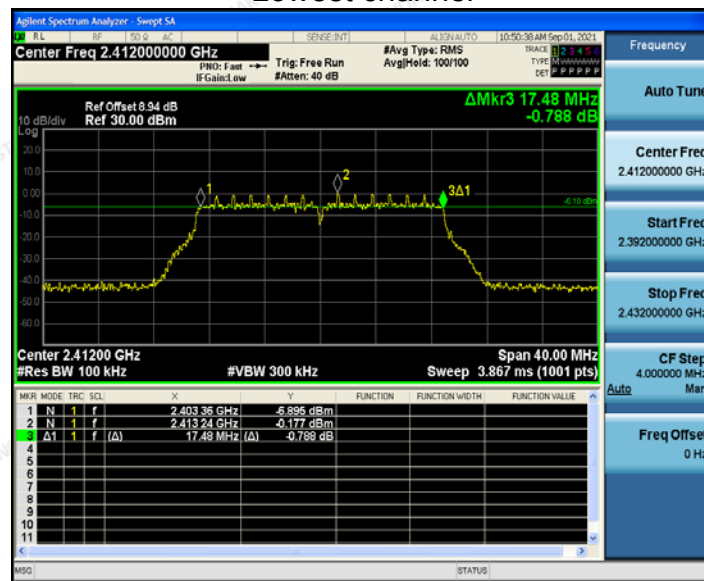


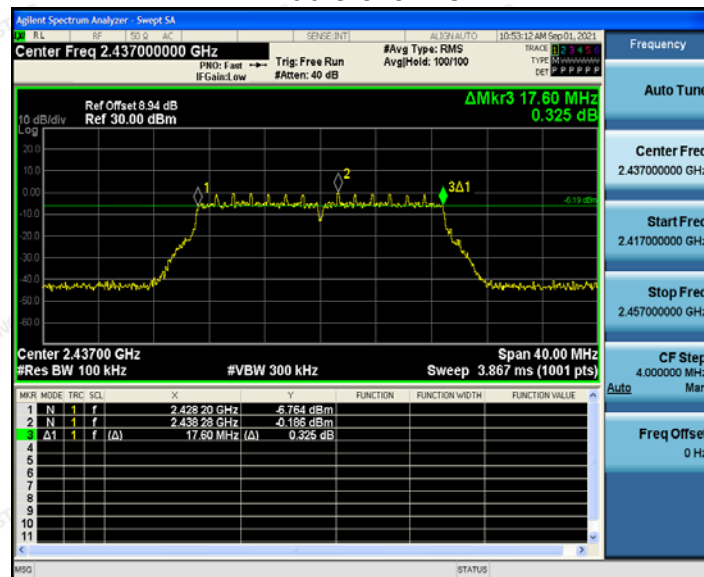


802.11ac(HT20) Modulation

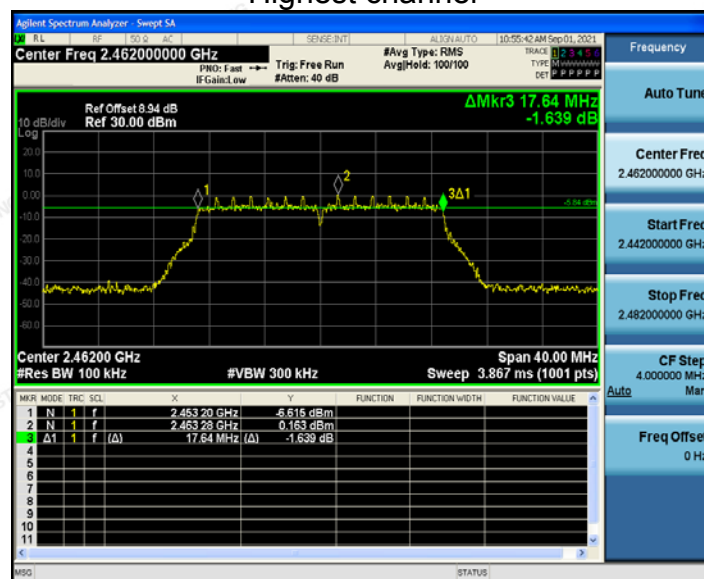
Lowest channel



Middle channel



Highest channel

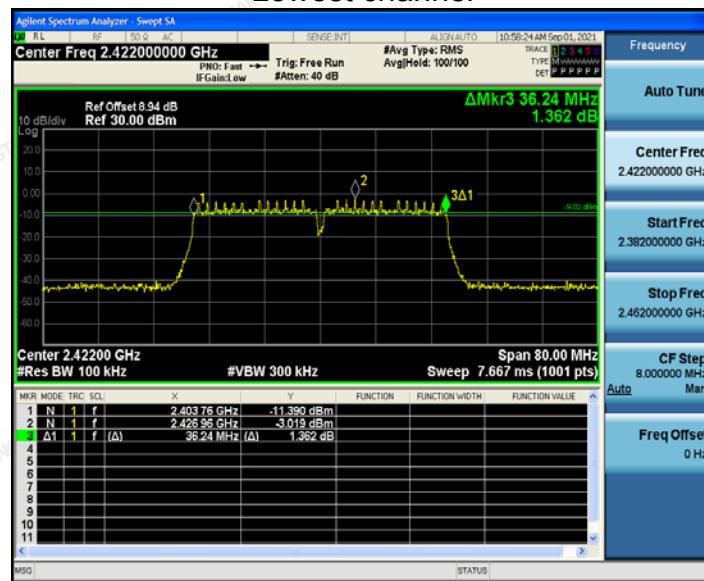


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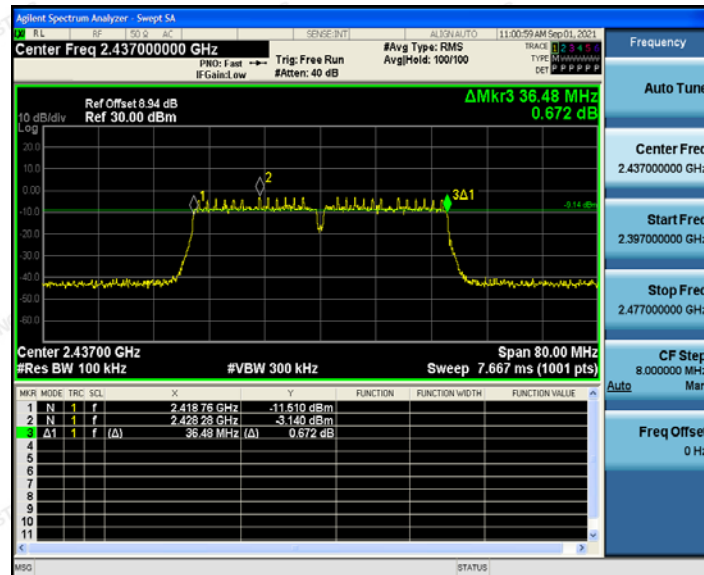


