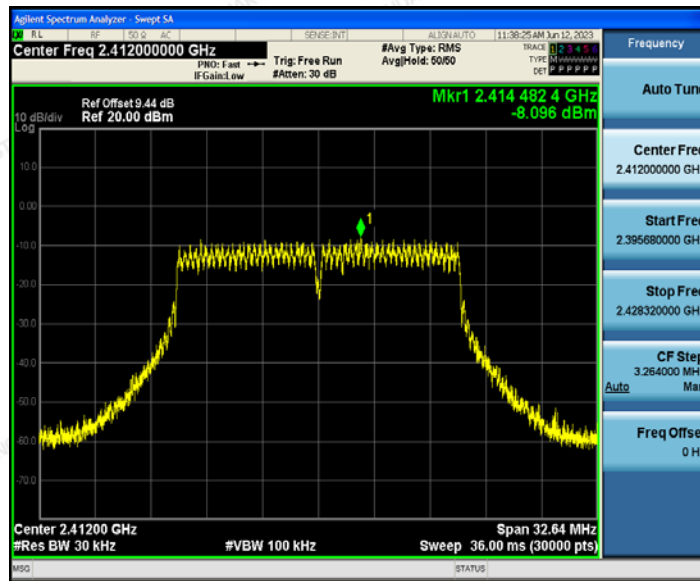


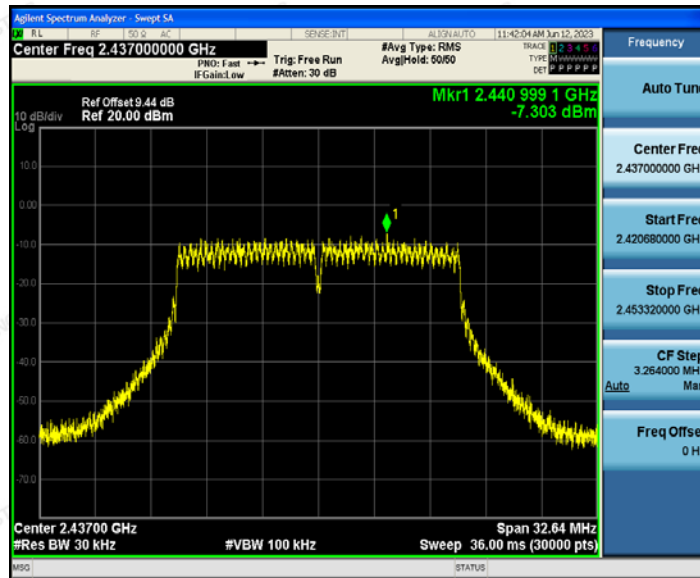


802.11g Modulation

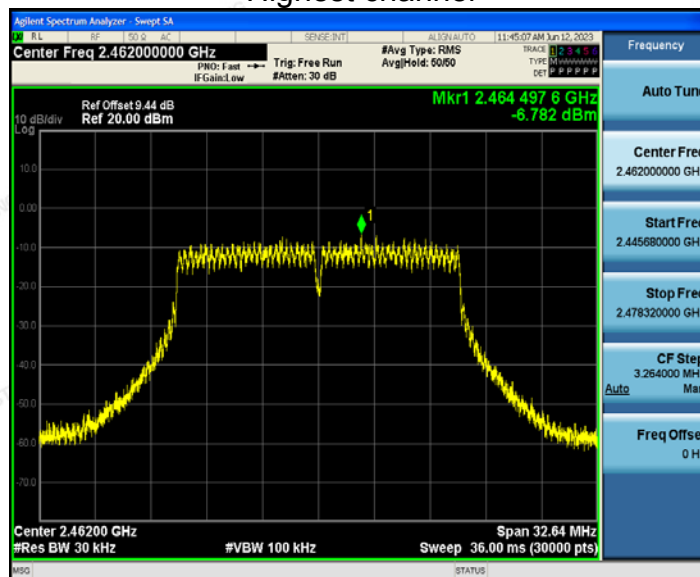
Lowest channel



Middle channel



Highest channel



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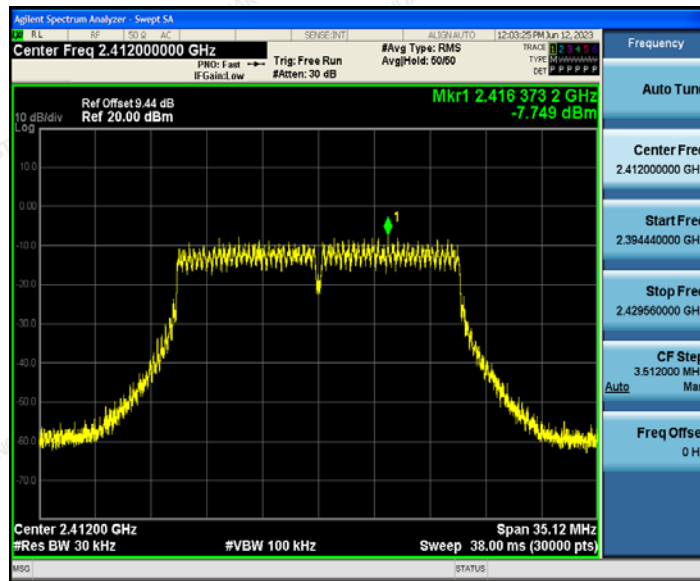
TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

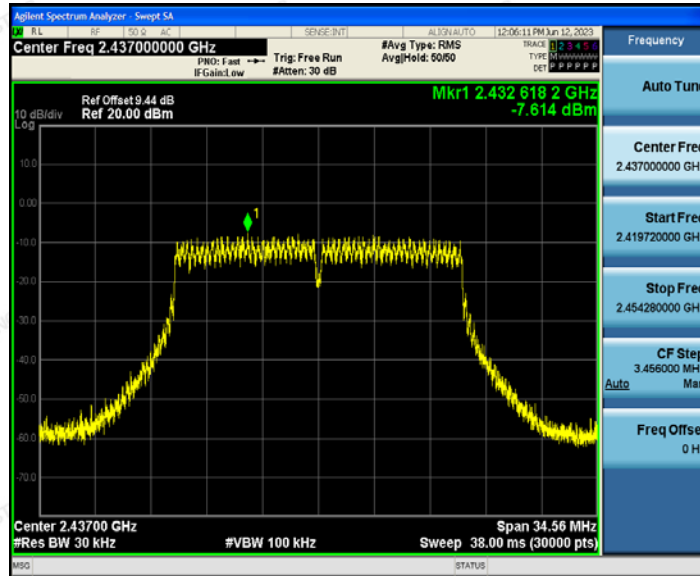


802.11n (HT20) Modulation

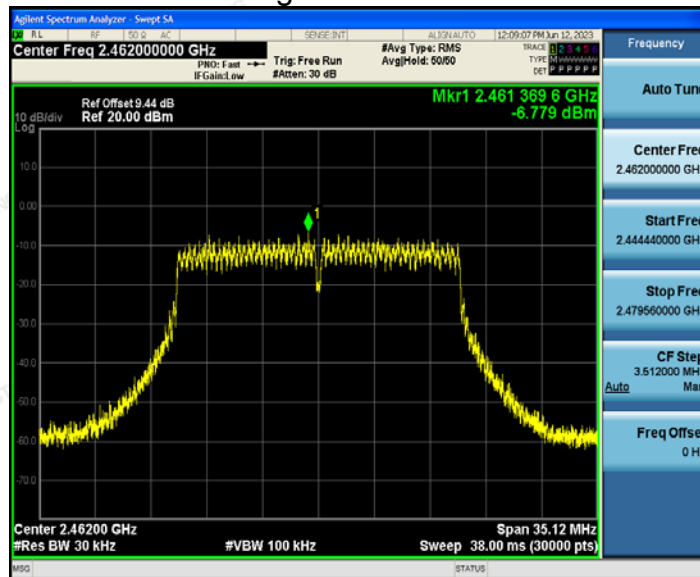
Lowest channel



Middle channel



Highest channel



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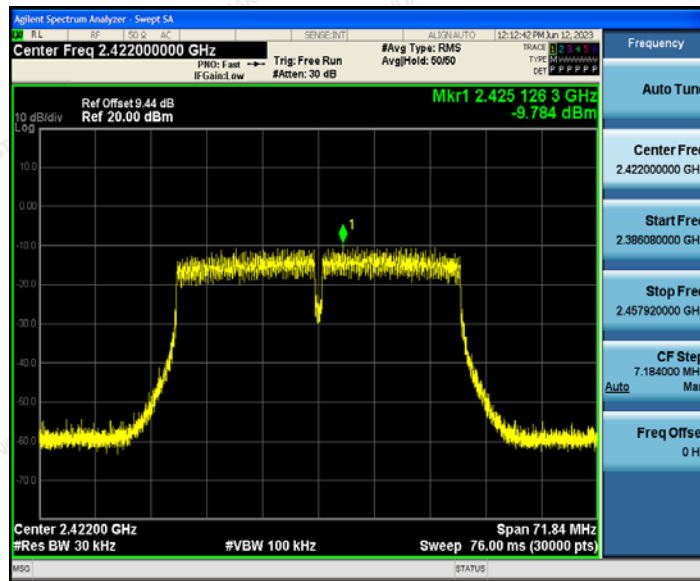
TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

