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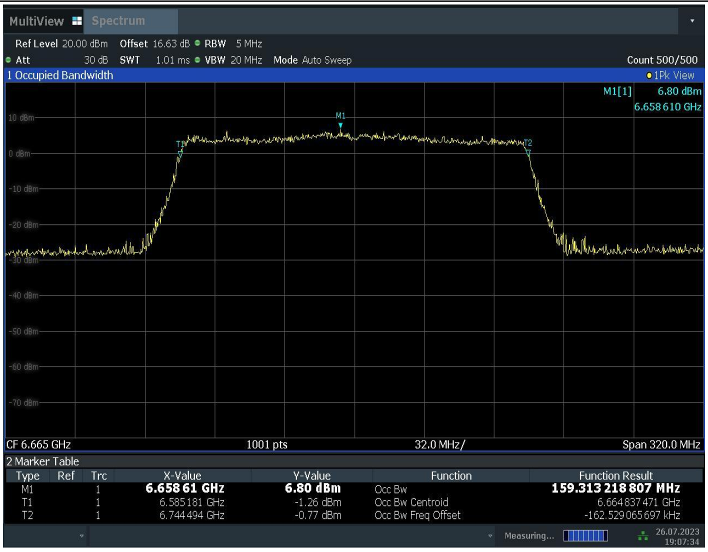
19:07:29 26.07.2023

11BE160MIMO_Ant2_6665



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19:07:57 26.07.2023

11BE160MIMO_Ant2_6825

19:08:04 26.07.2023

11BE160MIMO_Ant1_6985

19:08:30 26.07.2023

11BE160MIMO_Ant2_6985
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11BE320MIMO_Ant1_6105
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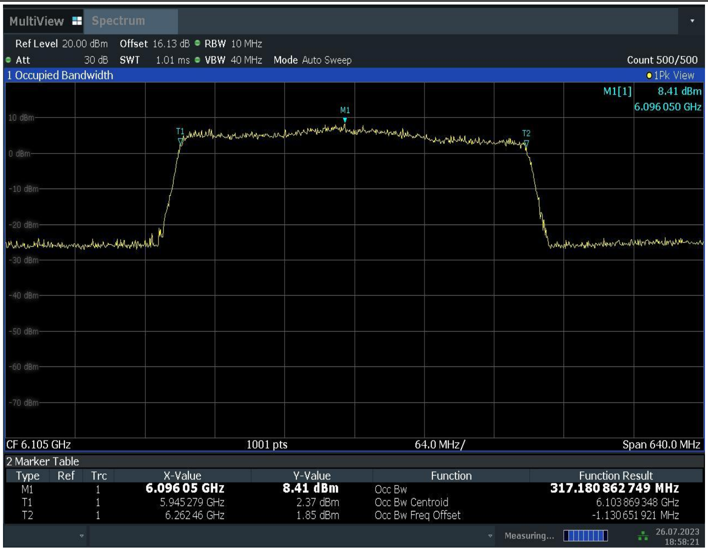

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18:59:21 26.07.2023

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18:59:28 26.07.2023

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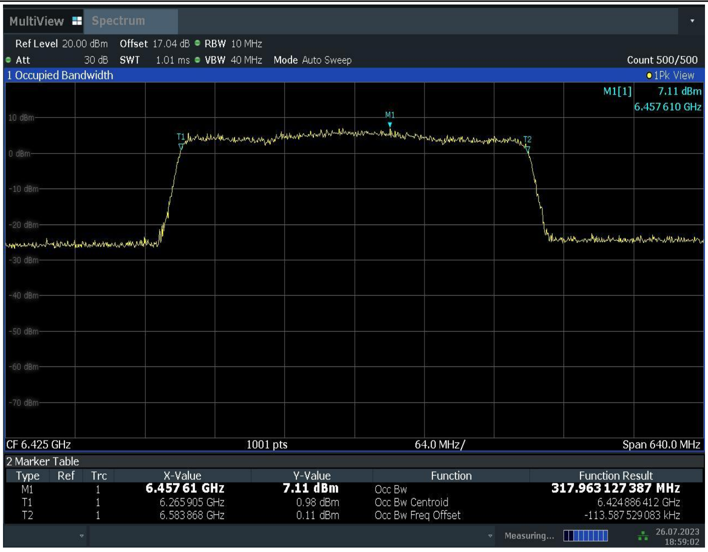 18:59:03 26.07.2023
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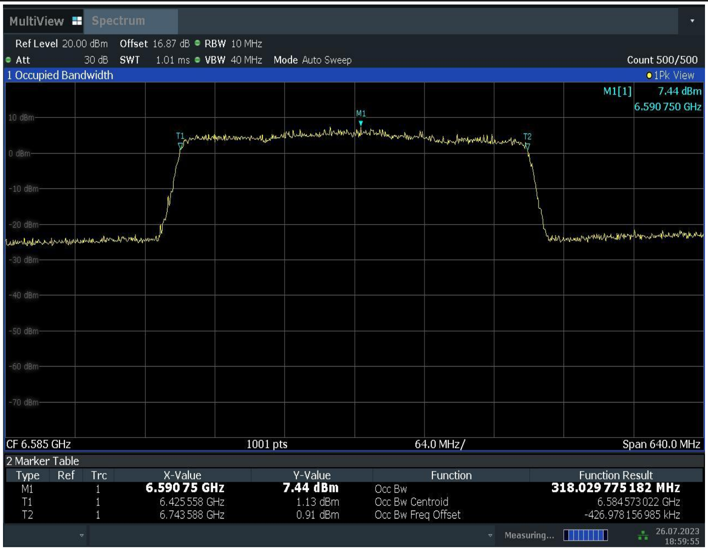
18:59:49 26.07.2023

11BE320MIMO_Ant2_6585



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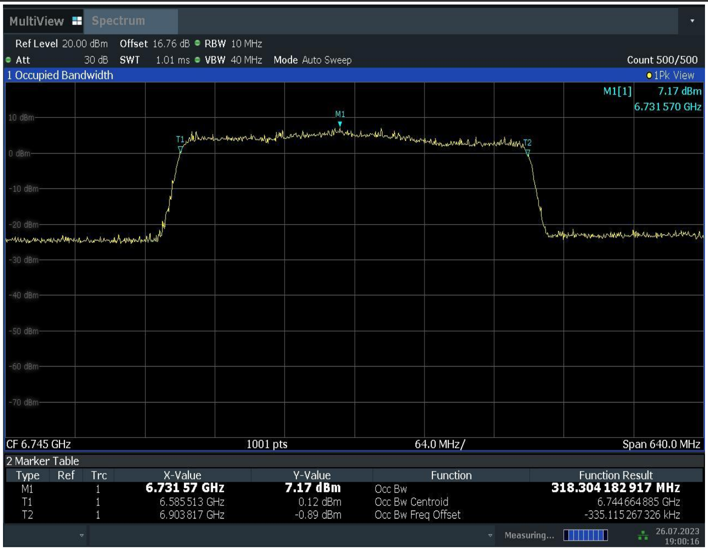
11BE320MIMO_Ant1_6745

