.0



Trial Number 9							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	823112.0	54.1	13	1	1415.0	-	-
2	174965.0	50.7	13	1	1221.0	-	-
3	382216.0	52.3	13	1	1974.0	-	-
4	587395.0	99.8	13	3	1558.0	1696.0	1949.0
5	796897.0	68.4	13	2	1014.0	1099.0	-
6	149042.0	80.8	13	2	1736.0	1505.0	-
7	356750.0	62.5	13	1	1778.0	-	-
8	563824.0	74.8	13	2	1149.0	1204.0	-
9	772314.0	50.8	13	1	1049.0	-	-
10	123796.0	54.0	13	1	1417.0	-	-
11	331215.0	63.0	13	1	1730.0	-	-
12	537402.0	91.8	13	3	1143.0	1270.0	1347.0
13	744805.0	79.3	13	2	1274.0	1992.0	-
14	98172.0	64.3	13	1	1937.0	-	-



Trial Number 10							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	535615.0	63.4	6	1	1043.0	-	-
2	898668.0	52.0	6	1	1863.0	-	-
3	1259235.0	97.2	6	3	1973.0	1605.0	1583.0
4	127106.0	78.7	6	2	1466.0	1743.0	-
5	490358.0	74.2	6	2	1280.0	1219.0	-
6	852409.0	88.7	6	3	1293.0	1934.0	1273.0
7	1217152.0	54.3	6	1	1991.0	-	-
8	82296.0	95.4	6	3	1580.0	1555.0	1791.0



Trial Number 11							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	209249.0	73.7	16	2	1208.0	1497.0	-
2	378386.0	97.4	16	3	1942.0	1754.0	1613.0
3	548411.0	91.7	16	3	1999.0	1702.0	1462.0
4	17733.0	66.2	16	1	1393.0	-	-
5	187952.0	70.8	16	2	1968.0	1821.0	-
6	359277.0	52.3	16	1	1740.0	-	-
7	528886.0	78.9	16	2	1308.0	1984.0	-
8	700166.0	70.9	16	2	1050.0	1358.0	-
9	167197.0	75.6	16	2	1437.0	1430.0	-
10	338262.0	59.1	16	1	1697.0	-	-
11	508324.0	77.0	16	2	1397.0	1304.0	-
12	678689.0	67.9	16	2	1803.0	1083.0	-
13	146031.0	81.2	16	2	1720.0	1932.0	-
14	316923.0	78.7	16	2	1247.0	1121.0	-
15	488056.0	63.3	16	1	1634.0	-	-
16	657326.0	68.9	16	2	1849.0	1423.0	-
17	125509.0	59.3	16	1	1093.0	-	-



Trial Number 12							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	263736.0	98.9	19	3	1381.0	1680.0	1488.0
2	416459.0	82.3	19	2	1716.0	1855.0	-
3	567902.0	86.7	19	3	1211.0	1400.0	1919.0
4	92979.0	89.7	19	3	1861.0	1068.0	1282.0
5	245155.0	98.6	19	3	1507.0	1194.0	1461.0
6	397609.0	71.1	19	2	1921.0	1789.0	-
7	551431.0	55.9	19	1	1947.0	-	-
8	74413.0	67.9	19	2	1350.0	1372.0	-
9	226559.0	84.4	19	3	1203.0	1107.0	1443.0
10	380056.0	58.8	19	1	1715.0	-	-
11	533408.0	65.6	19	1	1017.0	-	-
12	55547.0	78.5	19	2	1911.0	1704.0	-
13	207876.0	82.3	19	2	1845.0	1686.0	-
14	359771.0	90.1	19	3	1938.0	1071.0	1266.0
15	511297.0	90.2	19	3	1989.0	1089.0	1950.0
16	36803.0	83.1	19	2	1943.0	1406.0	-
17	189652.0	58.8	19	1	1742.0	-	-
18	341809.0	77.0	19	2	1187.0	1657.0	-
19	495737.0	55.0	19	1	1012.0	-	-



Trial Number 13							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	22911.0	58.1	13	1	1929.0	-	-
2	216473.0	52.1	13	1	1910.0	-	-
3	410004.0	59.9	13	1	1971.0	-	-
4	603671.0	60.2	13	1	1812.0	-	-
5	794160.0	95.9	13	3	1399.0	1906.0	1608.0
6	192251.0	79.9	13	2	1626.0	1859.0	-
7	385590.0	78.5	13	2	1238.0	1917.0	-
8	579862.0	53.8	13	1	1763.0	-	-
9	773423.0	64.7	13	1	1800.0	-	-
10	168898.0	61.4	13	1	1390.0	-	-
11	361606.0	83.2	13	2	1692.0	1858.0	-
12	553866.0	84.7	13	3	1533.0	1677.0	1638.0
13	747241.0	88.7	13	3	1703.0	1528.0	1058.0
14	144710.0	78.3	13	2	1258.0	1951.0	-
15	337856.0	69.3	13	2	1731.0	1717.0	-



Trial Number 14							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	22911.0	58.1	13	1	1929.0	-	-
2	216473.0	52.1	13	1	1910.0	-	-
3	410004.0	59.9	13	1	1971.0	-	-
4	603671.0	60.2	13	1	1812.0	-	-
5	794160.0	95.9	13	3	1399.0	1906.0	1608.0
6	192251.0	79.9	13	2	1626.0	1859.0	-
7	385590.0	78.5	13	2	1238.0	1917.0	-
8	579862.0	53.8	13	1	1763.0	-	-
9	773423.0	64.7	13	1	1800.0	-	-
10	168898.0	61.4	13	1	1390.0	-	-
11	361606.0	83.2	13	2	1692.0	1858.0	-
12	553866.0	84.7	13	3	1533.0	1677.0	1638.0