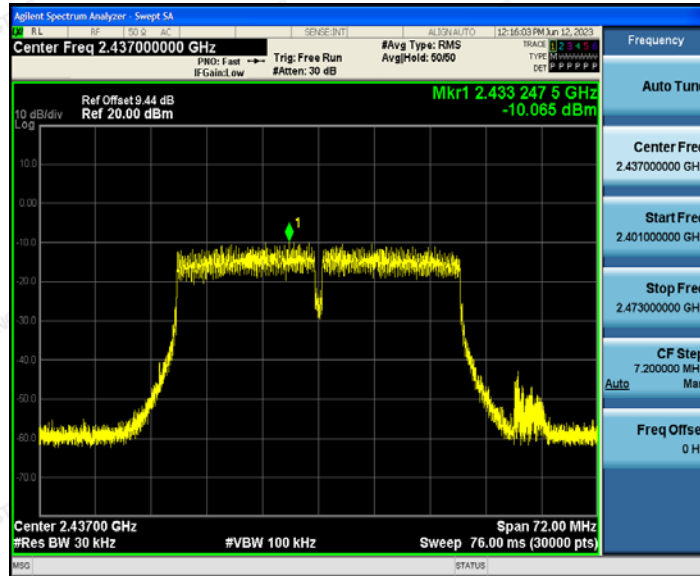


802.11n (HT40) Modulation

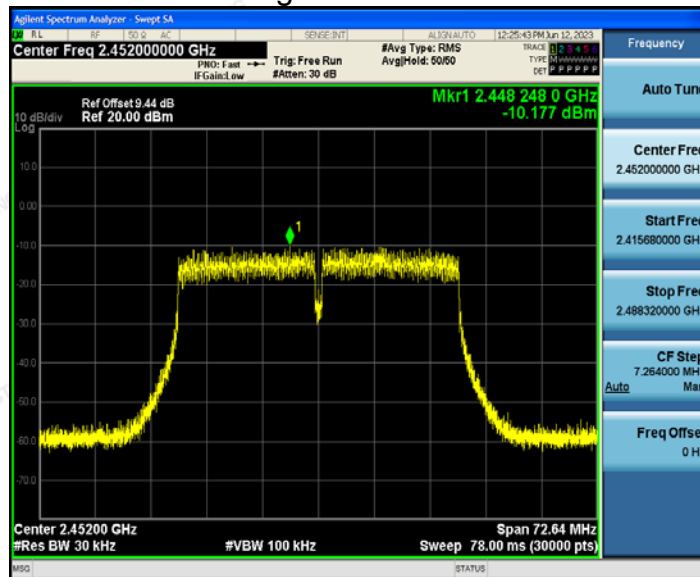
Lowest channel



Middle channel



Highest channel



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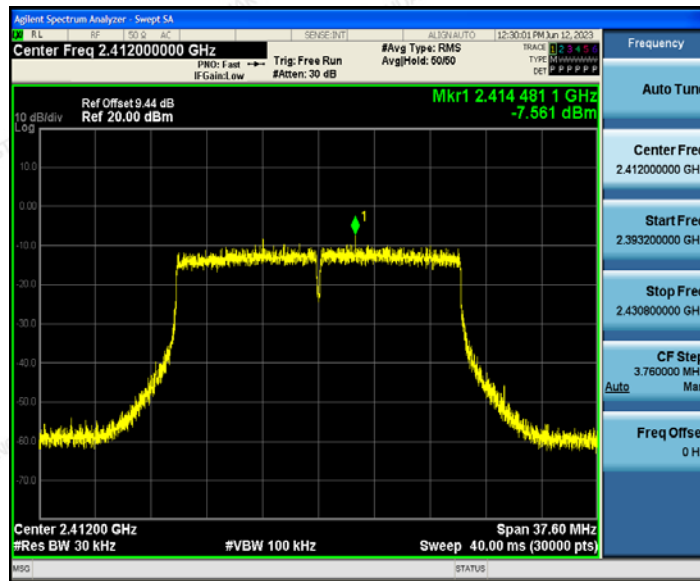
TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

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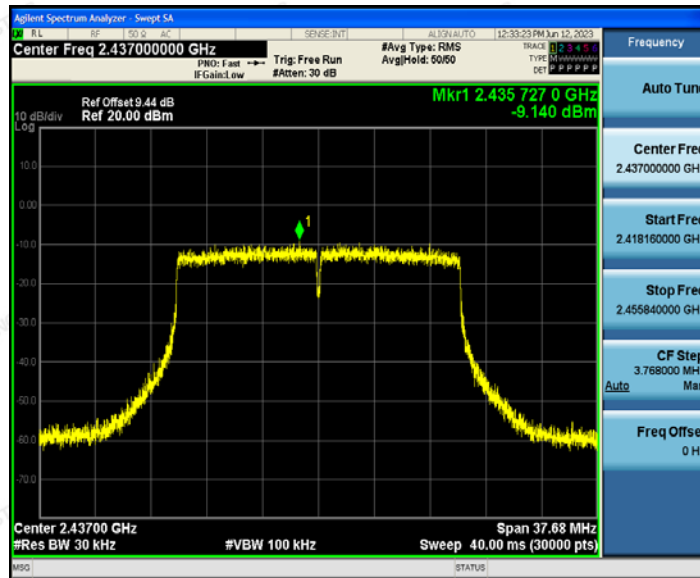


802.11ax (HT20) Modulation

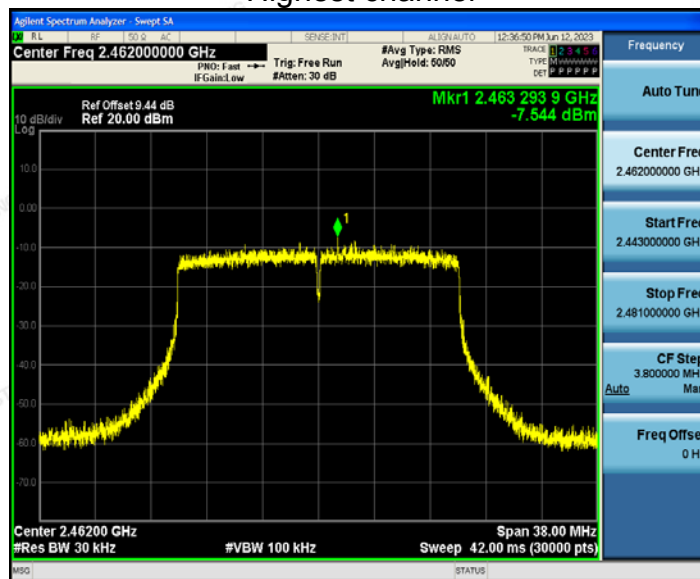
Lowest channel



Middle channel



Highest channel



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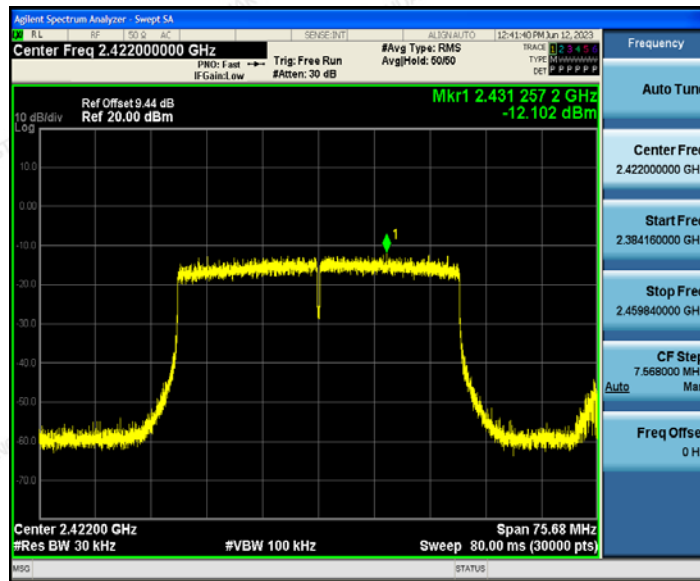
TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

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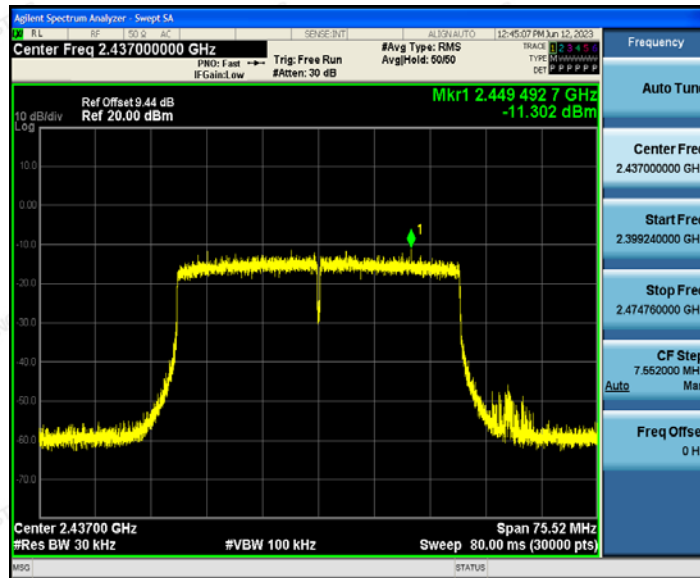