802.11ac (HT40) Modulation

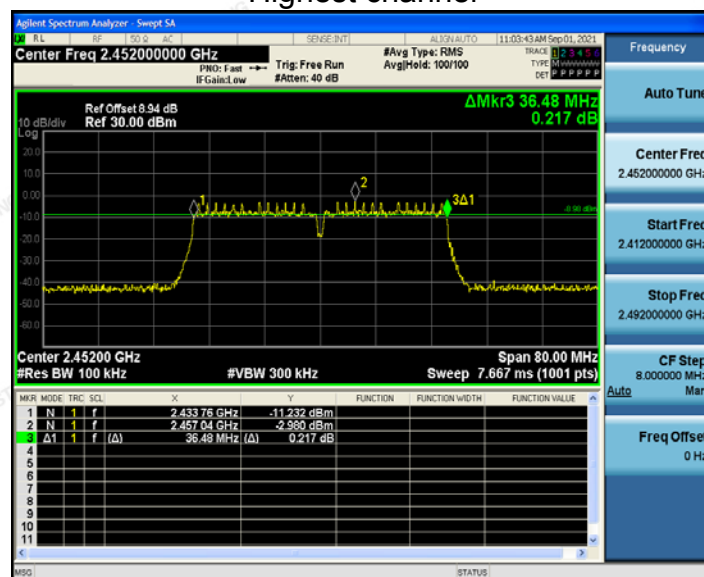
Lowest channel



Middle channel



Highest channel

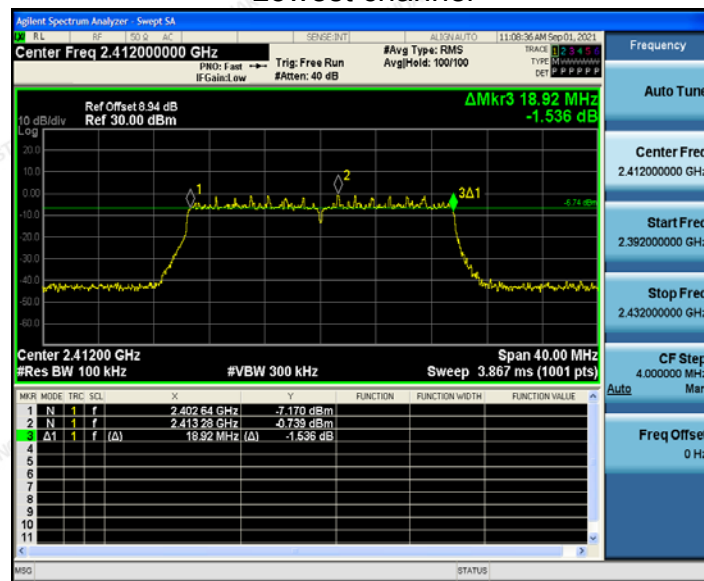


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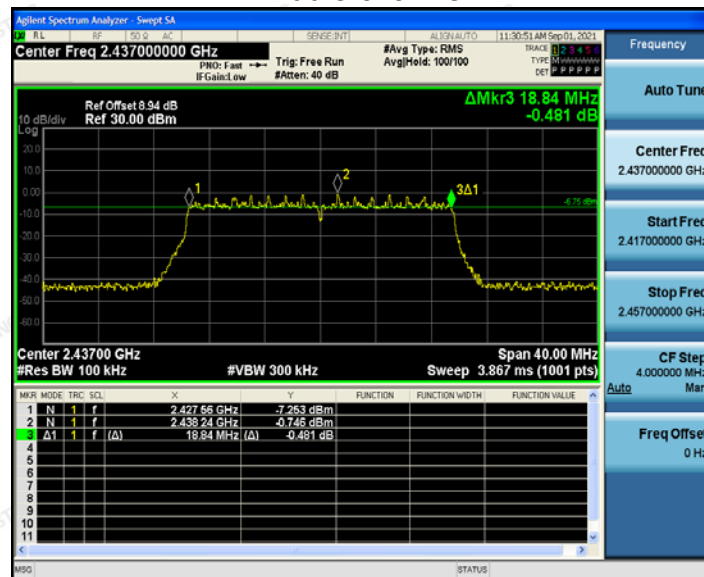


802.11ax (HT20) Modulation

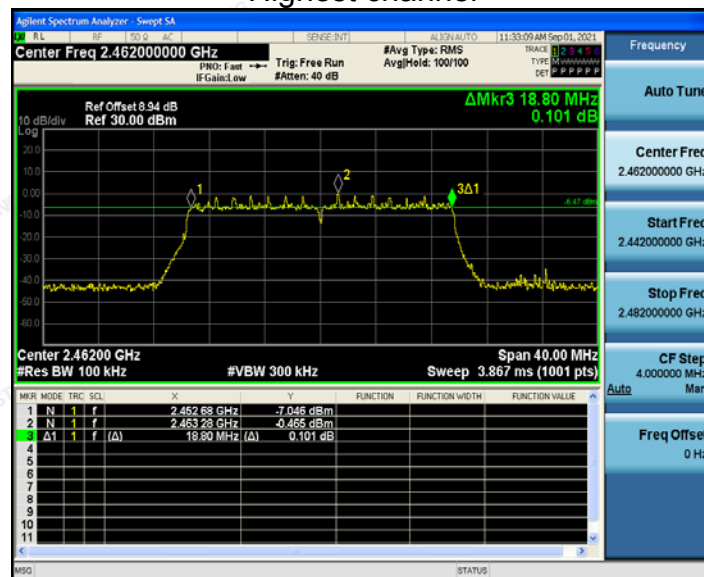
Lowest channel



Middle channel



Highest channel

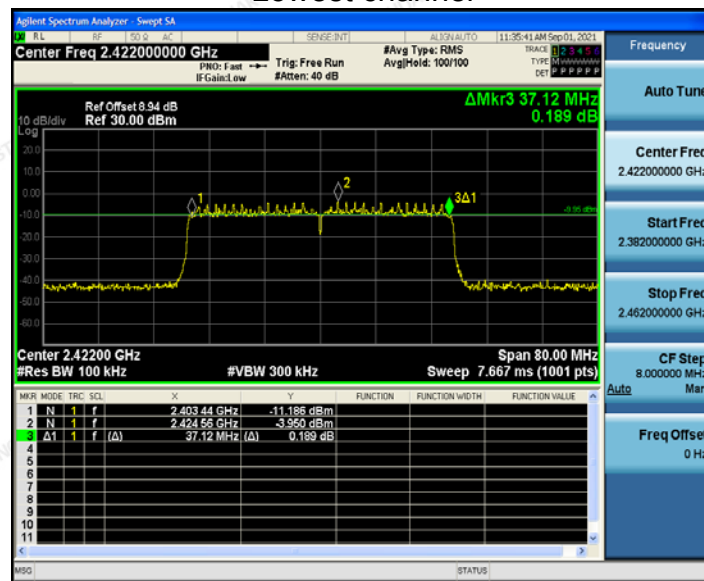


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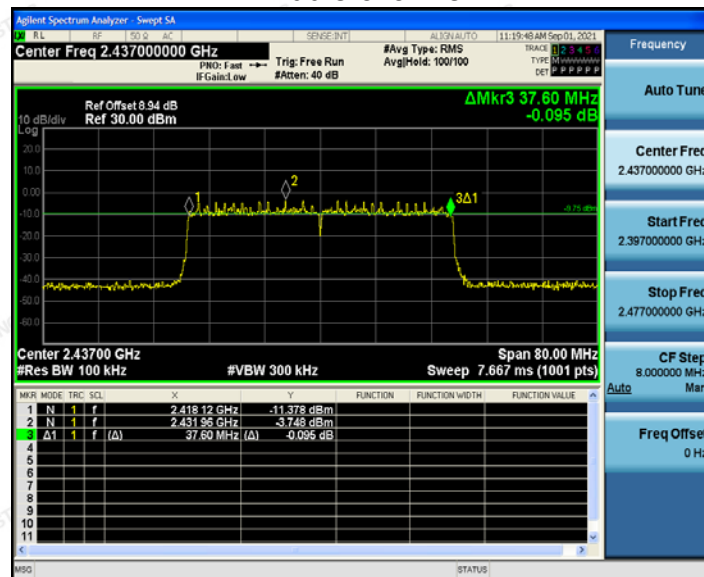


