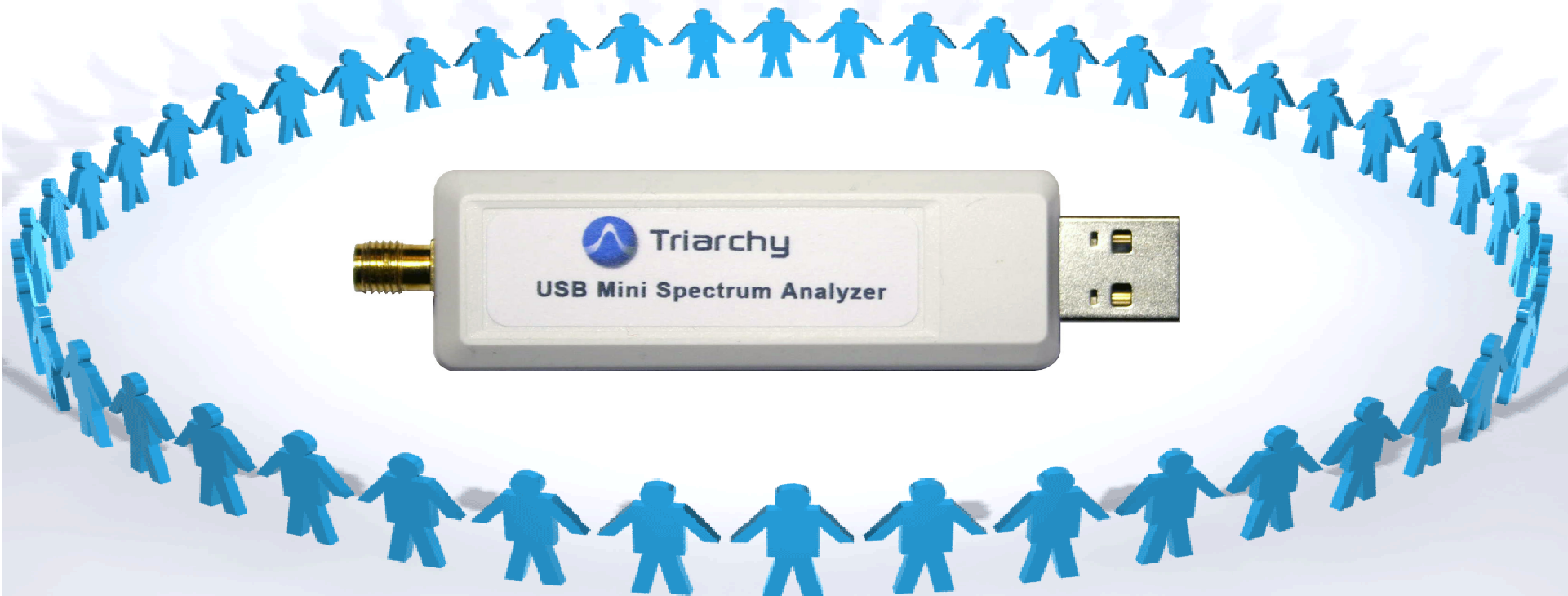




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Wifi signal testing with TSA5G35