802.11ax (HT40) Modulation

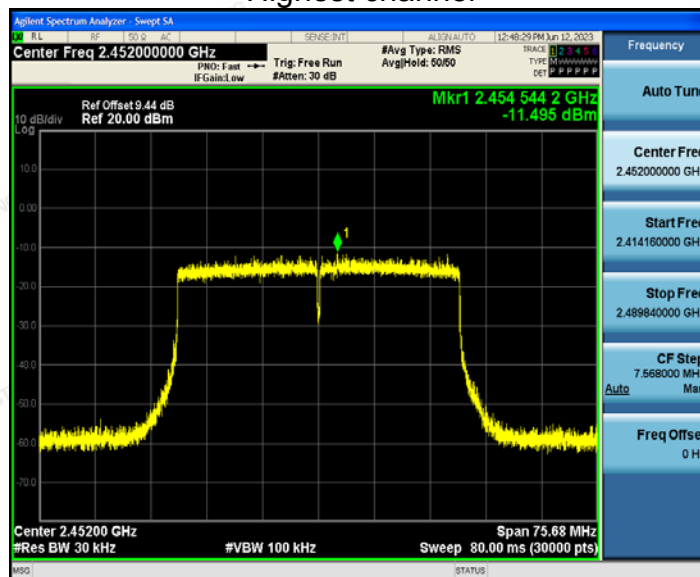
Lowest channel



Middle channel



Highest channel



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For antenna port 4

EUT Set Mode	Channel	Result (dBm/30kHz)	Offset	Test Result (dBm/30kHz)	Result (dBm/3kHz)
802.11b	Lowest	-9.43	9.44	0.01	-9.99
	Middle	-4.55	9.44	4.89	-5.11
	Highest	-9.27	9.44	0.17	-9.83
802.11g	Lowest	-17.60	9.44	-8.16	-18.16
	Middle	-16.75	9.44	-7.31	-17.31
	Highest	-16.64	9.44	-7.2	-17.2
802.11n(HT20)	Lowest	-16.99	9.44	-7.55	-17.55
	Middle	-16.59	9.44	-7.15	-17.15
	Highest	-16.53	9.44	-7.09	-17.09
802.11n(HT40)	Lowest	-18.84	9.44	-9.4	-19.4
	Middle	-19.38	9.44	-9.94	-19.94
	Highest	-19.63	9.44	-10.19	-20.19
802.11ax(HT20)	Lowest	-18.57	9.44	-9.13	-19.13
	Middle	-18.46	9.44	-9.02	-19.02
	Highest	-18.26	9.44	-8.82	-18.82
802.11ax(HT40)	Lowest	-20.64	9.44	-11.2	-21.2
	Middle	-20.72	9.44	-11.28	-21.28
	Highest	-20.82	9.44	-11.38	-21.38
PSD Test Result (dBm/30kHz)= Result +Offset					
Offset= Instrument attenuation +cable loss					
PSD test result (dBm/3kHz)= PSD test result (dBm/30kHz)-10					
Limit: 8dBm/3kHz					
Test Result:	PASS				

Test plots as follows:



802.11b Modulation

Lowest channel



Middle channel



Highest channel



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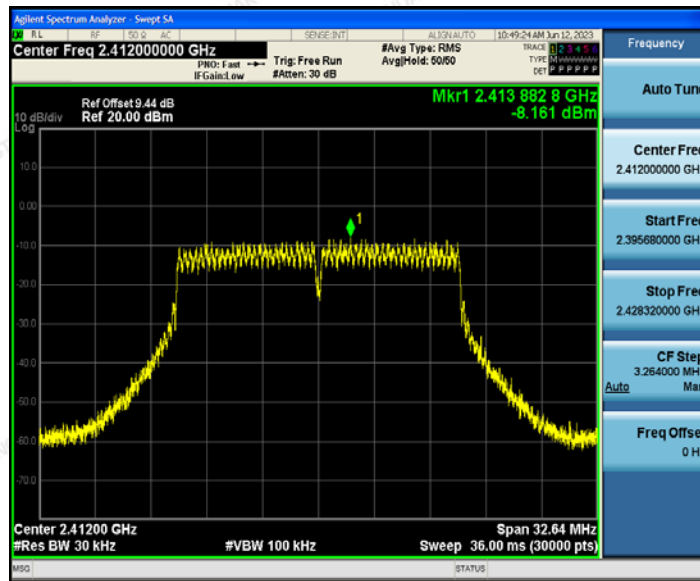
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Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

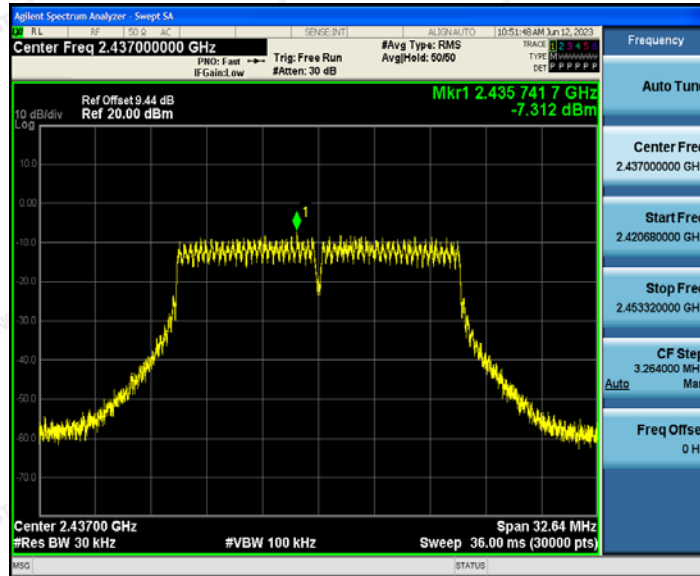


802.11g Modulation

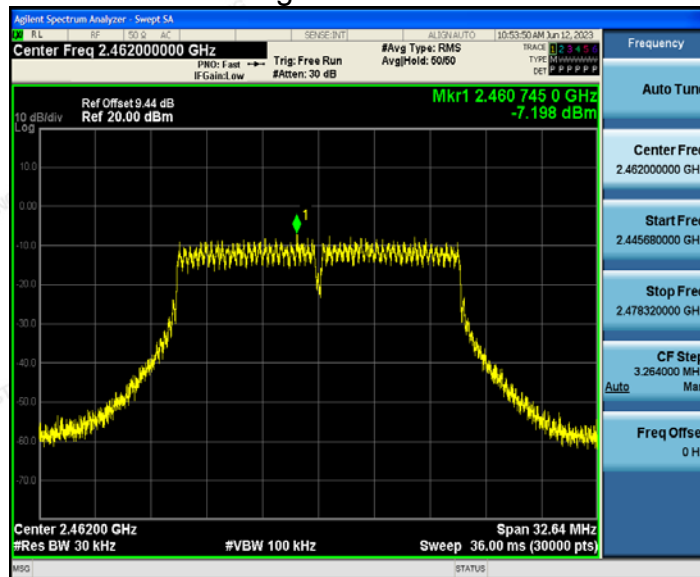
Lowest channel



Middle channel



Highest channel



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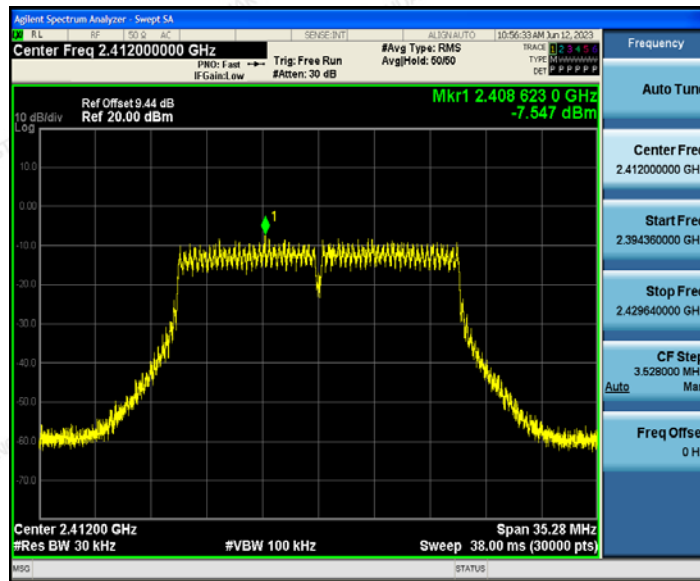
TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

