

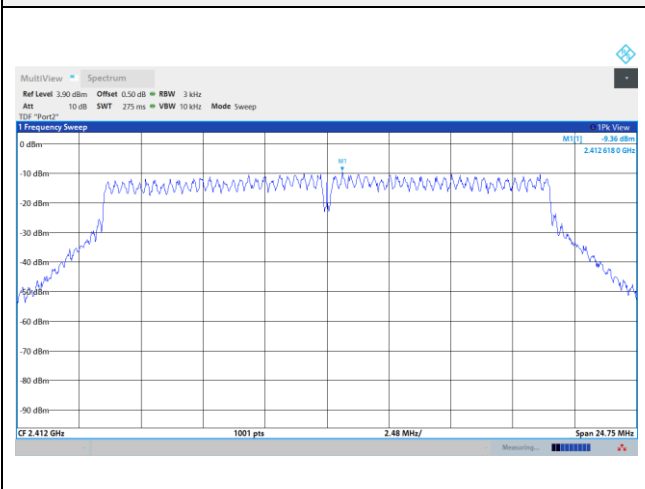
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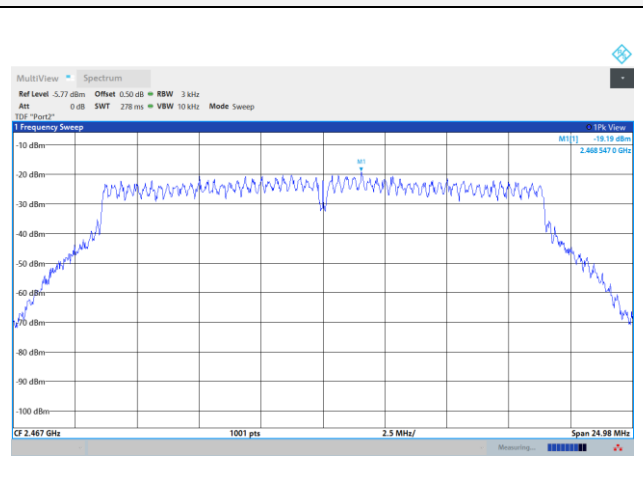
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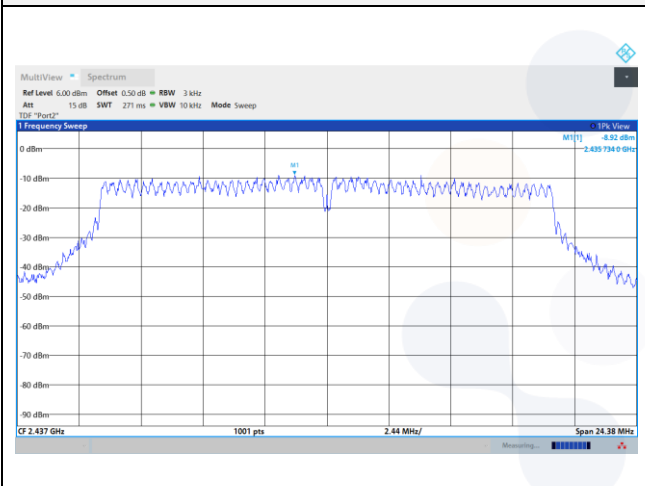
802.11n HT20 / 2 412 MHz



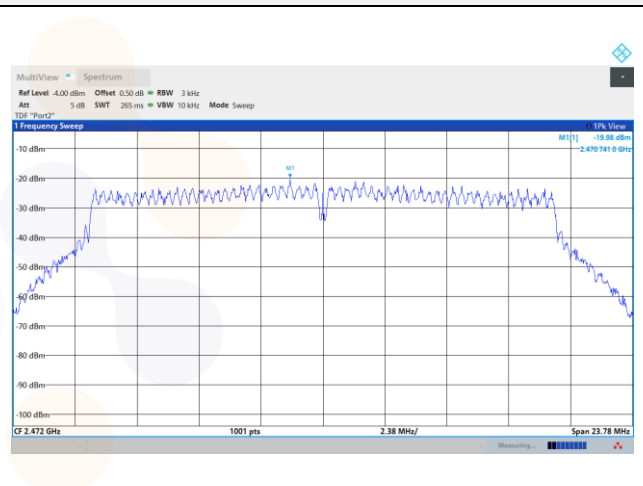
802.11n HT20 / 2 467 MHz



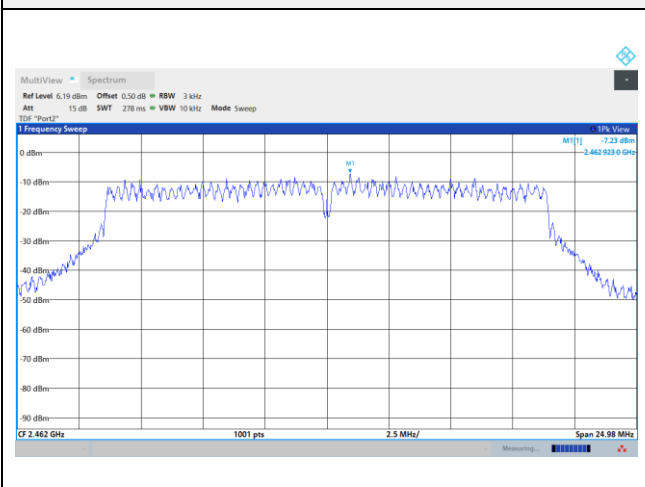
802.11n HT20 / 2 437 MHz



802.11n HT20 / 2 472 MHz



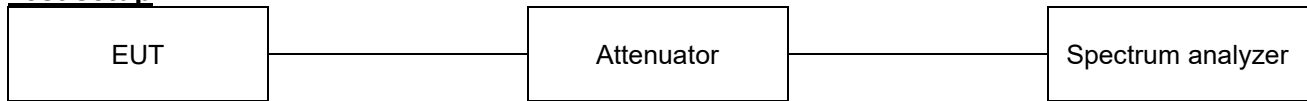
802.11n HT20 / 2 462 MHz



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7.3. 6 dB Bandwidth(DTS Channel Bandwidth) & 99% Bandwidth

Test setup



Limit

According to §15.247(a)(2) and RSS-247(5.2), Systems using digital modulation techniques may operate in the 902–928 MHz, 2 400–2 483.5 MHz, and 5 725–5 850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Test procedure

ANSI C63.10 - Section 11.8.2

Test settings

DTS bandwidth

One of the following procedures may be used to determine the modulated DTS bandwidth.

Option 1

- 1) Set RBW = 100 kHz.
- 2) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) Sweep = auto couple.
- 6) Allow the trace to stabilize.
- 7) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Option 2

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described in 11.8.1 (i.e., RBW = 100 kHz, VBW $\geq 3 \times$ RBW, and peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.

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Occupied bandwidth (or 99% emission bandwidth)

- ♦ The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
- ♦ The span of the spectrum analyzer shall be set large enough to capture all products of the modulation process, including the emissions skirts, around the carrier frequency, but small enough to avoid having other emissions (e.g. on adjacent channels) within the span.
- ♦ The detector of the spectrum analyzer shall be set to "Sample". However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold (or "Max hold") may be necessary to determine the occupied / x dB bandwidth if the device is not transmitting continuously.
- ♦ The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value. Video averaging is not permitted

Notes: it may be necessary to repeat the measurement a few times until the RBW and VBW are in compliance with the above requirement.

For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level terms, The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99% emission bandwidth).

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**Test results****SISO**

Test mode	Frequency(MHz)	6 dB bandwidth(MHz)		99% bandwidth(MHz)	
		ANT 1	ANT 2	ANT 1	ANT 2
802.11b	2412	8.65	8.65	14.03	13.93
	2437	8.65	9.10	13.70	13.89
	2462	8.65	9.15	14.07	13.98
	2467	8.65	8.70	13.80	13.91
	2472	8.65	9.15	13.56	13.82
802.11g	2412	15.85	15.85	16.90	16.74
	2437	15.85	16.15	16.75	16.81
	2462	15.80	16.15	16.77	16.73
	2467	15.80	15.80	16.75	16.72
	2472	15.45	16.05	16.62	16.70
802.11n HT20	2412	16.45	16.40	17.94	17.85
	2437	16.20	16.20	17.84	17.85
	2462	16.45	16.10	17.83	17.81
	2467	16.45	16.25	17.81	17.80
	2472	15.25	16.10	17.69	17.76

MIMO

Test mode	Frequency(MHz)	6 dB bandwidth(MHz)		99% bandwidth(MHz)	
		ANT 1	ANT 2	ANT 1	ANT 2
802.11b	2412	9.15	8.65	14.06	13.97
	2437	8.65	8.65	13.74	13.91
	2462	8.70	8.65	14.08	13.99
	2467	8.65	8.65	13.77	13.89
	2472	8.65	8.15	13.48	13.80
802.11g	2412	15.85	15.85	16.86	16.69
	2437	15.85	15.85	16.80	16.67
	2462	15.80	15.80	16.77	16.69
	2467	15.80	15.80	16.70	16.64
	2472	15.25	15.85	16.59	16.62
802.11n HT20	2412	16.45	16.50	17.91	17.79
	2437	16.45	16.25	17.88	17.81
	2462	16.20	16.65	17.83	17.79
	2467	16.45	16.65	17.80	17.76
	2472	15.25	15.85	17.68	17.71

