

4.5 6dB Bandwidth

Limit

For digital modulation systems, the minimum 6 dB bandwidth shall be at least 500 kHz

Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100 KHz RBW and 300 KHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

Test Configuration



Test Results

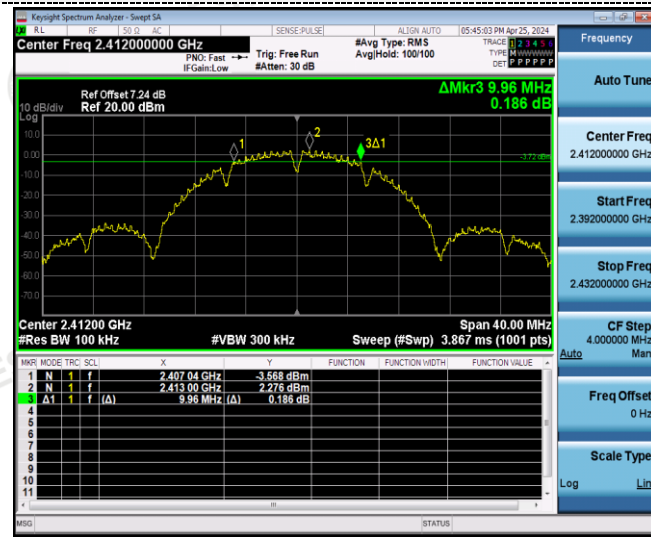
Type	Channel	6dB Bandwidth (MHz)	Limit (KHz)	Result
802.11b	01	9.960	≥500	Pass
	06	10.000		
	11	10.040		
802.11g	01	14.440	≥500	Pass
	06	15.040		
	11	15.120		
802.11n(HT20)	01	15.080	≥500	Pass
	06	15.080		
	11	15.040		
802.11n(HT40)	03	35.040	≥500	Pass
	06	33.840		
	09	33.840		
802.11ax(HT20)	01	15.120	≥500	Pass
	06	12.640		
	11	12.800		
802.11ax(HT40)	03	35.040	≥500	Pass
	06	31.280		
	09	33.840		

Note:

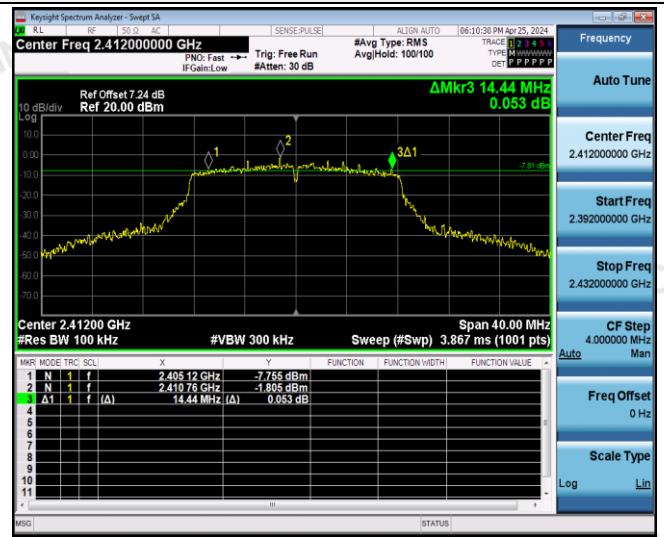
- 1) Measured peak power spectrum density at difference data rate for each mode and recorded worst case for each mode.
- 2) Test results including cable loss;
- 3) Worst case data at 1Mbps at IEEE 802.11b; 6Mbps at IEEE 802.11g; 6.5Mbps at IEEE 802.11n/ax HT20; 13.5Mbps at IEEE 802.11n/ax HT40;

Please refer to following plots;