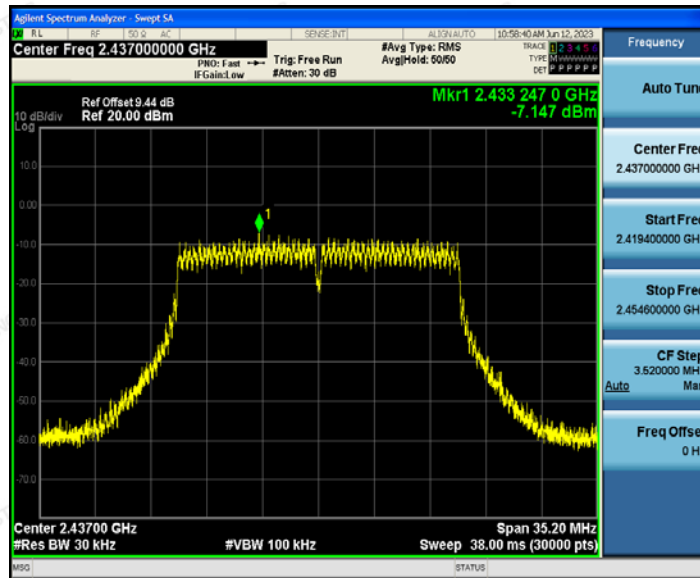


802.11n (HT20) Modulation

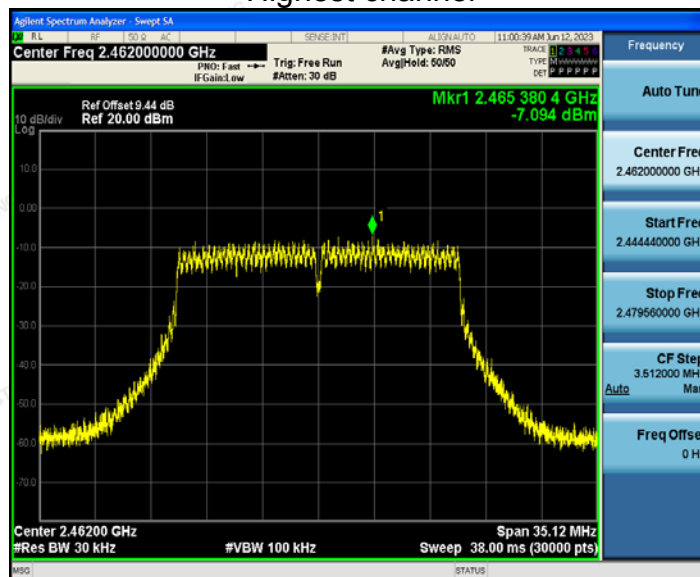
Lowest channel



Middle channel



Highest channel



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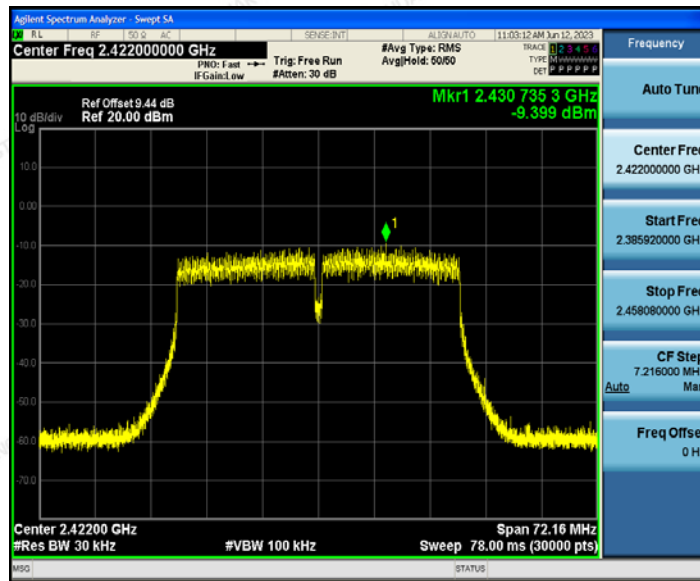
TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

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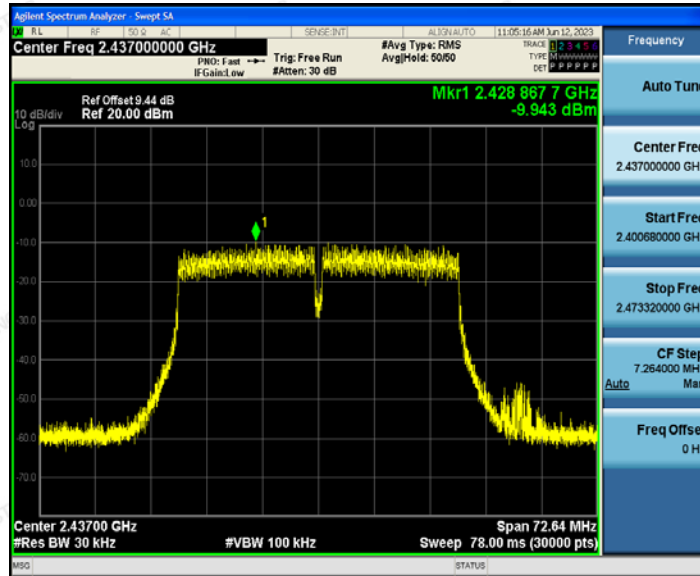


802.11n (HT40) Modulation

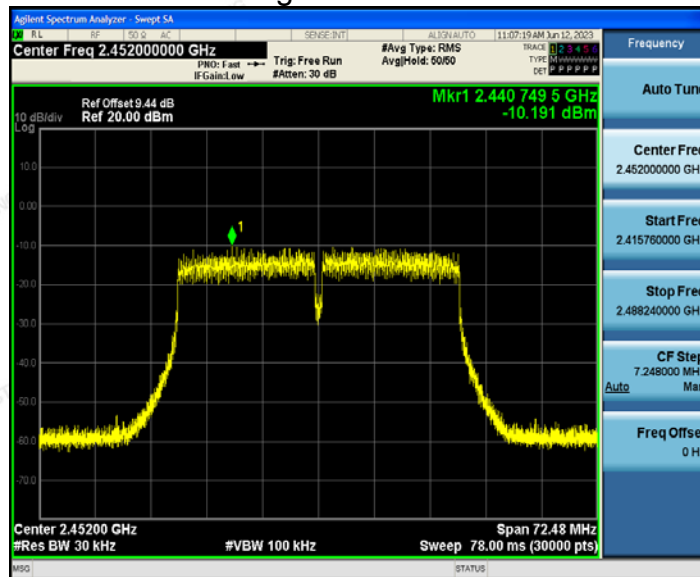
Lowest channel



Middle channel



Highest channel



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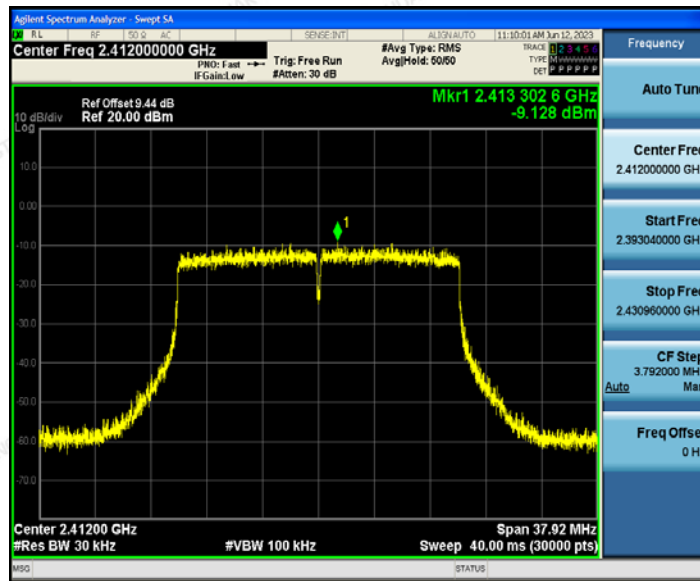
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Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