Trial Number 15							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	361323.0	93.3	18	3	1983.0	1912.0	1535.0
2	515261.0	69.1	18	2	1102.0	1794.0	-
3	39025.0	86.9	18	3	1044.0	1152.0	1148.0
4	190900.0	84.9	18	3	1894.0	1948.0	1118.0
5	343941.0	72.3	18	2	1094.0	1916.0	-
6	497624.0	51.7	18	1	1447.0	-	-
7	20319.0	58.3	18	1	1429.0	-	-
8	172999.0	60.8	18	1	1979.0	-	-
9	325872.0	57.1	18	1	1641.0	-	-
10	475841.0	88.9	18	3	1886.0	1964.0	1489.0
11	1489.0	72.0	18	2	1909.0	1297.0	-
12	153647.0	90.9	18	3	1261.0	1566.0	1370.0
13	307096.0	59.8	18	1	1552.0	-	-
14	458804.0	70.0	18	2	1759.0	1291.0	-
15	610798.0	67.2	18	2	1625.0	1881.0	-
16	134759.0	91.2	18	3	1382.0	1832.0	1661.0
17	288306.0	56.5	18	1	1483.0	-	-
18	441296.0	51.2	18	1	1237.0	-	-
19	592780.0	74.1	18	2	1471.0	1245.0	-



Trial Number 16							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	158286.0	76.9	12	2	1110.0	1140.0	-
2	366024.0	50.2	12	1	1316.0	-	-
3	573452.0	62.9	12	1	1520.0	-	-
4	780619.0	64.7	12	1	1902.0	-	-
5	132455.0	83.8	12	3	1410.0	1097.0	1621.0
6	340207.0	65.4	12	1	1944.0	-	-
7	548208.0	53.2	12	1	1024.0	-	-
8	755333.0	51.7	12	1	1603.0	-	-
9	107117.0	78.7	12	2	1804.0	1168.0	-
10	314500.0	72.4	12	2	1030.0	1343.0	-
11	522447.0	53.8	12	1	1327.0	-	-
12	728517.0	73.6	12	2	1524.0	1553.0	-
13	81611.0	66.7	12	2	1722.0	1122.0	-
14	288948.0	82.5	12	2	1404.0	1019.0	-



Trial Number 17							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	345766.0	87.6	20	3	1565.0	1055.0	1840.0
2	490019.0	85.2	20	3	1735.0	1541.0	1408.0
3	39073.0	84.8	20	3	1534.0	1889.0	1463.0
4	183923.0	77.9	20	2	1749.0	1460.0	-
5	328777.0	76.5	20	2	1518.0	1485.0	-
6	474728.0	60.9	20	1	1540.0	-	-
7	21394.0	83.0	20	2	1080.0	1010.0	-
8	165992.0	80.4	20	2	1824.0	1752.0	-
9	310973.0	67.5	20	2	1764.0	1181.0	-
10	456884.0	62.1	20	1	1495.0	-	-
11	3515.0	86.4	20	3	1773.0	1966.0	1263.0
12	147928.0	84.3	20	3	1593.0	1188.0	1788.0
13	293225.0	76.9	20	2	1226.0	1537.0	-
14	436922.0	95.8	20	3	1192.0	1298.0	1844.0
15	584015.0	55.2	20	1	1644.0	-	-
16	130832.0	59.0	20	1	1402.0	-	-
17	274684.0	94.5	20	3	1296.0	1700.0	1283.0
18	418579.0	91.9	20	3	1970.0	1978.0	1165.0
19	563464.0	85.2	20	3	1732.0	1551.0	1189.0
20	112787.0	69.5	20	2	1038.0	1224.0	-



Trial Number 18							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	429224.0	86.4	10	3	1259.0	1918.0	1455.0
2	670241.0	92.2	10	3	1598.0	1719.0	1895.0
3	912880.0	80.4	10	2	1816.0	1899.0	-
4	158603.0	54.3	10	1	1335.0	-	-
5	400824.0	53.1	10	1	1303.0	-	-
6	641915.0	69.4	10	2	1503.0	1546.0	-
7	883823.0	69.1	10	2	1279.0	1639.0	-
8	128373.0	100.0	10	3	1375.0	1438.0	1595.0
9	370379.0	79.6	10	2	1239.0	1705.0	-
10	611194.0	88.4	10	3	1374.0	1579.0	1623.0
11	855665.0	53.3	10	1	1016.0	-	-
12	98897.0	65.3	10	1	1709.0	-	-



Trial Number 19							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	292143.0	55.3	12	1	1920.0	-	-
2	499633.0	58.3	12	1	1797.0	-	-
3	706377.0	72.3	12	2	1610.0	1039.0	-
4	58989.0	84.8	12	3	1131.0	1761.0	1721.0
5	266161.0	82.5	12	2	1875.0	1431.0	-
6	474469.0	63.3	12	1	1095.0	-	-
7	680544.0	80.0	12	2	1119.0	1913.0	-
8	33519.0	90.3	12	3	1660.0	1853.0	1123.0
9	240319.0	91.1	12	3	1539.0	1783.0	1172.0
10	447400.0	96.6	12	3	1525.0	1036.0	1385.0
11	654516.0	82.7	12	2	1710.0	1990.0	-
12	8083.0	50.7	12	1	1234.0	-	-
13	215435.0	78.4	12	2	1047.0	1109.0	-
14	421325.0	99.5	12	3	1299.0	1965.0	1869.0