802.11b



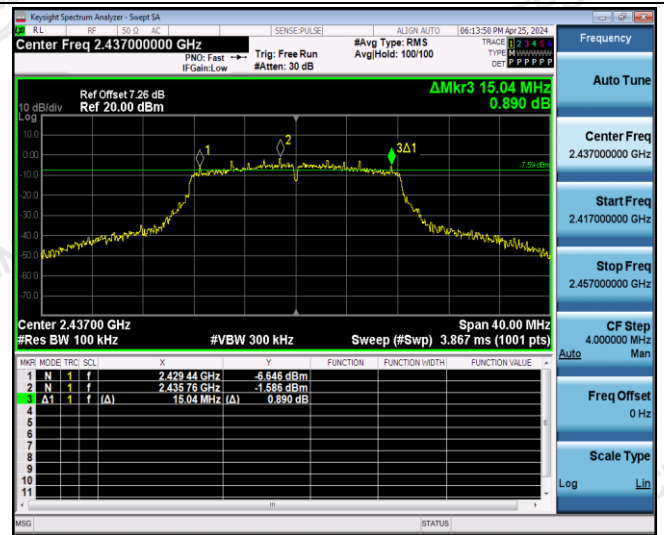
802.11g



CH01



CH01



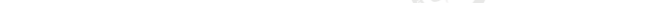
CH06



CH06



CH11

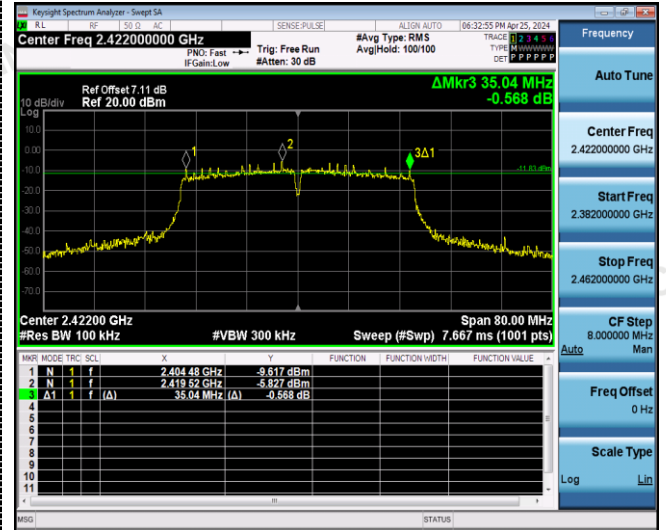
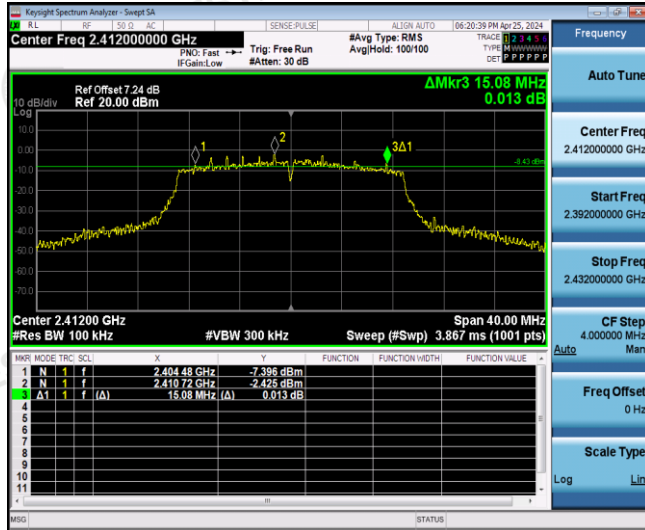


CH11



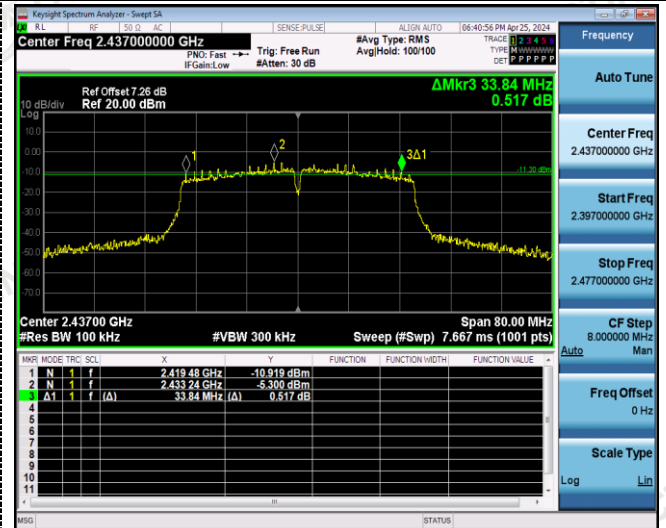
802.11n(HT20)

