

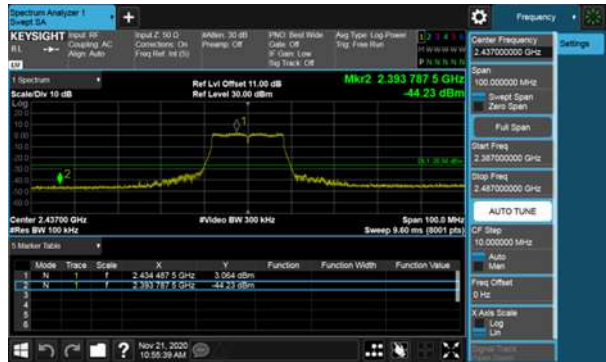


ANT H:

Modulation Type: 802.11g, CH 01



Modulation Type: 802.11g, CH 06





ANT H:
Modulation Type: 802.11g, CH 11



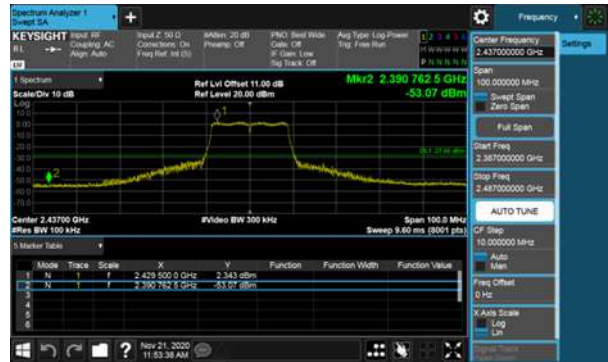
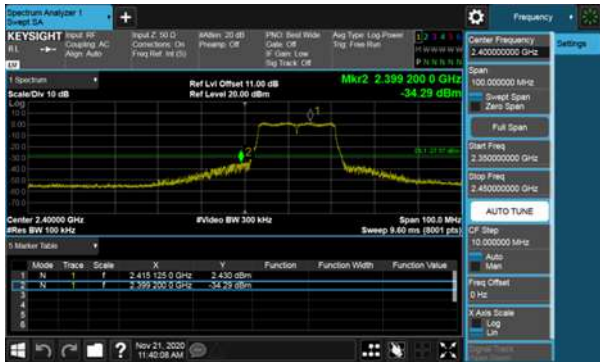


ANT H:

Modulation Type: VHT20, CH01



Modulation Type: VHT20, CH06





ANT H:

Modulation Type: VHT20, CH11



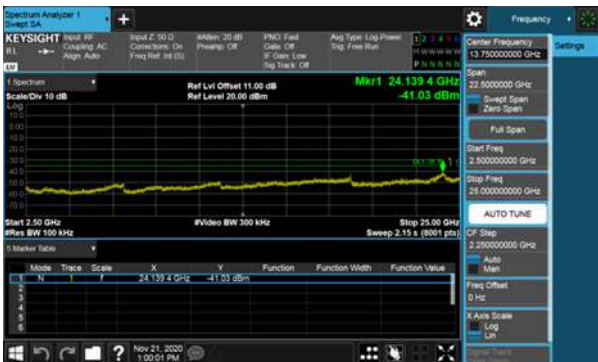
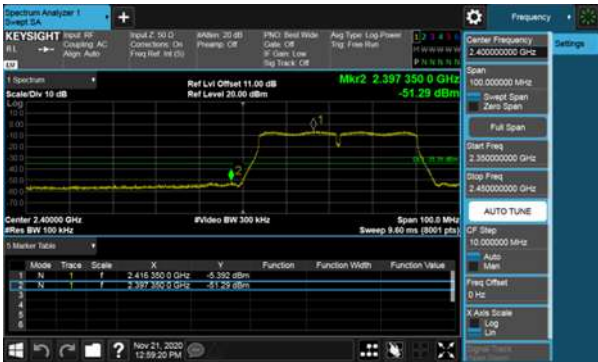
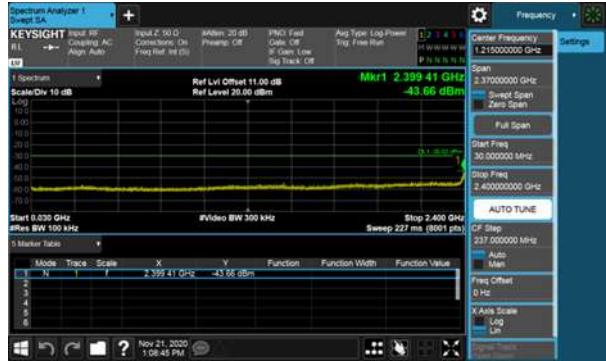