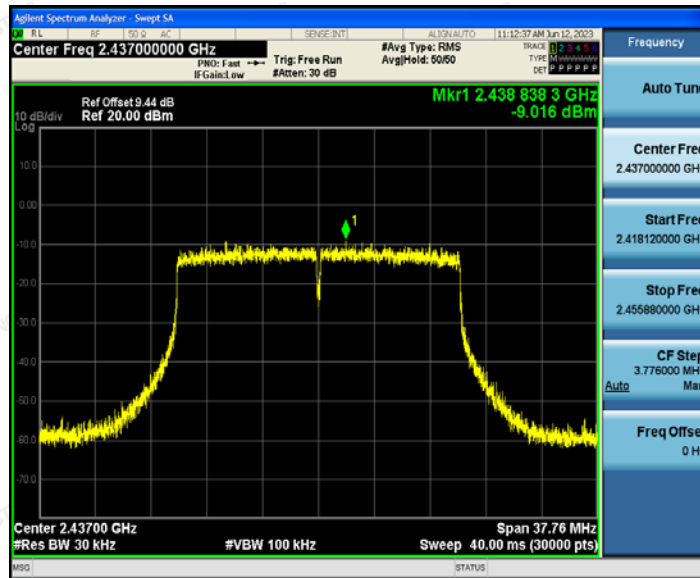


802.11ax (HT20) Modulation

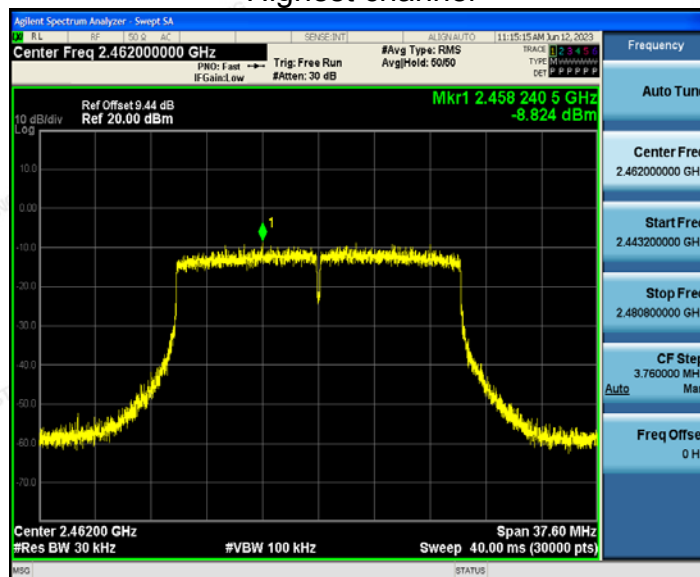
Lowest channel



Middle channel



Highest channel



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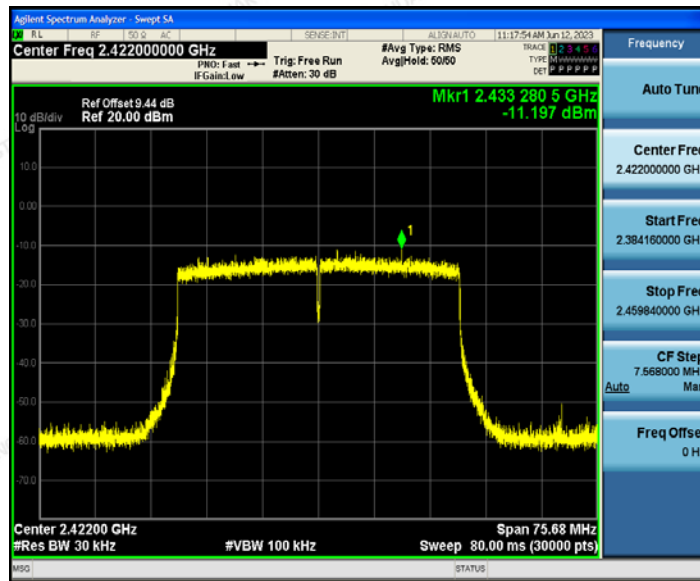
TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com

Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

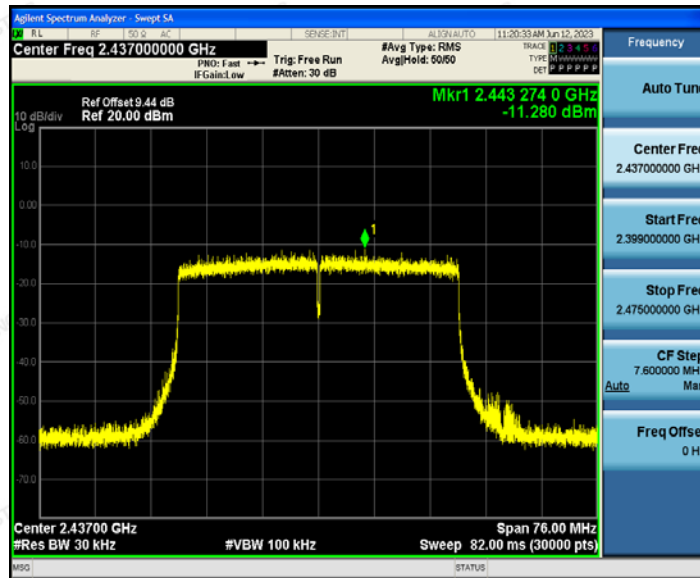


802.11ax (HT40) Modulation

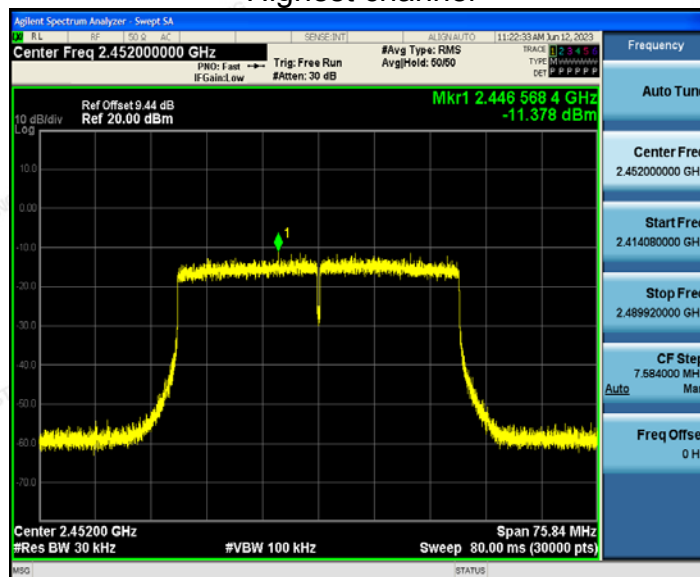
Lowest channel



Middle channel



Highest channel



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For MIMO antenna port 1+antenna port 2+ antenna port 3+ antenna port 4			
Frequency	Power Density (dBm)	Limit (dBm)	Result
TX 802.11n/HT20 Mode			
2412 MHz	-11.14	1.44	PASS
2437 MHz	-11.01	1.44	PASS
2462 MHz	-10.77	1.44	PASS
TX 802.11n/HT40 Mode			
2422 MHz	-13.48	1.44	PASS
2437 MHz	-13.75	1.44	PASS
2452 MHz	-13.52	1.44	PASS
TX 802.11ax/HT20 Mode			
2412 MHz	-12.15	1.44	PASS
2437 MHz	-12.51	1.44	PASS
2462 MHz	-11.74	1.44	PASS
TX 802.11ax/HT40 Mode			
2422 MHz	-15.10	1.44	PASS
2437 MHz	-14.79	1.44	PASS
2452 MHz	-15.18	1.44	PASS
Note: 1 According to KDB 662911, Result power = $10\log(10^{(ant1/10)} + 10^{(ant2/10)})$. 2 Result unit: W, The end result is converted to units of dBm. limit=8dBm-(direction gain-6dBi)= 8-(6.54+10log4-6)=1.44dBm			

Note: This product supports antenna 1, antenna 2, antenna 3 and antenna 4 launch, but only support 802.11 n/802.11ax for MIMO mode, not support 802.11 b and 802.11 g for MIMO mode.