19:00:10 26.07.2023

11BE320MIMO_Ant2_6745



19:00:16 26.07.2023

11BE320MIMO_Ant1_6905

19:00:34 26.07.2023

11BE320MIMO_Ant2_6905

19:00:40 26.07.2023

A.6. Contention Based Protocol

Measurement Limit and Method:

Indoor access points, subordinate devices and client devices operating in the 5.925-7.125 GHz band must employ a contention-based protocol.

Unlicensed low-power indoor devices must detect co-channel radio frequency power that is at least -62dBm or lower. Upon detection of energy in the band, unlicensed low power indoor devices must vacate the channel (in which incumbent signal is transmitted) and stay off the incumbent channel as long as detected radio frequency power is equal to or greater than the threshold (-62 dBm)1. The -62 dBm (or lower) threshold is referenced to a 0 dBi antenna gain.

To ensure incumbent operations are reliably detected in the band, low power indoor devices must detect RF energy throughout their intended operating channel. For example, an 802.11 device that plans to transmit a 40 MHz- wide signal (on a primary 20 MHz channel and a secondary 20 MHz channel) must detect energy throughout the entire 40 MHz channel. Additionally, low-power indoor devices must detect co-channel energy with 90% or greater certainty.

The measurement is made according to KDB 987594.

EUT does NOT use channel puncturing for incumbent avoidance. The EUT use bandwidth reduction for incumbent avoidance. An example figure 1, take the UNII-5 band 320 MHz channel:

Working channel：5975MHz（primary channel）

Bandwidth：320MHz

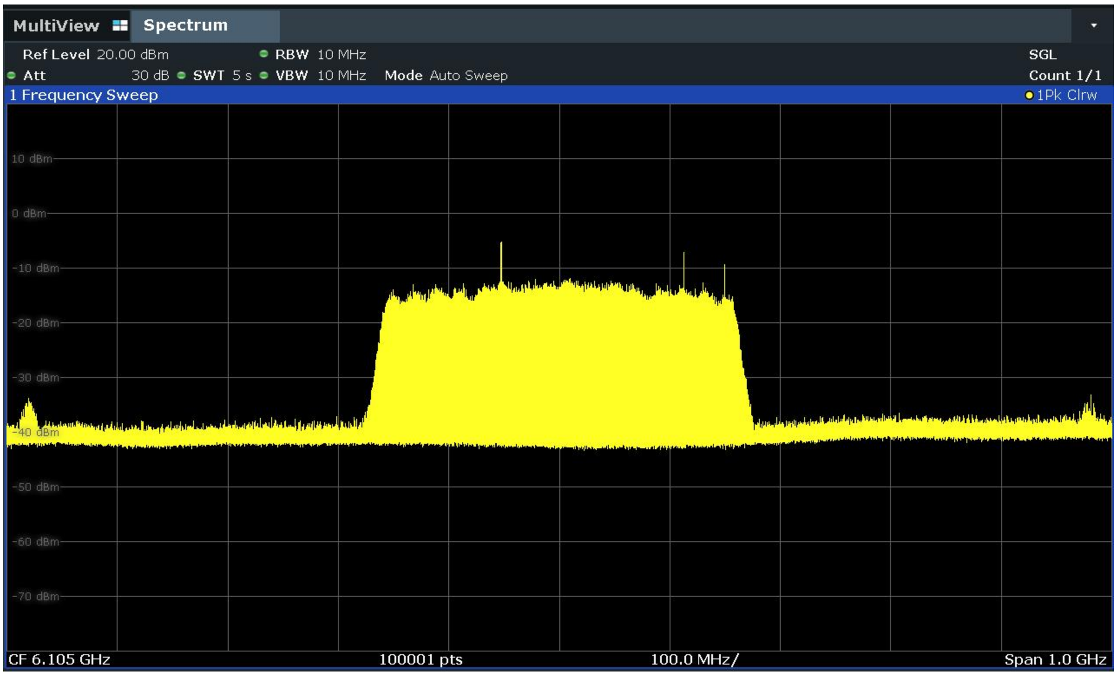


Figure 1

Injected signal 10MHz AWGN：

lower：5950MHz；

middle：6105MHz；

upper：6260MHz

For the lower edge

A 10 MHz AWGN signal (center frequency is 5950MHz) is injected, the EUT state on frequency domain is shown in figure 2, the bandwidth reduce to 40MHz (the primary channel is 5975MHz), and the other channel stop the data transmissions:

