7. Test of Conducted Spurious Emission

7.1 Test Limit

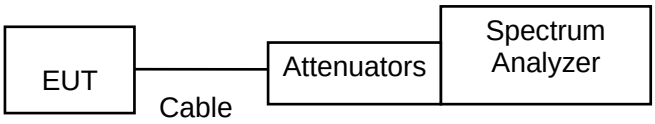
According to the methods defined in ANSI C63.10-2013 Section 11.11.1
Below –30dB of the highest emission level of operating band (In 100 kHz Resolution Bandwidth)

7.2 Test Procedure

According to the methods defined in ANSI C63.10-2013 Section 11.11.2 & 11.11.3

a. The transmitter output was connected to the spectrum analyzer via a low loss cable.
b. Set RBW of spectrum analyzer to 100 KHz and VBW of spectrum analyzer to 300 KHz with convenient frequency span including 100 KHz bandwidth from band edge.
c. Peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 30dB relative to the maximum measured in-band peak PSD level.
d. The band edges was measured and recorded.

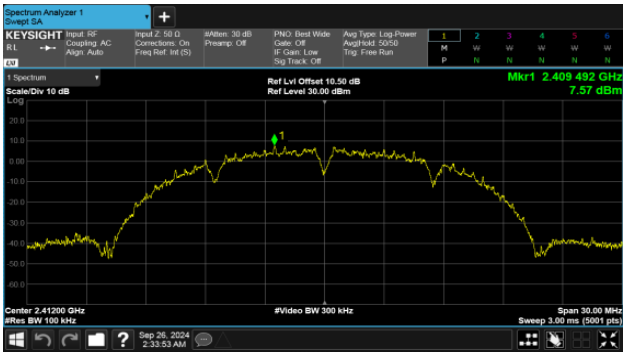
7.3 Test Setup Layout



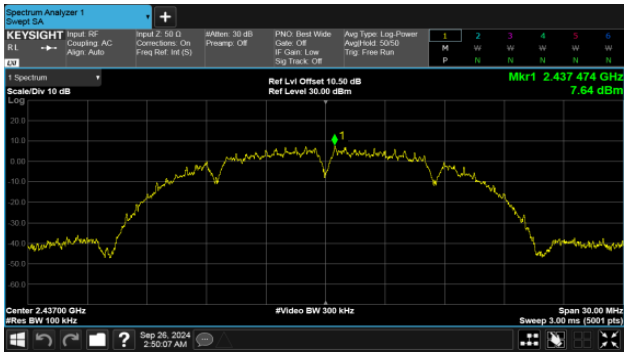
7.4 Test Result and Data

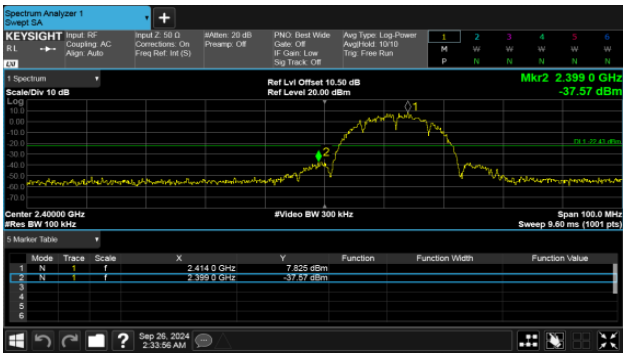
Note: Test plots refers to the following pages.