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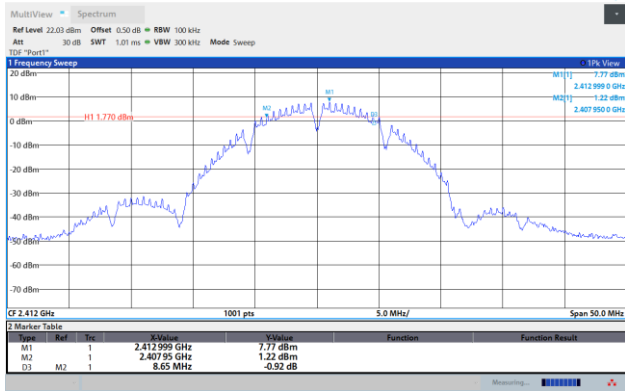
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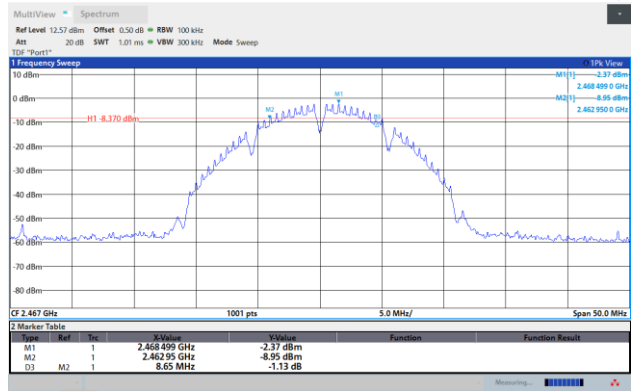
SISO ANT 1

6 dB bandwidth

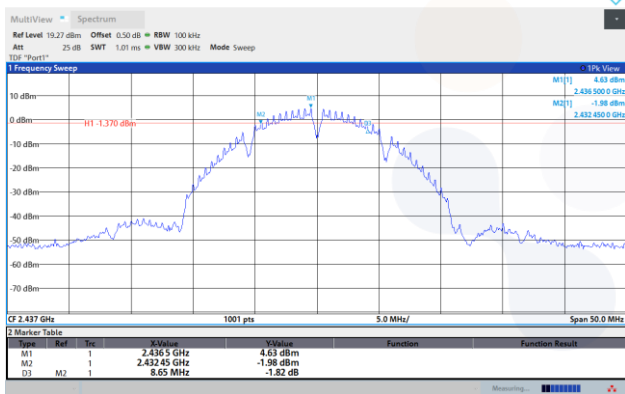
802.11b / 2 412 MHz



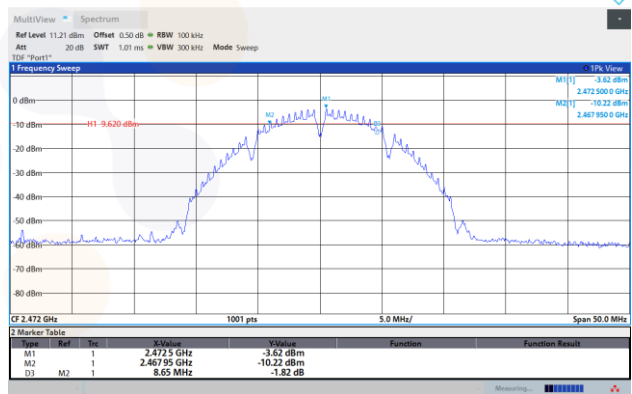
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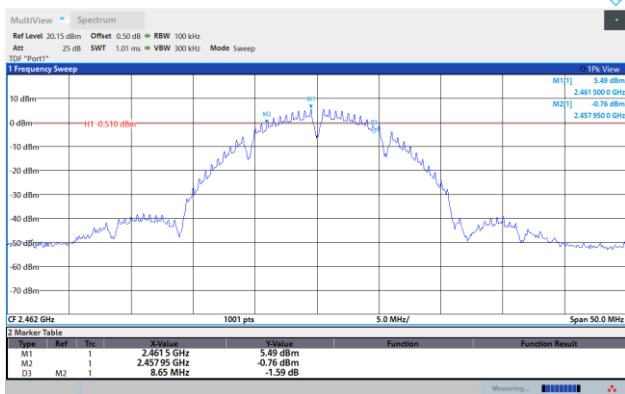
802.11b / 2 437 MHz



802.11b / 2 472 MHz



802.11b / 2 462 MHz



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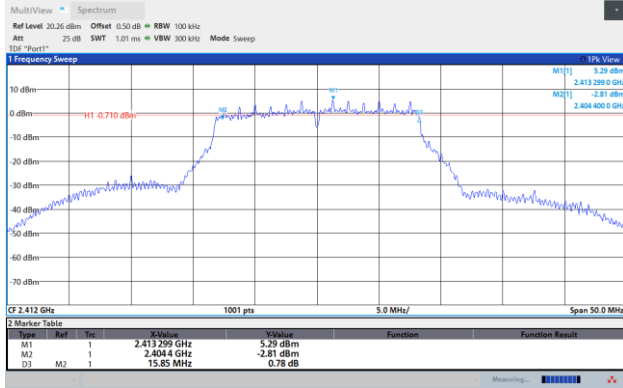
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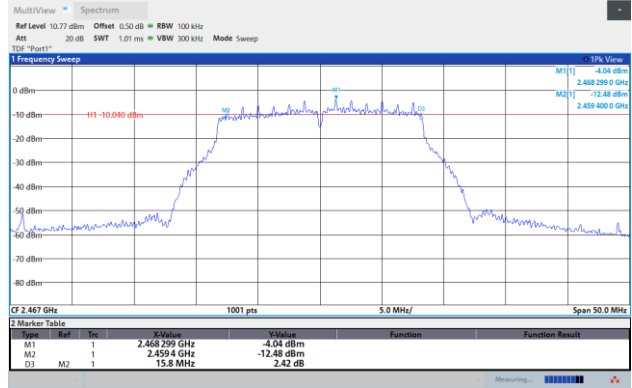
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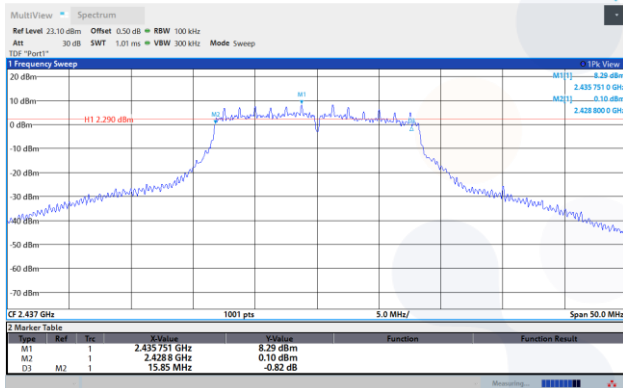
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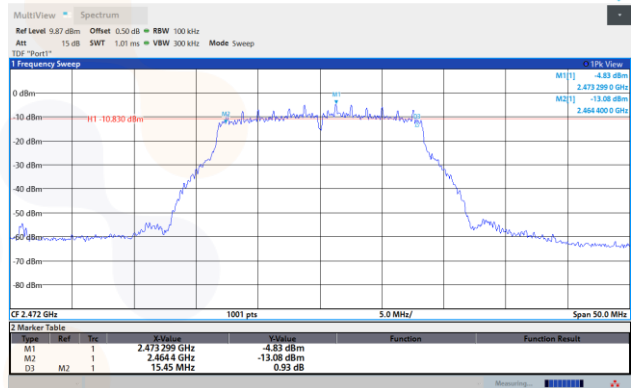
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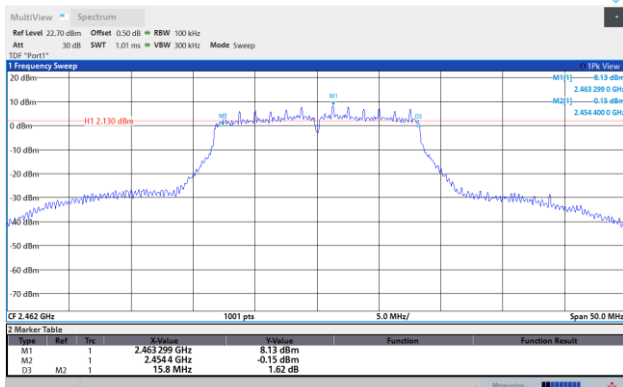
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802.11g / 2 472 MHz



802.11g / 2 462 MHz



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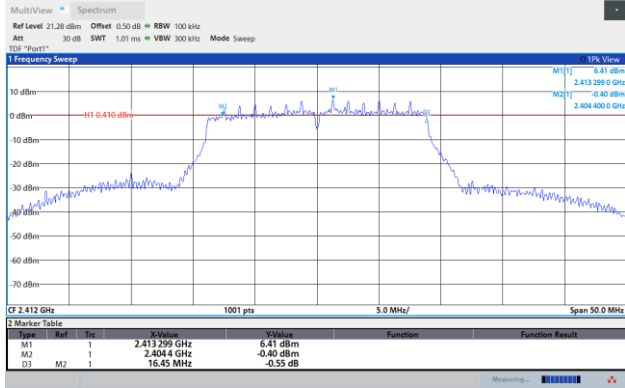
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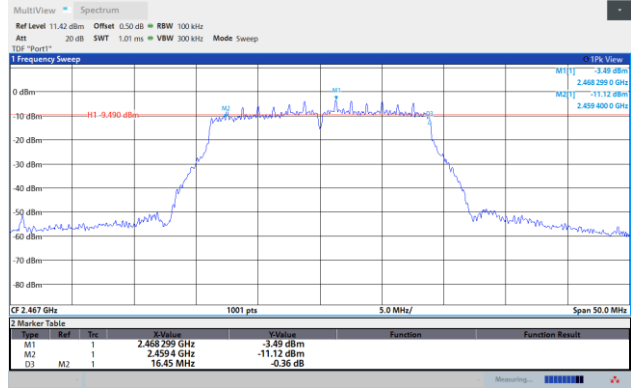
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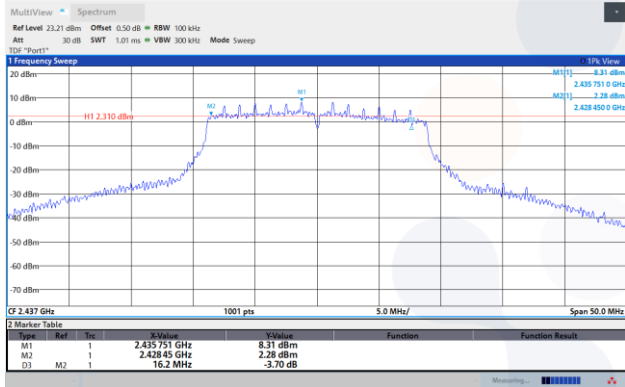
802.11n HT20 / 2 412 MHz