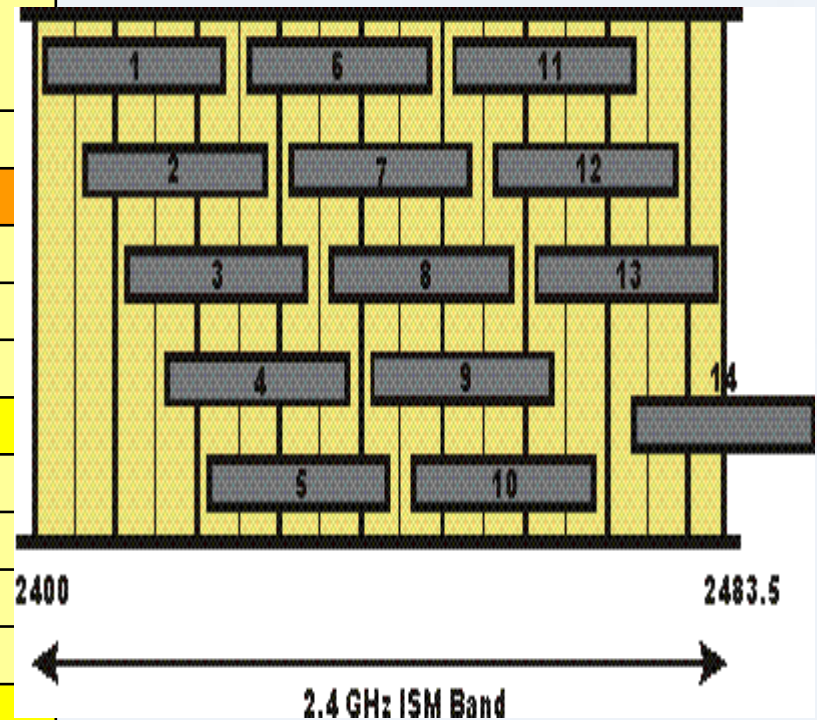


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Wi-Fi WLAN channel frequencies

Channel Number	Lower Frequency GHz	Center Frequency GHz	Upper Frequency GHz
1	2401	2412	2423
2	2404	2417	2428
3	2411	2422	2433
4	2416	2427	2438
5	2421	2432	2443
6	2426	2437	2448
7	2431	2442	2453
8	2436	2447	2458
9	2441	2452	2463
10	2451	2457	2468
11	2451	2462	2473
12	2456	2467	2478
13	2461	2472	2483
14	2473	2484	2495



Channel 6&11 will be
Wi-fi default setting



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Wireless Router conductive testing

1: Using direction coupler to connect with both TSA5G35 and antenna.

2: External 30dB attenuator shall be connected before the TSA5G35, because the output power of wireless router is around 20dBm





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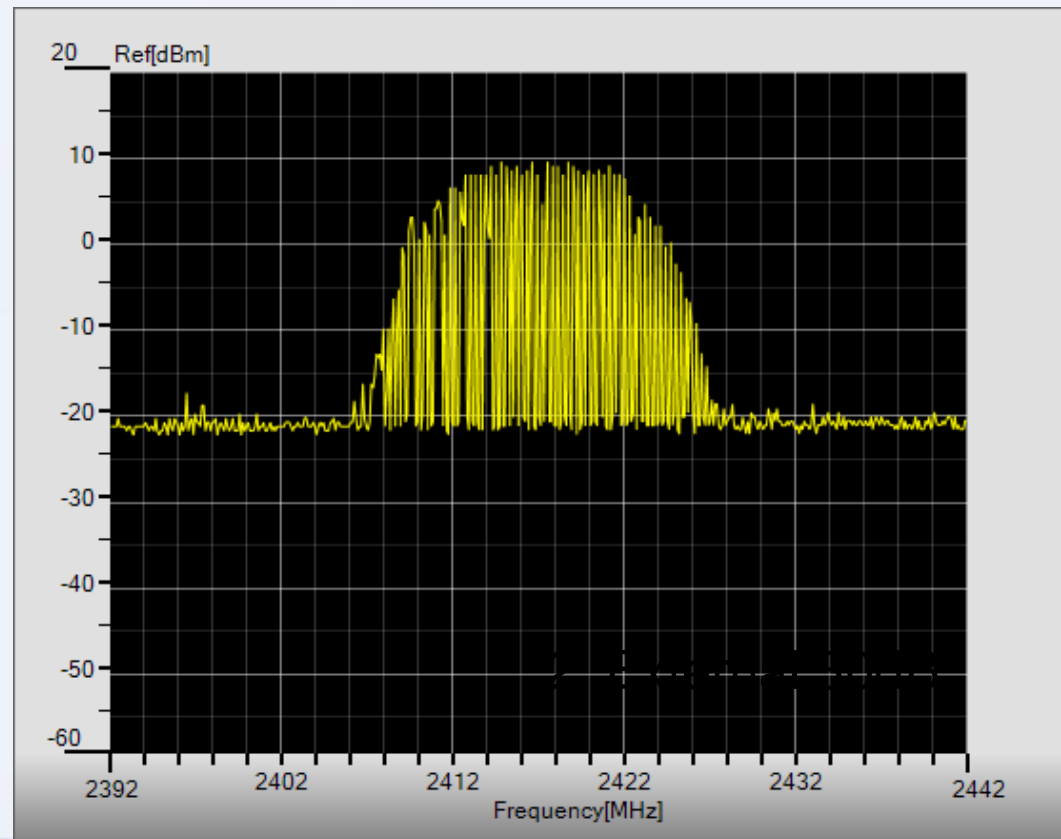
Wireless Router conductive testing

The TSA5G35 parameter setting will be:

Parameter Setting

Center-Freq(MHz)	2417	Start	
Span(MHz)	50		
Amplitude(dBm)	20		<input checked="" type="checkbox"/> External ATT(30dB)
Sweep Time	x8 (Burst Mode)		

The display curve is selected at CURRENT, the measure result is shown with each one frame.