802.11n(HT40)



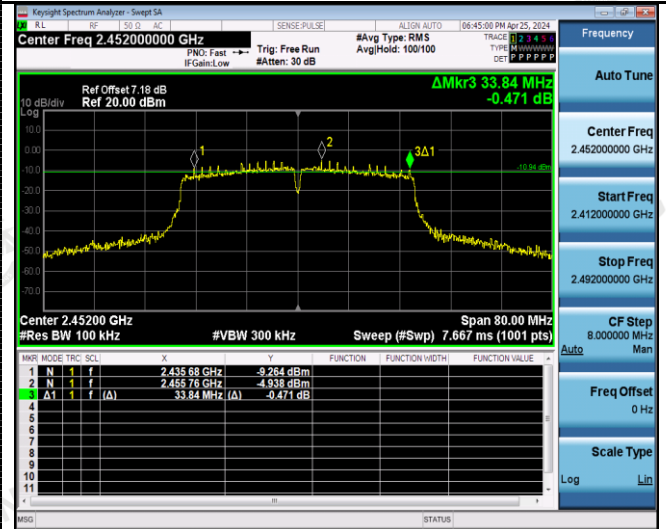
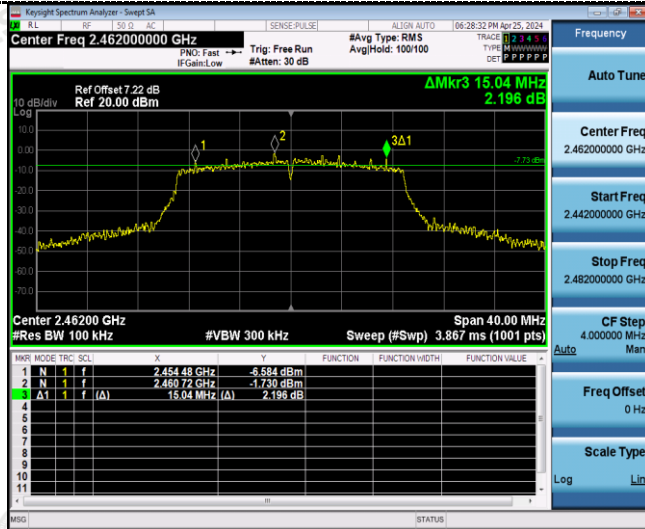
CH01