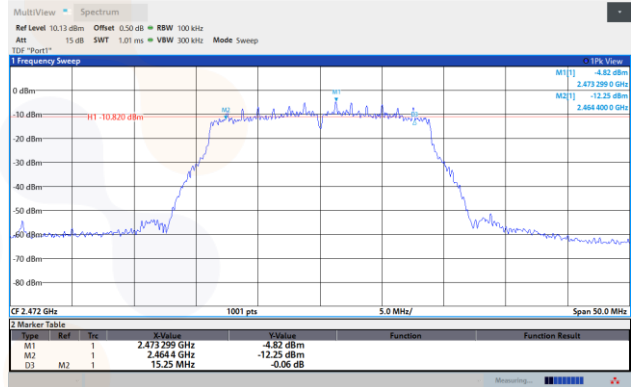
802.11n HT20 / 2 467 MHz



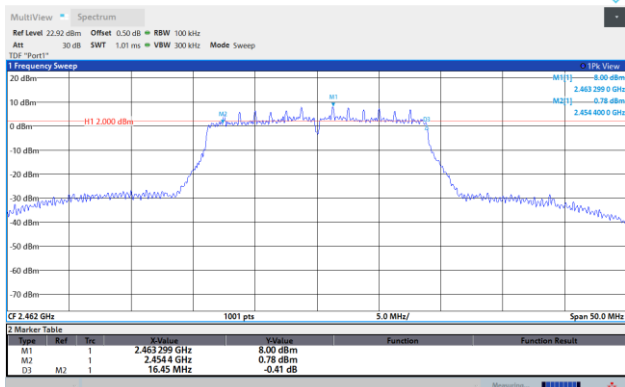
802.11n HT20 / 2 437 MHz



802.11n HT20 / 2 472 MHz



802.11n HT20 / 2 462 MHz



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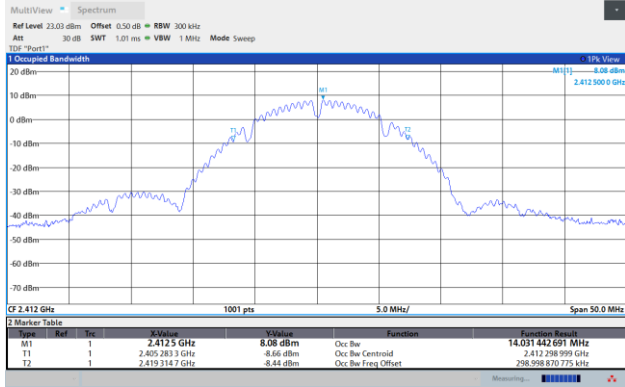
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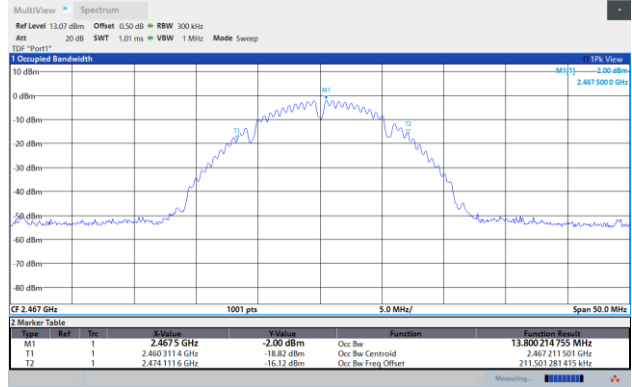


99% bandwidth

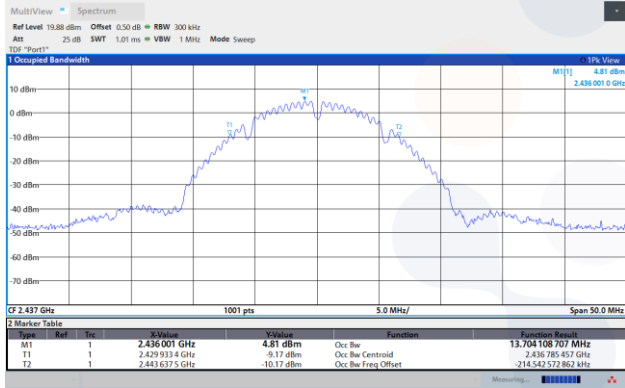
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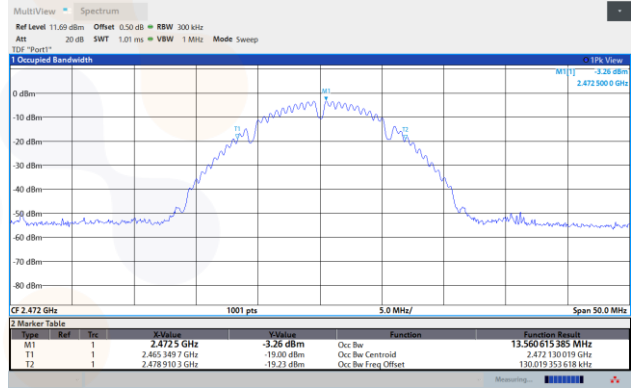
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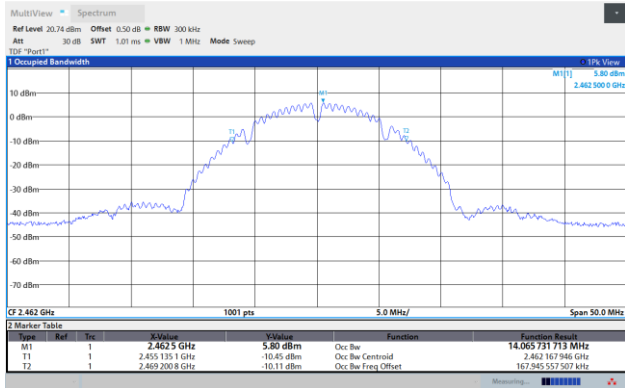
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802.11b / 2 472 MHz



802.11b / 2 462 MHz



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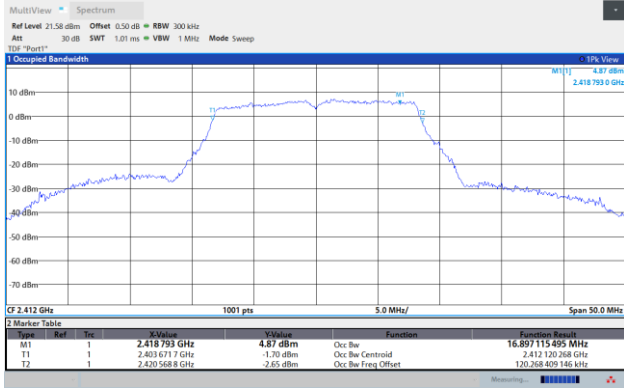
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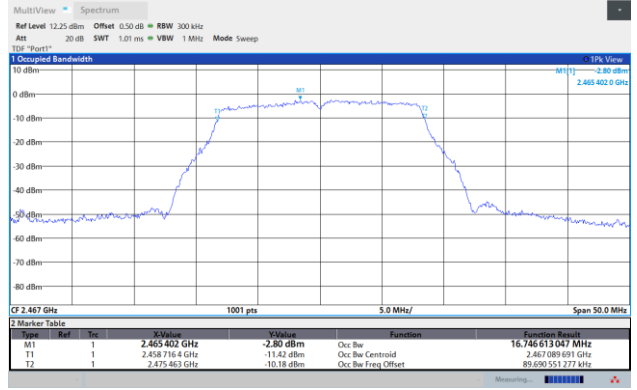
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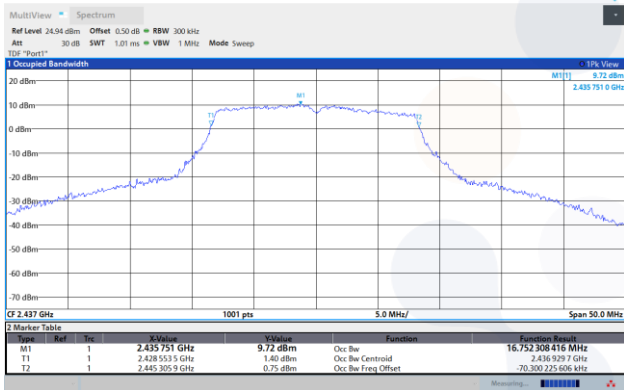
802.11g / 2 412 MHz