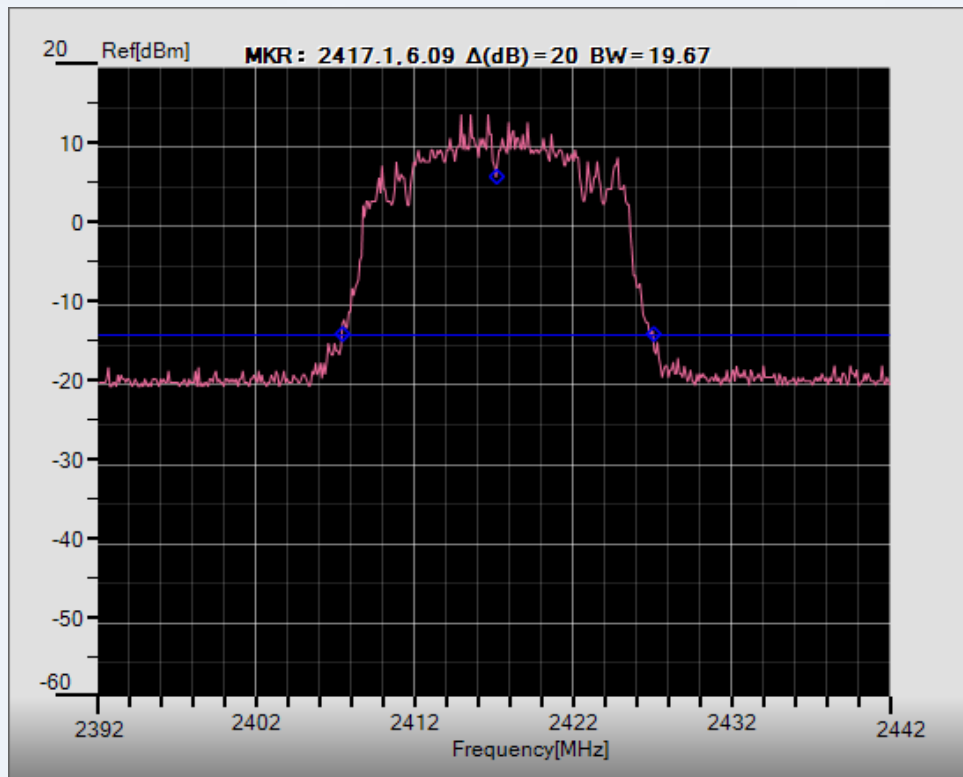




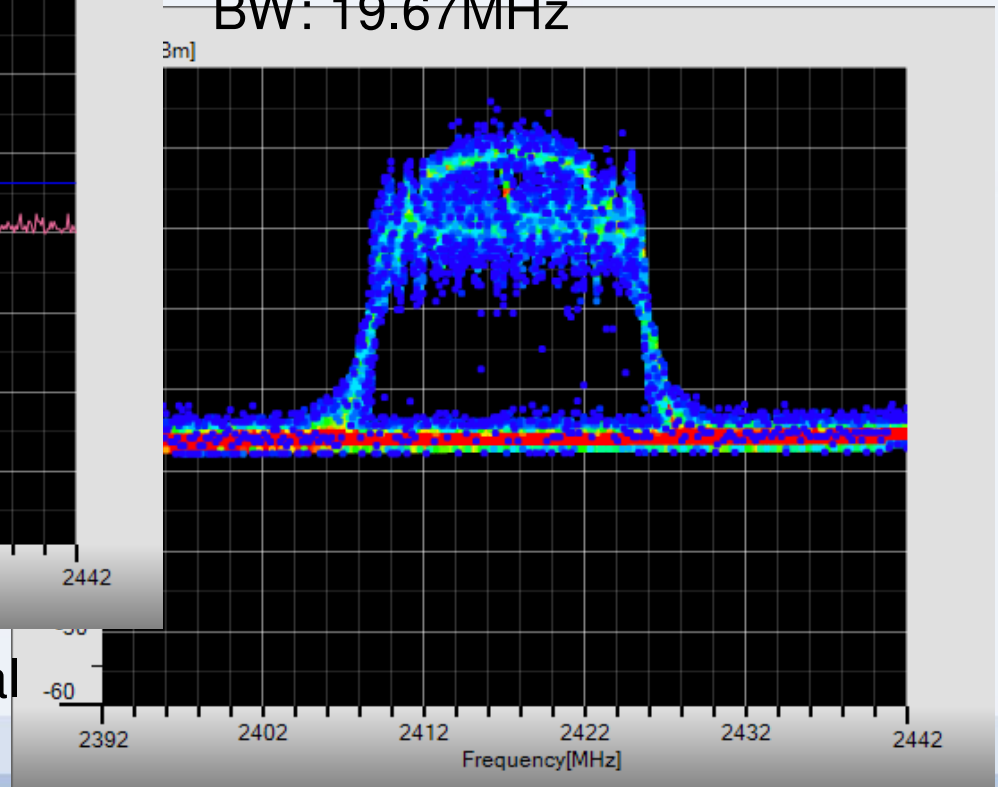
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Wireless Router conductive testing