802.11ax (HT40) Modulation

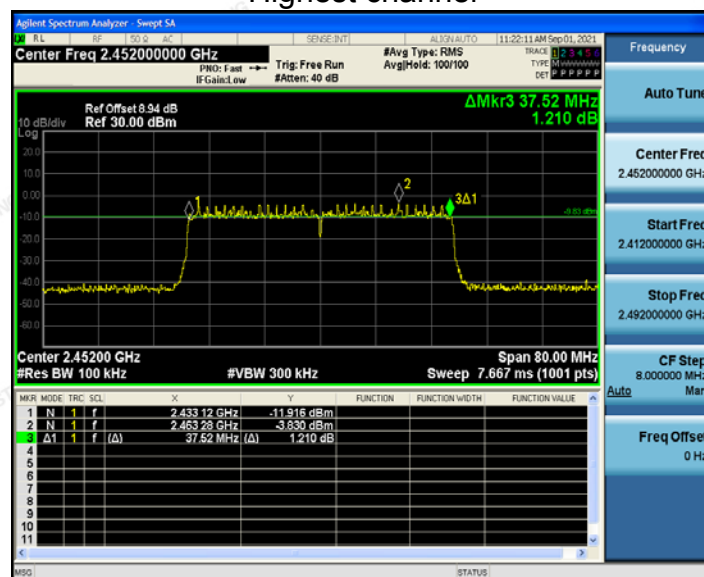
Lowest channel



Middle channel



Highest channel



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4.4. Power Spectral Density

4.4.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	KDB 558074
Limit:	The average power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.
Test Setup:	 Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows Measurement procedure 10.2 method PKPSD of FCC KDB Publication No. 558074 D01 15.247 Meas Guidance v05r02. 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW): $3\text{ kHz} \leq \text{RBW} \leq 100\text{ kHz}$. Video bandwidth VBW $\geq 3 \times \text{RBW}$. Set the span to at least 1.5 times the OBW. 5. Detector = Peak, Sweep time = auto couple. 6. Employ trace averaging (Peak) mode over a minimum of 100 traces. Use the peak marker function to determine the maximum power level. 6. Measure and record the results in the test report.
Test Result:	PASS

4.4.2. Test Instruments

RF Test Room					
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 10, 2020	Dec. 09, 2021
RF Cable (9KHz-26.5GHz)	Tonscend	170660	N/A	Dec. 10, 2020	Dec. 09, 2021
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 10, 2020	Dec. 09, 2021

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

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4.4.3. Test data

For antenna port 1

EUT Set Mode	Channel	Result (dBm/30kHz)	Result (dBm/3kHz)
802.11b	Lowest	2.31	-7.69
	Middle	3.52	-6.48
	Highest	3.01	-6.99
802.11g	Lowest	-5.88	-15.88
	Middle	-5.84	-15.84
	Highest	-5.55	-15.55
802.11n(H20)	Lowest	-5.68	-15.68
	Middle	-5.05	-15.05
	Highest	-4.96	-14.96
802.11n(H40)	Lowest	-8.06	-18.06
	Middle	-7.93	-17.93
	Highest	-8.47	-18.47
802.11ac(H20)	Lowest	-4.59	-14.59
	Middle	-4.66	-14.66
	Highest	-4.65	-14.65
802.11ac(H40)	Lowest	-8.13	-18.13
	Middle	-8.14	-18.14
	Highest	-8.13	-18.13
802.11ax(H20)	Lowest	-4.36	-14.36
	Middle	-5.66	-15.66
	Highest	-4.69	-14.69
802.11ax(H40)	Lowest	-7.65	-17.65
	Middle	-7.91	-17.91
	Highest	-9.05	-19.05
PSD test result (dBm/3kHz)= PSD test result (dBm/30kHz)-10			
limit=8dBm-(direction gain-6dBi)=8-(5+10log2-6)=6.0dBm			
Limit: 6.0dBm/3kHz			
Test Result:	PASS		

Test plots as follows:



802.11b Modulation

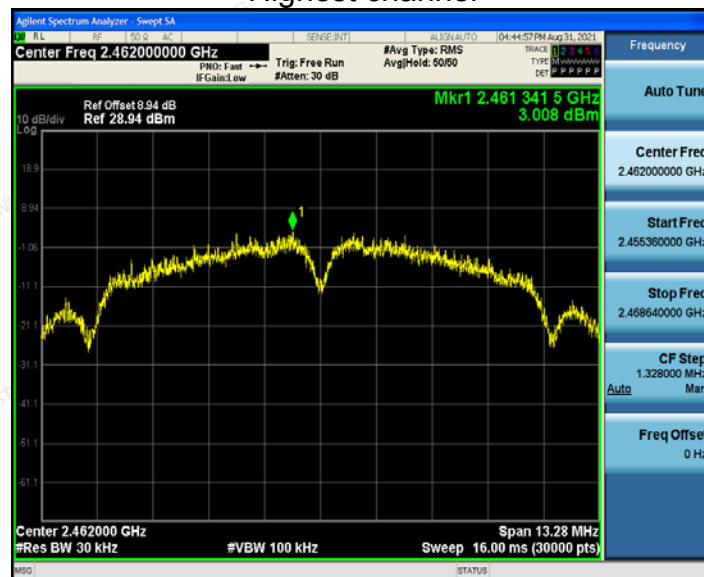
Lowest channel



Middle channel



Highest channel

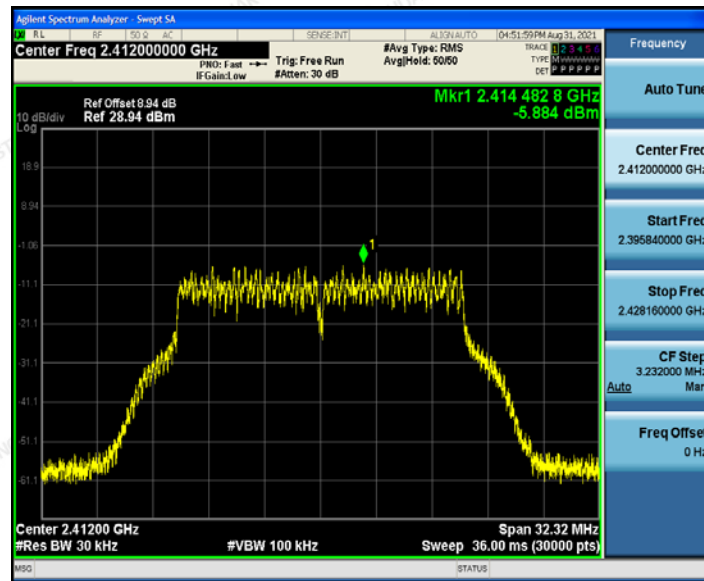


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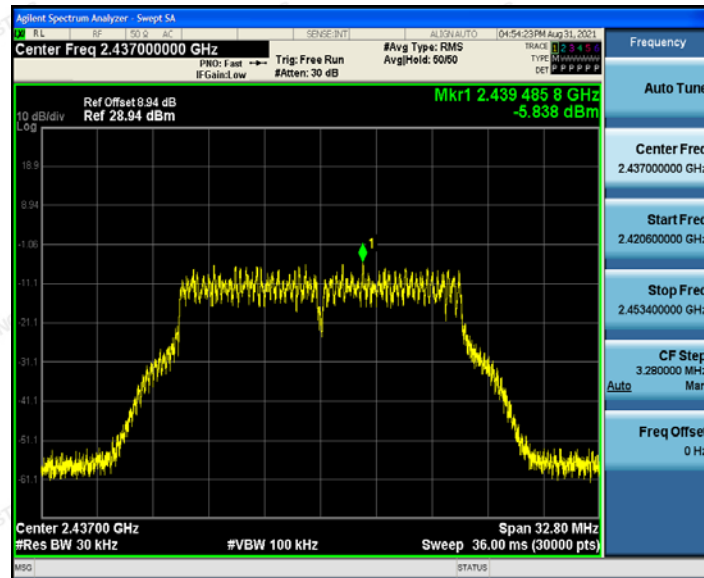