802.11g / 2 467 MHz



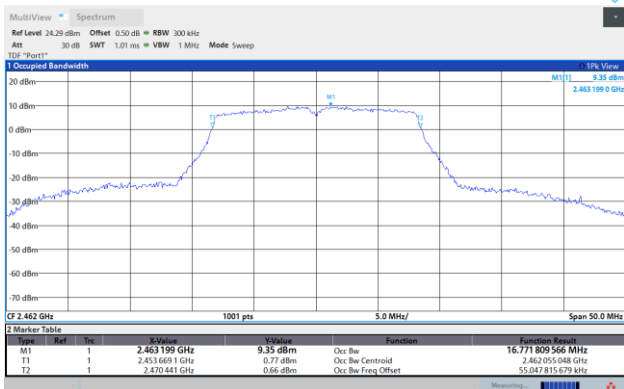
802.11g / 2 437 MHz



802.11g / 2 472 MHz



802.11g / 2 462 MHz



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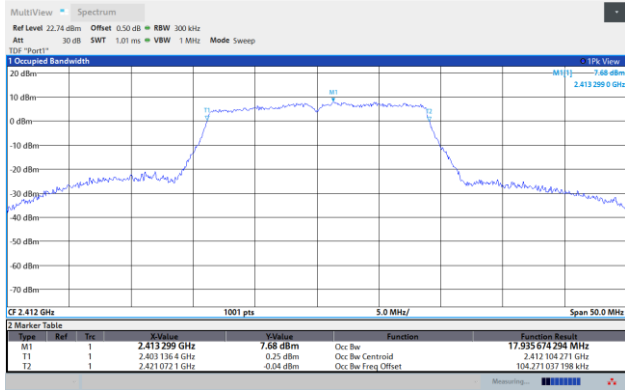
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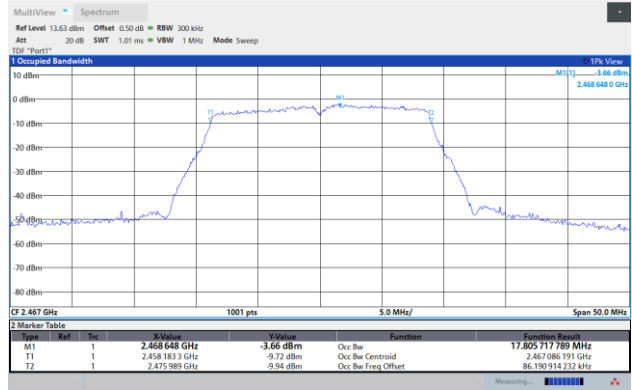
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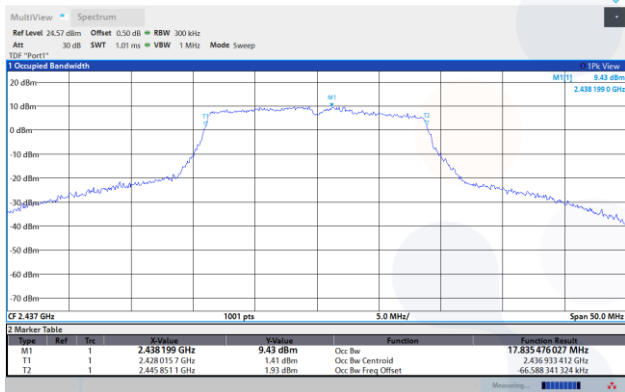
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802.11n HT20 / 2 467 MHz



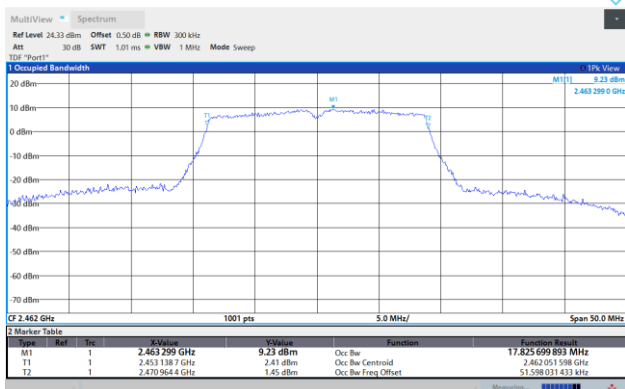
802.11n HT20 / 2 437 MHz



802.11n HT20 / 2 472 MHz



802.11n HT20 / 2 462 MHz



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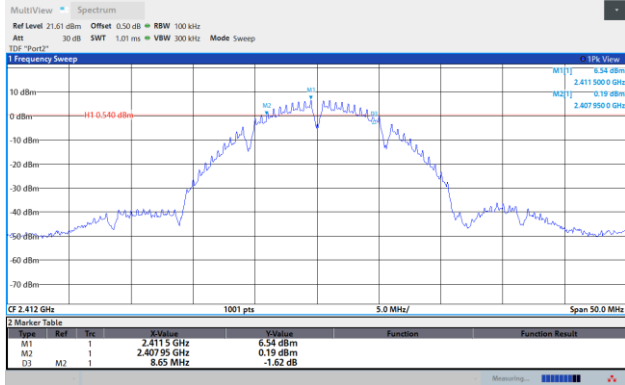
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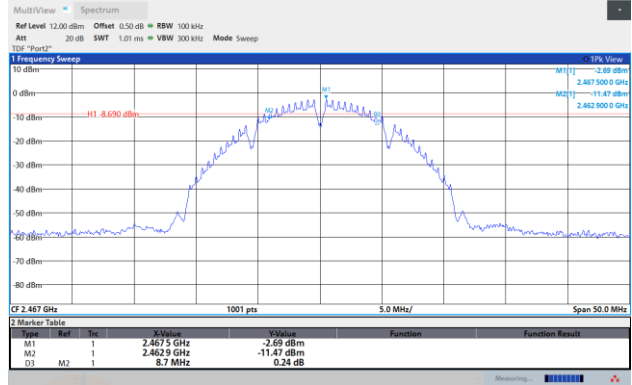
SISO ANT 2

6 dB bandwidth

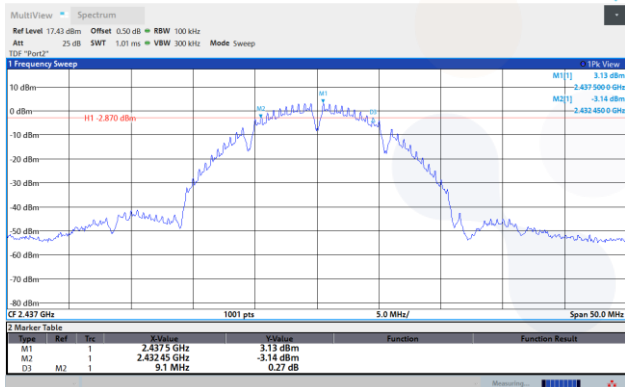
802.11b / 2 412 MHz



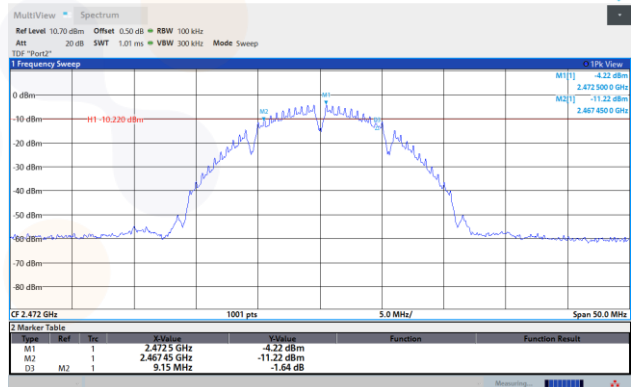
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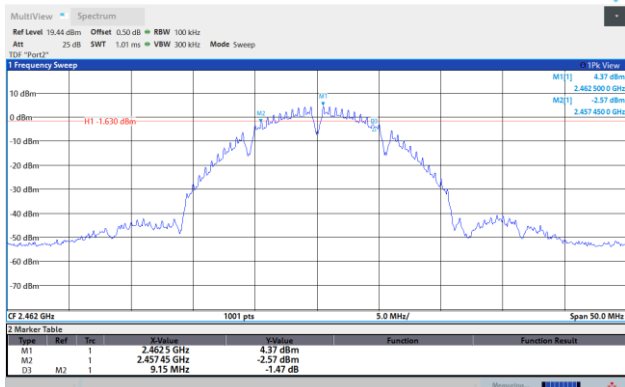
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802.11b / 2 472 MHz



802.11b / 2 462 MHz



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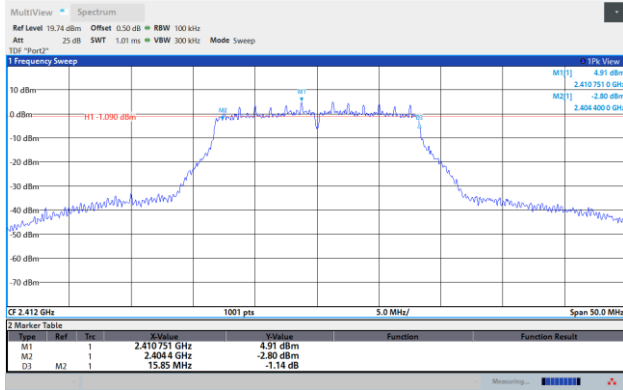
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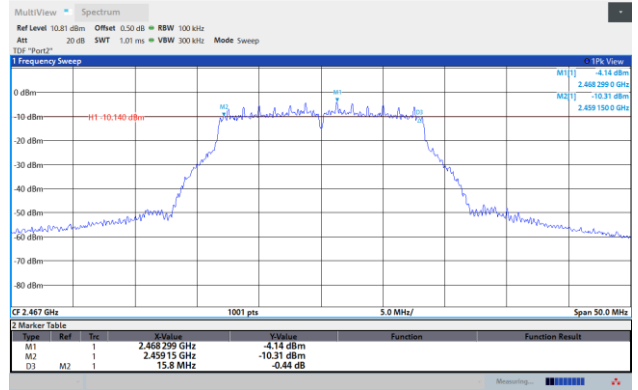
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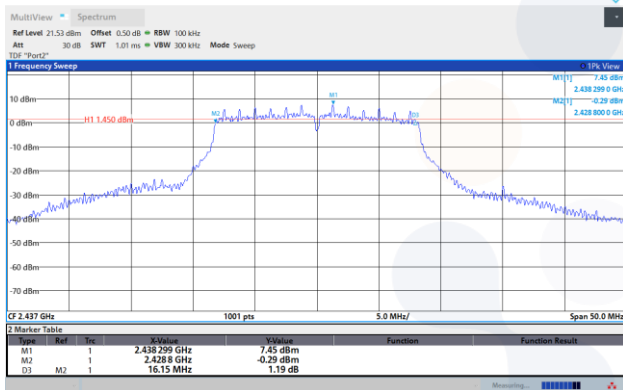
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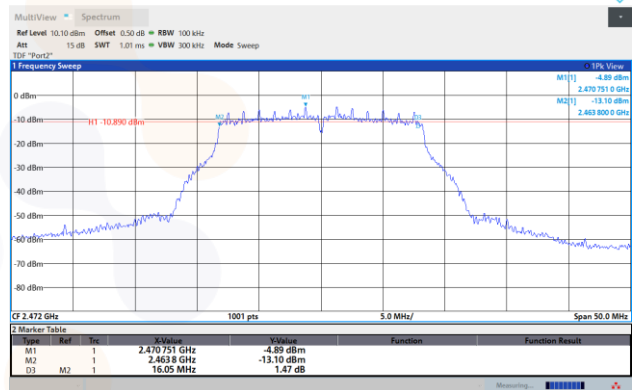
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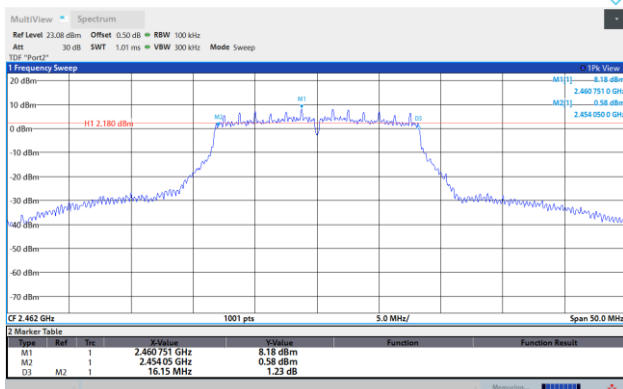
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802.11g / 2 472 MHz