ANT H:

Modulation Type: VHT40, CH03



Modulation Type: VHT40, CH06





ANT H:

Modulation Type: VHT40, CH09





ANT H:

Modulation Type: 11ax HE20, CH01



Modulation Type: 11ax HE20, CH06





ANT H:

Modulation Type: 11ax HE20, CH11



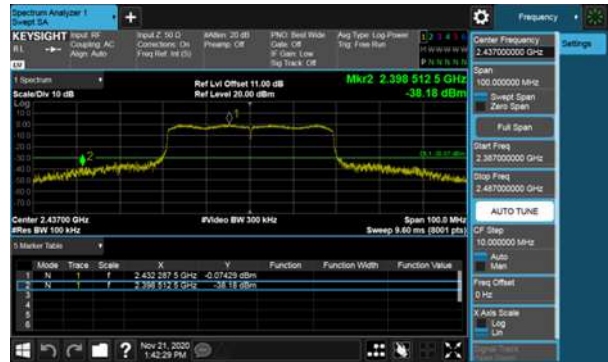


ANT H:

Modulation Type: 11ax HE40, CH03



Modulation Type: 11ax HE40, CH06





ANT H:

Modulation Type: 11ax HE40, CH09





8. On Time, Duty Cycle and Measurement methods

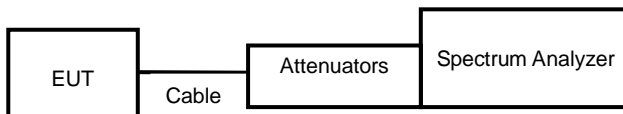
8.1 Test Limit

None; for reporting purposes only.

8.2 Test Procedure

Zero-Span Spectrum Analyzer Method.

8.3 Test Setup Layout



8.4 Test Result and Data

Modulation Type	On Time (ms)	Period Time (ms)	Duty Cycle (%)
11b,1M	100.00	100.00	100.00%
11g,6M	100.00	100.00	100.00%
VHT20	100.00	100.00	100.00%
VHT40	100.00	100.00	100.00%
11ax HT20	100.00	100.00	100.00%
11ax HT40	100.00	100.00	100.00%



Modulation Type: 802.11b(1Mbps)



Modulation Type: VHT40(13.5Mbps)



Modulation Type: 802.11g(6Mbps)



Modulation Type: 802.11ax HE20(7.3Mbps)



Modulation Type: VHT20(6.5Mbps)



Modulation Type: 802.11ax HE40(14.6Mbps)





9. 6dB & 99% Bandwidth Measurement Data

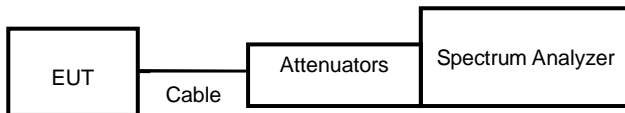
9.1 Test Limit

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

9.2 Test Procedures

- a. The transmitter output was connected to the spectrum analyzer.
- b. Set RBW of spectrum analyzer to 100 KHz and VBW to 300 KHz.
- c. The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.
- d. The 6dB Bandwidth was measured and recorded.