Mark1: primary channel

Mark2: AWGN signal center frequency

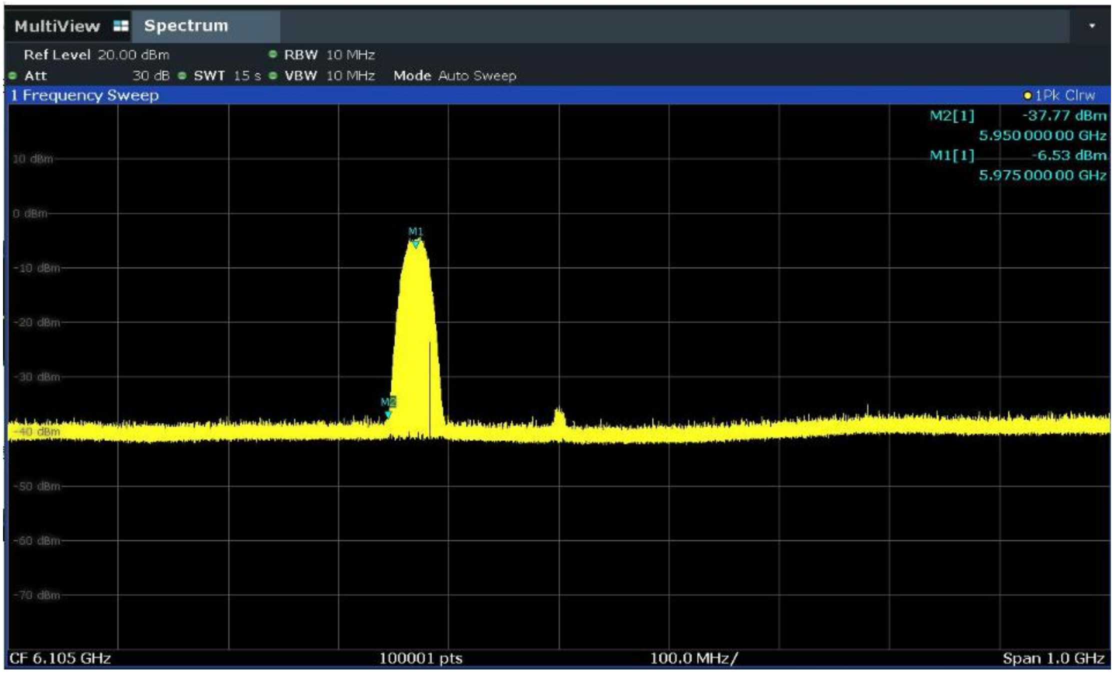


Figure 2

For the middle:

A 10 MHz AWGN signal (center frequency is 6105MHz) is injected, the EUT state on frequency domain is shown in figure 3, DUT stop data transmissions on all channel:

Mark1: primary channel

Mark2: AWGN signal center frequency

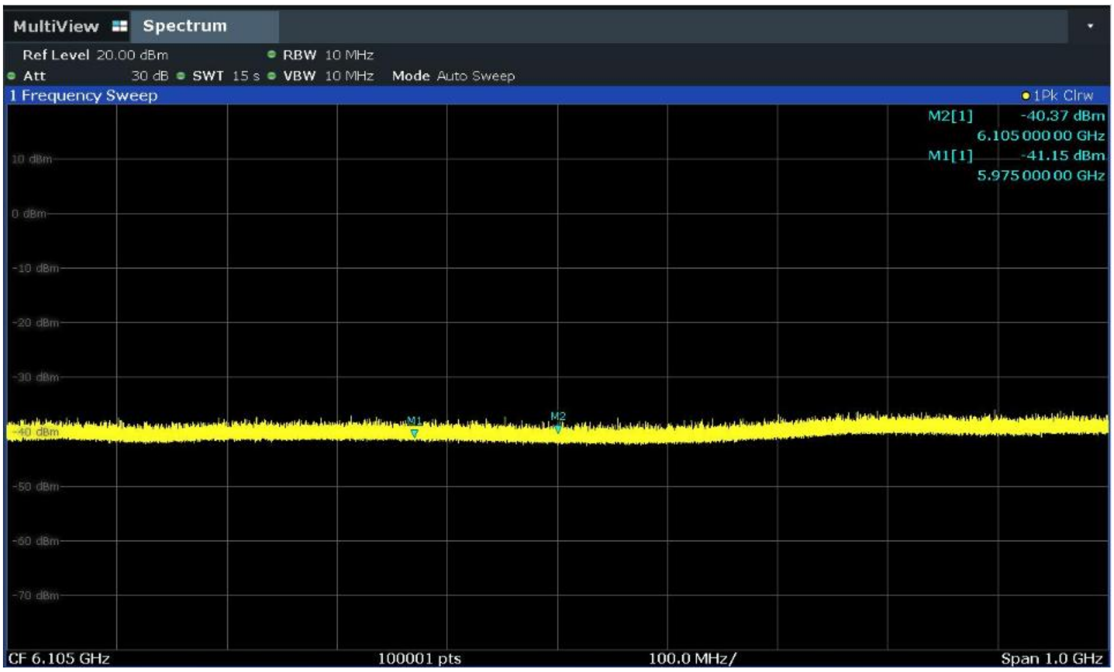


Figure 3

For the upper edge

A 10 MHz AWGN signal (center frequency is 6260MHz) is injected, the EUT state on frequency domain is shown in figure 4,the bandwidth reduce to 160MHz (the primary channel is 5975MHz), and the other channel stop the data transmissions :

Mark1: primary channel

Mark2: AWGN signal center frequency

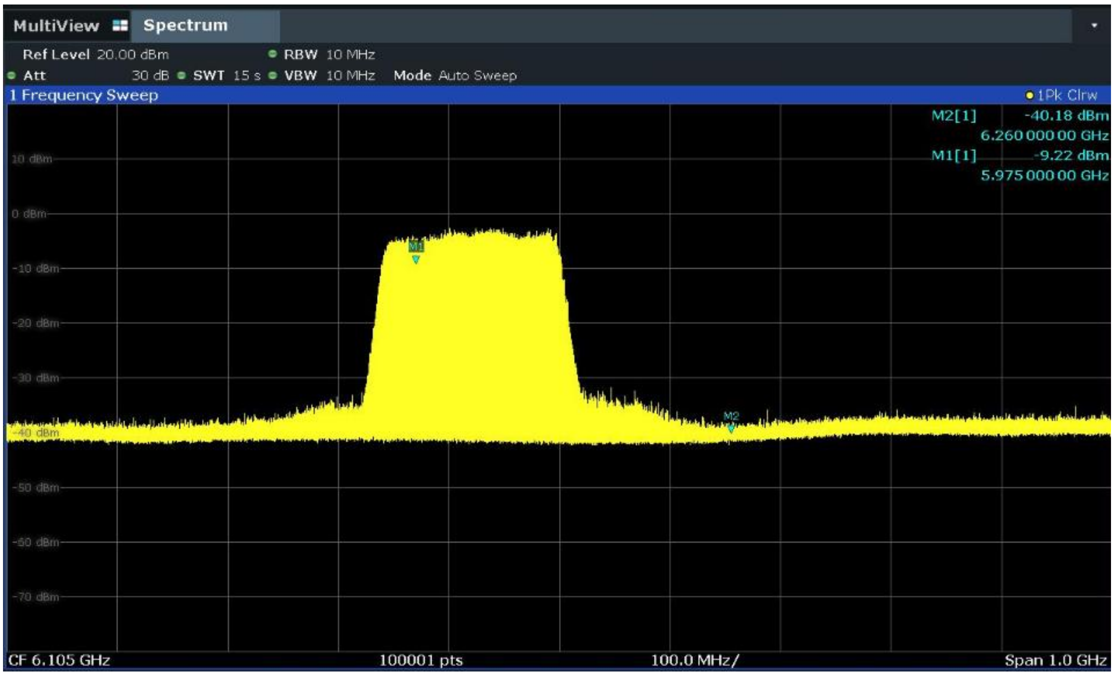


Figure 4

Measurement Results:

supported

<table>
<tr><th>Band</th><th>BW
(MHz)</th><th>Fre.
(MHz)</th><th>Incumbent Freq
(MHz)</th><th>AWGN Signal Level (at Antenna Port)
(dBm)</th><th>Incumbent Signal Level (Refer to 0dBi Antenna)
(dBm)</th><th>Detection Rate(%)</th><th>Threshold Level(dBm)</th></tr>
<tr><td rowspan="6">UNII
Band
5</td><td rowspan="6">20</td><td rowspan="6">6135</td><td rowspan="6">6135
fc1 = fc2</td><td rowspan="2">-67</td><td>-62.5</td><td>100</td><td>-62</td></tr>
<tr><td colspan="3">Cease transmission</td></tr>
<tr><td rowspan="2">-67.5</td><td>-63</td><td><90</td><td>-62</td></tr>
<tr><td colspan="3">Minimal transmission</td></tr>
<tr><td rowspan="2">-90</td><td>-85.5</td><td>0</td><td>-62</td></tr>
<tr><td colspan="3">Normal transmission</td></tr>
</table>

	320	6105	5950 Lower Edge	-80.5	-76	90	-62
					Cease transmission		
				-86.5	-82	<90	-62
					Minimal transmission		
				-90	-85.5	0	-62
					Normal transmission		
			6105 fc1 = fc2	-77.5	-73	100	-62
					Cease transmission		
				-83.5	-79	<90	-62
					Minimal transmission		
				-90	-85.5	0	-62
					Normal transmission		
			6260 Upper Edge	-77.5	-73	100	-62
					Cease transmission		
				-83.5	-79	<90	-62
					Minimal transmission		
				-90	-85.5	0	-62
					Normal transmission		

Band	**BW (MHz)**	**Fre. (MHz)**	**Incumbent Freq (MHz)**	**AWGN Signal Level (at Antenna Port) (dBm)**	**Incumbent Signal Level (Refer to 0dBi Antenna) (dBm)**	**Detection Rate(%)**	**Threshold Level(dBm)**
UNII Band 6	20	6455	6455 fc1 = fc2	-66.7	-62.2	90	-62
					Cease transmission		
				-67	-62.5	<90	-62
					Minimal transmission		
				-90	-85.5	0	-62
					Normal transmission		

320 UNII Band 5/6/7	320	6425	6270 Lower Edge	-79.5	-75	90	-62
					Cease transmission		
				-80.5	-76	<90	-62
					Minimal transmission		
				-90	-85.5	0	-62
					Normal transmission		
			6425 fc1 = fc2	-77.5	-73	90	-62
					Cease transmission		
				-78.5	-74	<90	-62
					Minimal transmission		
				-90	-85.5	0	-62
					Normal transmission		
			6580 Upper Edge	-66.7	-62.2	100	-62
					Cease transmission		
				-67.5	-63	<90	-62
					Minimal transmission		
				-90	-85.5	0	-62
					Normal transmission		

Band	**BW (MHz)**	**Fre. (MHz)**	**Incumbent Freq (MHz)**	**AWGN Signal Level (at Antenna Port) (dBm)**	**Incumbent Signal Level (Refer to 0dBi Antenna) (dBm)**	**Detection Rate(%)**	**Threshold Level(dBm)**
UNII Band 7	20	6855	6855 fc1 = fc2	-69	-64.5	100	-62
					Cease transmission		
				-69.5	-65	<90	-62
					Minimal transmission		
				-90	-85.5	0	-62
					Normal transmission		

320 UNII Band 7(8)	320	6745	6590 Lower Edge	-70.5	-66	90	-62
					Cease transmission		
				-70.9	-66.4	<90	-62
					Minimal transmission		
				-90	-85.5	0	-62
					Normal transmission		
			6745 fc1 = fc2	-67	-62.5	100	-62
					Cease transmission		
				-68	-63.5	<90	-62
					Minimal transmission		
				-90	-85.5	0	-62
					Normal transmission		
			6900 Upper Edge	-76.5	-72	90	-62
					Cease transmission		
				-77.5	-73	<90	-62
					Minimal transmission		
				-90	-85.5	0	-62
					Normal transmission		

Band	BW (MHz)	Fre. (MHz)	Incumbent Freq (MHz)	AWGN Signal Level (at Antenna Port) (dBm)	Incumbent Signal Level (Refer to 0dBi Antenna) (dBm)	Detection Rate(%)	Threshold Level(dBm)
UNII Band 8	20	7015	7015 fc1 = fc2	-66.6	-62.1	100	-62
					Cease transmission		
				-67.5	-63	<90	-62
					Minimal transmission		
				-90	-85.5	0	-62
					Normal transmission		

<table>
<tr><td rowspan="18">320
UNII Band 8(7)</td><td rowspan="18">320</td><td rowspan="18">6745</td><td rowspan="6">6590
Lower Edge</td><td rowspan="2">-70.5</td><td>-66</td><td>90</td><td>-62</td></tr>
<tr><td colspan="3">Cease transmission</td></tr>
<tr><td rowspan="2">-70.9</td><td>-66.4</td><td><90</td><td>-62</td></tr>
<tr><td colspan="3">Minimal transmission</td></tr>
<tr><td rowspan="2">-90</td><td>-85.5</td><td>0</td><td>-62</td></tr>
<tr><td colspan="3">Normal transmission</td></tr>
<tr><td rowspan="6">6745
fc1 = fc2</td><td rowspan="2">-67</td><td>-62.5</td><td>100</td><td>-62</td></tr>
<tr><td colspan="3">Cease transmission</td></tr>
<tr><td rowspan="2">-68</td><td>-63.5</td><td><90</td><td>-62</td></tr>
<tr><td colspan="3">Minimal transmission</td></tr>
<tr><td rowspan="2">-90</td><td>-85.5</td><td>0</td><td>-62</td></tr>
<tr><td colspan="3">Normal transmission</td></tr>
<tr><td rowspan="6">6900
Upper Edge</td><td rowspan="2">-76.5</td><td>-72</td><td>90</td><td>-62</td></tr>
<tr><td colspan="3">Cease transmission</td></tr>
<tr><td rowspan="2">-77.5</td><td>-73</td><td><90</td><td>-62</td></tr>
<tr><td colspan="3">Minimal transmission</td></tr>
<tr><td rowspan="2">-90</td><td>-85.5</td><td>0</td><td>-62</td></tr>
<tr><td colspan="3">Normal transmission</td></tr>
</table>