802.11g / 2 462 MHz



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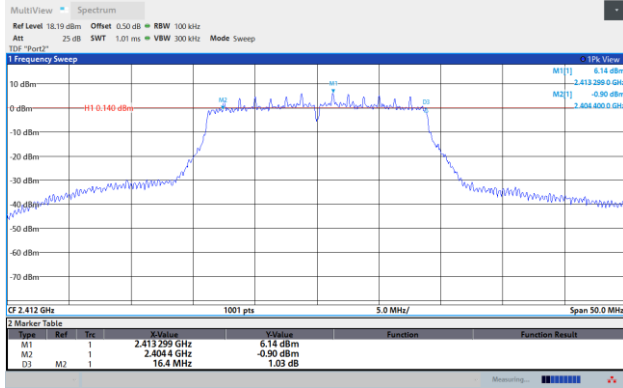
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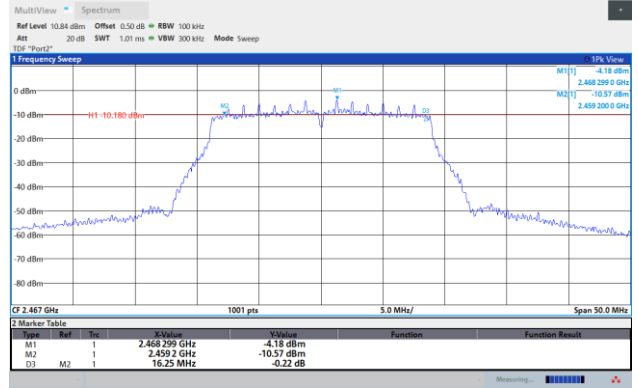
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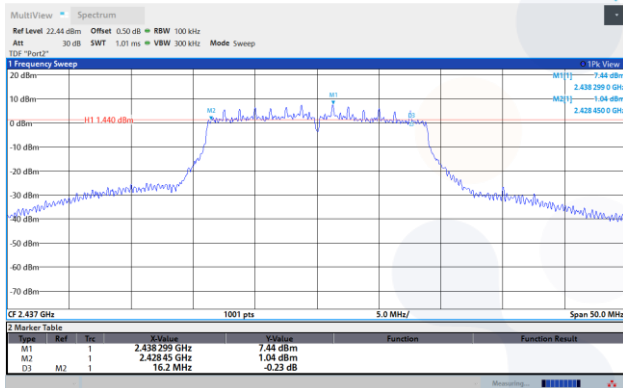
802.11n HT20 / 2 412 MHz



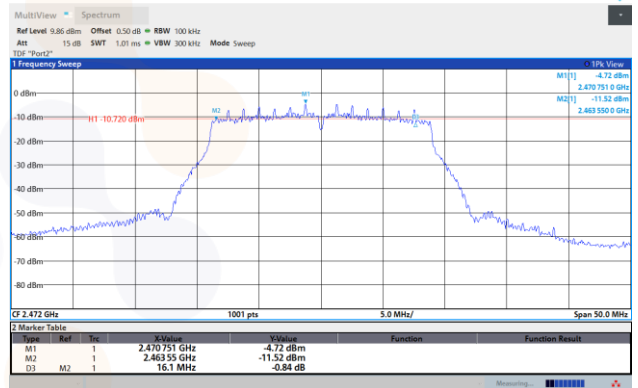
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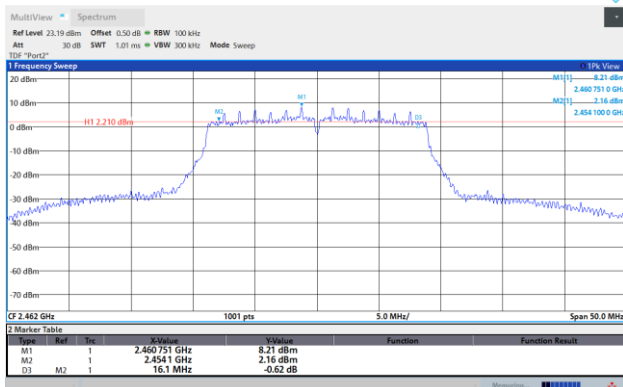
802.11n HT20 / 2 437 MHz



802.11n HT20 / 2 472 MHz



802.11n HT20 / 2 462 MHz



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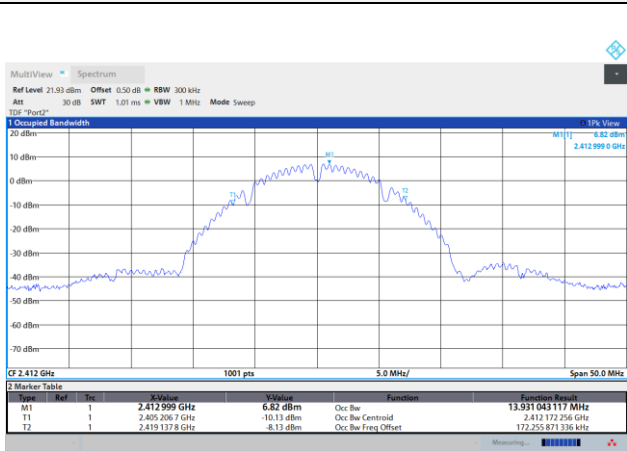
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KR22-SRF0050
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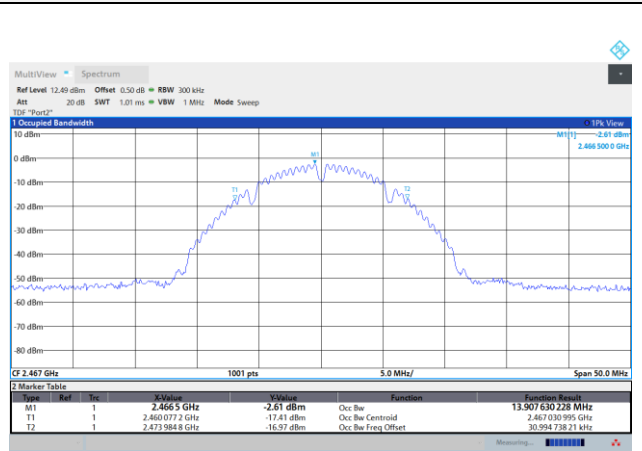