9.3 Test Setup Layout





9.4 Test Result and Data (6dB Bandwidth)

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Limit (MHz)
			ANT E	ANT F	ANT G	ANT H	
11b	1	2412	10.08	10.08	10.08	10.08	0.5
	6	2437	10.08	10.08	10.08	10.08	0.5
	11	2462	10.08	10.08	10.08	10.08	0.5
11g	1	2412	16.56	16.56	16.53	16.53	0.5
	6	2437	16.56	16.56	16.50	16.53	0.5
	11	2462	16.56	16.56	16.50	16.53	0.5
VHT20	1	2412	17.76	17.76	17.73	17.67	0.5
	6	2437	17.73	17.76	17.73	17.70	0.5
	11	2462	17.76	17.79	17.76	17.67	0.5
VHT40	3	2422	36.36	36.42	36.42	36.36	0.5
	6	2437	36.42	36.36	36.36	36.42	0.5
	9	2452	36.36	36.42	36.36	36.36	0.5
11ax HE20	1	2412	18.99	19.02	19.02	19.05	0.5
	6	2437	18.99	19.02	19.05	19.05	0.5
	11	2462	18.81	19.02	19.05	19.05	0.5
11ax HE40	3	2422	37.98	37.80	38.04	37.80	0.5
	6	2437	37.98	37.92	37.92	37.98	0.5
	9	2452	37.74	37.86	37.86	37.92	0.5



9.5 Test Result and Data (99% Bandwidth)

Modulation Type	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
			ANT E	ANT F	ANT G	ANT H
11b	1	2412	13.36	13.38	13.38	13.37
	6	2437	13.37	13.38	13.38	13.37
	11	2462	13.37	13.38	13.38	13.37
11g	1	2412	16.69	16.72	16.70	16.62
	6	2437	16.69	16.74	16.70	16.61
	11	2462	16.70	16.73	16.70	16.62
VHT20	1	2412	17.71	17.71	17.67	17.66
	6	2437	17.71	17.72	17.68	17.69
	11	2462	17.72	17.72	17.65	17.68
VHT40	3	2422	36.50	36.43	36.49	36.42
	6	2437	36.50	36.44	36.53	36.46
	9	2452	36.49	36.43	36.51	36.45
11ax HE20	1	2412	18.81	18.84	18.85	18.85
	6	2437	18.81	18.85	18.85	18.86
	11	2462	18.81	18.85	18.85	18.85
11ax HE40	3	2422	37.72	37.67	37.76	37.69
	6	2437	37.65	37.70	37.74	37.73
	9	2452	37.67	37.70	37.74	37.67