Trial Number 20							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	733725.0	88.6	10	3	1501.0	1067.0	1927.0
2	977882.0	57.4	10	1	1723.0	-	-
3	221197.0	96.6	10	3	1086.0	1658.0	1324.0
4	462915.0	69.7	10	2	1751.0	1945.0	-
5	705071.0	77.9	10	2	1642.0	1317.0	-
6	947923.0	62.0	10	1	1866.0	-	-
7	191373.0	88.4	10	3	1997.0	1077.0	1366.0
8	432561.0	97.3	10	3	1790.0	1896.0	1367.0
9	674004.0	96.2	10	3	1391.0	1787.0	1672.0
10	915842.0	95.4	10	3	1020.0	1892.0	1414.0
11	162176.0	54.8	10	1	1084.0	-	-
12	403553.0	80.4	10	2	1850.0	1436.0	-



Trial Number 21							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	483470.0	74.7	15	2	1619.0	1611.0	-
2	666072.0	57.1	15	1	1560.0	-	-
3	98810.0	91.9	15	3	1392.0	1475.0	1276.0
4	279914.0	83.1	15	2	1809.0	1772.0	-
5	462536.0	50.7	15	1	1003.0	-	-
6	642324.0	79.2	15	2	1574.0	1600.0	-
7	76831.0	58.7	15	1	1186.0	-	-
8	257785.0	71.0	15	2	1521.0	1567.0	-
9	438554.0	79.0	15	2	1777.0	1960.0	-
10	620397.0	68.5	15	2	1284.0	1428.0	-
11	54310.0	73.5	15	2	1904.0	1352.0	-
12	235506.0	70.5	15	2	1864.0	1115.0	-
13	417036.0	76.6	15	2	1045.0	1300.0	-
14	597974.0	81.2	15	2	1160.0	1675.0	-
15	32086.0	61.8	15	1	1277.0	-	-
16	212751.0	94.9	15	3	1450.0	1206.0	1860.0



Trial Number 22							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	526149.0	78.5	9	2	1653.0	1698.0	-
2	767135.0	89.8	9	3	1174.0	1962.0	1167.0
3	12955.0	59.4	9	1	1982.0	-	-
4	254612.0	79.6	9	2	1633.0	1890.0	-
5	496588.0	76.0	9	2	1112.0	1811.0	-
6	739728.0	53.6	9	1	1144.0	-	-
7	980872.0	80.9	9	2	1220.0	1053.0	-
8	225249.0	61.6	9	1	1724.0	-	-
9	467279.0	53.4	9	1	1901.0	-	-
10	709720.0	59.9	9	1	1379.0	-	-
11	951847.0	60.4	9	1	1453.0	-	-
12	194839.0	91.4	9	3	1768.0	1726.0	1227.0



Trial Number 23							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	261858.0	77.0	20	2	1191.0	1363.0	-
2	407646.0	58.1	20	1	1248.0	-	-
3	552319.0	62.1	20	1	1836.0	-	-
4	99107.0	76.9	20	2	1334.0	1236.0	-
5	243514.0	80.0	20	2	1914.0	1852.0	-
6	389464.0	52.0	20	1	1701.0	-	-
7	531093.0	88.6	20	3	1693.0	1995.0	1905.0
8	81159.0	72.9	20	2	1922.0	1387.0	-
9	225245.0	98.5	20	3	1839.0	1746.0	1389.0
10	371906.0	57.9	20	1	1193.0	-	-
11	514197.0	95.9	20	3	1659.0	1870.0	1066.0
12	63561.0	53.5	20	1	1162.0	-	-
13	207510.0	92.0	20	3	1745.0	1654.0	1458.0
14	353638.0	57.3	20	1	1834.0	-	-
15	497515.0	70.5	20	2	1684.0	1586.0	-
16	45553.0	70.0	20	2	1042.0	1664.0	-
17	189821.0	84.0	20	3	1765.0	1630.0	1176.0
18	335330.0	76.1	20	2	1557.0	1057.0	-
19	478825.0	93.2	20	3	1985.0	1018.0	1340.0
20	27594.0	96.8	20	3	1760.0	1614.0	1817.0



Trial Number 24							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	247117.0	50.1	12	1	1841.0	-	-
2	453362.0	93.5	12	3	1590.0	1081.0	1413.0
3	660875.0	68.8	12	2	1707.0	1577.0	-
4	14140.0	56.3	12	1	1056.0	-	-
5	220734.0	86.0	12	3	1953.0	1108.0	1987.0
6	428367.0	75.2	12	2	1572.0	1536.0	-
7	636681.0	54.4	12	1	1517.0	-	-
8	843157.0	71.1	12	2	1329.0	1243.0	-
9	195585.0	76.2	12	2	1940.0	1770.0	-
10	403231.0	80.2	12	2	1098.0	1209.0	-
11	610202.0	79.7	12	2	1588.0	1214.0	-
12	815229.0	90.9	12	3	1615.0	1862.0	1601.0
13	170267.0	68.7	12	2	1377.0	1441.0	-
14	377306.0	67.4	12	2	1872.0	1313.0	-



Trial Number 25							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	628071.0	94.0	11	3	1643.0	1748.0	1941.0
2	853391.0	70.8	11	2	1177.0	1201.0	-
3	156223.0	56.3	11	1	1006.0	-	-
4	378734.0	96.7	11	3	1230.0	1163.0	1332.0
5	601331.0	90.6	11	3	1217.0	1582.0	1498.0
6	825462.0	74.5	11	2	1569.0	1281.0	-
7	128265.0	92.6	11	3	1065.0	1669.0	1222.0
8	351161.0	89.0	11	3	1493.0	1135.0	1380.0
9	573425.0	96.5	11	3	1607.0	1822.0	1602.0
10	798431.0	70.5	11	2	1141.0	1178.0	-
11	100737.0	94.0	11	3	1009.0	1629.0	1956.0
12	324661.0	55.8	11	1	1290.0	-	-
13	546278.0	87.7	11	3	1435.0	1963.0	1164.0