Center frequency: 2417.1MHz
Power level : 10dBm
BW: 19.67MHz



The density will show that signal density distribution.

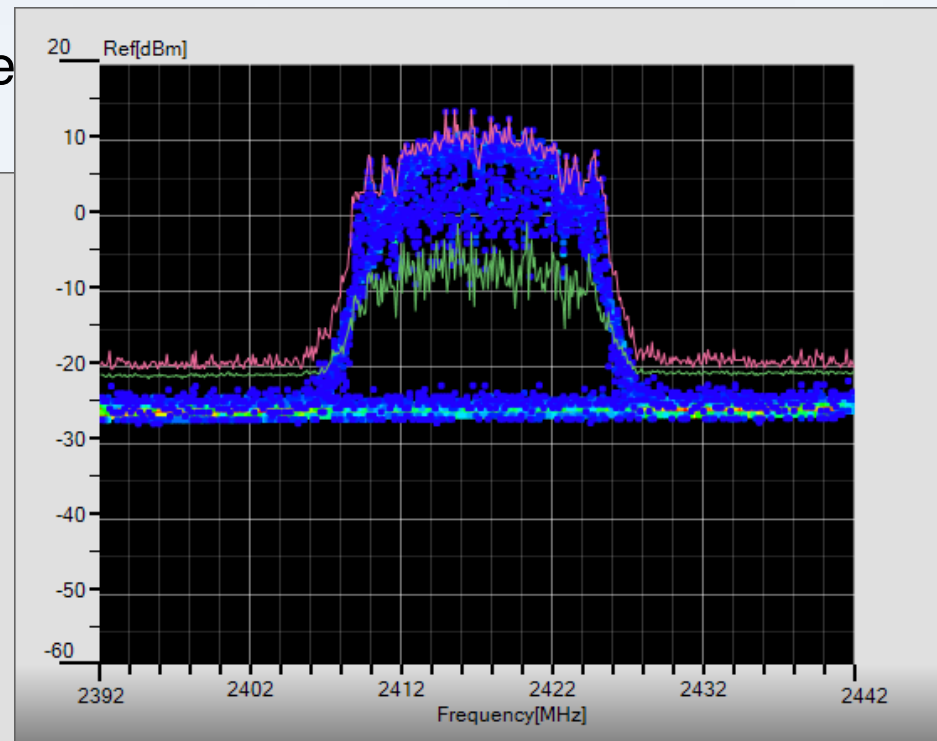
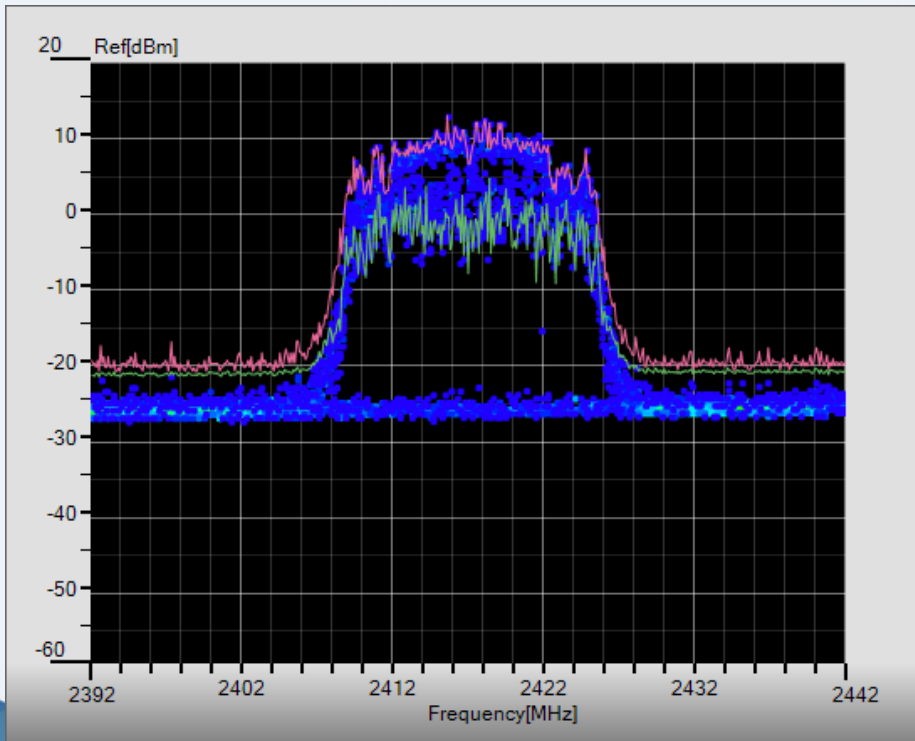