6dB Bandwidth, ANT E
Modulation Type: 802.11b
CH01

Modulation Type: 802.11g
CH01



CH06

CH06



CH11

CH11





6dB Bandwidth, ANT E
Modulation Type: VHT20
CH01



Modulation Type: VHT40
CH03



CH06



CH06



CH11



CH09





6dB Bandwidth, ANT E
Modulation Type: 802.11ax HE20
CH01

Modulation Type: 802.11ax HE40
CH03



CH06

CH06



CH11

CH09





6dB Bandwidth, ANT F
Modulation Type: 802.11b
CH01

Modulation Type: 802.11g
CH01



CH06

CH06



CH11

CH11





6dB Bandwidth, ANT F
Modulation Type: VHT20
CH01



Modulation Type: VHT40
CH03



CH06



CH06



CH11



CH09





6dB Bandwidth, ANT F
Modulation Type: 802.11ax HE20
CH01

Modulation Type: 802.11ax HE40
CH03



CH06

CH06



CH11

CH09





6dB Bandwidth, ANT G
Modulation Type: 802.11b
CH01

Modulation Type: 802.11g
CH01



CH06

CH06



CH11

CH11





6dB Bandwidth, ANT G
Modulation Type: VHT20
CH01



Modulation Type: VHT40
CH03



CH06



CH06



CH11



CH09





6dB Bandwidth, ANT G
Modulation Type: 802.11ax HE20
CH01

Modulation Type: 802.11ax HE40
CH03



CH06

CH06



CH11

CH09





6dB Bandwidth, ANT H
Modulation Type: 802.11b
CH01

Modulation Type: 802.11g
CH01



CH06

CH06



CH11

CH11





6dB Bandwidth, ANT H
Modulation Type: VHT20
CH01



Modulation Type: VHT40
CH03



CH06



CH06



CH11



CH09





6dB Bandwidth, ANT H
Modulation Type: 802.11ax HE20
CH01

Modulation Type: 802.11ax HE40
CH03



CH06

CH06



CH11

CH09





99% Bandwidth, ANT E
Modulation Type: 802.11b
CH01

Modulation Type: 802.11g
CH01



CH06

CH06



CH11

CH11





99% Bandwidth, ANT E
Modulation Type: VHT20
CH01



Modulation Type: VHT40
CH03



CH06



CH06



CH11



CH09





99% Bandwidth, ANT E
Modulation Type: 802.11ax HE20
CH01

Modulation Type: 802.11ax HE40
CH03



CH06

CH06



CH11

CH09





99% Bandwidth, ANT F
Modulation Type: 802.11b
CH01

Modulation Type: 802.11g
CH01



CH06

CH06



CH11

CH11





99% Bandwidth, ANT F
Modulation Type: VHT20
CH01



Modulation Type: VHT40
CH03



CH06



CH06



CH11



CH09





99% Bandwidth, ANT F
Modulation Type: 802.11ax HE20
CH01

Modulation Type: 802.11ax HE40
CH03



CH06



CH06



CH11



CH09





99% Bandwidth, ANT G
Modulation Type: 802.11b
CH01

Modulation Type: 802.11g
CH01



CH06

CH06



CH11

CH11





99% Bandwidth, ANT G
Modulation Type: VHT20
CH01



Modulation Type: VHT40
CH03



CH06



CH06



CH11



CH09





99% Bandwidth, ANT G
Modulation Type: 802.11ax HE20
CH01

Modulation Type: 802.11ax HE40
CH03



CH06

CH06



CH11

CH09





99% Bandwidth, ANT H
Modulation Type: 802.11b
CH01

Modulation Type: 802.11g
CH01



CH06

CH06



CH11

CH11





99% Bandwidth, ANT H
Modulation Type: VHT20
CH01



Modulation Type: VHT40
CH03



CH06



CH06



CH11



CH09





99% Bandwidth, ANT H
Modulation Type: 802.11ax HE20
CH01

Modulation Type: 802.11ax HE40
CH03



CH06

CH06



CH11

CH09





10. Maximum Average Output Power

10.1 Test Limit

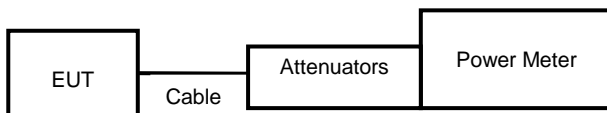
The Maximum Average Output Power Measurement is 30dBm.

If transmitting antennas of directional gain greater than 6 dBi are used, the average output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

10.2 Test Procedures

The antenna port (RF output) of the EUT was connected to the input (RF input) of a power meter. Power was read directly from the meter and cable loss connection was added to the reading to obtain power at the EUT antenna terminal. The EUT Output Power was set to maximum to produce the worse case test result.

10.3 Test Setup Layout





10.4 Test Result and Data

Non Beamforming

Setting	Modulation Mode	Channel	Frequency (MHz)	Conducted(average) output power (dBm)				Total AV power (dBm)	Total AV power (mW)	Power Limit (dBm)
				ANT E	ANT F	ANT G	ANT H			
15	11b	1	2412	15.38	15.13	15.16	15.23	21.25	133.250	30.00
15		6	2437	15.72	15.49	15.65	15.62	21.64	145.928	30.00
15		11	2462	15.56	15.18	15.51	15.23	21.39	137.842	30.00
15	11g	1	2412	15.67	15.30	15.43	15.75	21.56	143.280	30.00
15		6	2437	15.52	15.35	15.48	15.64	21.52	141.884	30.00
15		11	2462	15.29	15.32	15.36	15.29	21.34	136.010	30.00
14.5	11n HT20	1	2412	15.19	14.88	15.04	15.49	21.18	131.113	30.00
15		6	2437	15.48	15.32	15.44	15.58	21.48	140.495	30.00
14.5		11	2462	14.83	14.85	15.00	14.94	20.93	123.770	30.00
9.5	11n HT40	3	2422	10.10	9.85	9.96	10.15	16.04	40.153	30.00
15		6	2437	15.38	15.21	15.29	15.47	21.36	136.747	30.00
10		9	2452	10.32	10.37	10.41	10.44	16.41	43.710	30.00
14.5	VHT20	1	2412	15.22	14.91	15.08	15.51	21.21	132.014	30.00
15		6	2437	15.50	15.36	15.46	15.60	21.50	141.301	30.00
14.5		11	2462	14.86	14.88	15.01	14.96	20.95	124.409	30.00
9.5	VHT40	3	2422	10.12	9.87	9.97	10.18	16.06	40.340	30.00
15		6	2437	15.41	15.24	15.32	15.51	21.39	137.777	30.00
10		9	2452	10.34	10.41	10.45	10.47	16.44	44.039	30.00
14.5	11ax HE20	1	2412	15.35	15.04	15.08	15.44	21.25	133.397	30.00
14.5		6	2437	15.16	15.11	15.13	15.26	21.19	131.401	30.00
14.5		11	2462	14.99	15.04	15.15	15.12	21.10	128.708	30.00
9	11ax HE40	3	2422	9.95	9.66	9.86	10.06	15.91	38.954	30.00
14.5		6	2437	15.24	15.06	15.12	15.27	21.19	131.642	30.00
9.5		9	2452	10.20	10.23	10.33	10.28	16.28	42.471	30.00