Modulation Type: 802.11b CH01

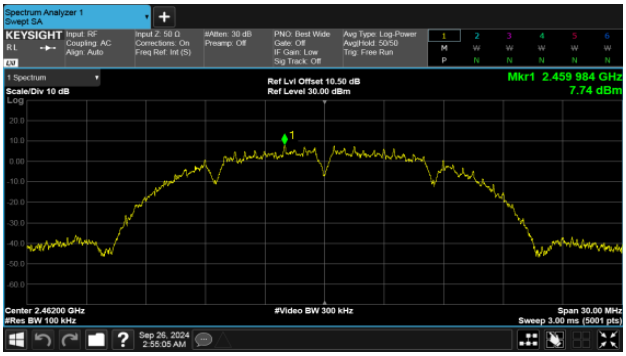


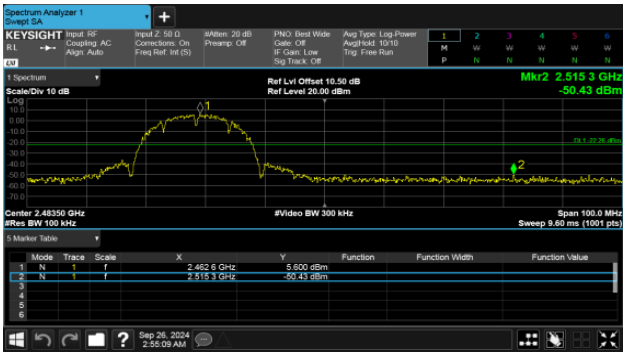
Modulation Type: 802.11b CH06



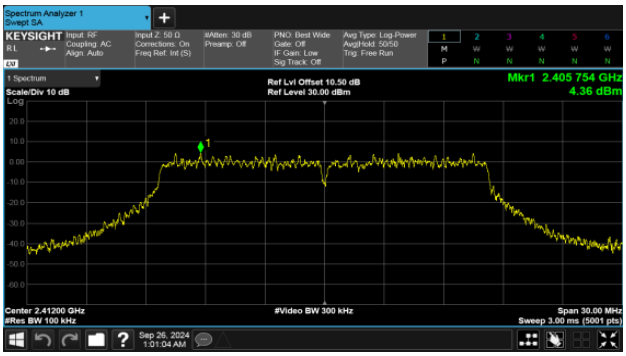


Modulation Type: 802.11b CH11

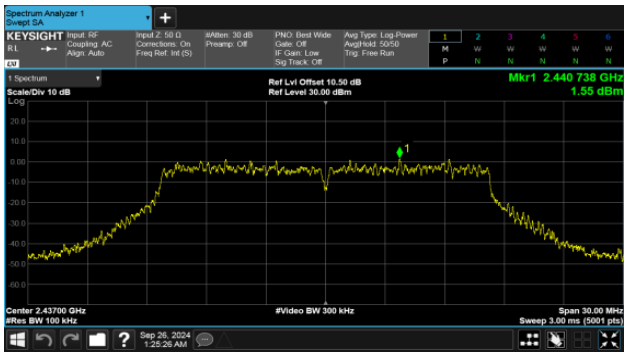


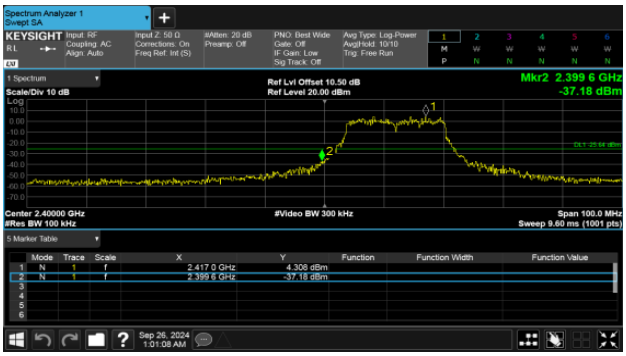


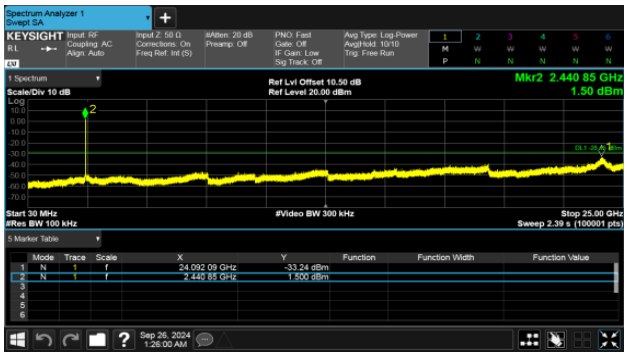
Modulation Type: 802.11g CH01



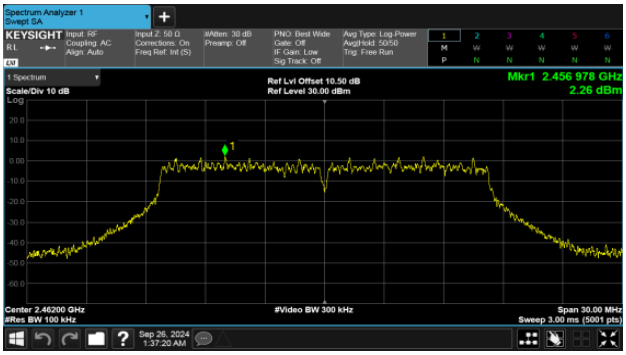
Modulation Type: 802.11g CH06

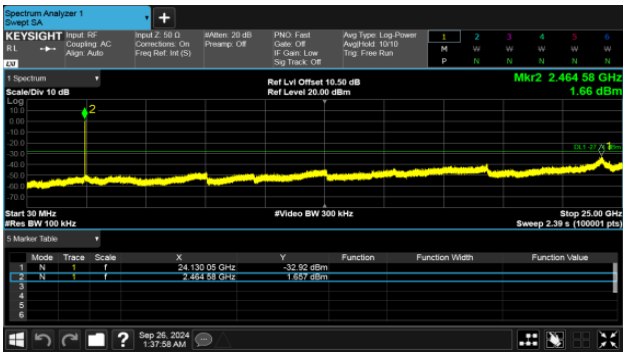




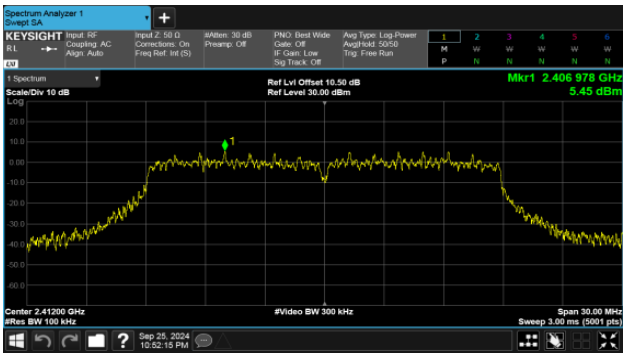


Modulation Type: 802.11g CH11

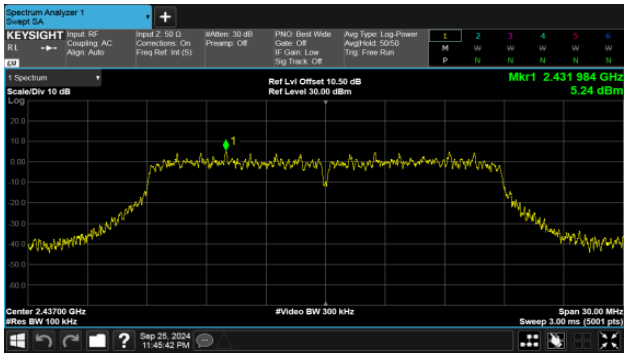


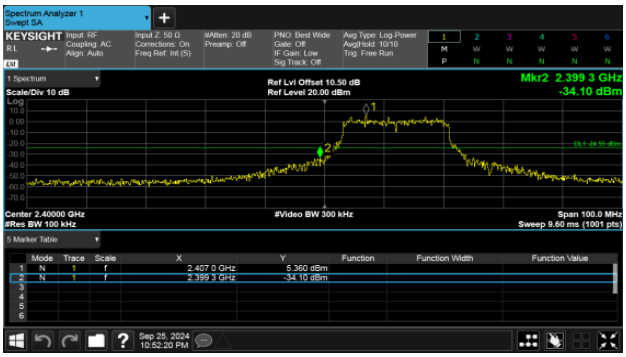


Modulation Type: 802.11n HT20 CH01

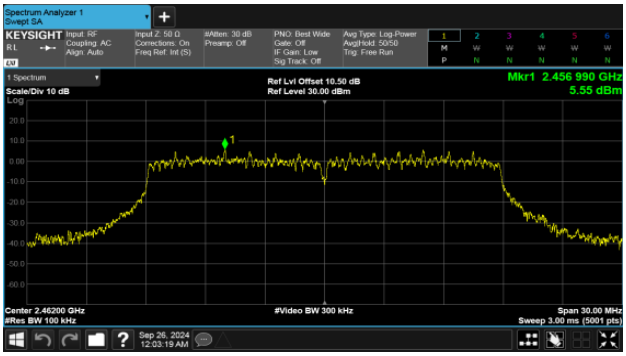