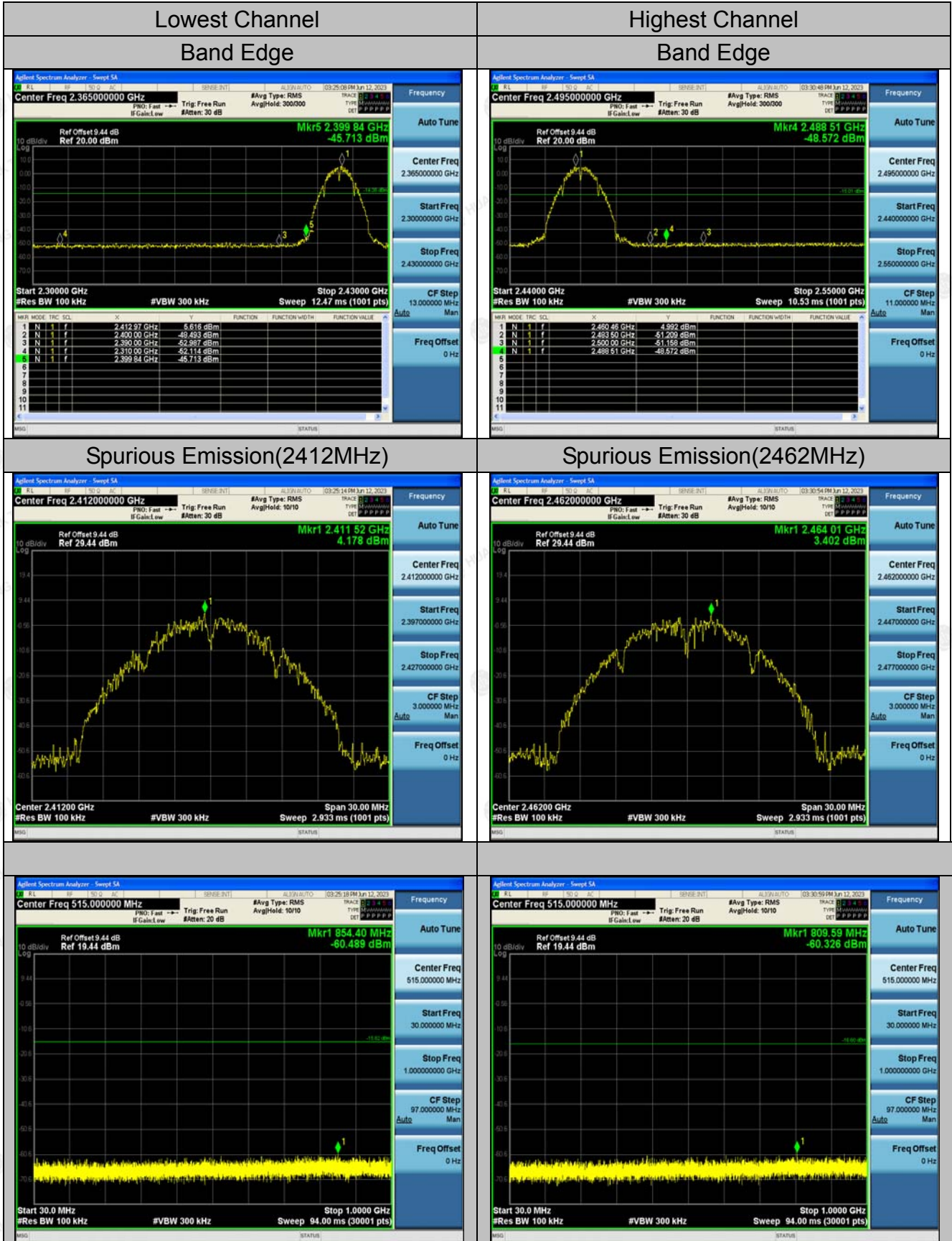
4.5.2. Test Instruments

RF Test Room					
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Spectrum analyzer	Agilent	N9020A	HKE-048	Feb. 17, 2023	Feb. 16, 2024
Signal generator	Agilent	N5183A	HKE-071	Feb. 17, 2023	Feb. 16, 2024
RF Cable (9KHz-26.5GHz)	Tonscend	170660	N/A	Feb. 17, 2023	Feb. 16, 2024
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 17, 2023	Feb. 16, 2024

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



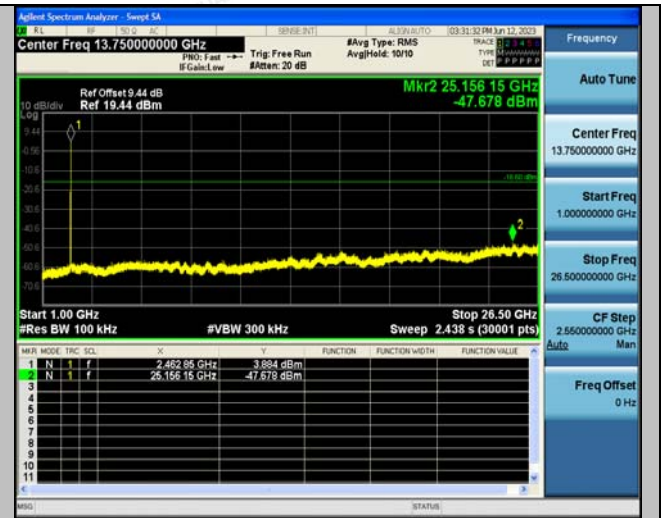
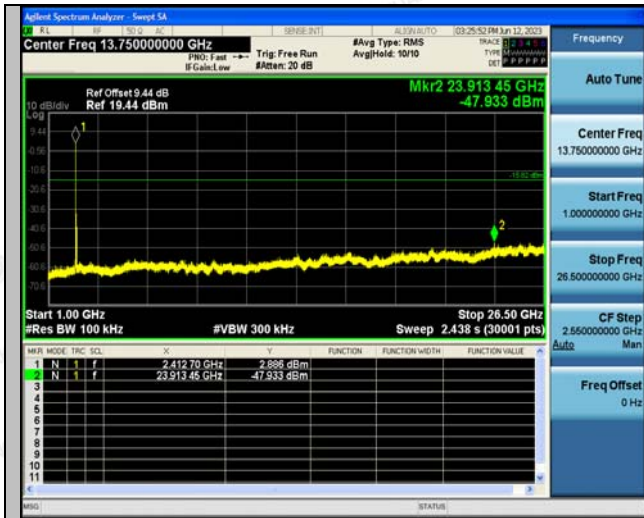
4.5.3. Test Data
Chain 1
802.11b Modulation



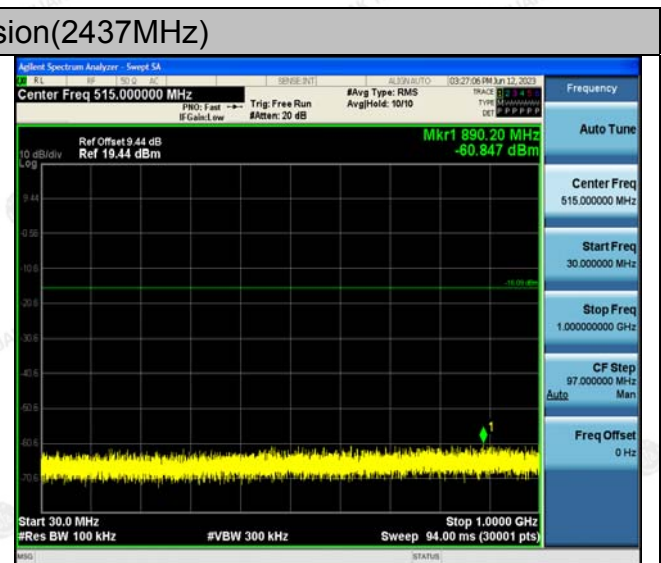
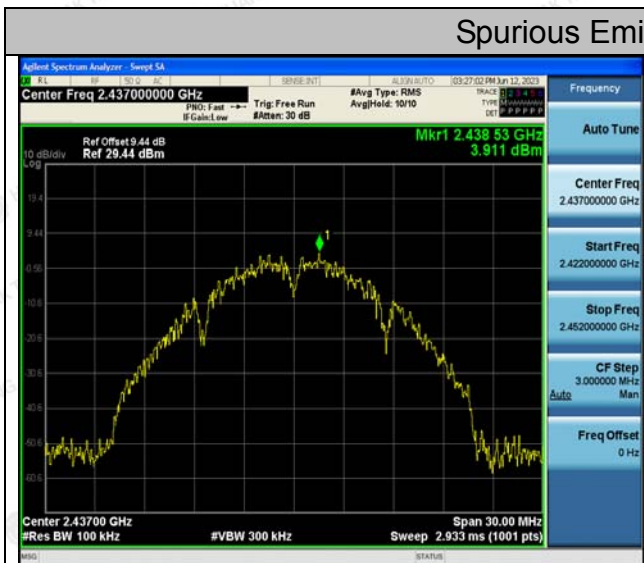
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Spurious Emission(2437MHz)



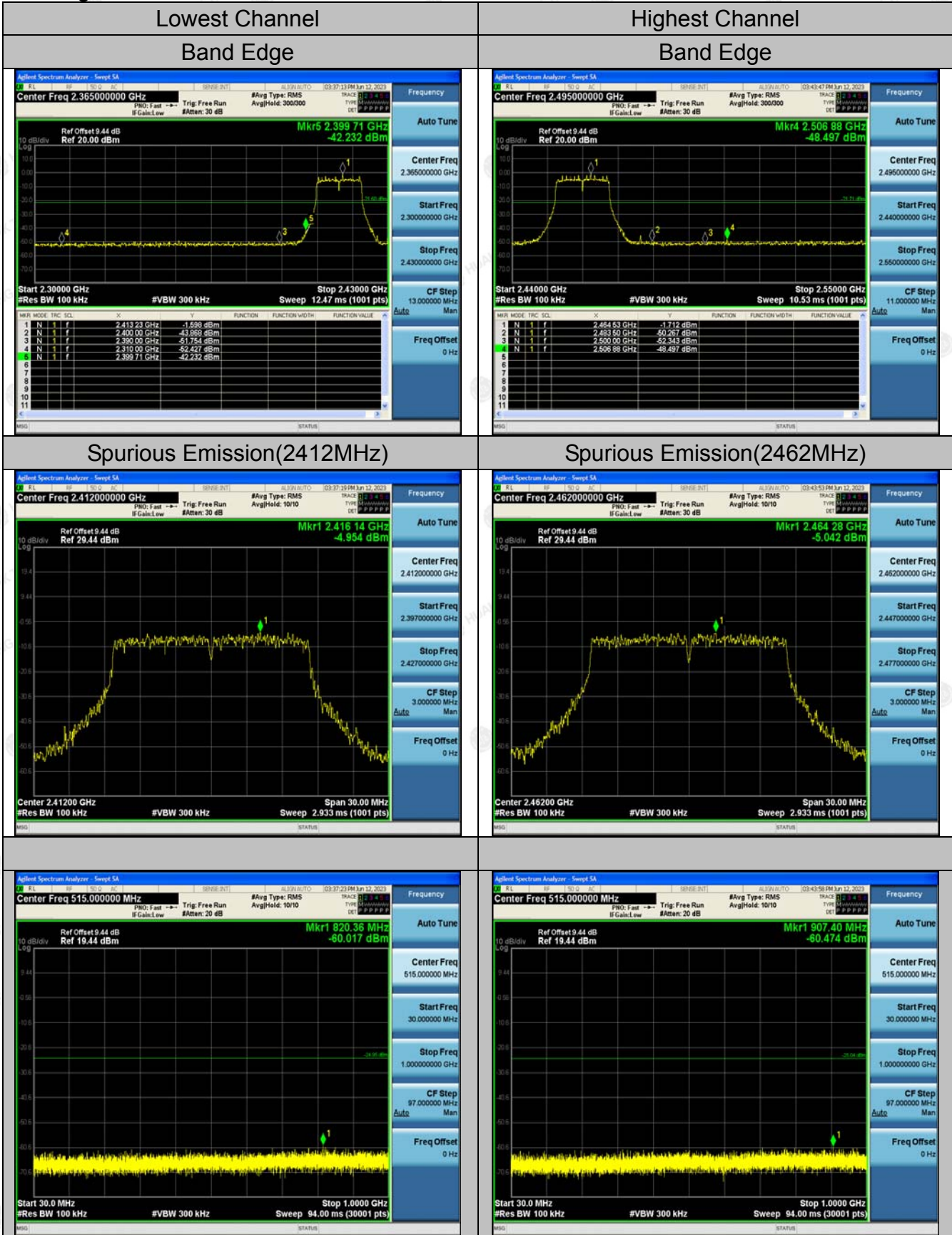
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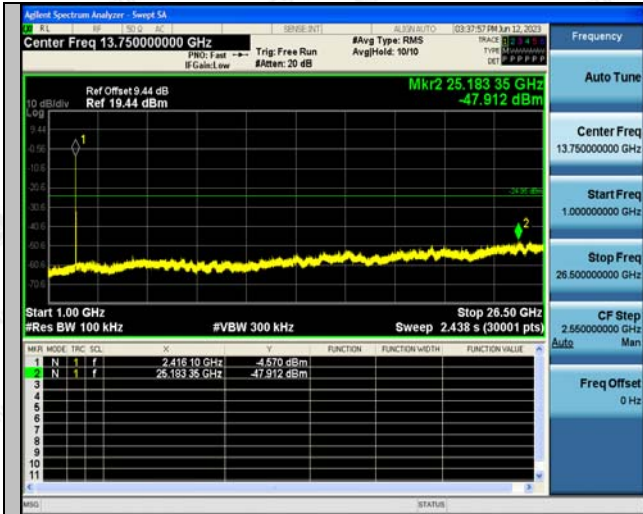
802.11g Modulation