Beamforming

Modulation Mode	Channel	Frequency (MHz)	Conducted(average) output power (dBm)				Total AV power (dBm)	Total AV power (mW)	Power Limit (dBm)
			ANT E	ANT F	ANT G	ANT H			
11n HT20	1	2412	9.17	8.86	9.02	9.47	15.16	32.783	26.31
	6	2437	9.46	9.30	9.42	9.56	15.46	35.129	26.31
	11	2462	8.81	8.83	8.98	8.92	14.91	30.947	26.31
11n HT40	3	2422	4.08	3.83	3.94	4.13	10.02	10.040	26.31
	6	2437	9.36	9.19	9.27	9.45	15.34	34.192	26.31
	9	2452	4.30	4.35	4.39	4.42	10.39	10.929	26.31
VHT20	1	2412	9.20	8.89	9.06	9.49	15.19	33.008	26.31
	6	2437	9.48	9.34	9.44	9.58	15.48	35.330	26.31
	11	2462	8.84	8.86	8.99	8.94	14.93	31.107	26.31
VHT40	3	2422	4.10	3.85	3.95	4.16	10.04	10.086	26.31
	6	2437	9.39	9.22	9.30	9.49	15.37	34.449	26.31
	9	2452	4.32	4.39	4.43	4.45	10.42	11.011	26.31
11ax HE20	1	2412	9.33	9.02	9.06	9.42	15.23	33.354	26.31
	6	2437	9.14	9.09	9.11	9.24	15.17	32.855	26.31
	11	2462	8.97	9.02	9.13	9.10	15.08	32.182	26.31
11ax HE40	3	2422	3.93	3.64	3.84	4.04	9.89	9.740	26.31
	6	2437	9.22	9.04	9.10	9.25	15.17	32.915	26.31
	9	2452	4.18	4.21	4.31	4.26	10.26	10.619	26.31



11. Power Spectral Density

11.1 Test Limit

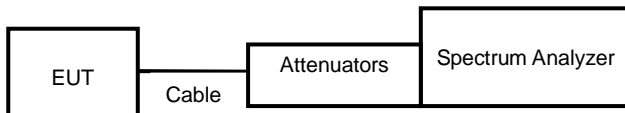
The Maximum of Power Spectral Density Measurement is 8dBm.

If transmitting antennas of directional gain greater than 6 dBi are used, the power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