Note: Incumbent signal level (dBm) = AWGN Signal power Level (dBm)-Antenna Gain (dBi),

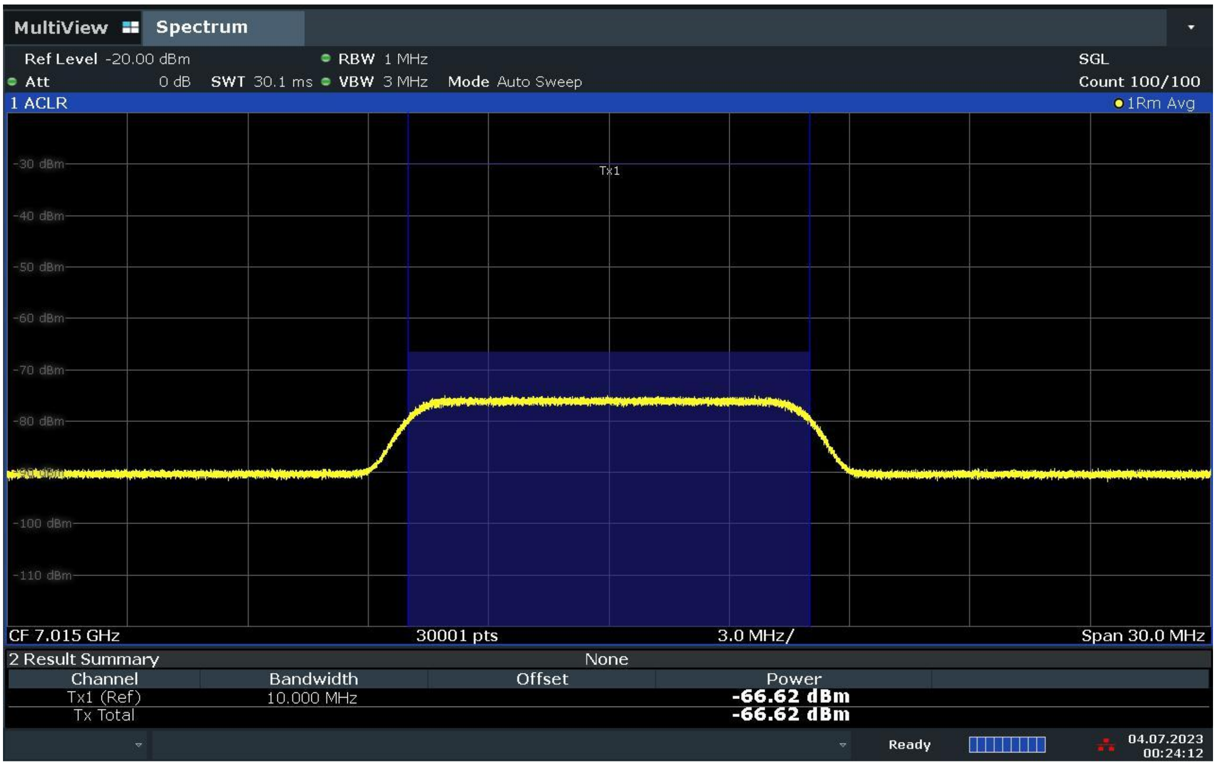
The EUT encounters the incumbent signal that its power level is less than or equal to the detection threshold (-62dBm) with reference to 0dBi antenna gain. Path loss is negligible (0dB).

EUT support bandwidth reduction mechanism.

Conclusion: PASS

Test graphs as below:

Mode	AWGN Signal Level	ceased transmission
802.1be-EHT20-7015MHz	See test graph	See test graph
802.11be-EHT320-6105MHz(middle)	See test graph	See test graph