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Wireless Router conductive testing

Watch TV on the internet, the Average curve will be high level.



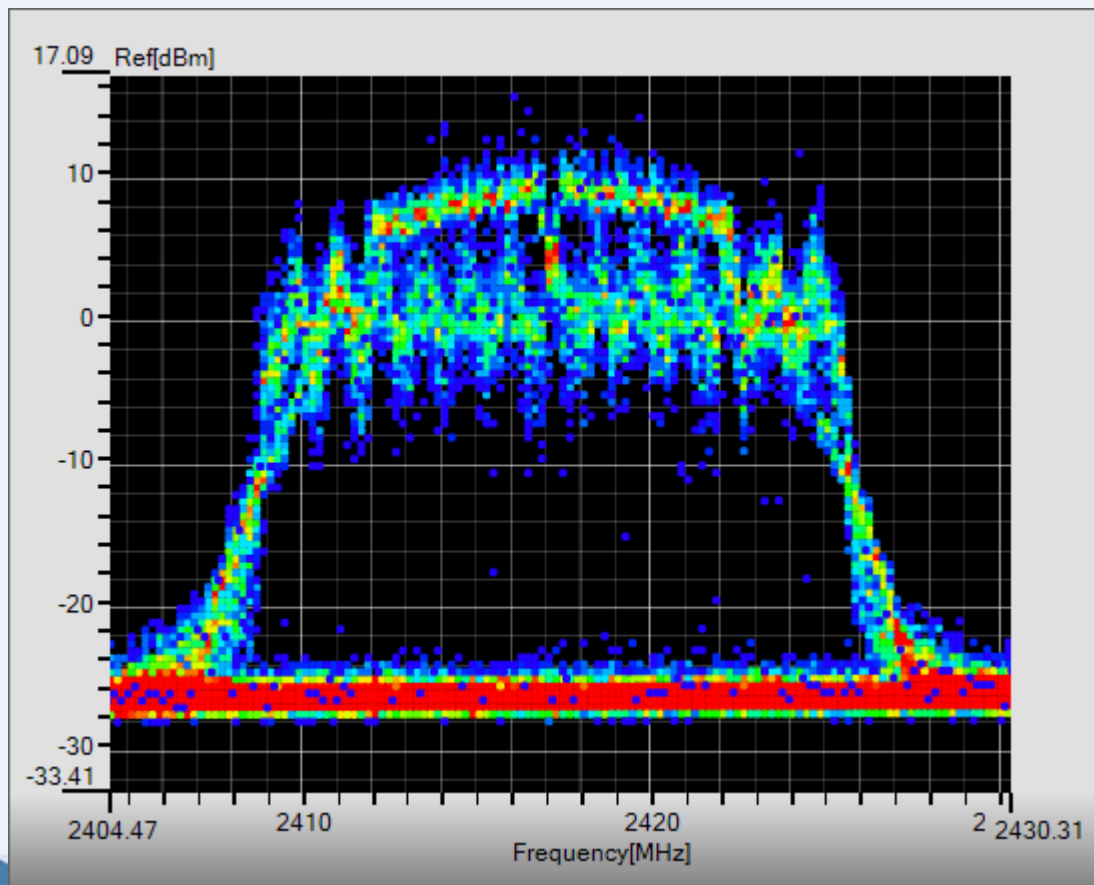
Only access internet to browser the web site, the Average curve will be low level.