802.11g Modulation

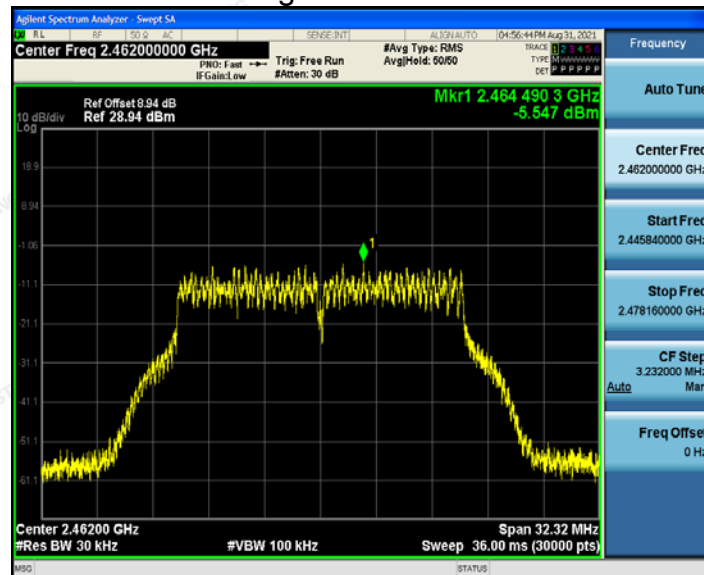
Lowest channel



Middle channel



Highest channel

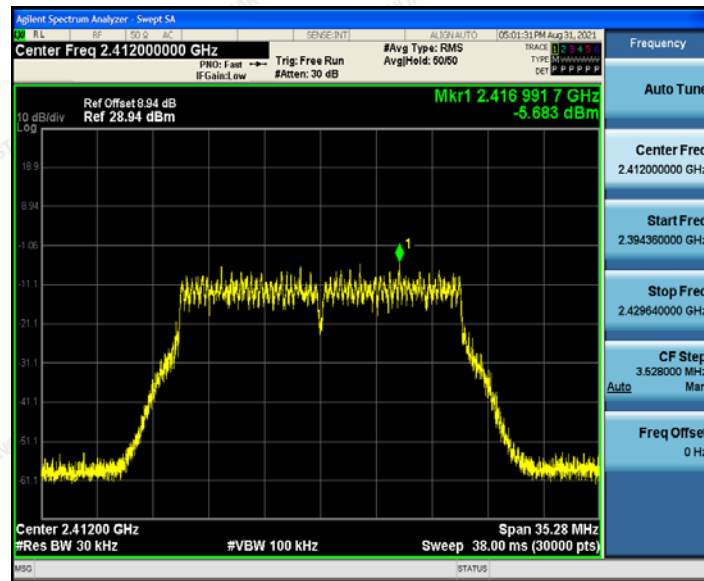


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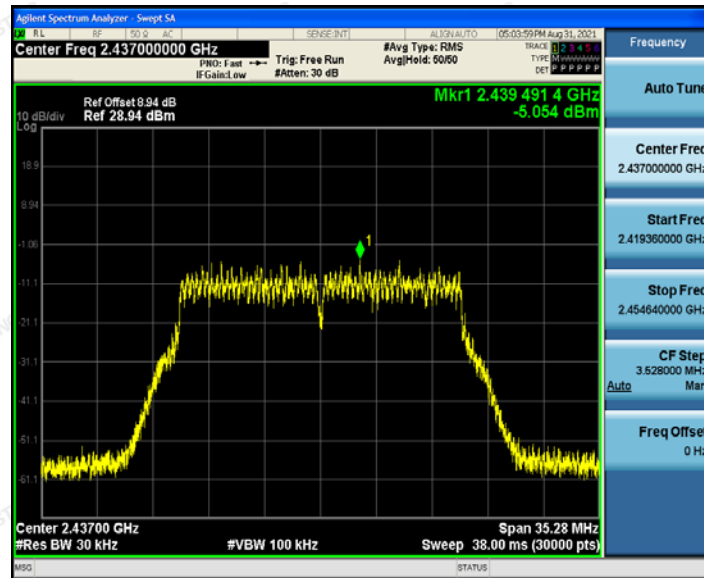


802.11n (HT20) Modulation

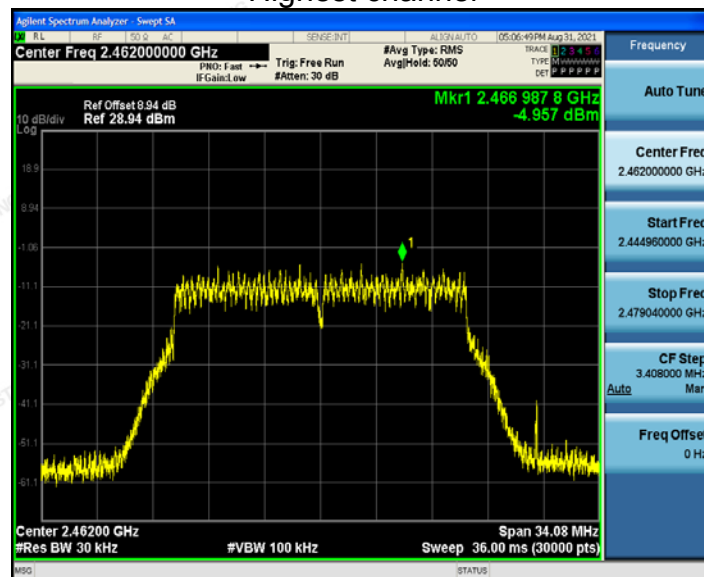
Lowest channel



Middle channel



Highest channel

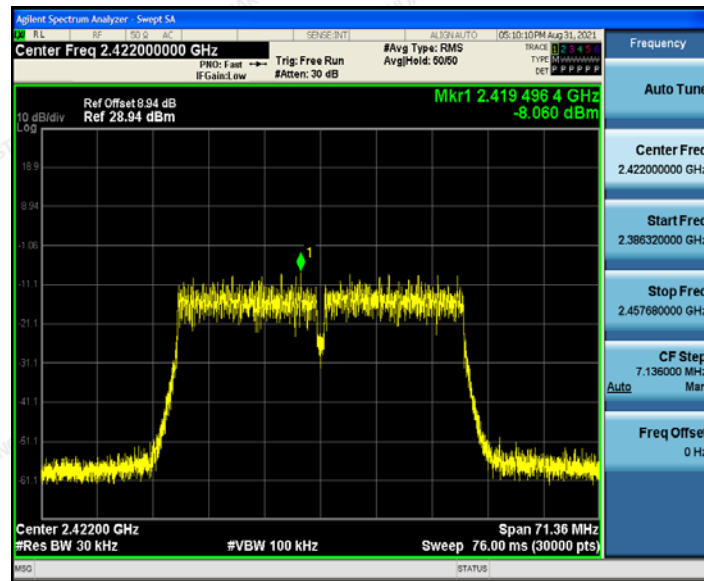


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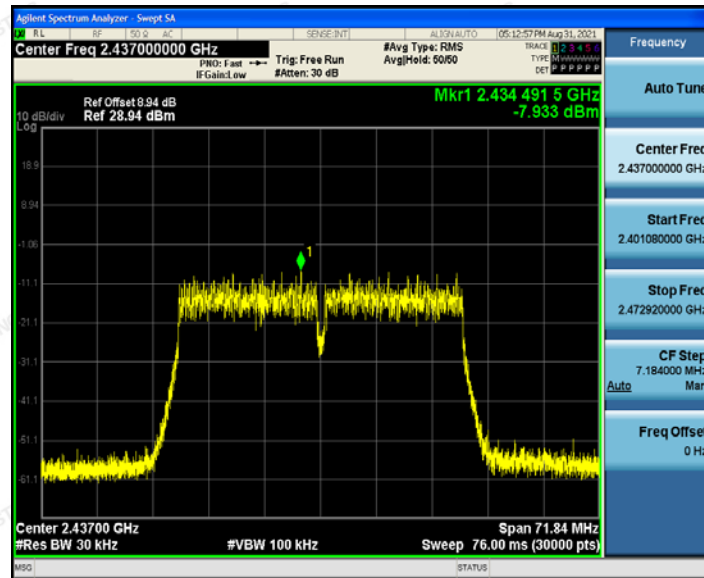