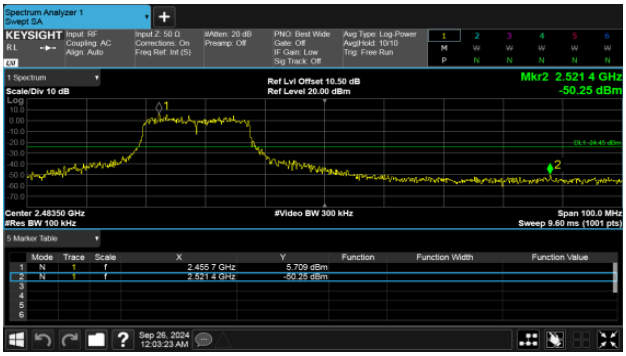
Modulation Type: 802.11n HT20 CH06



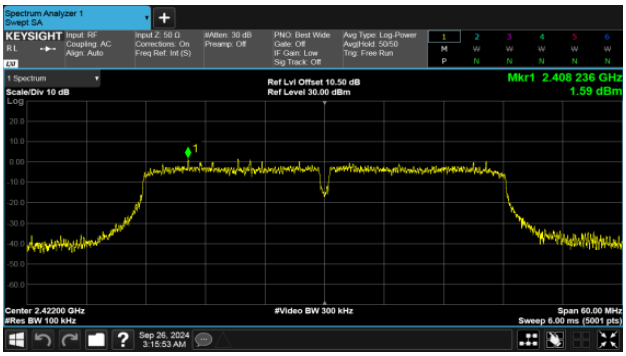


Modulation Type: 802.11n HT20 CH11

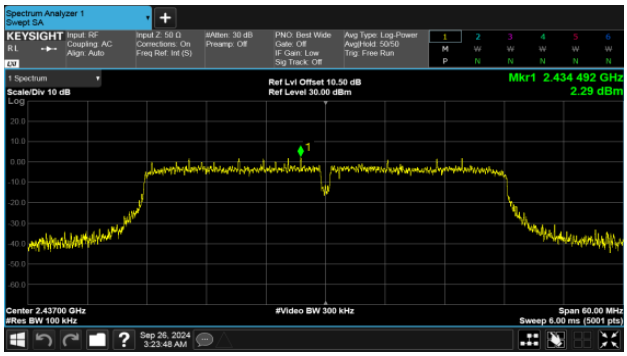


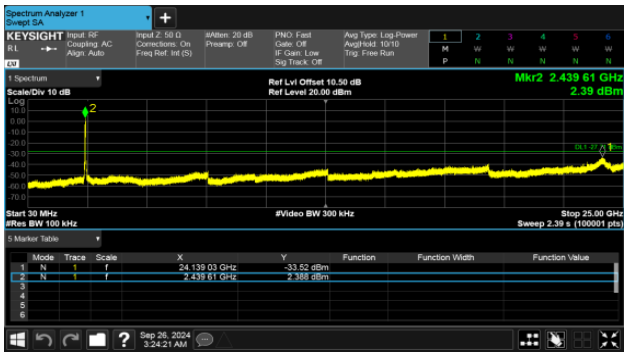


Modulation Type: 802.11n HT40 CH03

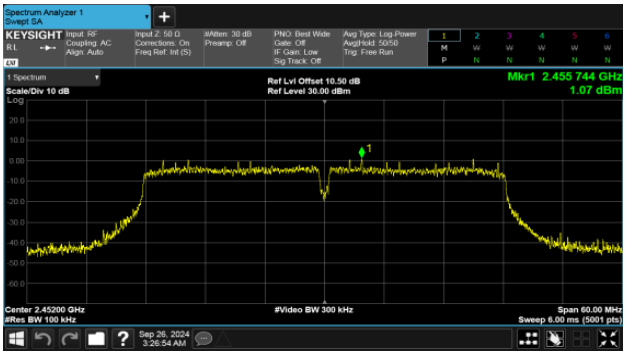


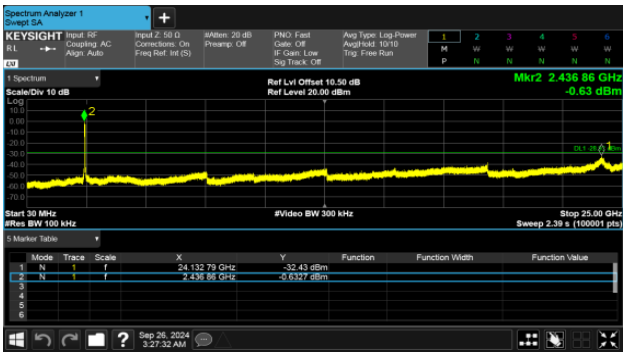
Modulation Type: 802.11n HT40 CH06





Modulation Type: 802.11n HT40 CH09





8. On Time, Duty Cycle and Measurement methods

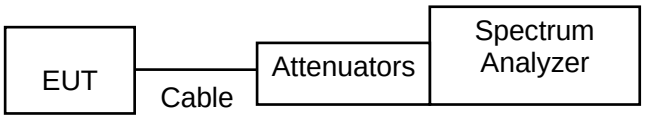
8.1 Test Limit

None; for reporting purposes only.

8.2 Test Procedure

According to the methods defined in ANSI C63.10-2013 Section 11.6 Zero-Span Spectrum Analyzer Method.