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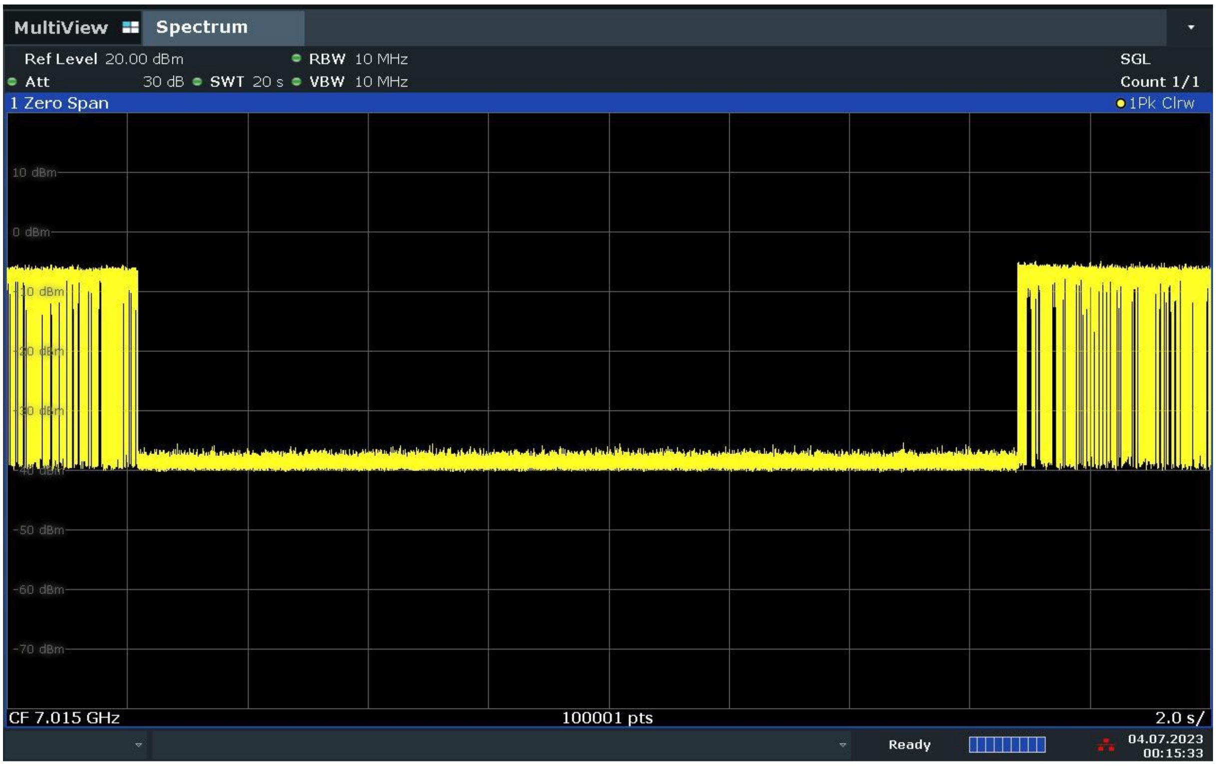
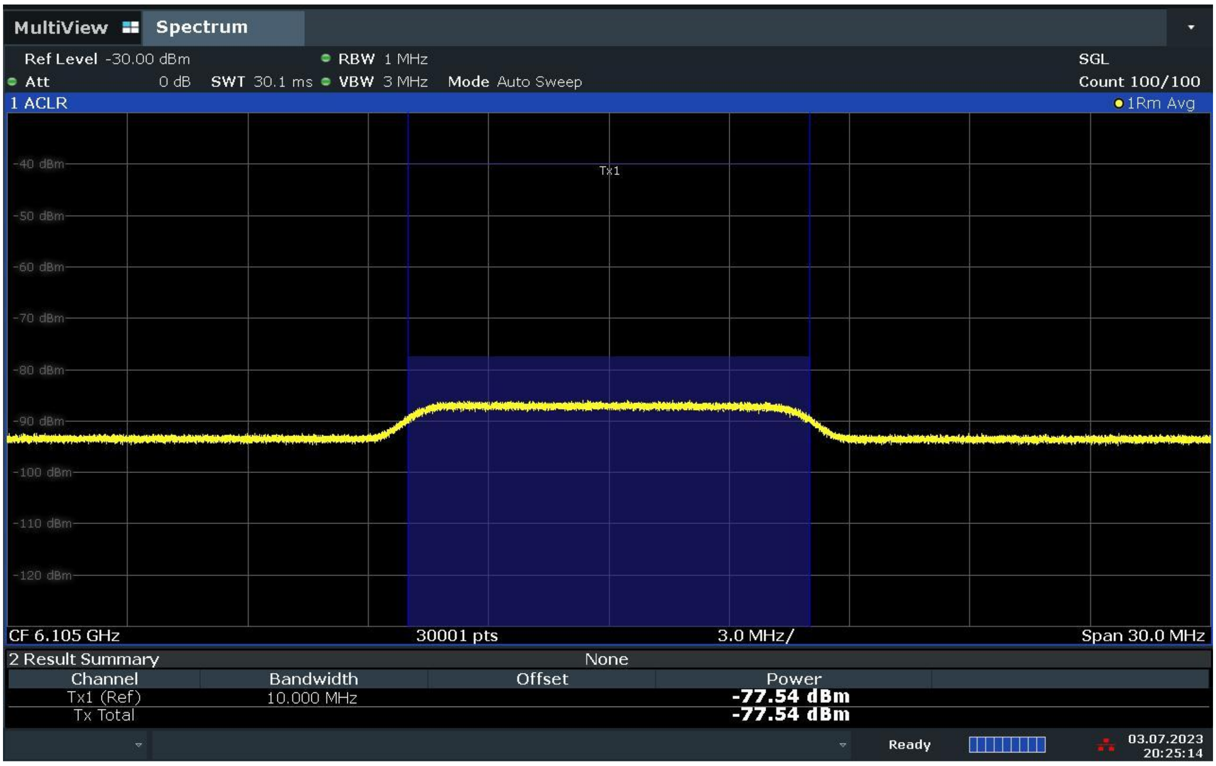
Contention Based Protocol 802.11be-EHT20 (ch7015MHz-AWGN Signal Level)



00:15:34 04.07.2023

Contention Based Protocol 802.11be-EHT20 (ch7015MHz-ceased transmission)



20:25:15 03.07.2023

Contention Based Protocol 802.11be-EHT320 (ch6105MHz-middle-AWGN Signal Level)

19:16:48 03.07.2023

Contention Based Protocol 802.11be-EHT320 (ch6105MHz-middle-ceased transmission)

A.7. In-Band Emissions

Measurement Limit and Method:

1. Take nominal bandwidth as reference channel bandwidth provided that 26 dB emission bandwidth is always larger than nominal bandwidth

2. Measure the power spectral density (which will be used for emissions mask reference) using the following procedure:

a) Set the span to encompass the entire 26 dB EBW of the signal.

b) Set RBW = same RBW used for 26 dB EBW measurement.

c) Set VBW ⩾ 3 X RBW

d) Number of points in sweep ⩾ [2 X span / RBW].

e) Sweep time = auto.

f) Detector = RMS (i.e., power averaging)

g) Trace average at least 100 traces in power averaging (rms) mode.

h) Use the peak search function on the instrument to find the peak of the spectrum.

3. Using the measuring equipment limit line function, develop the emissions mask based on the following requirements. The emissions power spectral density must be reduced below the peak power spectral density (in dB) as follows:

a. Suppressed by 20 dB at 1 MHz outside of the channel edge. (The channel edge is defined as the 26-dB point on either side of the carrier center frequency.)

b. Suppressed by 28 dB at one channel bandwidth from the channel center.

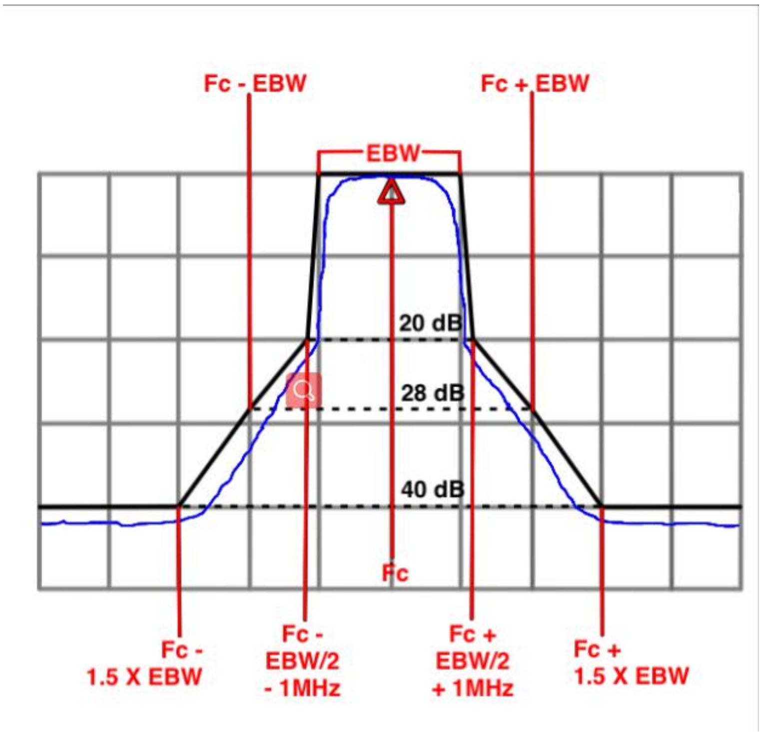
c. Suppressed by 40 dB at one- and one-half times the channel bandwidth from the channel center.