802.11n (HT40) Modulation

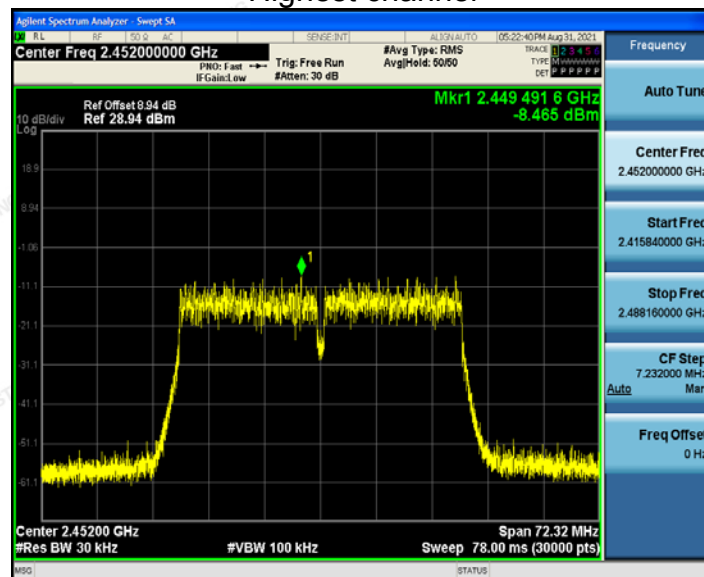
Lowest channel



Middle channel



Highest channel

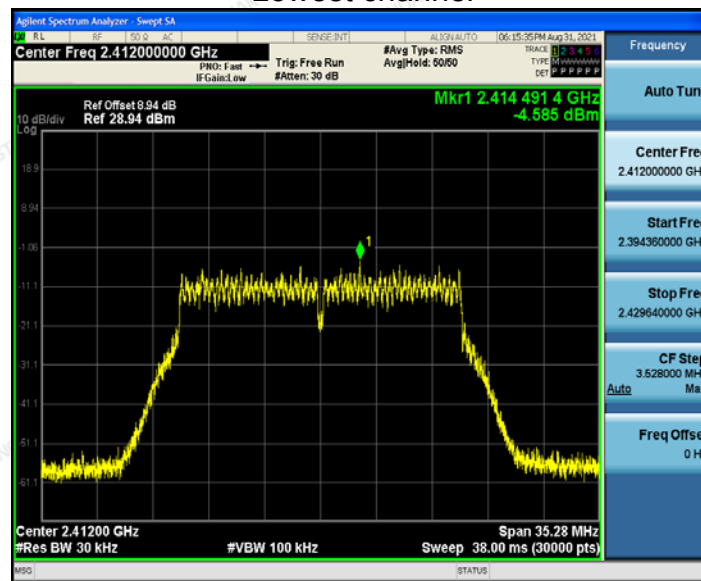


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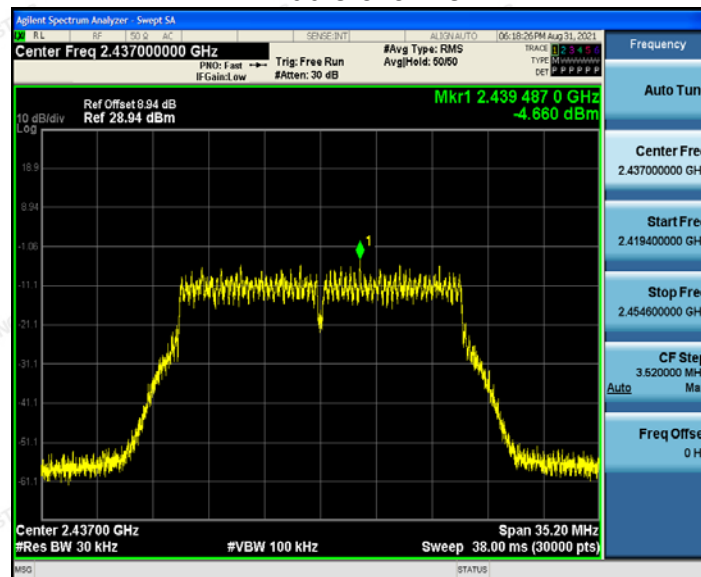


802.11ac(HT20) Modulation

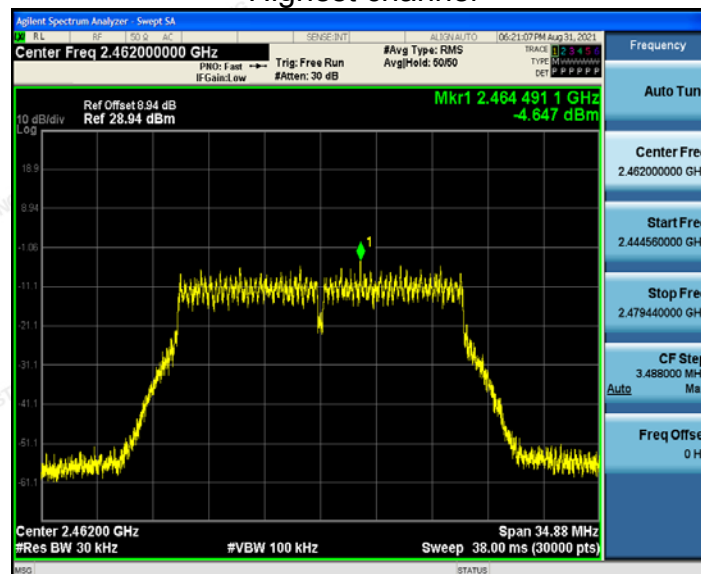
Lowest channel



Middle channel



Highest channel

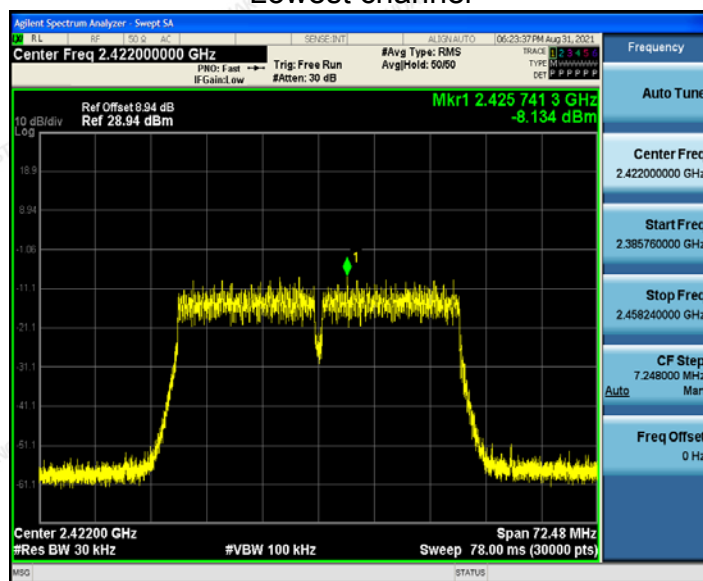


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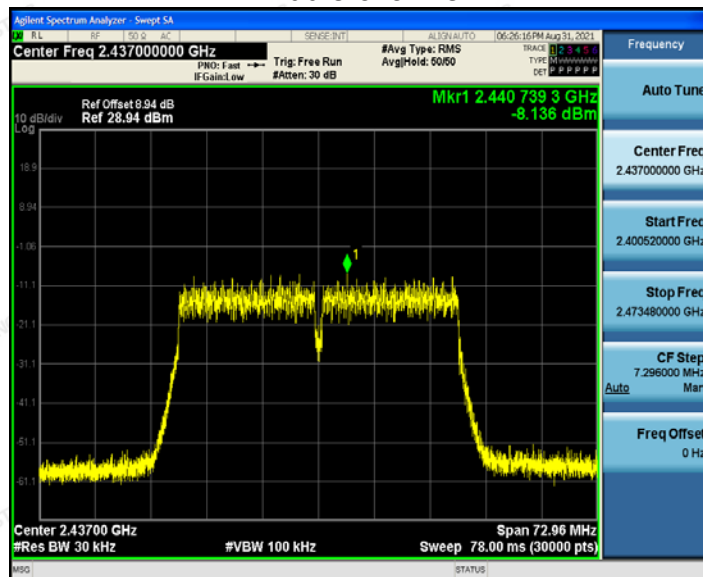