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Wireless Router conductive testing



Zoom the density image, to look around the signal distribution more detail.



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Wireless Router radiation testing

The TSA5G35 parameter setting will be:

Parameter Setting	
Center-Freq(MHz)	2417
Span(MHz)	50
Amplitude(dBm)	-40
Sweep Time	x8 (Burst Mode)
<input type="checkbox"/> External ATT(30dB)	
Start	

Both antenna distance will be 1 meter. TSA5G35 will use USB cable to connect with computer



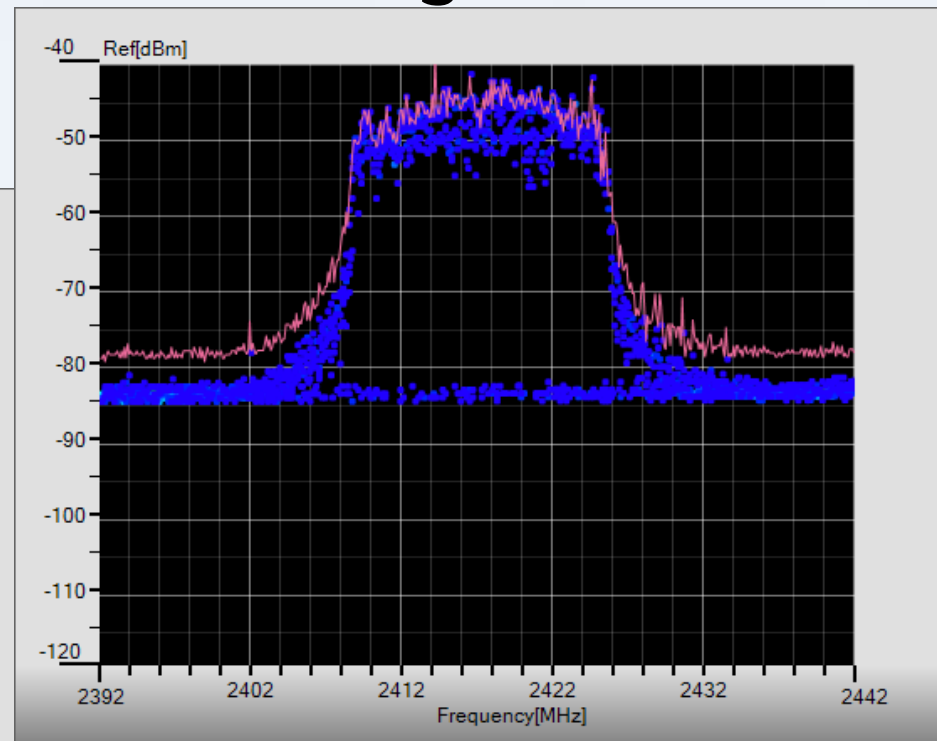
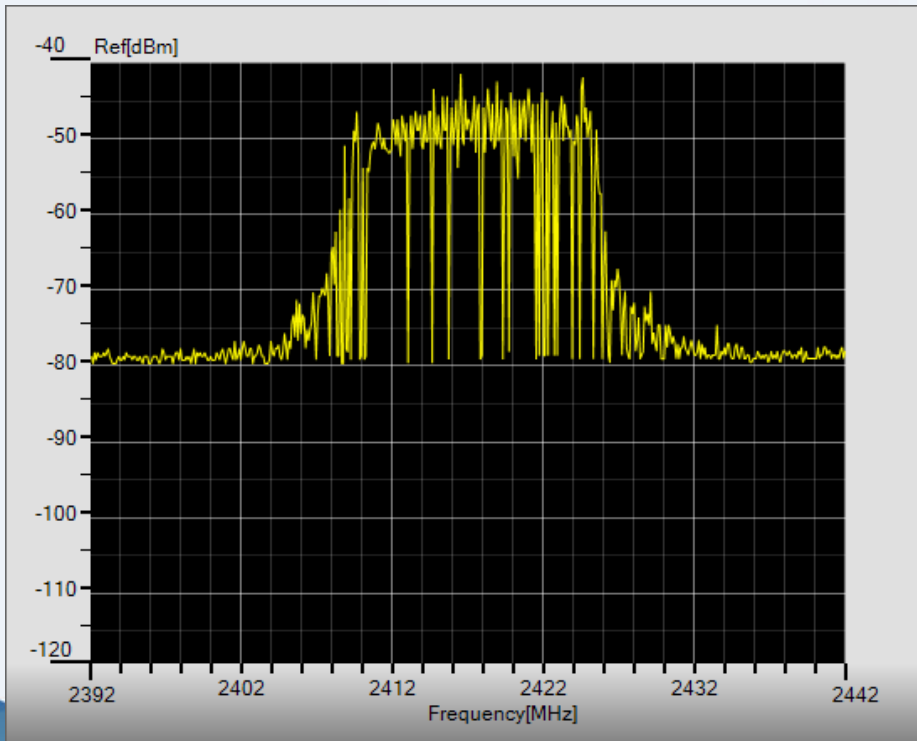