4. Adjust the span to encompass the entire mask as necessary.

5. Clear trace.

6. Trace average at least 100 traces in power averaging (rms) mode.

7. Adjust the reference level as necessary so that the crest of the channel touches the top of the emission mask.



Generic Emission Mask

The measurement is made according to KDB 987594.

Measurement Results:

TestMode	Antenna	Channel	Result	Limit	Verdict
802.11a	Ant2	5955	See test graph	See test graph	PASS
	Ant2	6175	See test graph	See test graph	PASS
	Ant2	6415	See test graph	See test graph	PASS
	Ant2	6435	See test graph	See test graph	PASS
	Ant2	6475	See test graph	See test graph	PASS
	Ant2	6515	See test graph	See test graph	PASS
	Ant2	6535	See test graph	See test graph	PASS
	Ant2	6695	See test graph	See test graph	PASS
	Ant2	6855	See test graph	See test graph	PASS
	Ant2	6875	See test graph	See test graph	PASS
	Ant2	6895	See test graph	See test graph	PASS
	Ant2	6995	See test graph	See test graph	PASS
	Ant2	7115	See test graph	See test graph	PASS
802.11be-EHT20 MIMO	Ant1	5955	See test graph	See test graph	PASS
	Ant2	5955	See test graph	See test graph	PASS
	Ant1	6175	See test graph	See test graph	PASS
	Ant2	6175	See test graph	See test graph	PASS
	Ant1	6415	See test graph	See test graph	PASS
	Ant2	6415	See test graph	See test graph	PASS
	Ant1	6435	See test graph	See test graph	PASS

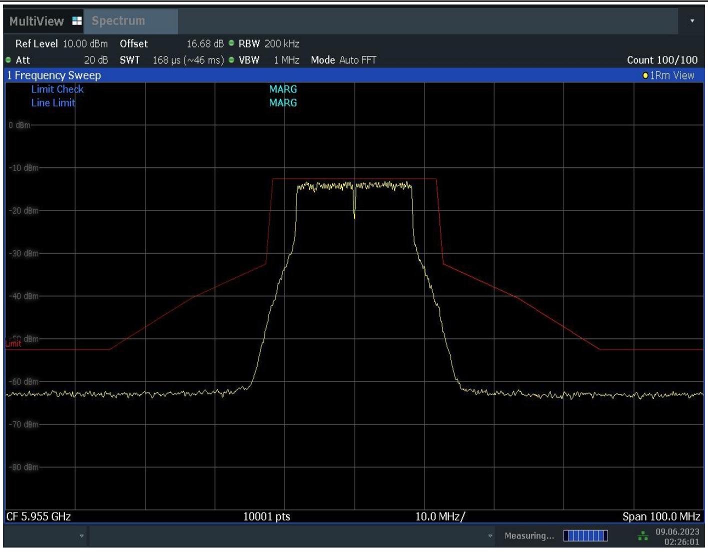
	Ant2	6435	See test graph	See test graph	PASS
	Ant1	6475	See test graph	See test graph	PASS
	Ant2	6475	See test graph	See test graph	PASS
	Ant1	6515	See test graph	See test graph	PASS
	Ant2	6515	See test graph	See test graph	PASS
	Ant1	6535	See test graph	See test graph	PASS
	Ant2	6535	See test graph	See test graph	PASS
	Ant1	6695	See test graph	See test graph	PASS
	Ant2	6695	See test graph	See test graph	PASS
	Ant1	6855	See test graph	See test graph	PASS
	Ant2	6855	See test graph	See test graph	PASS
	Ant1	6875	See test graph	See test graph	PASS
	Ant2	6875	See test graph	See test graph	PASS
	Ant1	6895	See test graph	See test graph	PASS
	Ant2	6895	See test graph	See test graph	PASS
	Ant1	6995	See test graph	See test graph	PASS
	Ant2	6995	See test graph	See test graph	PASS
	Ant1	7115	See test graph	See test graph	PASS
	Ant2	7115	See test graph	See test graph	PASS
802.11be-EHT40 MIMO	Ant1	5965	See test graph	See test graph	PASS
	Ant2	5965	See test graph	See test graph	PASS
	Ant1	6165	See test graph	See test graph	PASS
	Ant2	6165	See test graph	See test graph	PASS
	Ant1	6405	See test graph	See test graph	PASS
	Ant2	6405	See test graph	See test graph	PASS
	Ant1	6445	See test graph	See test graph	PASS
	Ant2	6445	See test graph	See test graph	PASS
	Ant1	6485	See test graph	See test graph	PASS
	Ant2	6485	See test graph	See test graph	PASS
	Ant1	6525	See test graph	See test graph	PASS
	Ant2	6525	See test graph	See test graph	PASS
	Ant1	6565	See test graph	See test graph	PASS
	Ant2	6565	See test graph	See test graph	PASS
	Ant1	6685	See test graph	See test graph	PASS
	Ant2	6685	See test graph	See test graph	PASS
	Ant1	6845	See test graph	See test graph	PASS
	Ant2	6845	See test graph	See test graph	PASS
	Ant1	6885	See test graph	See test graph	PASS
	Ant2	6885	See test graph	See test graph	PASS
	Ant1	6925	See test graph	See test graph	PASS
	Ant2	6925	See test graph	See test graph	PASS
	Ant1	6965	See test graph	See test graph	PASS
	Ant2	6965	See test graph	See test graph	PASS