802.11ac (HT40) Modulation

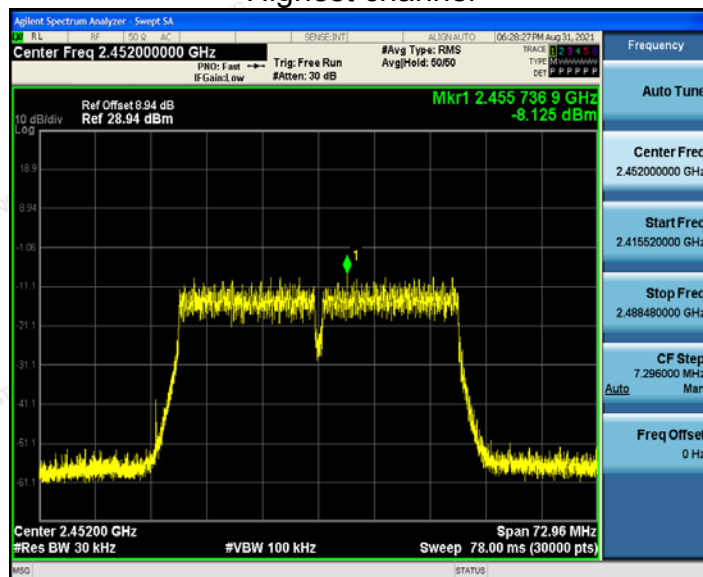
Lowest channel



Middle channel



Highest channel

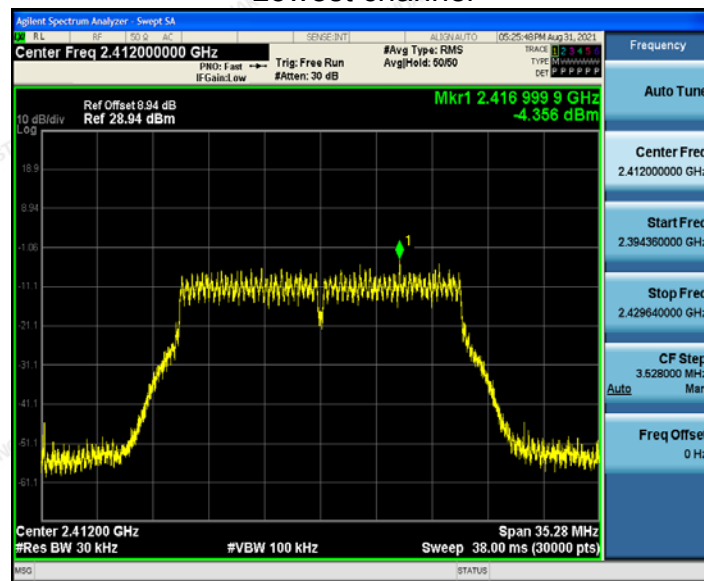


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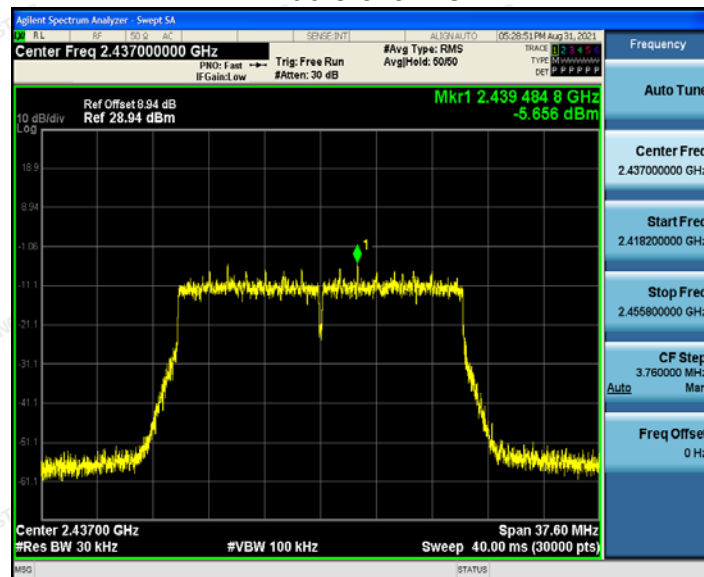


802.11ax(HT20) Modulation

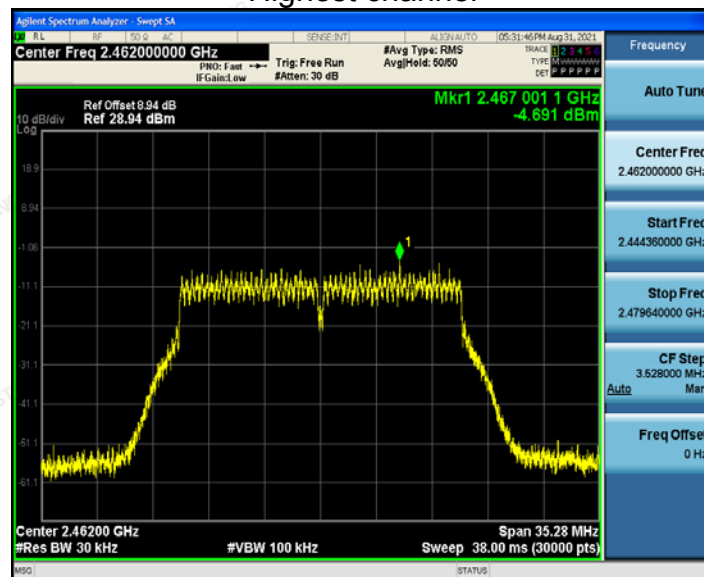
Lowest channel



Middle channel



Highest channel

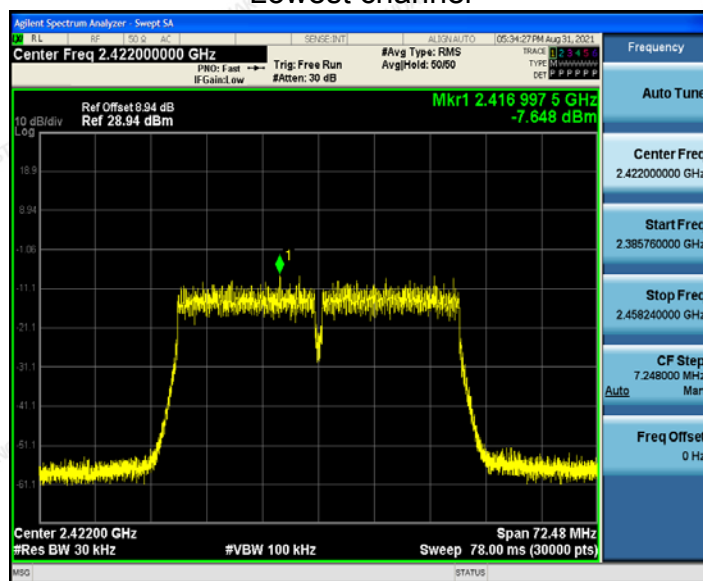


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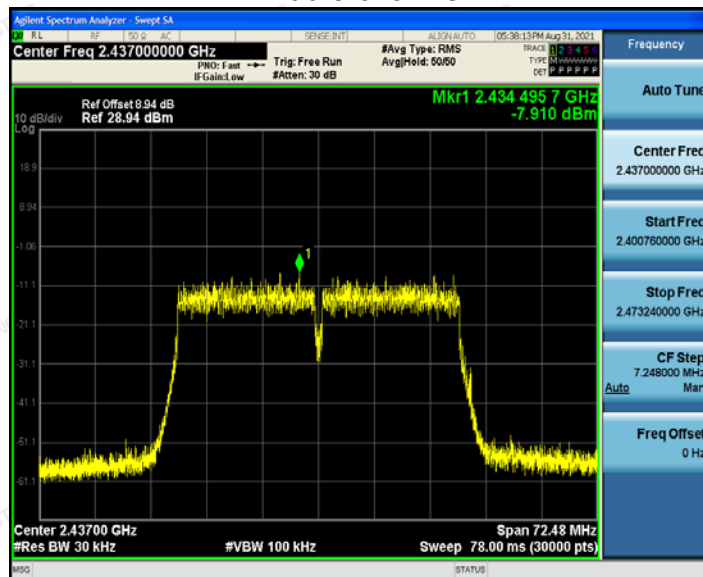