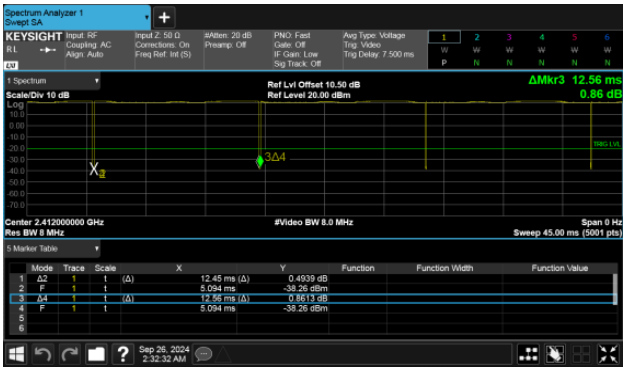
8.3 Test Setup Layout



8.4 Test Result and Data

Modulation Type	On Time (ms)	Period Time (ms)	Duty Cycle (%)
11b,1M	12.450	12.560	99.12%
11g,6M	0.251	0.403	62.28%
11n HT20	0.232	0.356	65.19%
11n HT40	0.950	1.030	92.19%

Modulation Type: 802.11b(1Mbps)



Modulation Type: 802.11n HT20 (6.5Mbps)

Modulation Type: 802.11g(6Mbps)

Modulation Type: 802.11n HT40 (13.5Mbps)

9. 6dB Bandwidth Measurement Data

9.1 Test Limit

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

9.2 Test Procedures

According to the methods defined in ANSI C63.10-2013 Section 11.8

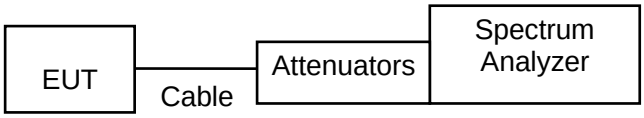
a. The transmitter output was connected to the spectrum analyzer.