11.2 Test Procedures

Reference to KDB558074 DTS Meas Guidance v04 D01

11.3 Test Setup Layout



**11.4 Test Result and Data**

Modulation Type	Channel	Frequency (MHz)	Maximum Power Density of 3KHz Bandwidth(dBm)				Sum chain (dBm)	Duty Cycle CF(dB)	Total PSD (dBm)	Limit (dBm)
			ANT E	ANT F	ANT G	ANT H				
11b	1	2412	-2.251	-2.373	-2.337	-2.468	3.66	0.00	3.66	8.00
	6	2437	-1.539	-1.841	-1.945	-1.839	4.23	0.00	4.23	8.00
	11	2462	-2.018	-2.076	-2.056	-2.27	3.92	0.00	3.92	8.00
11g	1	2412	-3.654	-4.044	-4.058	-3.834	2.13	0.00	2.13	8.00
	6	2437	-3.79	-4.068	-3.957	-3.597	2.17	0.00	2.17	8.00
	11	2462	-4.179	-4.422	-4.124	-3.871	1.88	0.00	1.88	8.00
VHT20	1	2412	-4.58	-4.976	-4.691	-4.35	1.38	0.00	1.38	8.00
	6	2437	-4.346	-4.49	-4.299	-4.1	1.71	0.00	1.71	8.00
	11	2462	-5.033	-4.787	-4.822	-4.75	1.17	0.00	1.17	8.00
VHT40	3	2422	-12.735	-12.99	-13.088	-12.731	-6.86	0.00	-6.86	8.00
	6	2437	-7.538	-7.591	-7.688	-7.28	-1.50	0.00	-1.50	8.00
	9	2452	-12.374	-12.401	-12.35	-11.908	-6.23	0.00	-6.23	8.00
11ax HE20	1	2412	-3.623	-3.755	-4.237	-3.674	2.21	0.00	2.21	8.00
	6	2437	-3.616	-3.507	-3.607	-3.877	2.37	0.00	2.37	8.00
	11	2462	-3.909	-3.879	-4.2	-4.049	2.01	0.00	2.01	8.00
11ax HE40	3	2422	-13.718	-14.108	-14.02	-13.763	-7.88	0.00	-7.88	8.00
	6	2437	-8.685	-8.654	-8.833	-8.319	-2.60	0.00	-2.60	8.00
	9	2452	-13.619	-13.649	-13.628	-13.563	-7.59	0.00	-7.59	8.00