802.11ax (HT40) Modulation

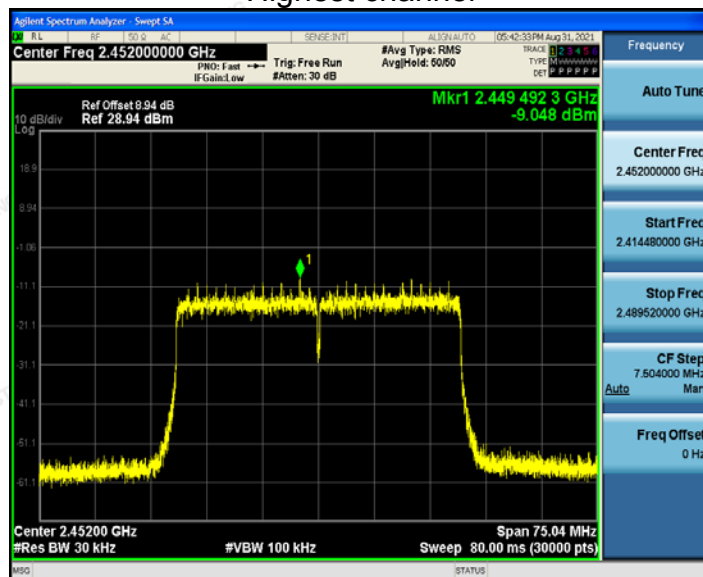
Lowest channel



Middle channel



Highest channel



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For antenna port 2

EUT Set Mode	Channel	Result (dBm/30kHz)	Result (dBm/3kHz)
802.11b	Lowest	3.75	-6.25
	Middle	3.56	-6.44
	Highest	4.33	-5.67
802.11g	Lowest	-5.83	-15.83
	Middle	-5.78	-15.78
	Highest	-5.42	-15.42
802.11n(H20)	Lowest	-4.77	-14.77
	Middle	-4.71	-14.71
	Highest	-4.66	-14.66
802.11n(H40)	Lowest	-7.84	-17.84
	Middle	-7.67	-17.67
	Highest	-8.11	-18.11
802.11ac(H20)	Lowest	-4.35	-14.35
	Middle	-4.36	-14.36
	Highest	-4.15	-14.15
802.11ac(H40)	Lowest	-8.06	-18.06
	Middle	-7.93	-17.93
	Highest	-7.95	-17.95
802.11ax(H20)	Lowest	-5.57	-15.57
	Middle	-5.63	-15.63
	Highest	-5.77	-15.77
802.11ax(H40)	Lowest	-8.77	-18.77
	Middle	-8.52	-18.52
	Highest	-8.92	-18.92
PSD test result (dBm/3kHz)= PSD test result (dBm/30kHz)-10			
limit=8dBm-(direction gain-6dBi)=8-(5+10log2-6)=6.0dBm			
Limit: 6.0dBm/3kHz			
Test Result:	PASS		

Test plots as follows:



802.11b Modulation

Lowest channel



Middle channel



Highest channel

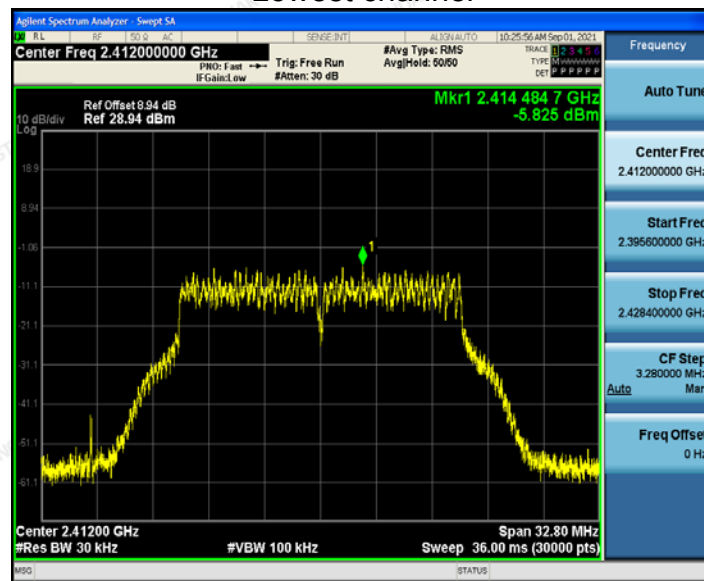


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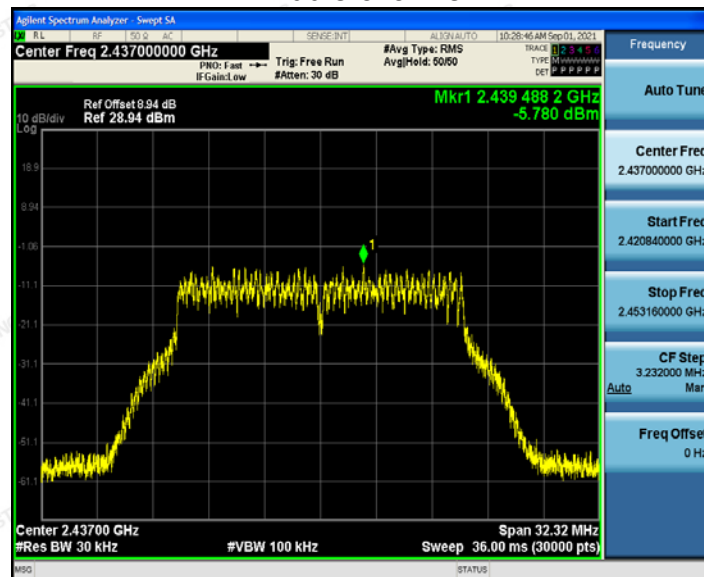