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

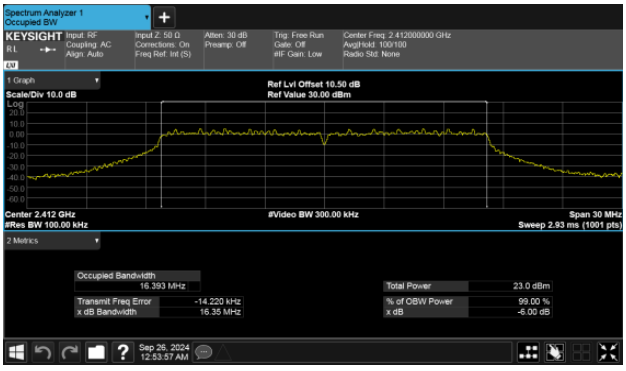
Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
11b	1	2412	10.11	0.5
	6	2437	10.12	0.5
	11	2462	10.11	0.5
11g	1	2412	16.35	0.5
	6	2437	16.40	0.5
	11	2462	16.44	0.5
11n HT20	1	2412	17.31	0.5
	6	2437	17.23	0.5
	11	2462	16.88	0.5
11n HT40	3	2422	35.47	0.5
	6	2437	35.15	0.5
	9	2452	35.16	0.5

Modulation Type: 802.11b CH01

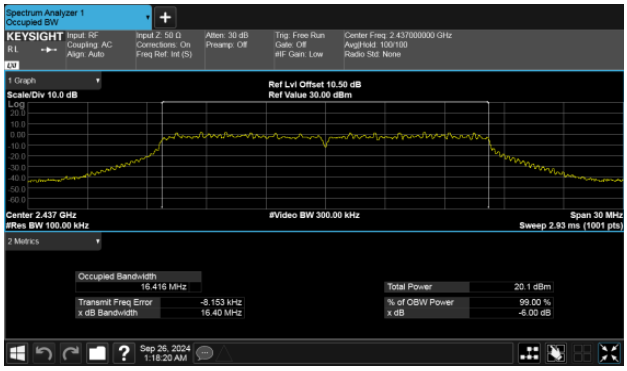
Modulation Type: 802.11b CH06

Modulation Type: 802.11b CH11

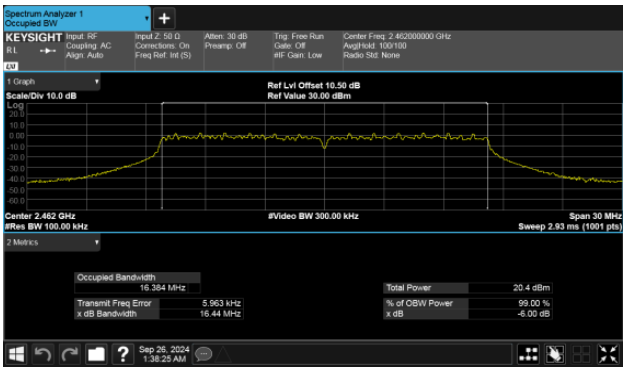
Modulation Type: 802.11g CH01



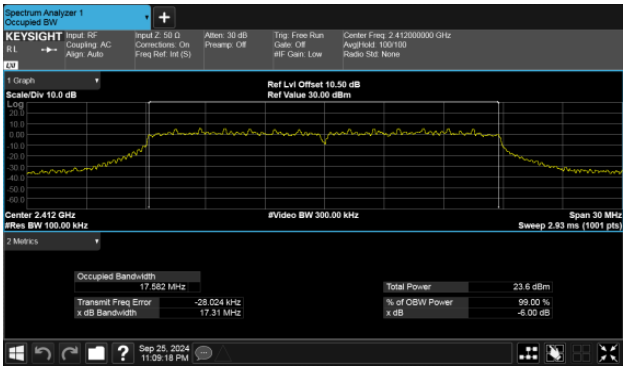
Modulation Type: 802.11g CH06



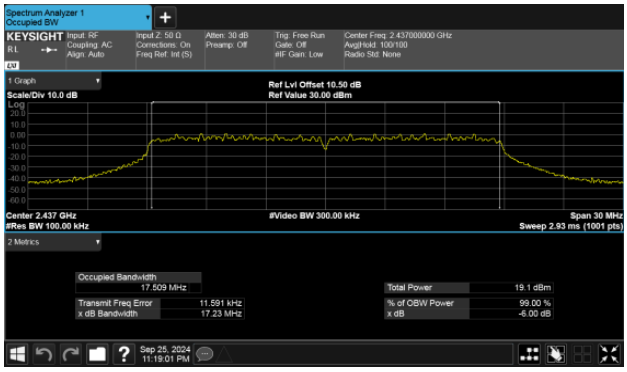
Modulation Type: 802.11g CH11



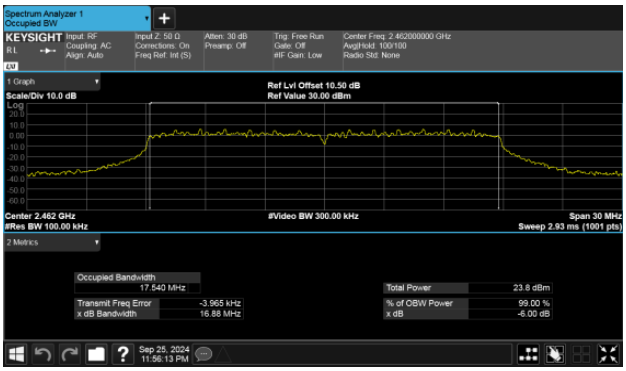
Modulation Type: 802.11n HT20 CH01



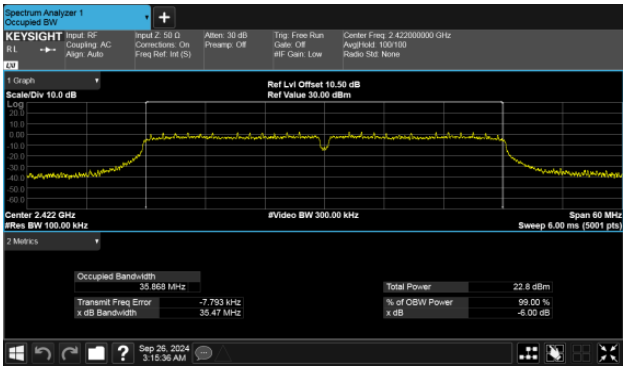
Modulation Type: 802.11n HT20 CH06



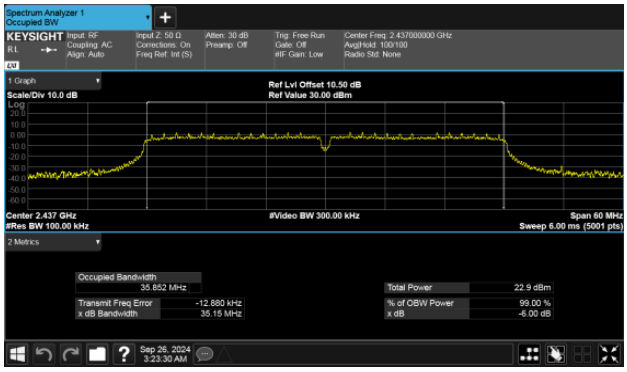
Modulation Type: 802.11n HT20 CH11



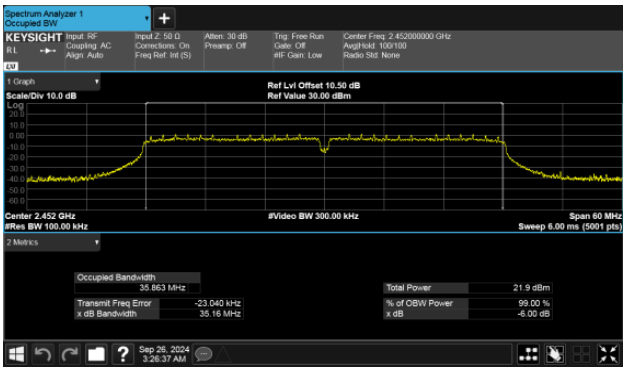
Modulation Type: 802.11n HT40 CH03



Modulation Type: 802.11n HT40 CH06



Modulation Type: 802.11n HT40 CH09



10. Maximum Average Output Power

10.1 Test Limit

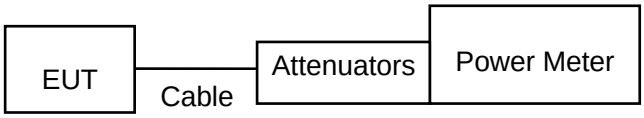
The Maximum Average Output Power Measurement is 30dBm.