CH03



CH06

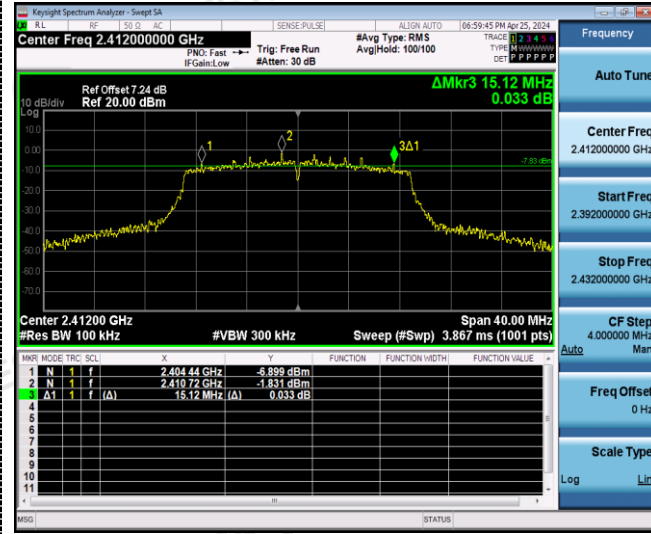
CH06



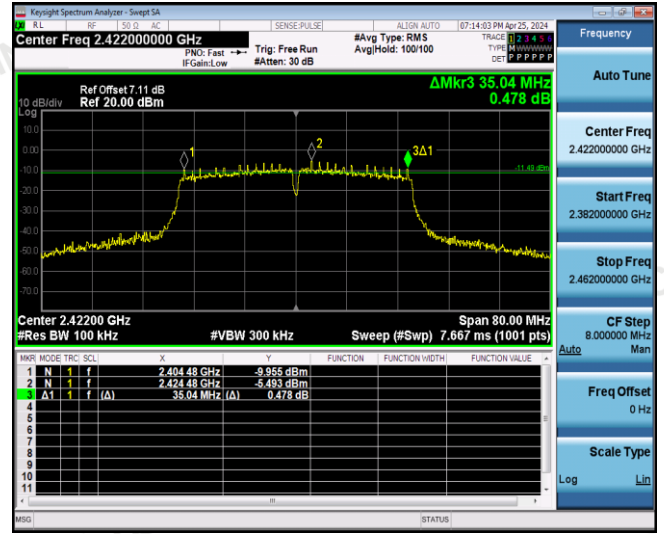
CH11

CH09

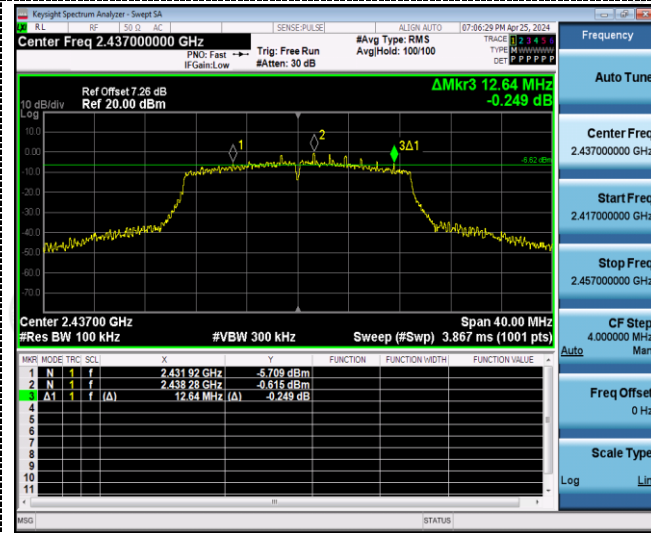
802.11ax(HT20)



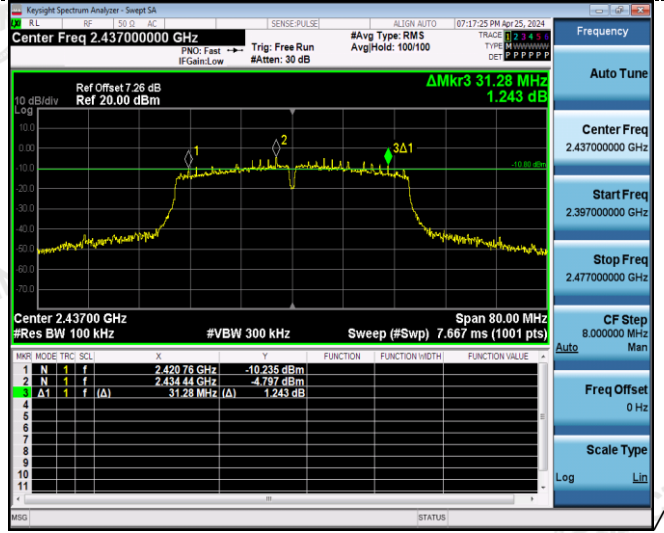
802.11ax(HT40)