Trial Number 26							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	1253842.0	68.6	5	2	1306.0	1161.0	-
2	119486.0	83.1	5	2	1420.0	1315.0	-
3	482958.0	60.9	5	1	1687.0	-	-
4	845641.0	77.7	5	2	1776.0	1158.0	-
5	1208428.0	77.4	5	2	1793.0	1510.0	-
6	74748.0	66.8	5	2	1576.0	1323.0	-
7	438300.0	63.7	5	1	1333.0	-	-
8	800152.0	91.2	5	3	1409.0	1681.0	1275.0



Trial Number 27							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	545865.0	83.6	16	3	1632.0	1195.0	1000.0
2	14067.0	89.4	16	3	1173.0	1627.0	1656.0
3	184953.0	55.8	16	1	1532.0	-	-
4	353759.0	90.9	16	3	1981.0	1554.0	1998.0
5	526388.0	54.7	16	1	1825.0	-	-
6	694806.0	97.7	16	3	1734.0	1202.0	1250.0
7	163568.0	67.5	16	2	1571.0	1434.0	-
8	333410.0	96.7	16	3	1589.0	1469.0	1268.0
9	504006.0	68.3	16	2	1750.0	1954.0	-
10	675297.0	78.3	16	2	1591.0	1082.0	-
11	142890.0	55.0	16	1	1427.0	-	-
12	312479.0	84.9	16	3	1129.0	1936.0	1199.0
13	482953.0	74.6	16	2	1959.0	1856.0	-
14	655022.0	63.3	16	1	1885.0	-	-
15	121457.0	99.8	16	3	1035.0	1515.0	1120.0
16	292606.0	63.6	16	1	1647.0	-	-
17	461322.0	87.3	16	3	1931.0	1051.0	1831.0



Trial Number 28							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	565136.0	85.6	19	3	1946.0	1078.0	1015.0
2	89970.0	68.6	19	2	1029.0	1780.0	-
3	243121.0	54.2	19	1	1111.0	-	-
4	396034.0	61.2	19	1	1104.0	-	-
5	546225.0	97.1	19	3	1157.0	1969.0	1100.0
6	70998.0	98.3	19	3	1142.0	1699.0	1622.0
7	224093.0	62.4	19	1	1655.0	-	-
8	376127.0	80.2	19	2	1126.0	1769.0	-
9	527806.0	87.5	19	3	1216.0	1448.0	1179.0
10	52247.0	85.8	19	3	1847.0	1348.0	1472.0
11	204582.0	88.1	19	3	1023.0	1124.0	1631.0
12	357941.0	65.3	19	1	1848.0	-	-
13	510977.0	52.5	19	1	1470.0	-	-
14	33698.0	52.3	19	1	1312.0	-	-
15	186023.0	74.1	19	2	1915.0	1200.0	-
16	339327.0	54.9	19	1	1479.0	-	-
17	491053.0	76.2	19	2	1376.0	1502.0	-
18	14858.0	60.4	19	1	1758.0	-	-
19	167387.0	81.5	19	2	1491.0	1103.0	-



Trial Number 29							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	507709.0	50.5	10	1	1857.0	-	-
2	750249.0	55.7	10	1	1246.0	-	-
3	989003.0	85.8	10	3	1774.0	1002.0	1967.0
4	235634.0	76.9	10	2	1125.0	1474.0	-
5	477675.0	75.1	10	2	1254.0	1052.0	-
6	718312.0	92.3	10	3	1180.0	1486.0	1492.0
7	960895.0	78.1	10	2	1301.0	1757.0	-
8	205370.0	92.2	10	3	1898.0	1252.0	1713.0
9	446940.0	89.0	10	3	1260.0	1706.0	1411.0
10	689225.0	70.9	10	2	1578.0	1620.0	-
11	932305.0	63.1	10	1	1782.0	-	-
12	176231.0	55.3	10	1	1522.0	-	-



Trial Number 30							
Burst ID	Burst Offset (us)	Pulse Width (us)	Chirp Width (MHz)	Number of Pulses per Burst	PRI-1 (us)	PRI-2 (us)	PRI-3 (us)
1	277485.0	83.4	17	3	1454.0	1205.0	1801.0
2	437880.0	97.3	17	3	1319.0	1826.0	1635.0
3	598445.0	90.4	17	3	1079.0	1986.0	1674.0
4	97088.0	91.8	17	3	1563.0	1151.0	1802.0
5	257251.0	98.2	17	3	1876.0	1977.0	1766.0
6	419893.0	59.5	17	1	1952.0	-	-
7	580724.0	80.0	17	2	1253.0	1137.0	-
8	77366.0	86.5	17	3	1054.0	1128.0	1828.0
9	238032.0	91.1	17	3	1105.0	1599.0	1442.0
10	398605.0	93.5	17	3	1867.0	1373.0	1087.0
11	562025.0	60.7	17	1	1033.0	-	-
12	57684.0	67.2	17	2	1288.0	1405.0	-
13	219083.0	61.8	17	1	1585.0	-	-
14	379234.0	79.4	17	2	1933.0	1667.0	-
15	540896.0	81.4	17	2	1096.0	1464.0	-
16	37916.0	65.7	17	1	1496.0	-	-
17	198794.0	76.0	17	2	1733.0	1255.0	-
18	359754.0	81.0	17	2	1326.0	1668.0	-



13.10. Uniform Spreading

The UUT will select channel by random mode and remember this channel when detect radar signal, so that will select unused channel by random mode.