If transmitting antennas of directional gain greater than 6 dBi are used, the average output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

10.2 Test Procedures

According to the methods defined in ANSI C63.10-2013 Section 11.9.2.3.2

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

Data Rate	Setting	Modulation Mode	CH	Frequency (MHz)	Conducted (AV) output power (dBm)	Total AV power (dBm)	Total AV power (mW)	Power Limit (dBm)
1	Default	11b	1	2412	17.66	17.66	58.345	30.00
	Default		6	2437	17.36	17.36	54.450	30.00
	Default		11	2462	17.27	17.27	53.333	30.00
6	51	11g	1	2412	15.81	15.81	38.107	30.00
	Default		6	2437	12.91	12.91	19.543	30.00
	Default		11	2462	13.27	13.27	21.232	30.00
MCS0	52	11n HT20	1	2412	16.42	16.42	43.853	30.00
	Default		6	2437	16.22	16.22	41.879	30.00
	53		11	2462	16.53	16.53	44.978	30.00
MSC0	Default	11n HT40	3	2422	17.05	17.05	50.699	30.00
	Default		6	2437	16.27	16.27	42.364	30.00
	52		9	2452	16.43	16.43	43.954	30.00

11. Power Spectral Density

11.1 Test Limit

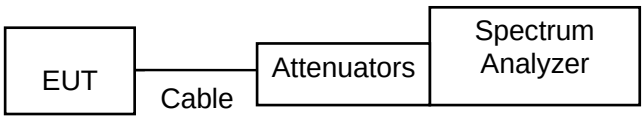
The Maximum of Power Spectral Density Measurement is 8dBm.

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

According to the methods defined in ANSI C63.10-2013 Section 11.10.