99% bandwidth

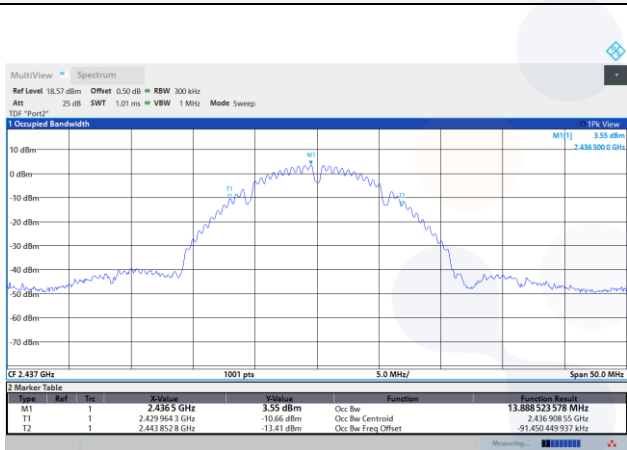
802.11b / 2 412 MHz



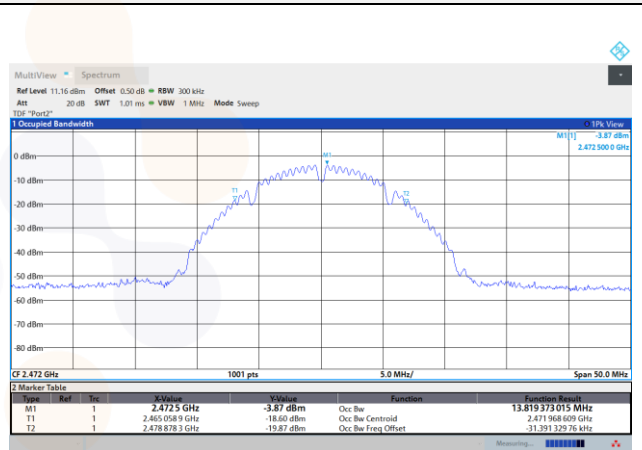
802.11b / 2 467 MHz



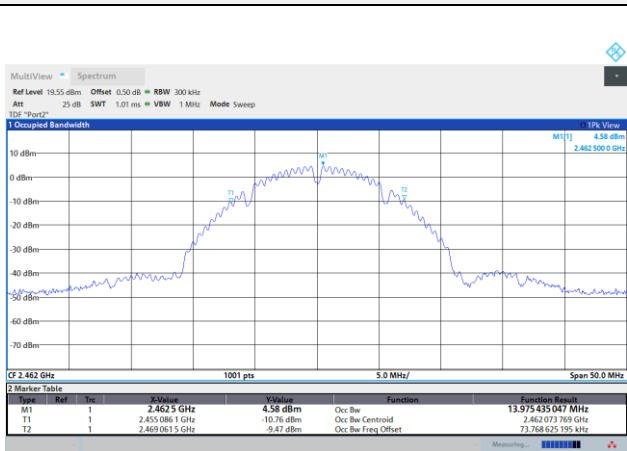
802.11b / 2 437 MHz



802.11b / 2 472 MHz



802.11b / 2 462 MHz



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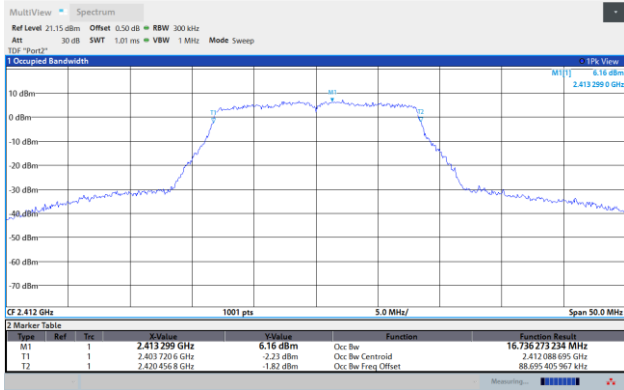
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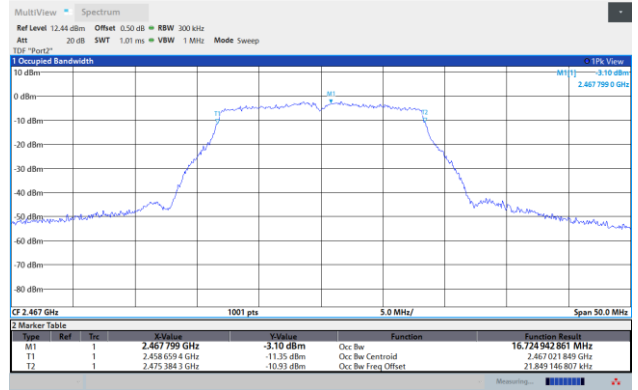
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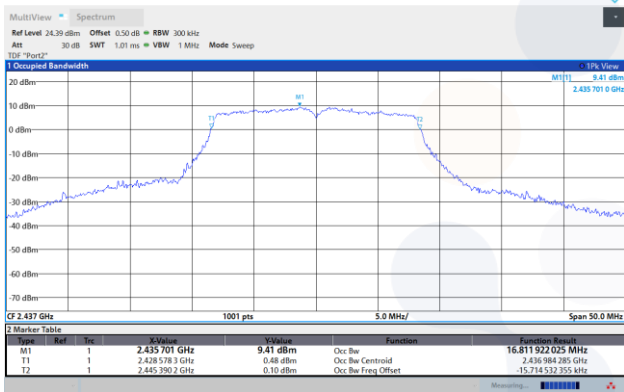
802.11g / 2 412 MHz



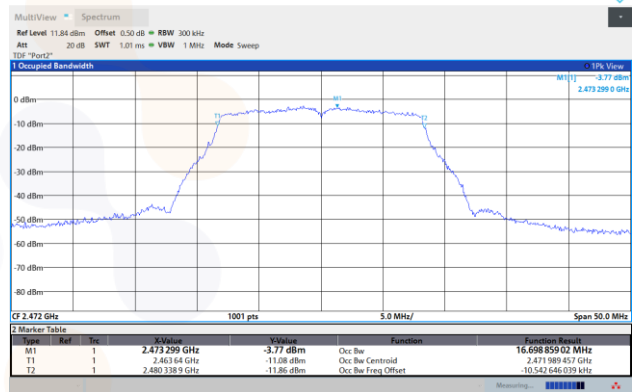
802.11g / 2 467 MHz



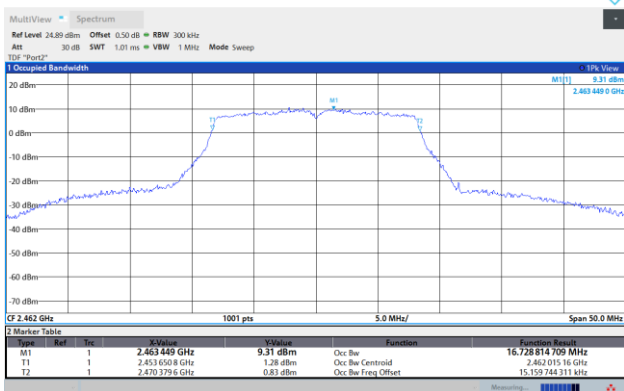
802.11g / 2 437 MHz



802.11g / 2 472 MHz



802.11g / 2 462 MHz



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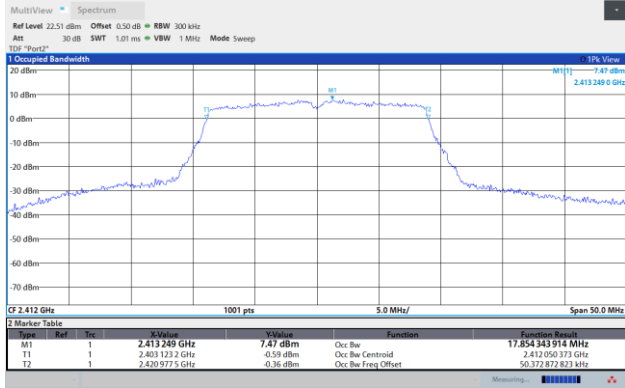
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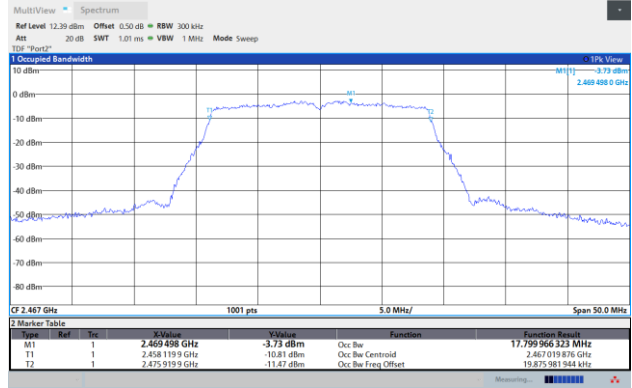
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KR22-SRF0050
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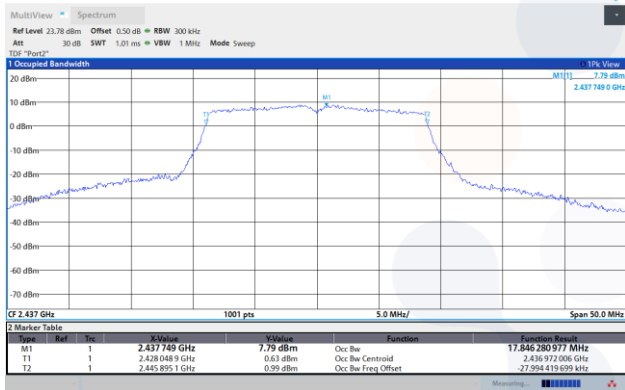
802.11n HT20 / 2 412 MHz



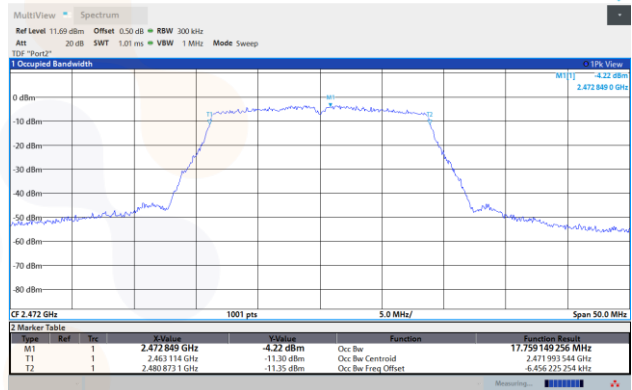
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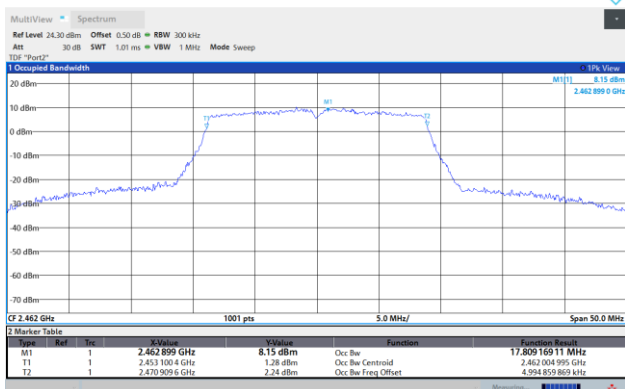
802.11n HT20 / 2 437 MHz



802.11n HT20 / 2 472 MHz



802.11n HT20 / 2 462 MHz



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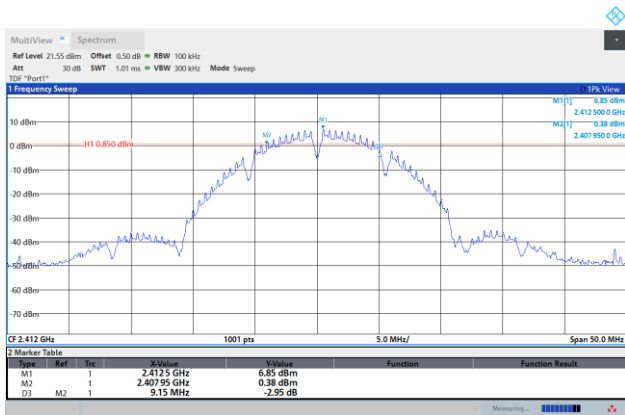
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KR22-SRF0050
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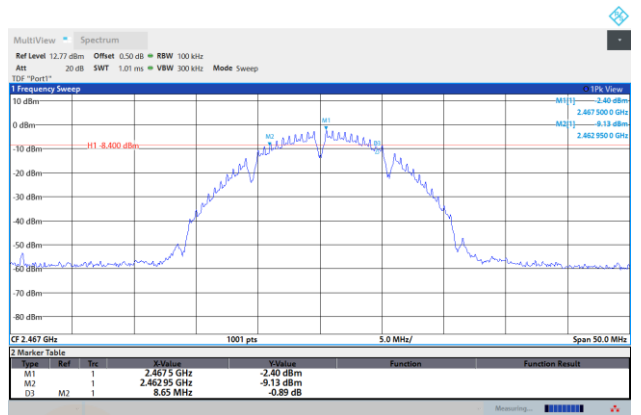
MIMO ANT 1