ANT E:
Modulation Type: 802.11b
CH01

Modulation Type: 802.11g
CH01



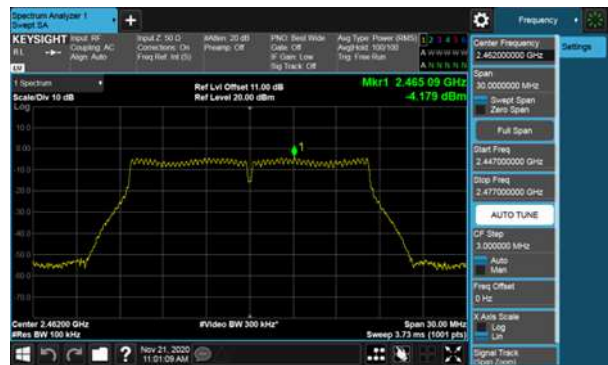
CH06

CH06



CH11

CH11

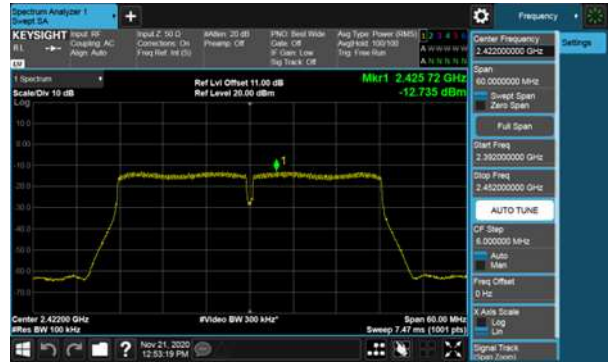




ANT E:
Modulation Type: VHT20
CH01



Modulation Type: VHT40
CH03



CH06



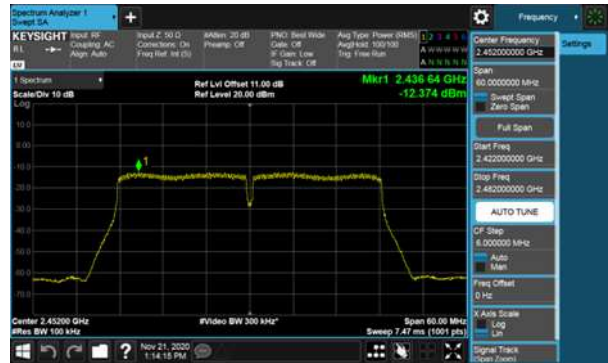
CH06



CH11



CH09





ANT F:
Modulation Type: 802.11b
CH01

Modulation Type: 802.11g
CH01



CH06

CH06



CH11

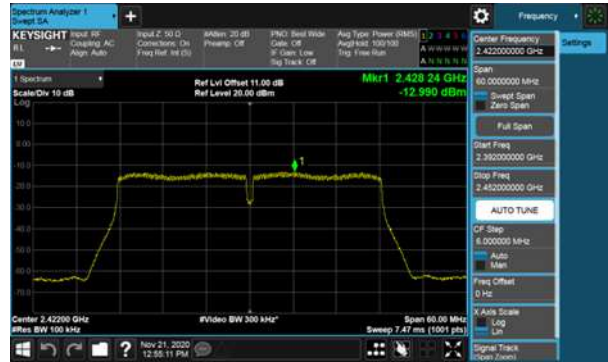
CH11





ANT F:
Modulation Type: VHT20
CH01

Modulation Type: VHT40
CH03



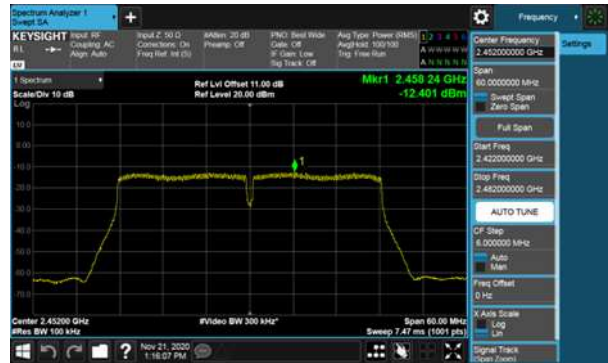
CH06

CH06



CH11

CH09





ANT G:
Modulation Type: 802.11b
CH01



Modulation Type: 802.11g
CH01



CH06



CH06



CH11

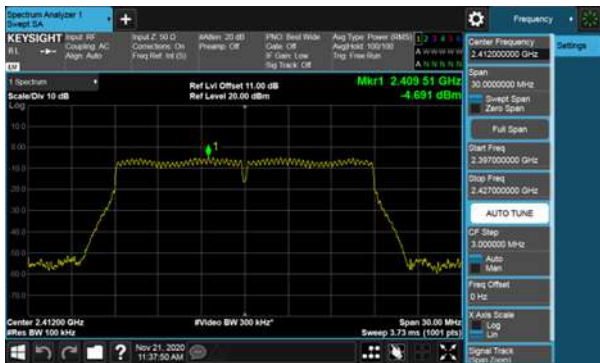


CH11

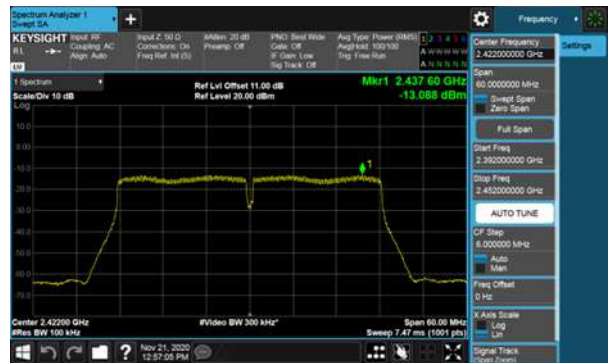