11.3 Test Setup Layout

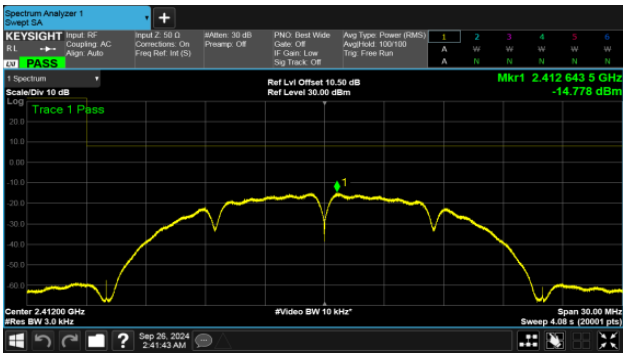


11.4 Test Result and Data

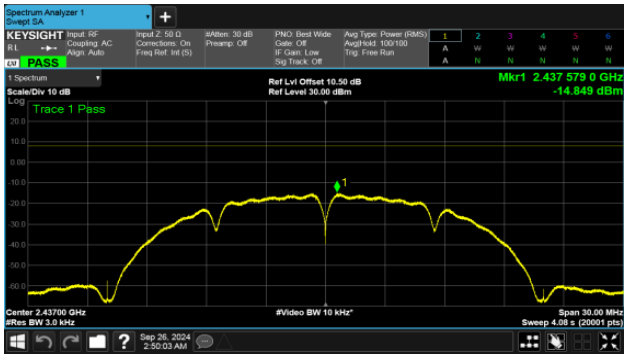
Modulation Type	CH	Frequency (MHz)	Maximum Power Density of 3KHz Bandwidth(dBm)	Sum chain (dBm)	Duty Cycle CF(dB)	Total PSD (dBm)	Limit (dBm)
11b	1	2412	-14.778	-14.78	0.00	-14.78	8.00
	6	2437	-14.849	-14.85	0.00	-14.85	8.00
	11	2462	-14.97	-14.97	0.00	-14.97	8.00
11g	1	2412	-14.01	-14.01	2.06	-11.95	8.00
	6	2437	-16.984	-16.98	2.06	-14.92	8.00
	11	2462	-16.139	-16.14	2.06	-14.08	8.00
11n HT20	1	2412	-12.34	-12.34	2.09	-10.25	8.00
	6	2437	-13.173	-13.17	2.09	-11.08	8.00
	11	2462	-12.876	-12.88	2.09	-10.79	8.00

Modulation Type	CH	Frequency (MHz)	Maximum Power Density of 100KHz Bandwidth(dBm)	Sum chain (dBm)	Duty Cycle CF(dB)	Total PSD (dBm)	Limit (dBm)
11n HT40	3	2422	-7.466	-7.47	0.31	-7.16	8.00
	6	2437	-7.379	-7.38	0.31	-7.07	8.00
	9	2452	-7.982	-7.98	0.31	-7.67	8.00