6 dB bandwidth

802.11b / 2 412 MHz



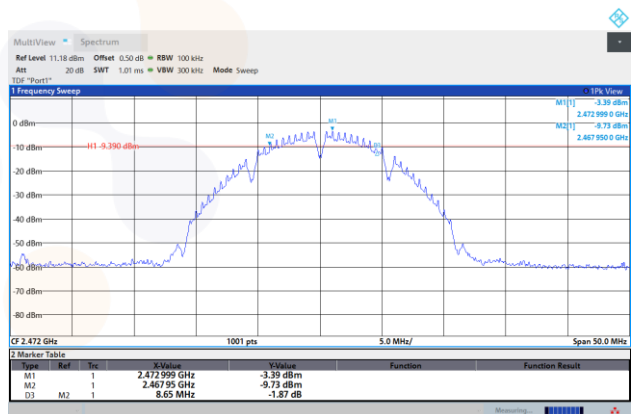
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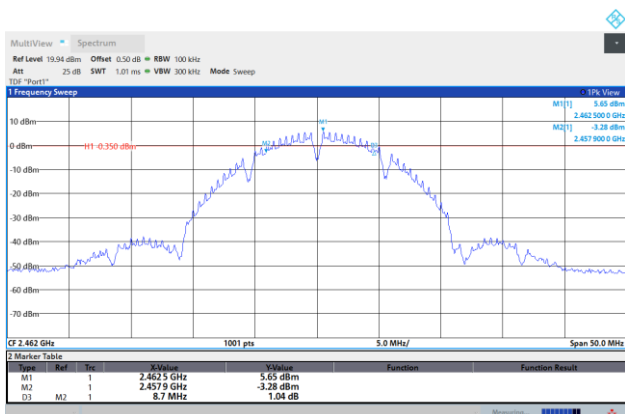
802.11b / 2 437 MHz



802.11b / 2 472 MHz



802.11b / 2 462 MHz



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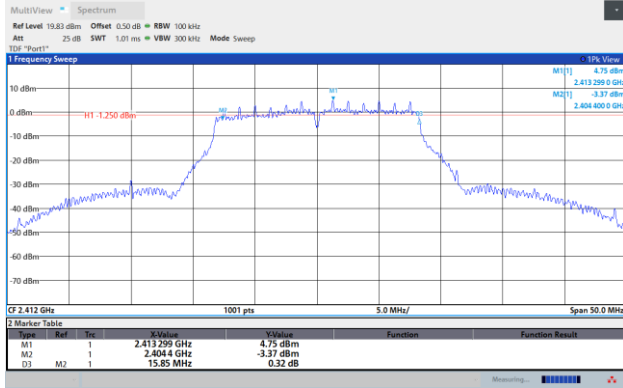
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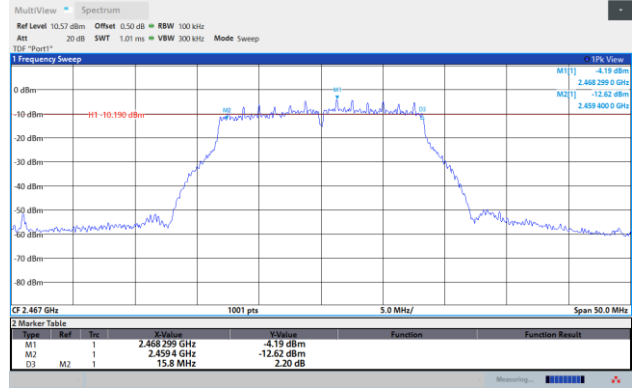
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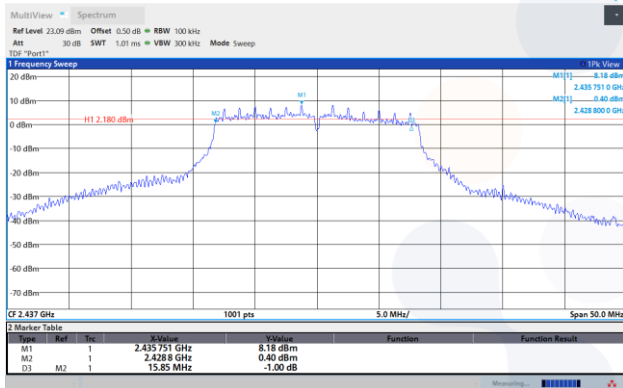
802.11g / 2 412 MHz



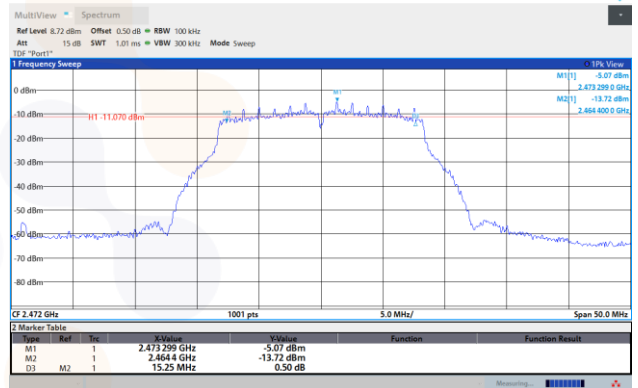
802.11g / 2 467 MHz



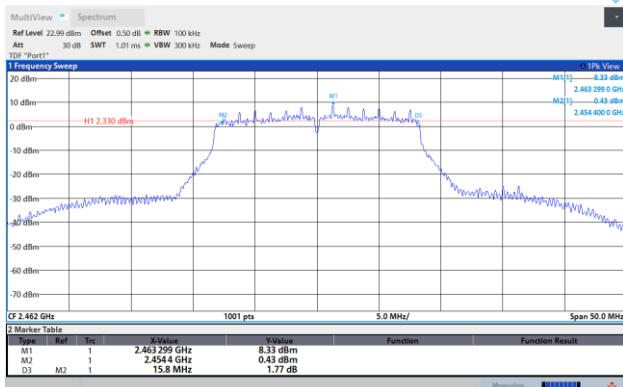
802.11g / 2 437 MHz



802.11g / 2 472 MHz



802.11g / 2 462 MHz



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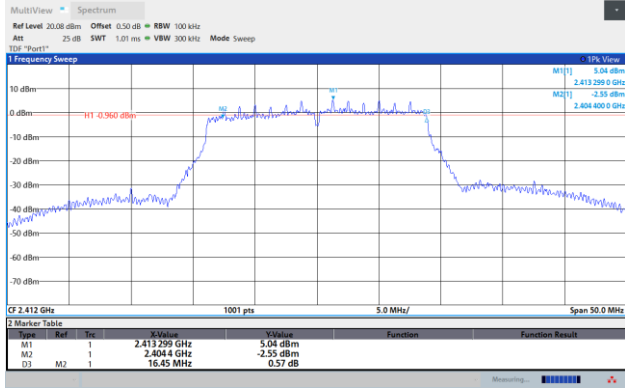
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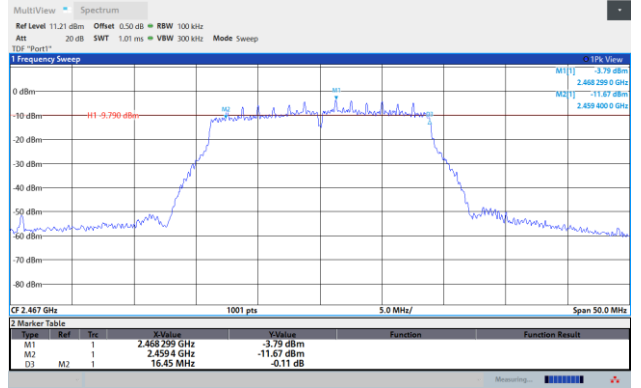
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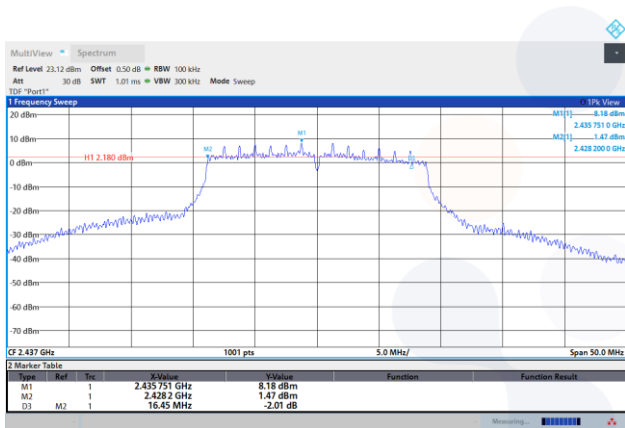
802.11n HT20 / 2 412 MHz