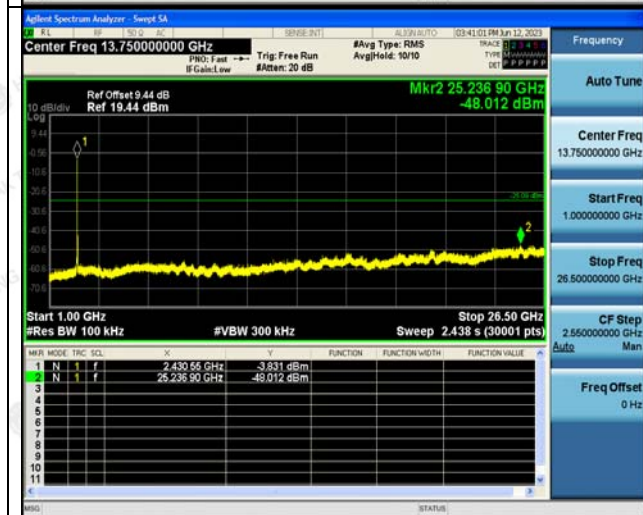
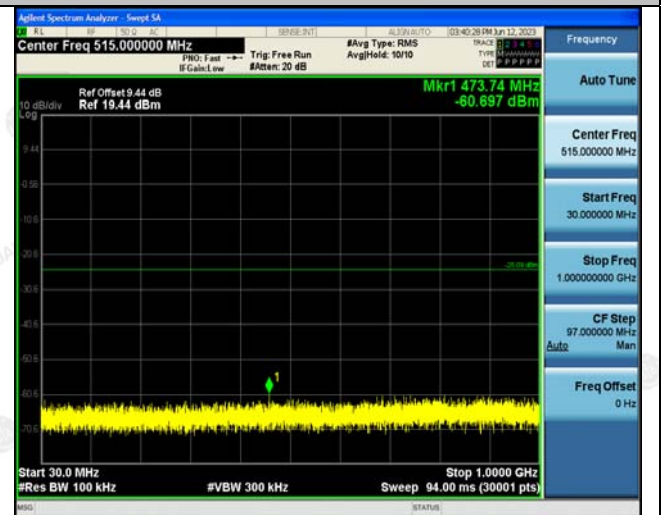
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Spurious Emission(2437MHz)



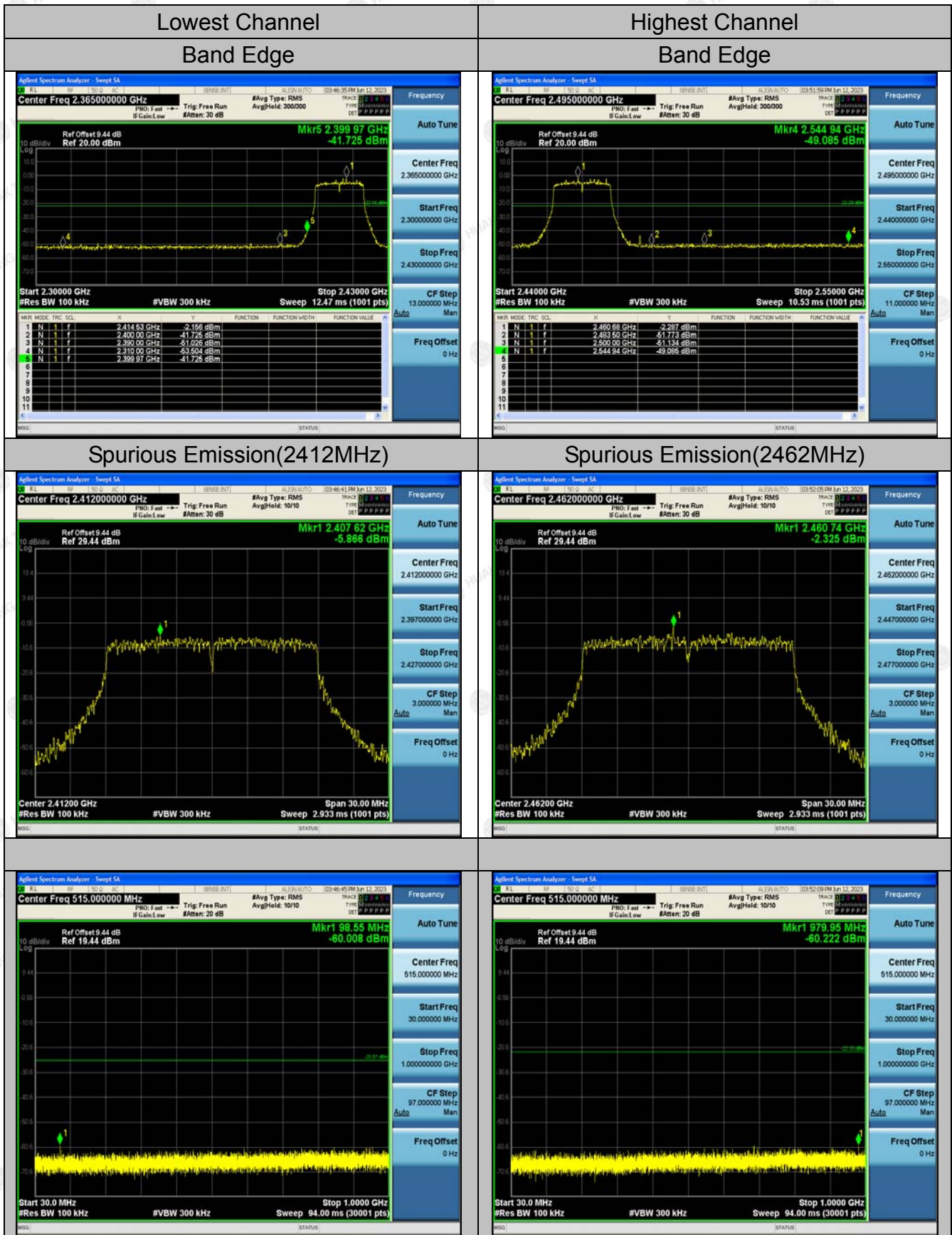
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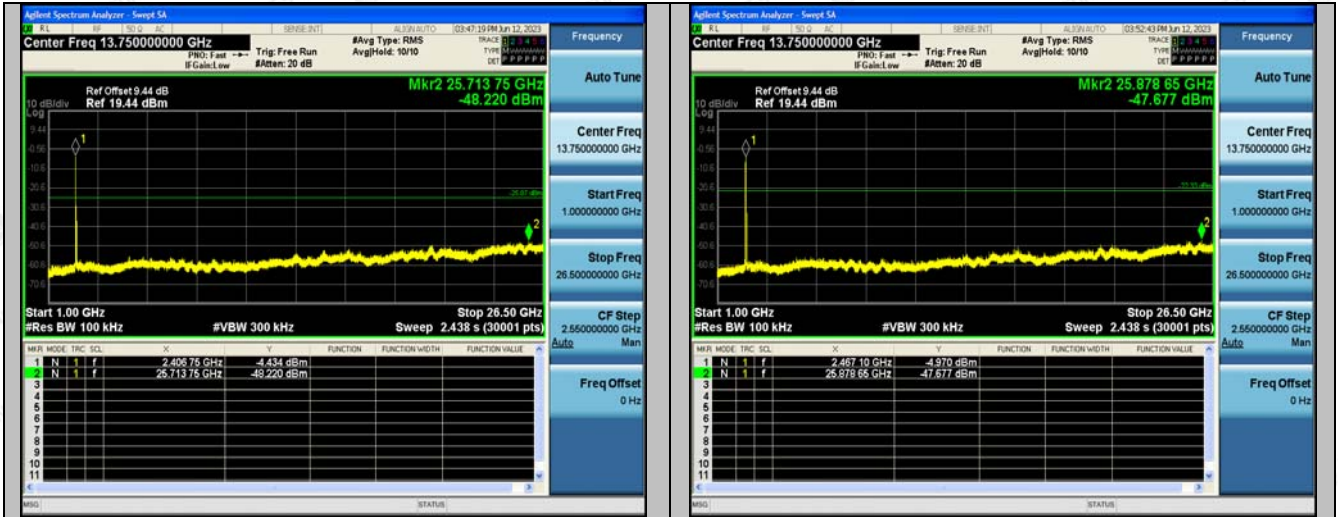
802.11n (HT20) Modulation