ANT G:
Modulation Type: VHT20
CH01



Modulation Type: VHT40
CH03



CH06



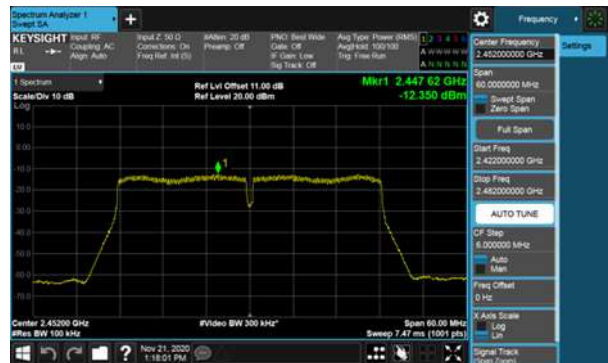
CH06



CH11



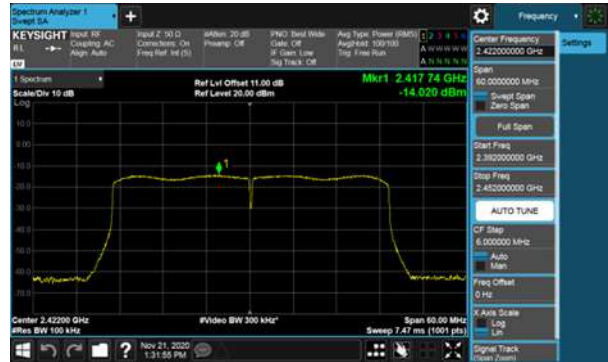
CH09





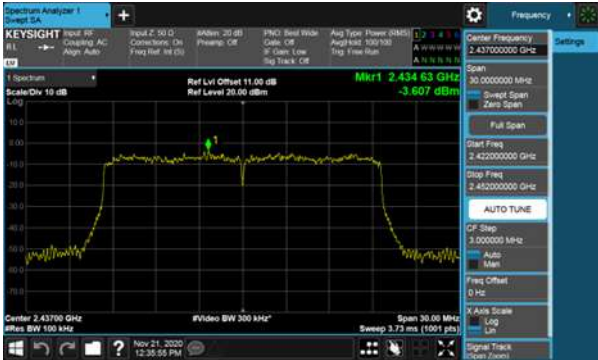
ANT G:
Modulation Type: 802.11ax HE20
CH01

Modulation Type: 802.11ax HE40
CH03



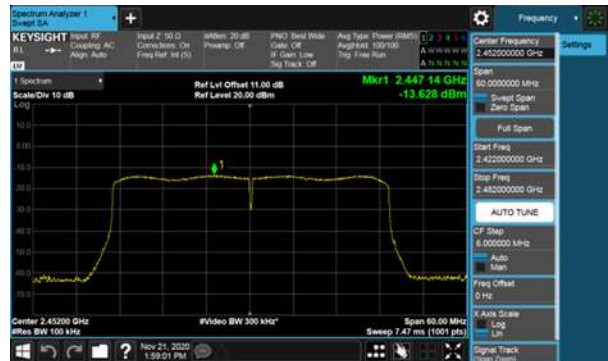
CH06

CH06



CH11

CH09





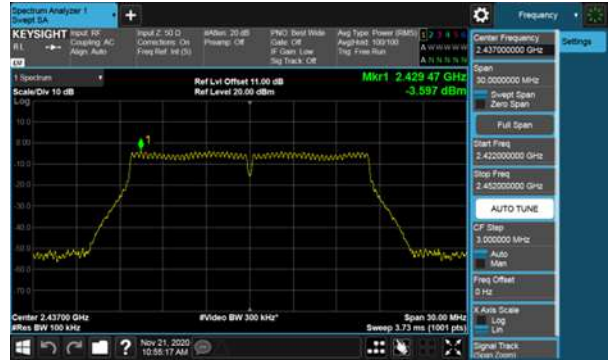
ANT H:
Modulation Type: 802.11b
CH01

Modulation Type: 802.11g
CH01



CH06

CH06



CH11

CH11





ANT H:
Modulation Type: VHT20
CH01

Modulation Type: VHT40
CH03



CH06

CH06



CH11

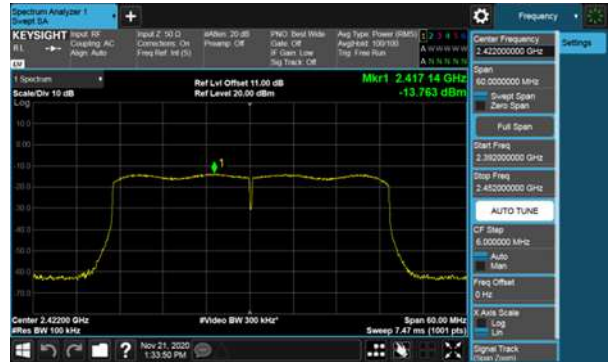
CH09





ANT H:
Modulation Type: 802.11ax HE20
CH01

Modulation Type: 802.11ax HE40
CH03



CH06

CH06



CH11

CH09