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Wireless Router radiation testing

The current curve is not stable as conductive testing.



Max curve will be similar to the conductive testing.



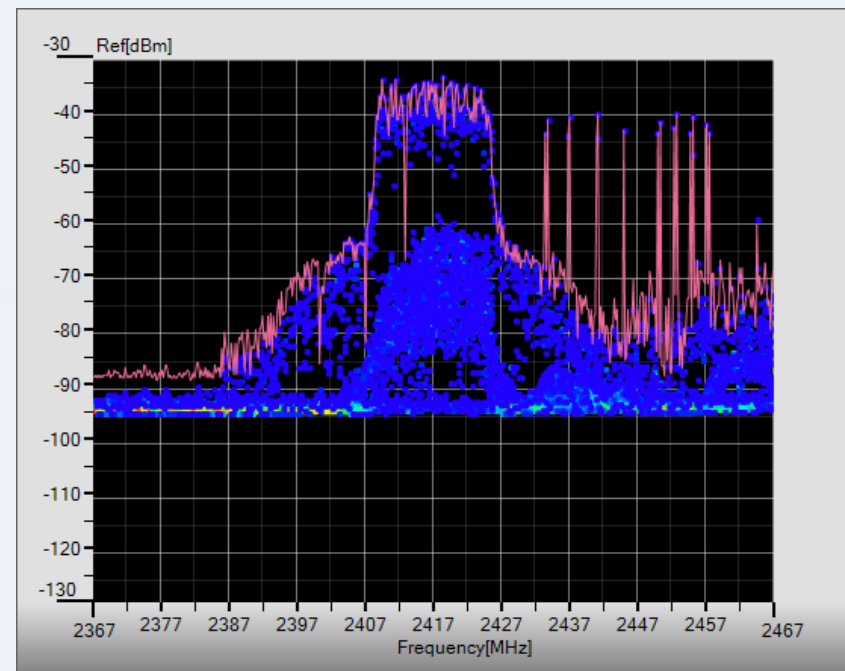
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Wireless Router radiation testing

Then TSA5G35 plug on computer directly, it will receive the both wifi signal, one is from wifi router, one is from the computer wifi device.

Radiation signal will have multi path effect, the neighbour device will be easy to be received, so that radiation test is not stable sometimes, the waveform will combine the several signal source. The density image will help you to distinguish each signal source.