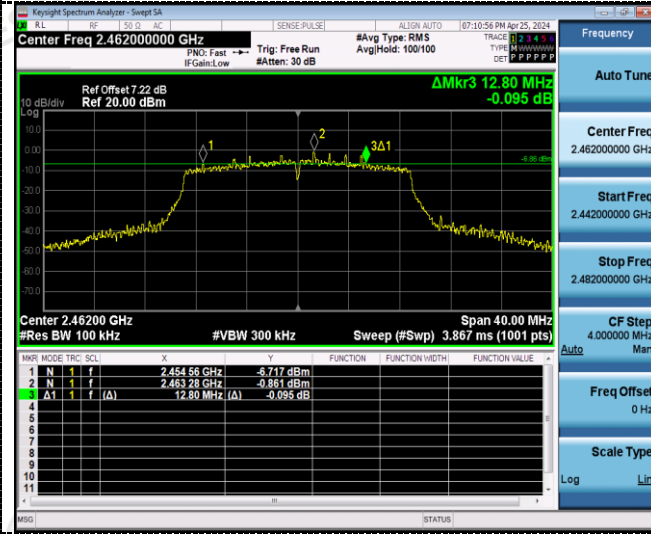
CH01



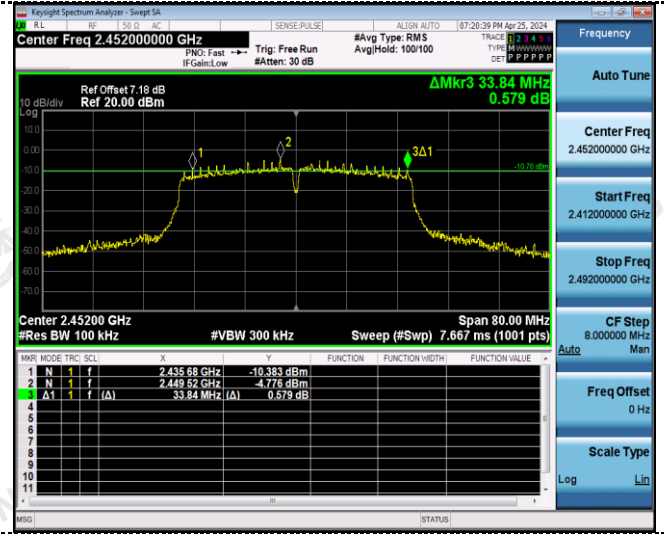
CH03



CH06



CH06



CH11

CH09

4.6 Out-of-band Emissions

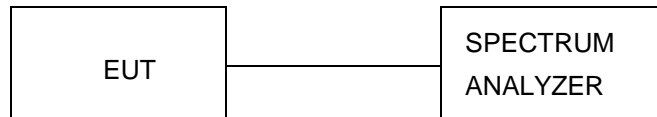
Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

Test Procedure

Connect the transmitter output to spectrum analyzer using a low loss RF cable, and set the spectrum analyzer to RBW=100 kHz, VBW= 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge and out-of-band emissions.

Test Configuration



Test Results

Remark: The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandedge measurement data. And record the worst data in the report.

Test plot as follows:

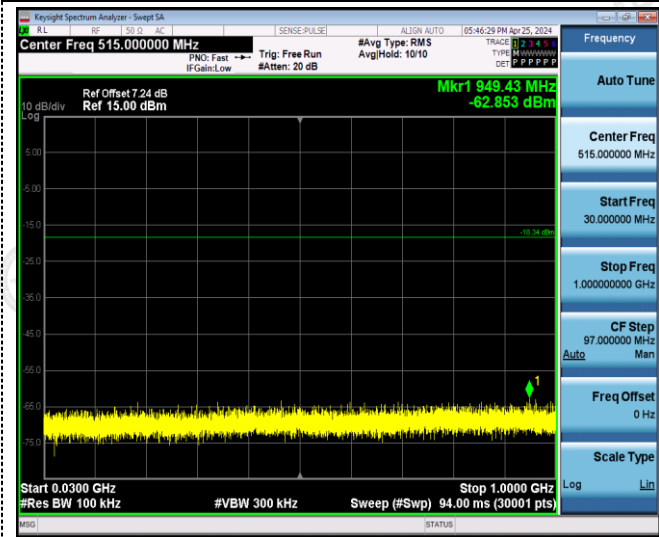
802.11b



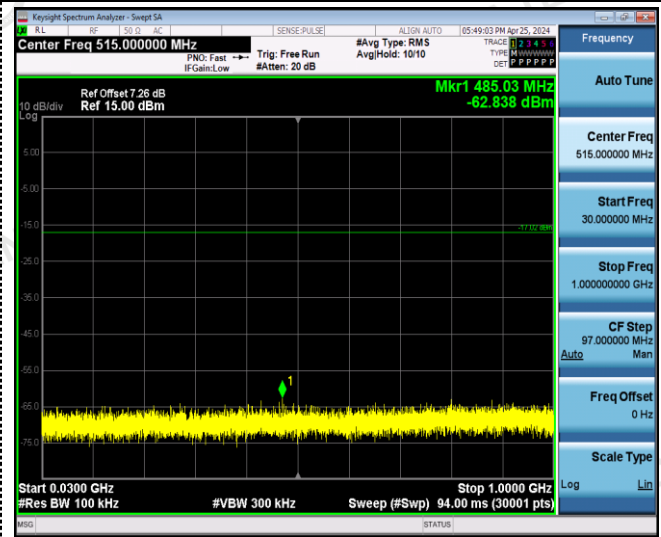
Reference
CH01



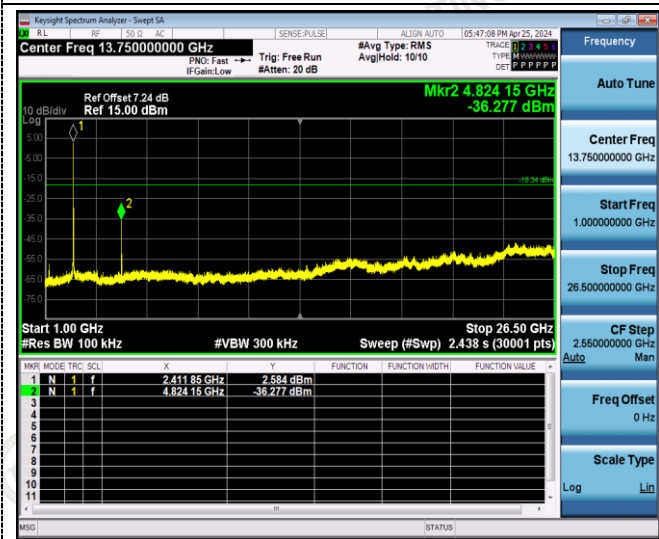
Reference
CH06



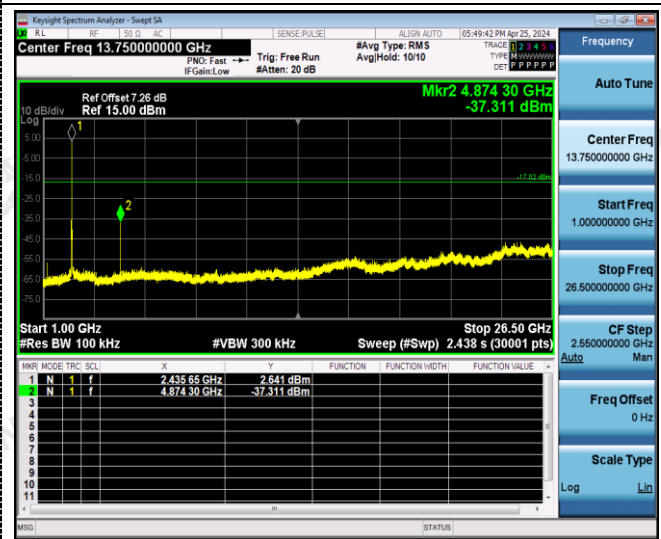
30MHz-1GHz



30MHz-1GHz



1GHz -25GHz



1GHz -25GHz