802.11g Modulation

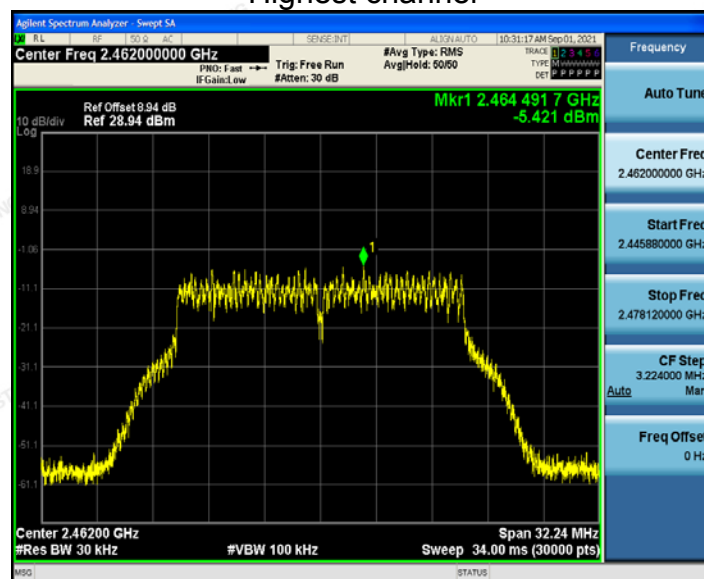
Lowest channel



Middle channel



Highest channel

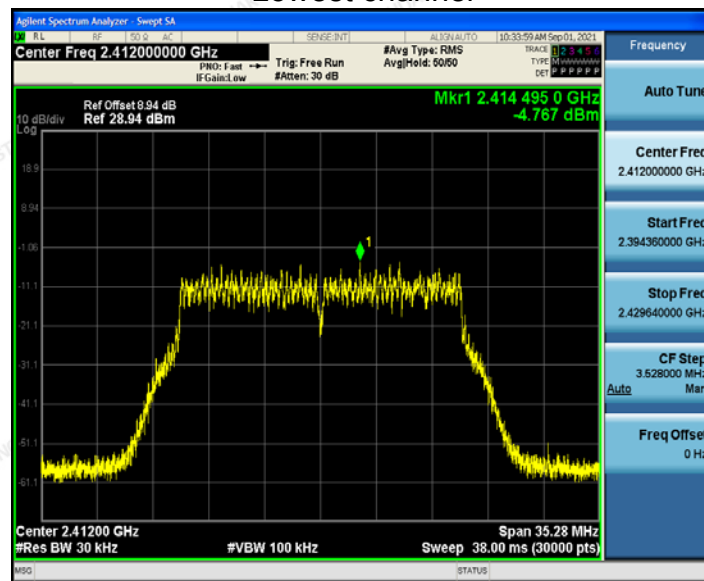


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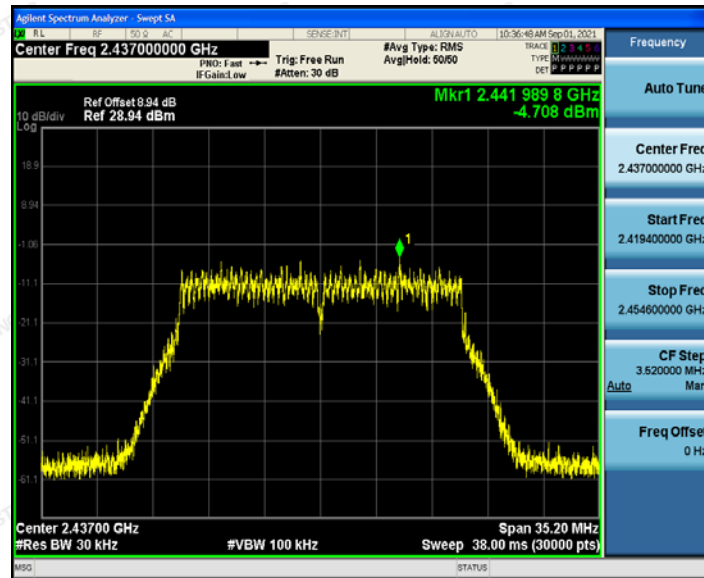


802.11n (HT20) Modulation

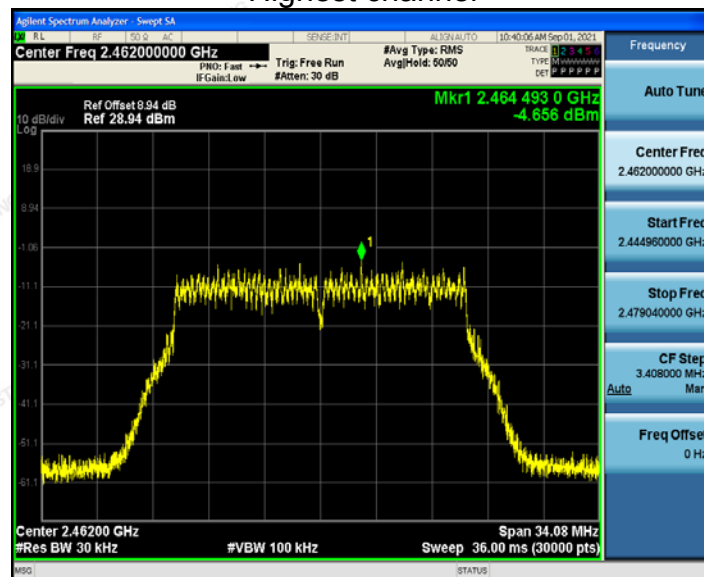
Lowest channel



Middle channel



Highest channel

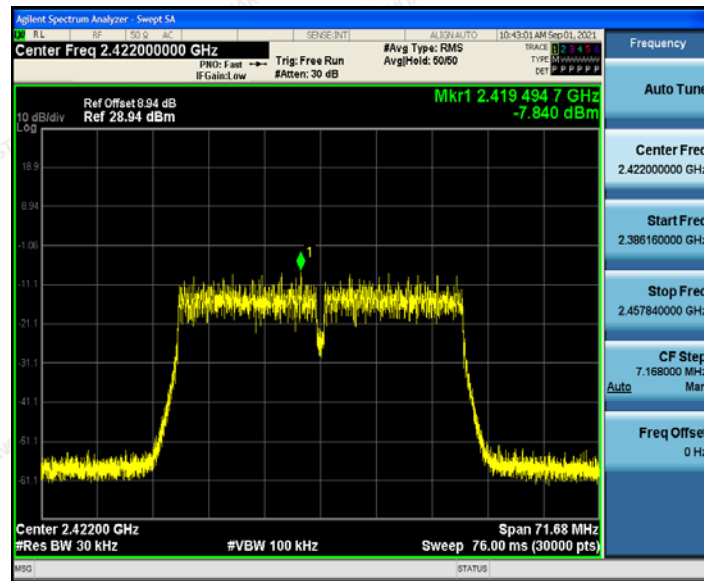


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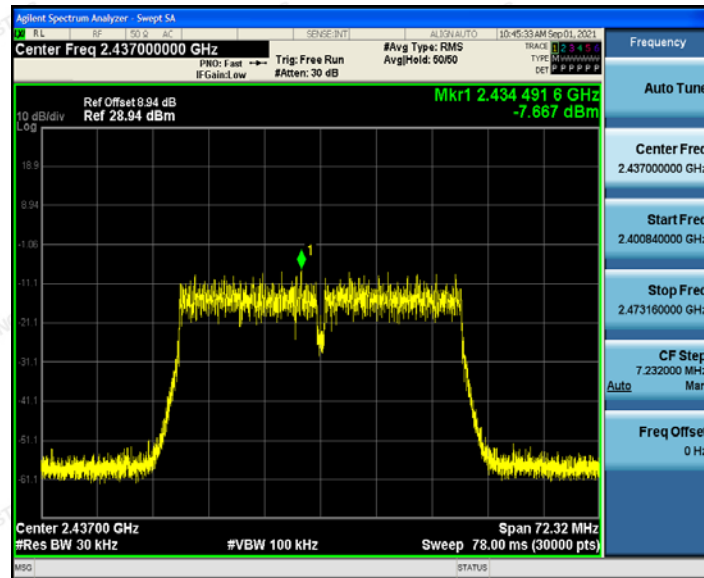


802.11n (HT40) Modulation

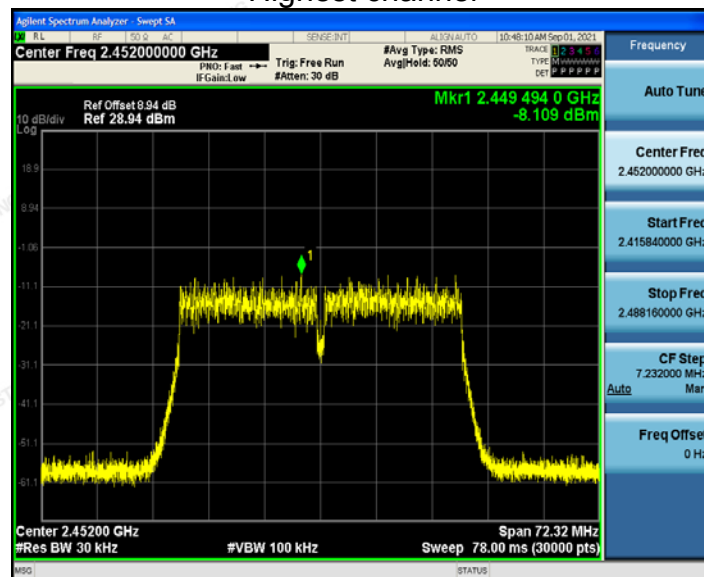
Lowest channel



Middle channel



Highest channel



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