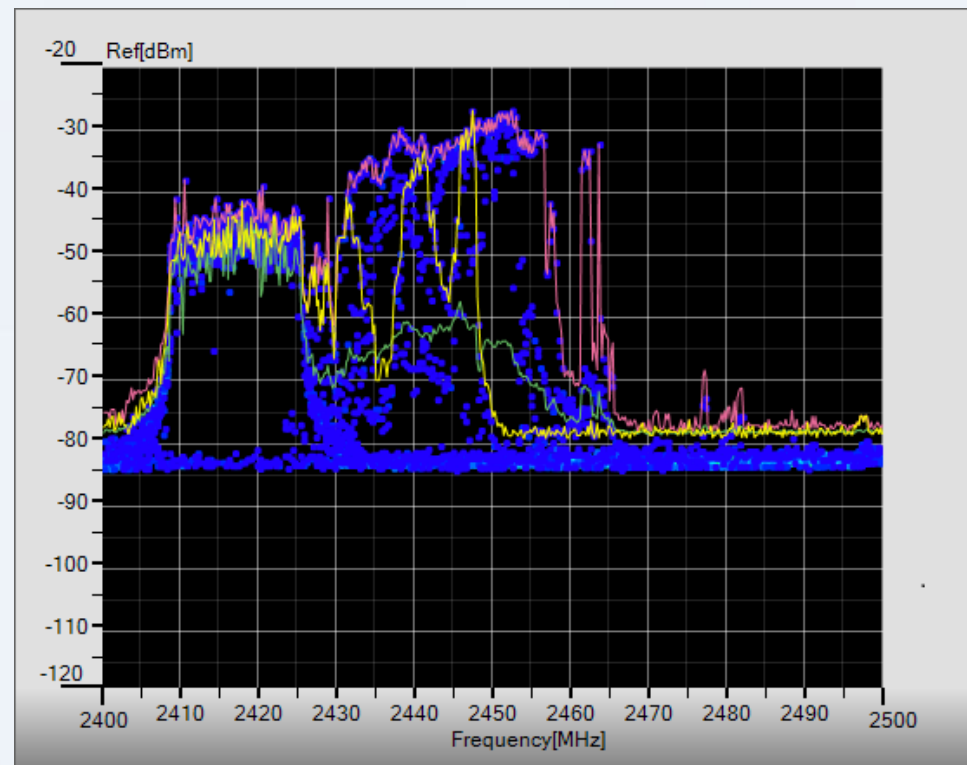


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Wireless Router interference testing

The microwave oven will be big interface source for the Wifi system. the microwave oven frequency band is 2430 to 2460MHz, the signal level is very large if your device is close the microwave oven. so that Channel 1,2,3 will be better to avoid impact from the microwave oven. The channel 6 will be overlap with microwave oven frequency.





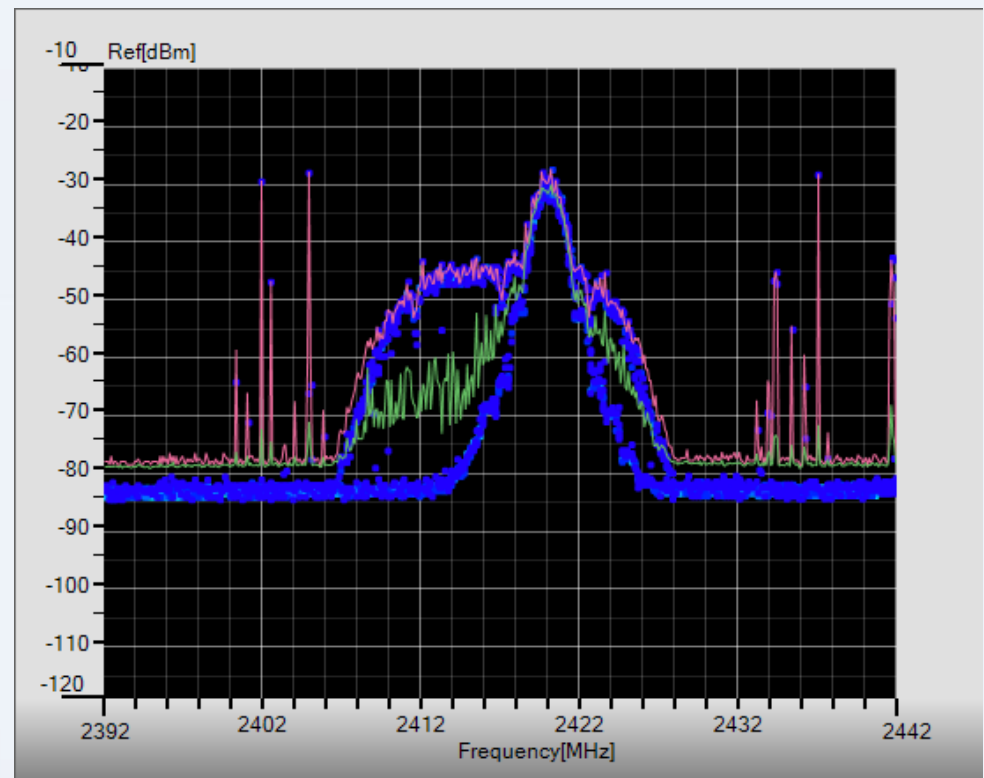
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Wireless Router interference testing

To turn the Zigbee signal at 2420MHz, inject Zigbee signal close the wifi area, the wifi is working at channel 2, 2417MHz. The TSA5G35 can measure the spectrum waveform shown as at right figure.

The internet link will be broken when the Zigbee signal is turn on.





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Wireless Router interference testing

To turn on the Bluetooth device, and make it working on the audio link. The device can detect wifi signal and avoid to make hopping at wifi channel. The TSA5G35 can measure the spectrum waveform shown as at right figure.

So that Bluetooth can be working with wifi system at same area.