13.10.1. Test Result of Uniform Spreading

Not required



13.11. In-Service Monitoring

The In-Service Monitoring is defined as the process by which an RLAN monitors the Operating Channel for the presence of radar signals.

Additional requirements for devices with multiple bandwidth modes	Master or Client with radar detection	Client without radar detection
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other	Any single BW mode	Not required
Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20Hz channels and the channel center frequency.		

13.11.1. Test Limit

Parameter	Value
Channel Move Time	< 10 s (See Note 1)
Channel Closing Transmission Time	< 200 ms+ an aggregate of 60 milliseconds over remaining 10 second period. (See Notes 1 and Notes 2.)
<p>Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.</p> <p>Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.</p>	

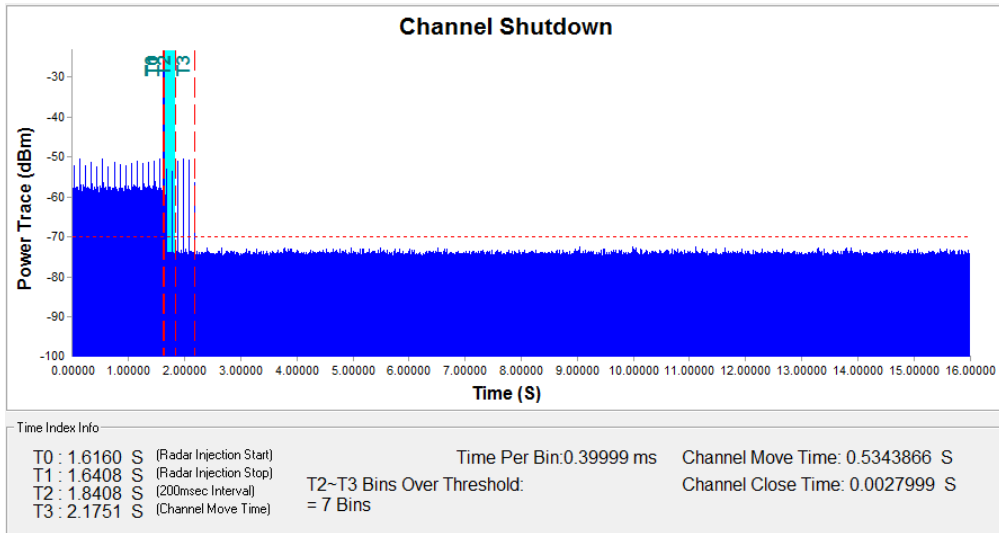
Limits Clause 4.7.2.2.2

The In-Service Monitoring shall be used to continuously monitor an Operating Channel. The In-Service-Monitoring shall start immediately after the RLAN has started transmissions on an Operating Channel.

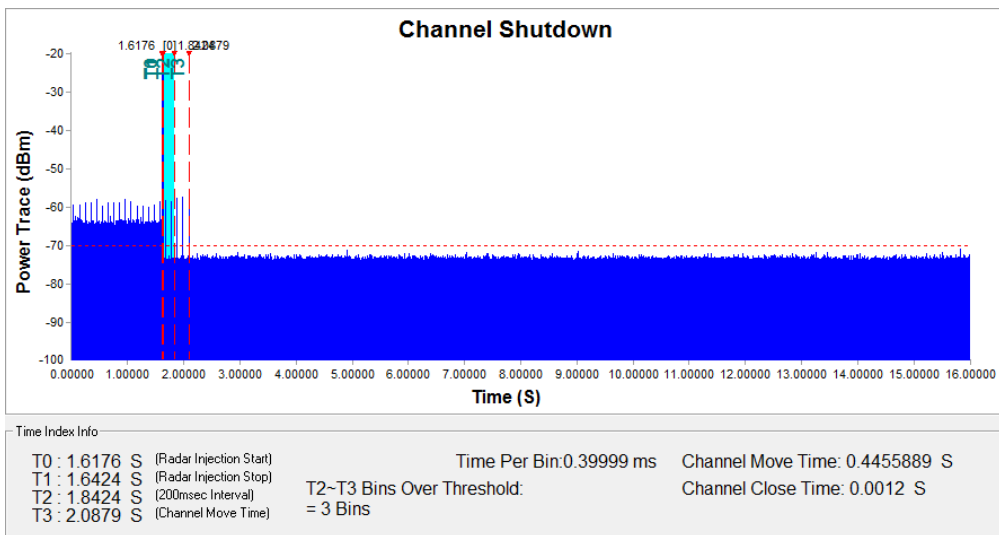


13.11.2. Test Result of In-Service Monitoring

Modulation Standard: 802.11ac VHT80, 5260MHz



Modulation Standard: 802.11ac VHT80, 5500MHz





13.12. Non-Occupancy Period

The Channel Shutdown is defined as the process initiated by the RLAN device immediately after a radar signal has been detected on an Operating Channel.

The master device shall instruct all associated slave devices to stop transmitting on this channel, which they shall do within the Channel Move Time.

Slave devices with a Radar Interference Detection function, shall stop their own transmissions within the Channel Move Time.

The aggregate duration of all transmissions of the RLAN device on this channel during the Channel Move Time shall be limited to the Channel Closing Transmission Time. The aggregate duration of all transmissions shall not include quiet periods in between transmissions.