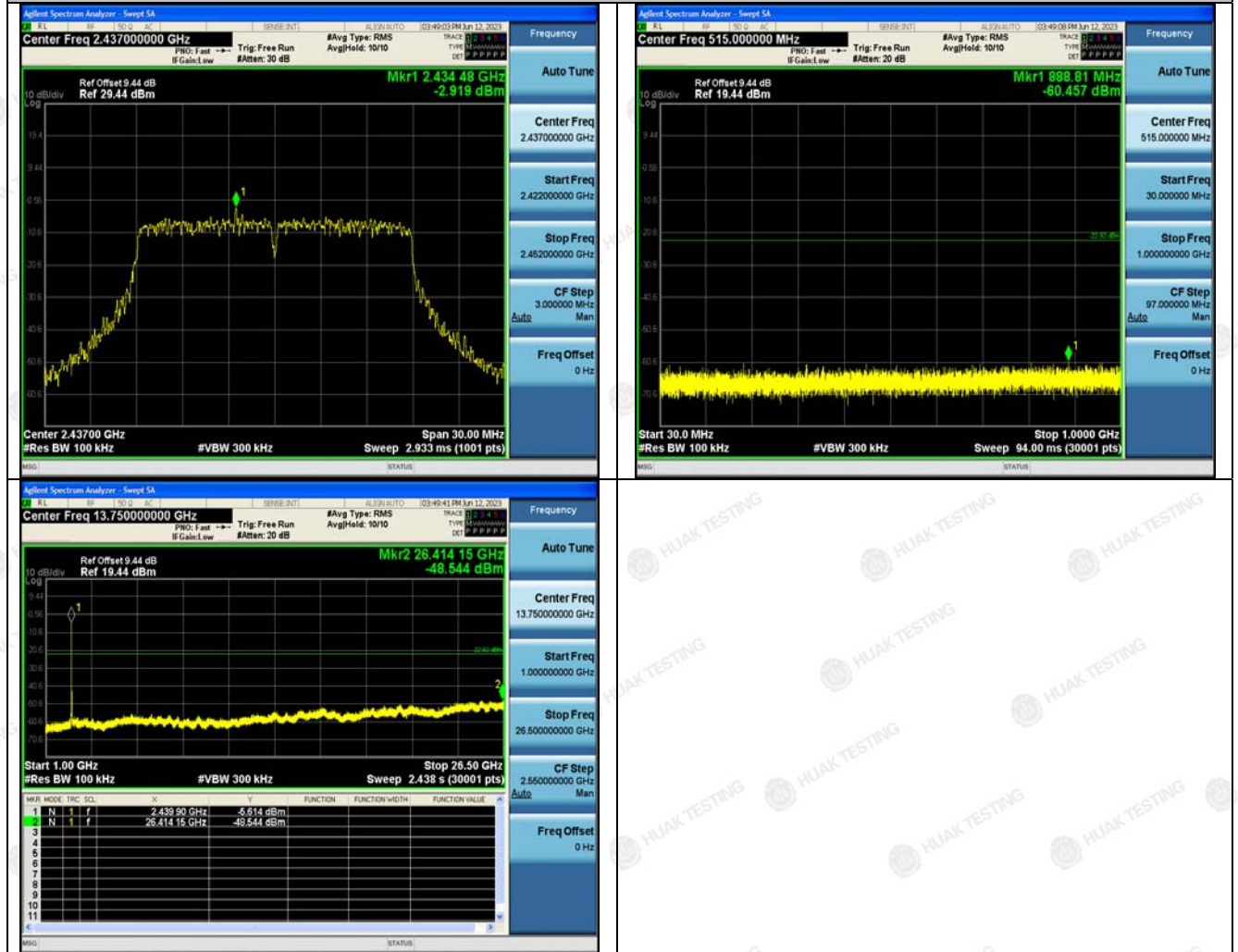
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 35 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at <http://www.cer-mark.com>.

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Spurious Emission(2437MHz)



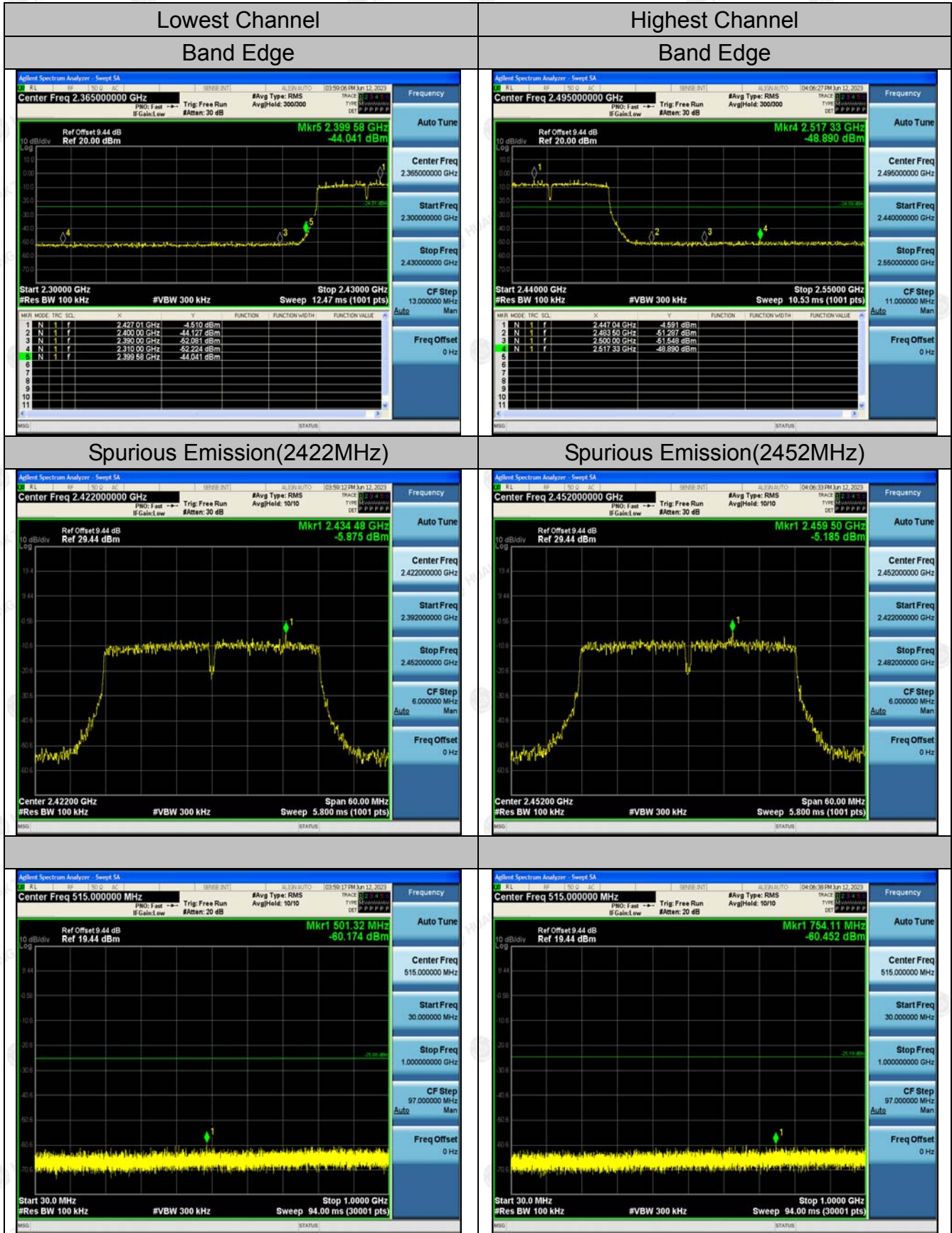
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802.11n (HT40) Modulation



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