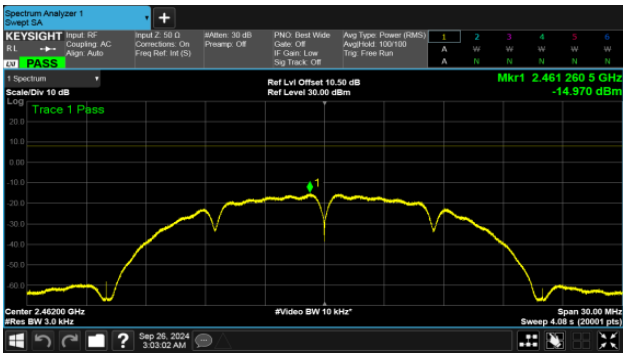
Modulation Type: 802.11b CH01



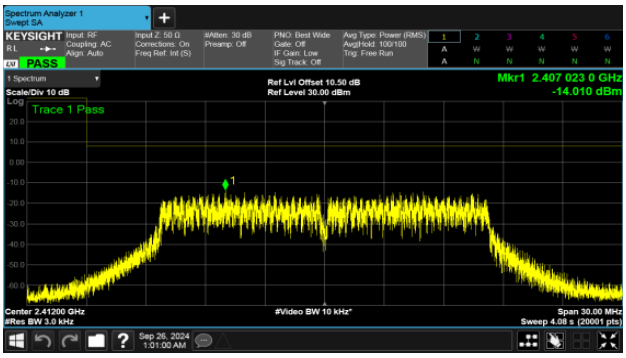
Modulation Type: 802.11b CH06



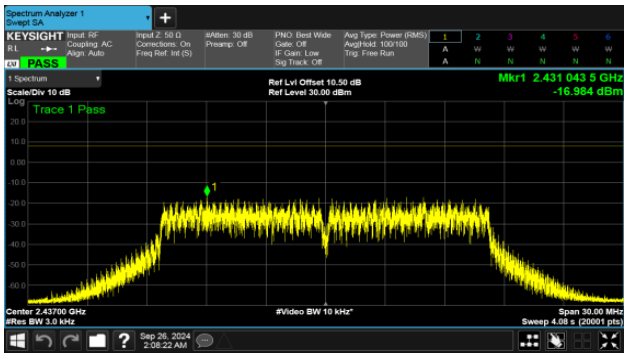
Modulation Type: 802.11b CH11



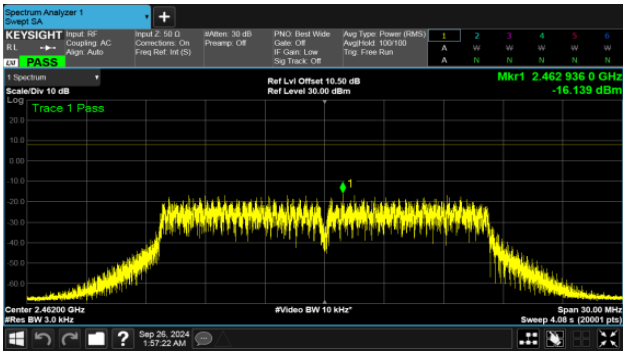
Modulation Type: 802.11g CH01



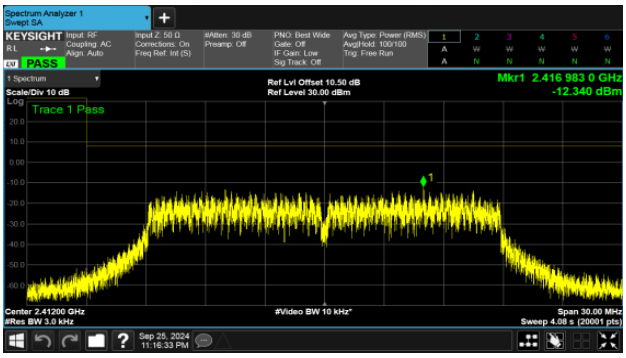
Modulation Type: 802.11g CH06



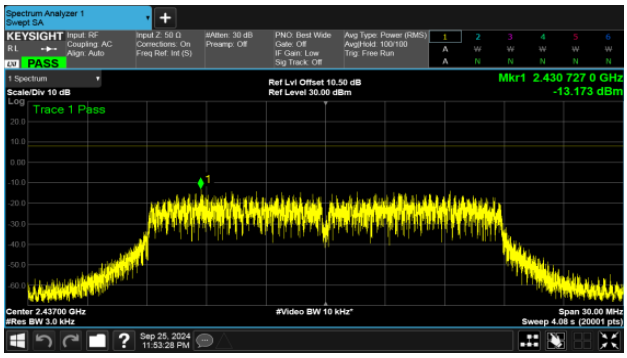
Modulation Type: 802.11g CH11



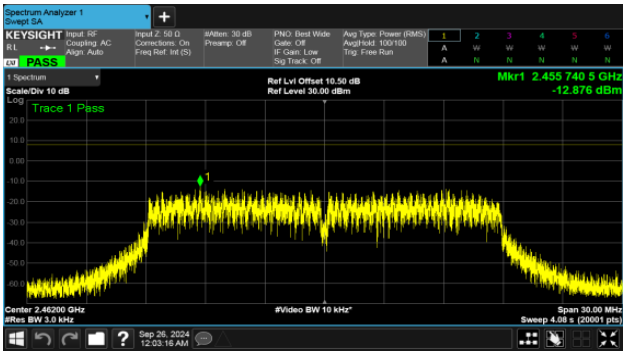
Modulation Type: 802.11n HT 20 CH01



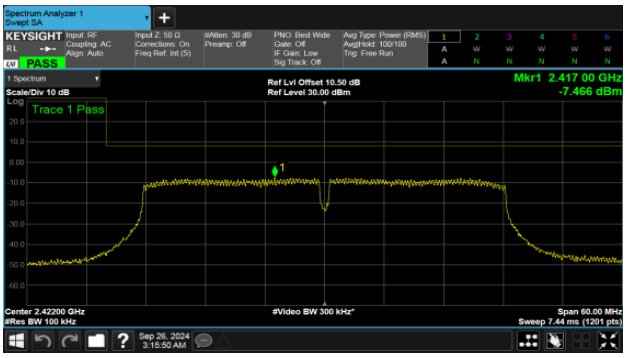
Modulation Type: 802.11n HT 20 CH06



Modulation Type: 802.11n HT 20 CH11



Modulation Type: 802.11n HT 40 CH03



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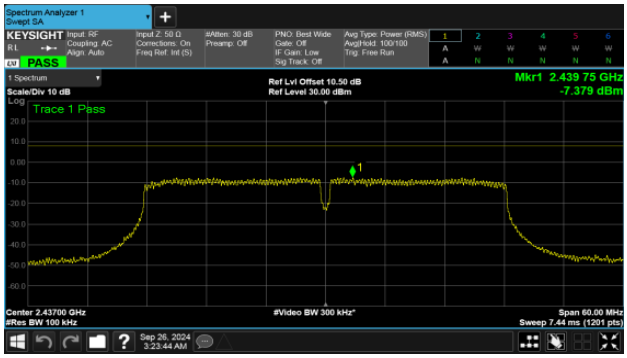

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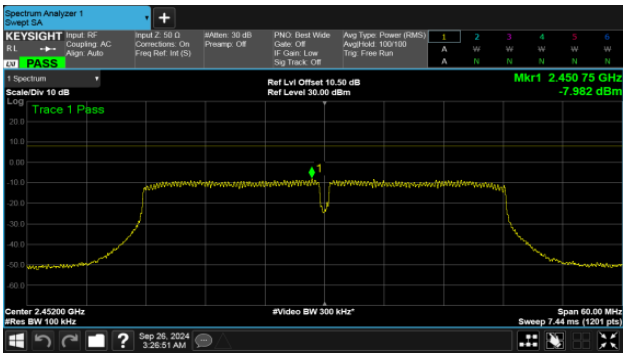

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