13.12.1. Test Limit

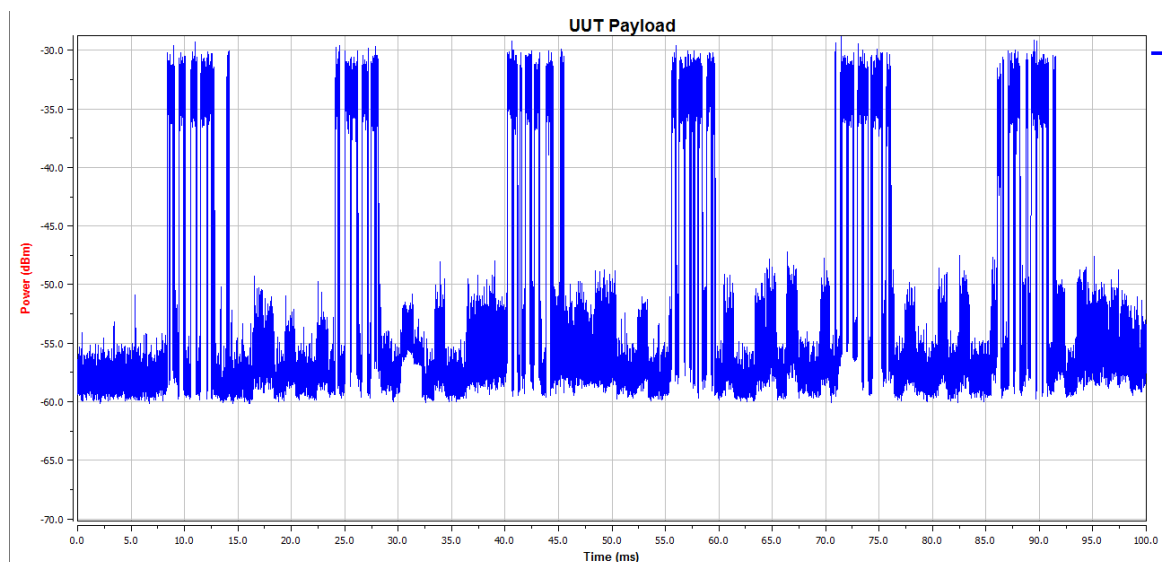
Radar Test Signal	Master (min)	Client (min)
0	> 30	> 30

13.12.2. Channel Loading

Timing plots are required with calculations demonstrating a minimum channel loading of approximately 17% or greater. For example, channel loading can be estimated by setting the spectrum analyzer for zero span and approximate the Time On/ (Time On + Off Time). This can be done with any appropriate channel BW and modulation type

Modulation Standard: 802.11ac VHT80 Channel 58

Duty Cycle=17.76%



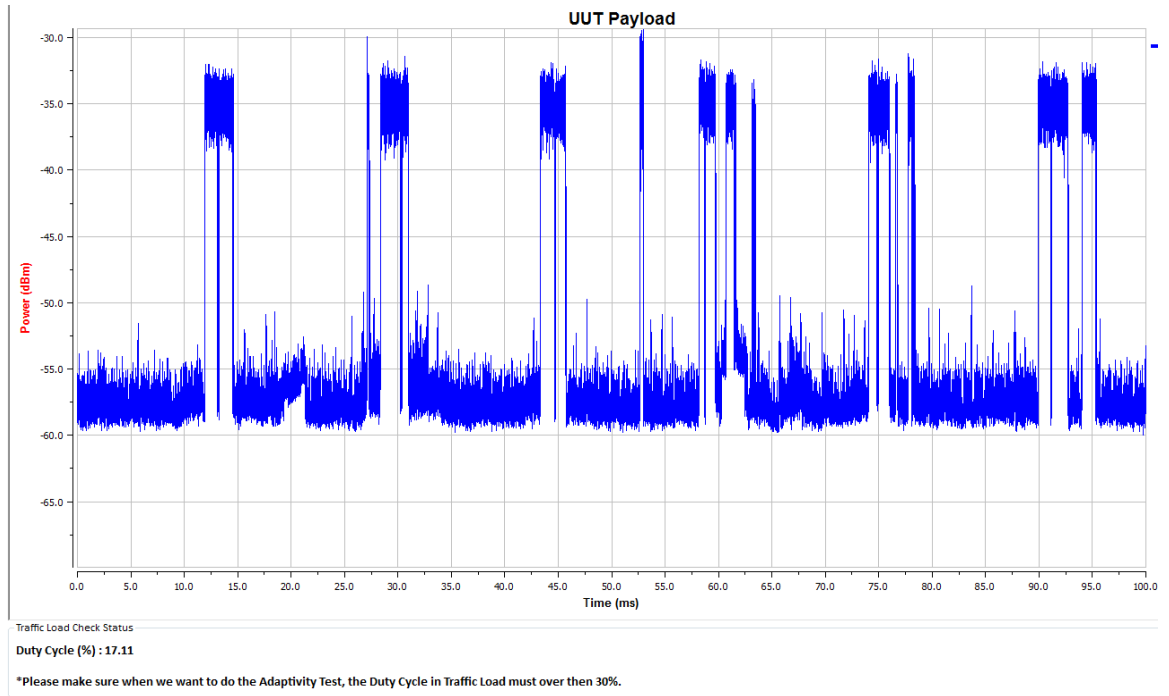
Traffic Load Check Status

Duty Cycle (%) : 17.76

*Please make sure when we want to do the Adaptivity Test, the Duty Cycle in Traffic Load must over then 30%.