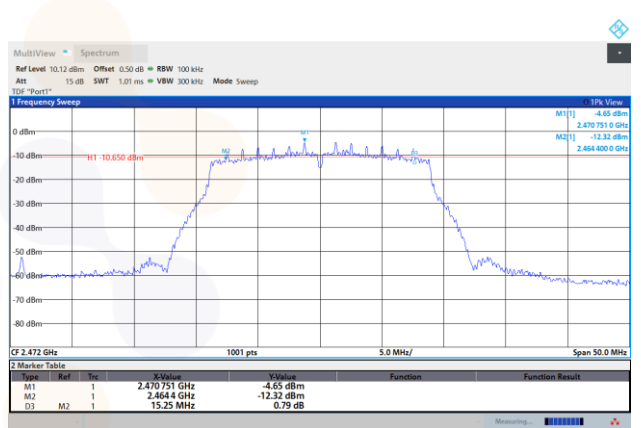
802.11n HT20 / 2 467 MHz



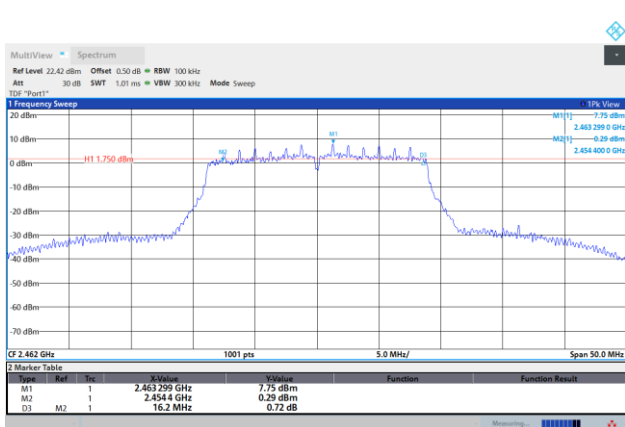
802.11n HT20 / 2 437 MHz



802.11n HT20 / 2 472 MHz



802.11n HT20 / 2 462 MHz



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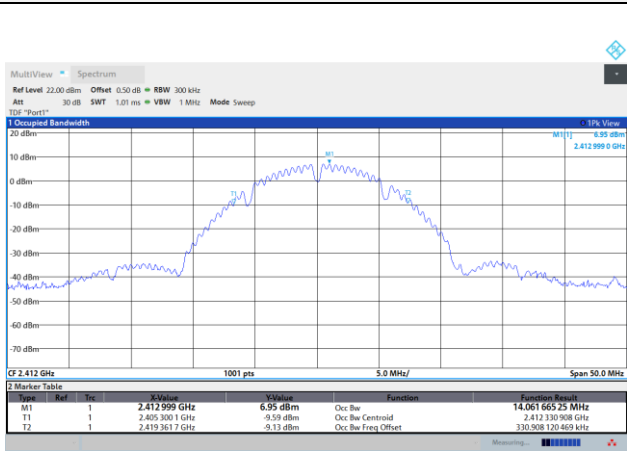
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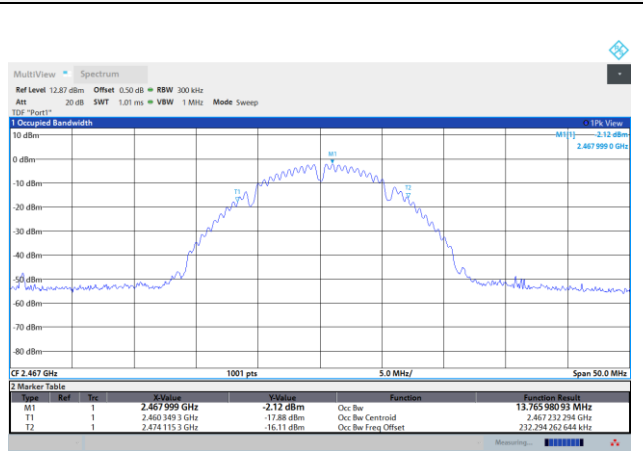


99% bandwidth

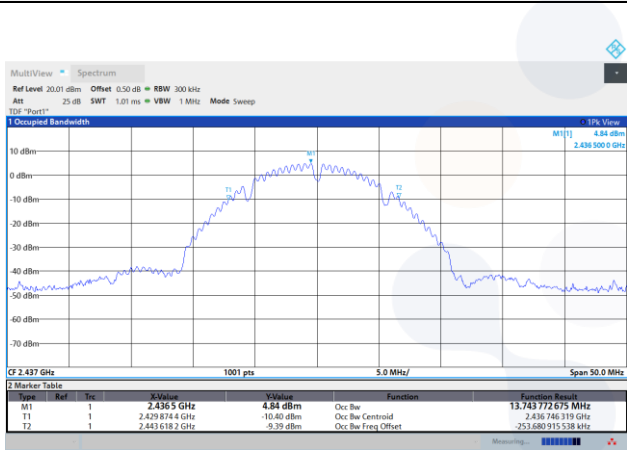
802.11b / 2 412 MHz



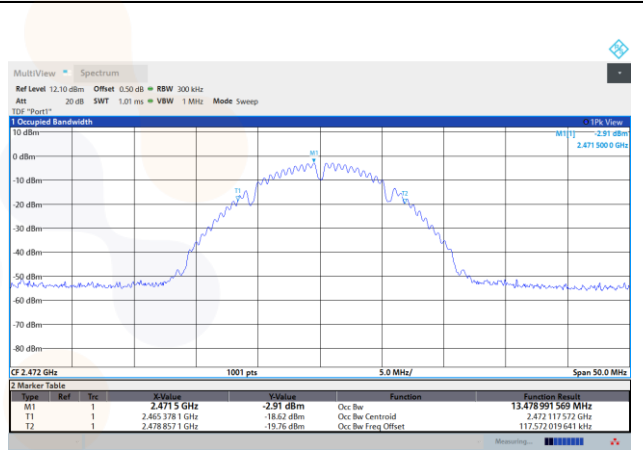
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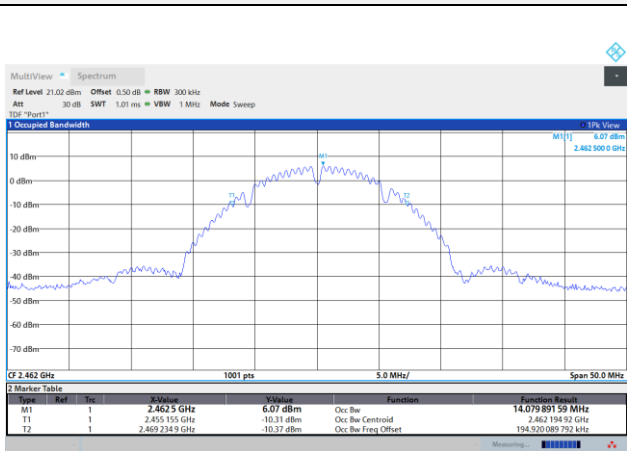
802.11b / 2 437 MHz



802.11b / 2 472 MHz



802.11b / 2 462 MHz



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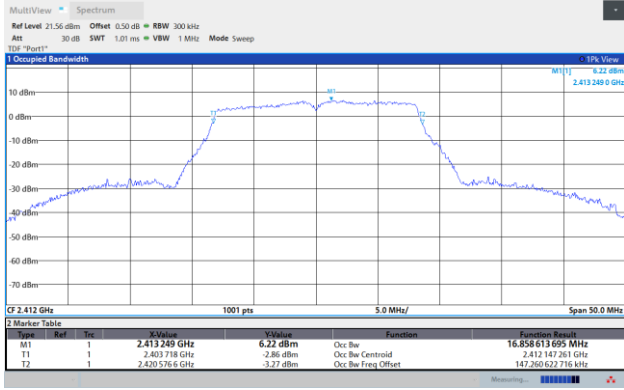
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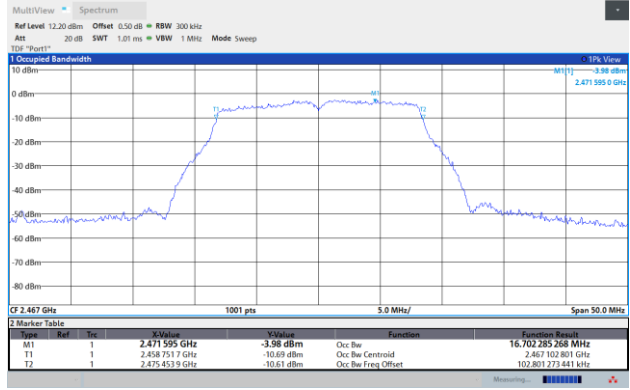
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KR22-SRF0050
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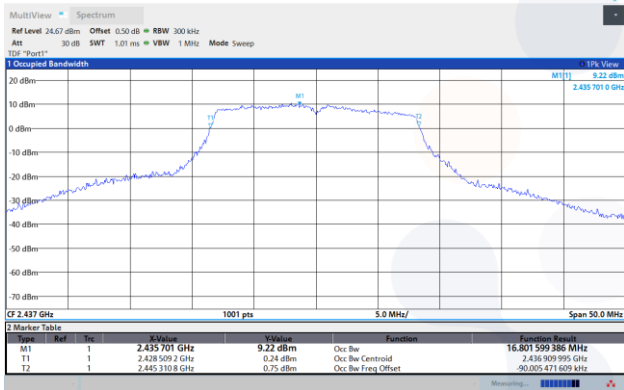
802.11g / 2 412 MHz



802.11g / 2 467 MHz



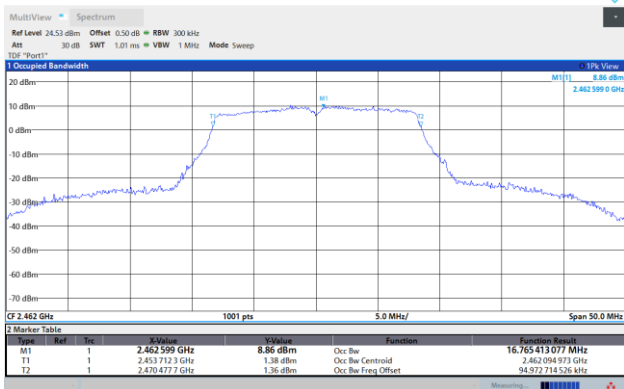
802.11g / 2 437 MHz



802.11g / 2 472 MHz



802.11g / 2 462 MHz



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