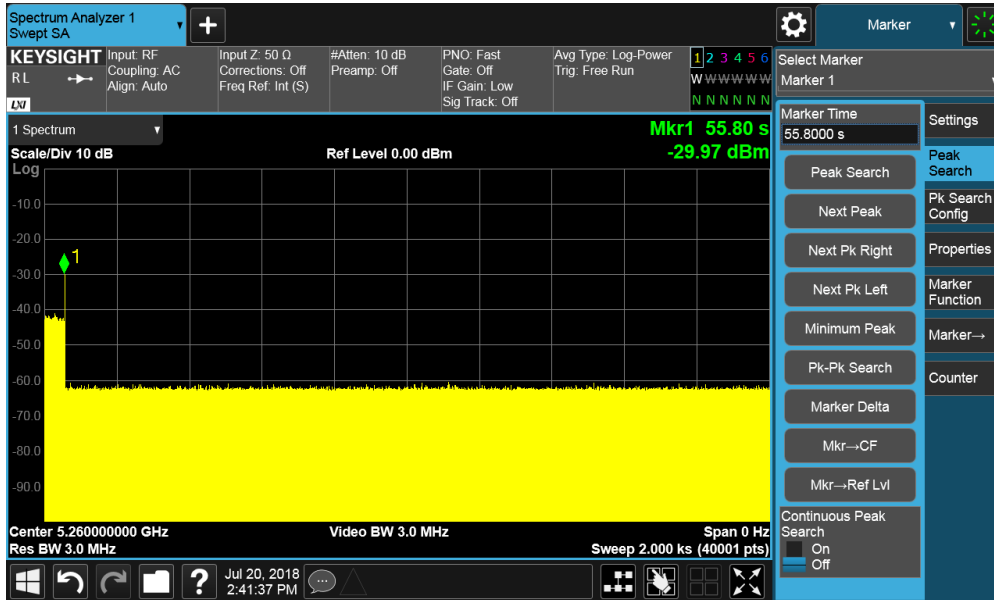
Modulation Standard: 802.11ac VHT80 Channel 106
Duty Cycle=17.11%



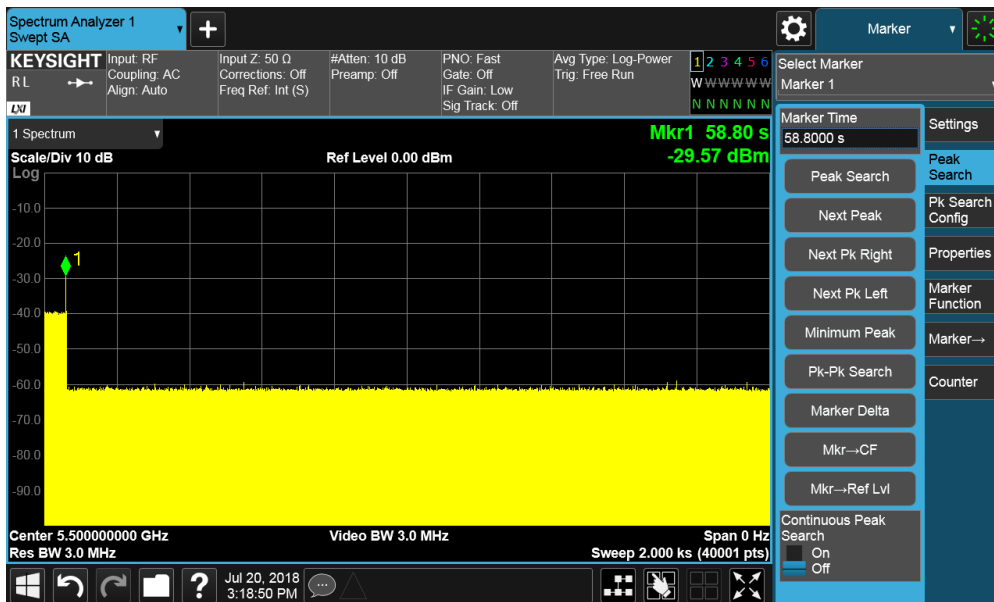


13.12.3. Test Result of Non-Occupancy Period

Modulation Standard: 802.11ac VHT80, 5260MHz



Modulation Standard: 802.11ac VHT80, 5500MHz





13.13. EUT Setup Photos





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)	<input type="checkbox"/> WLAN: 2412MHz ~ 2462MHz <input type="checkbox"/> WLAN: 5150MHz ~ 5250MHz <input checked="" type="checkbox"/> WLAN: 5250MHz ~ 5350MHz <input checked="" type="checkbox"/> WLAN: 5470MHz ~ 5725MHz <input type="checkbox"/> WLAN: 5725MHz ~ 5850MHz <input type="checkbox"/> Bluetooth: 2402MHz ~ 2480MHz
Device category	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation)
Exposure classification	<input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm ²) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna diversity	<input type="checkbox"/> Single antenna <input checked="" type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input checked="" type="checkbox"/> Tx/Rx diversity
Evaluation applied	<input checked="" type="checkbox"/> MPE Evaluation* <input type="checkbox"/> SAR Evaluation <input type="checkbox"/> N/A
Remark:	
<ol style="list-style-type: none"> The maximum output power is <u>23.34dBm (215.85mW)</u> at <u>5270MHz</u> (with <u>numeric 4.2 antenna gain.</u>) DTS device is not subject to routine RF evaluation; MPE estimate is used to justify the compliance. For mobile or fixed location transmitters, no SAR consideration applied. The maximum power density is 1.0 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:

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

Changing to units of mW and cm, using:

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

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

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

Max. output power	<p>Non-Beamforming</p> <p>Band: 5250MHz ~ 5350MHz</p> <p>802.11a: 20.61 dBm (114.98mW)</p> <p>802.11an HT20: 21.06 dBm (127.62mW)</p> <p>802.11an HT40: 23.32 dBm (214.63mW)</p> <p>802.11ac VHT20: 21.09 dBm (128.47mW)</p> <p>802.11ac VHT40: 23.34 dBm (215.85mW)</p> <p>802.11ac VHT80: 17.62 dBm (57.80mW)</p>
	<p>Band: 5470MHz ~ 5725MHz</p> <p>802.11a: 20.15 dBm (103.53mW)</p> <p>802.11an HT20: 19.67 dBm (92.70mW)</p> <p>802.11an HT40: 22.79 dBm (190.25mW)</p> <p>802.11ac VHT20: 19.70 dBm (93.34mW)</p> <p>802.11ac VHT40: 22.82 dBm (191.57mW)</p> <p>802.11ac VHT80: 22.35 dBm (171.919mW)</p>
	<p>Beamforming</p> <p>Band: 5250MHz ~ 5350MHz</p> <p>802.11a: 17.60 dBm (57.49mW)</p> <p>802.11an HT20: 18.05 dBm (63.81mW)</p> <p>802.11an HT40: 20.31 dBm (107.32mW)</p> <p>802.11ac VHT20: 18.08 dBm (64.24mW)</p> <p>802.11ac VHT40: 20.33 dBm (107.93mW)</p> <p>802.11ac VHT80: 14.61 dBm (28.90mW)</p>
	<p>Band: 5470MHz ~ 5725MHz</p> <p>802.11a: 17.14 dBm (51.77mW)</p> <p>802.11an HT20: 16.66 dBm (46.35mW)</p> <p>802.11an HT40: 19.78 dBm (95.13mW)</p> <p>802.11ac VHT20: 16.69 dBm (46.67mW)</p> <p>802.11ac VHT40: 19.81 dBm (95.79mW)</p> <p>802.11ac VHT80: 19.34 dBm (85.9mW)</p>
Antenna gain (Max)	<p>5250MHz-5350MHz: ANT A: 4.02 dBi ; ANT B: 4.2 dBi</p> <p>5470MHz-5725MHz: ANT A: 4.83 dBi ; ANT B: 4.05 dBi</p>

**Maximum Permissible Exposure (Non-Beamforming)**

Modulation Mode	Frequency band (MHz)	Max. Conducted output power (dBm)	Antenna gain (dBi)	Distance (cm)	Power density (mW/cm ²)	Limit (mW/cm ²)
802.11a	5250-5350	20.61	4.2	20	0.0602	1
802.11a	5470-5725	20.15	4.83	20	0.0626	1
802.11an HT20	5250-5350	21.06	4.2	20	0.0668	1
802.11an HT20	5470-5725	19.67	4.83	20	0.0561	1
802.11an HT40	5250-5350	23.32	4.2	20	0.1123	1
802.11an HT40	5470-5725	22.79	4.83	20	0.1151	1
802.11ac VHT20	5250-5350	21.09	4.2	20	0.0672	1
802.11ac VHT20	5470-5725	19.70	4.83	20	0.0565	1
802.11ac VHT40	5250-5350	23.34	4.2	20	0.1129	1
802.11ac VHT40	5470-5725	22.82	4.83	20	0.1159	1
802.11ac VHT80	5250-5350	17.62	4.2	20	0.0302	1
802.11ac VHT80	5470-5725	22.35	4.83	20	0.1039	1

Maximum Permissible Exposure (Beamforming)

Modulation Mode	Frequency band (MHz)	Max. Conducted output power (dBm)	Antenna gain (dBi)	Distance (cm)	Power density (mW/cm ²)	Limit (mW/cm ²)
802.11a	5250-5350	17.60	7.12	20	0.0589	1
802.11a	5470-5725	17.14	7.46	20	0.0574	1
802.11an HT20	5250-5350	18.05	7.12	20	0.0654	1
802.11an HT20	5470-5725	16.66	7.46	20	0.0514	1
802.11an HT40	5250-5350	20.31	7.12	20	0.1100	1
802.11an HT40	5470-5725	19.78	7.46	20	0.1055	1
802.11ac VHT20	5250-5350	18.08	7.12	20	0.0658	1
802.11ac VHT20	5470-5725	16.69	7.46	20	0.0517	1
802.11ac VHT40	5250-5350	20.33	7.12	20	0.1106	1
802.11ac VHT40	5470-5725	19.81	7.46	20	0.1062	1
802.11ac VHT80	5250-5350	14.61	7.12	20	0.0296	1
802.11ac VHT80	5470-5725	19.34	7.46	20	0.0952	1

**Maximum Permissible Exposure (Co-location)****(Non-Beamforming)**

Modulation Mode	Frequency band (MHz)	Max. Conducted output power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm ²)
2.4G 11b	2412-2462	24.37	4.85	20	0.1661
5G 11ac VHT40	5250-5350	23.34	4.20	20	0.1129
5G 11ac VHT40	5470-5725	22.82	4.83	20	0.1159
Co-location Total					0.3949
Maximum Permissible Exposure Limit					1

(Beamforming)

Modulation Mode	Frequency band (MHz)	Max. Conducted output power (dBm)	Antenna Gain(dBi)	Distance (cm)	Power Density (mW/cm ²)
2.4G VHT20	2412-2462	20.77	7.64	20	0.1381
5G 11ac VHT40	5250-5350	20.33	7.12	20	0.1106
5G 11ac VHT40	5470-5725	19.81	7.46	20	0.1062
Co-location Total					0.3549
Maximum Permissible Exposure Limit					1