	Ant1	7085	See test graph	See test graph	PASS
	Ant2	7085	See test graph	See test graph	PASS
802.11be-EHT80 MIMO	Ant1	5985	See test graph	See test graph	PASS
	Ant2	5985	See test graph	See test graph	PASS
	Ant1	6145	See test graph	See test graph	PASS
	Ant2	6145	See test graph	See test graph	PASS
	Ant1	6385	See test graph	See test graph	PASS
	Ant2	6385	See test graph	See test graph	PASS
	Ant1	6465	See test graph	See test graph	PASS
	Ant2	6465	See test graph	See test graph	PASS
	Ant1	6545	See test graph	See test graph	PASS
	Ant2	6545	See test graph	See test graph	PASS
	Ant1	6625	See test graph	See test graph	PASS
	Ant2	6625	See test graph	See test graph	PASS
	Ant1	6705	See test graph	See test graph	PASS
	Ant2	6705	See test graph	See test graph	PASS
	Ant1	6785	See test graph	See test graph	PASS
	Ant2	6785	See test graph	See test graph	PASS
	Ant1	6865	See test graph	See test graph	PASS
	Ant2	6865	See test graph	See test graph	PASS
	Ant1	6945	See test graph	See test graph	PASS
	Ant2	6945	See test graph	See test graph	PASS
	Ant1	7025	See test graph	See test graph	PASS
	Ant2	7025	See test graph	See test graph	PASS
802.11be-EHT160 MIMO	Ant1	6025	See test graph	See test graph	PASS
	Ant2	6025	See test graph	See test graph	PASS
	Ant1	6185	See test graph	See test graph	PASS
	Ant2	6185	See test graph	See test graph	PASS
	Ant1	6345	See test graph	See test graph	PASS
	Ant2	6345	See test graph	See test graph	PASS
	Ant1	6505	See test graph	See test graph	PASS
	Ant2	6505	See test graph	See test graph	PASS
	Ant1	6665	See test graph	See test graph	PASS
	Ant2	6665	See test graph	See test graph	PASS
	Ant1	6825	See test graph	See test graph	PASS
	Ant2	6825	See test graph	See test graph	PASS
	Ant1	6985	See test graph	See test graph	PASS
	Ant2	6985	See test graph	See test graph	PASS
802.11be-EHT320 MIMO	Ant1	6105	See test graph	See test graph	PASS
	Ant2	6105	See test graph	See test graph	PASS
	Ant1	6265	See test graph	See test graph	PASS
	Ant2	6265	See test graph	See test graph	PASS
	Ant1	6425	See test graph	See test graph	PASS

	Ant2	6425	See test graph	See test graph	PASS
	Ant1	6585	See test graph	See test graph	PASS
	Ant2	6585	See test graph	See test graph	PASS
	Ant1	6745	See test graph	See test graph	PASS
	Ant2	6745	See test graph	See test graph	PASS
	Ant1	6905	See test graph	See test graph	PASS
	Ant2	6905	See test graph	See test graph	PASS

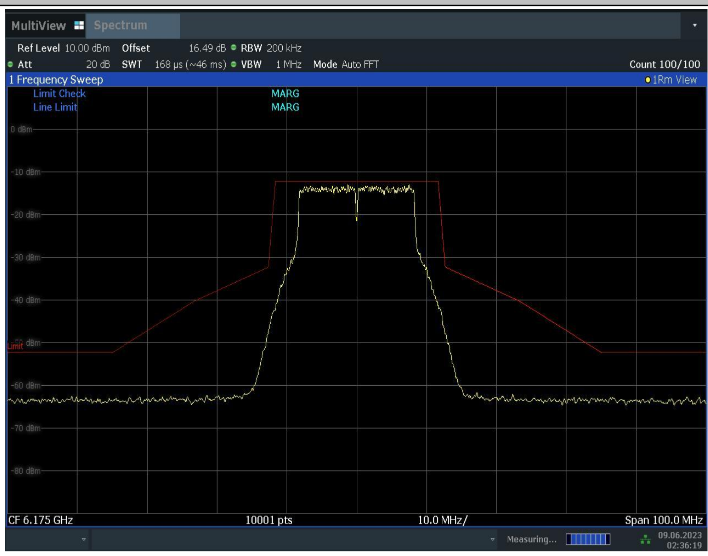
Note: Ant1 of the result table and result graph corresponds to ant7 of the EUT, ant2 of the result table and result graph corresponds to ant10 of the EUT.

11A_Ant2_5955



02:26:02 09.06.2023

11A_Ant2_6175



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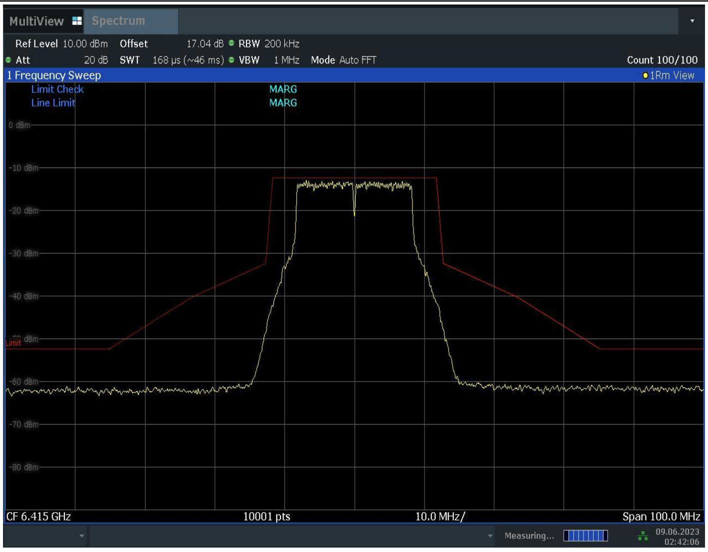
11A_Ant2_6415



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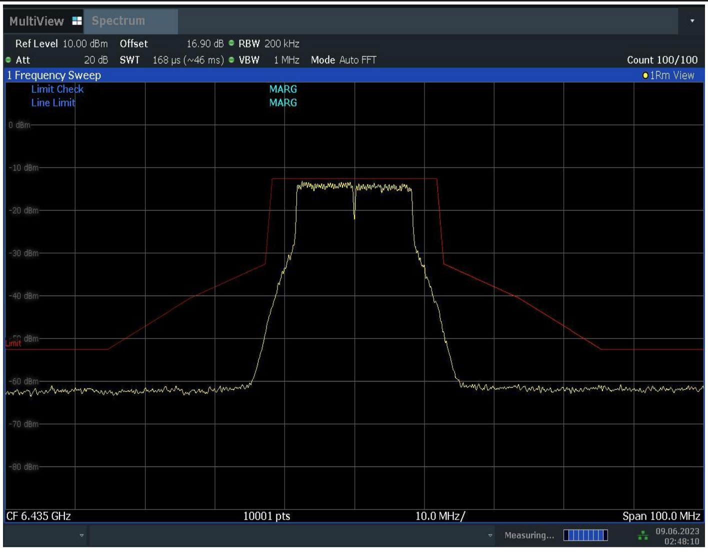

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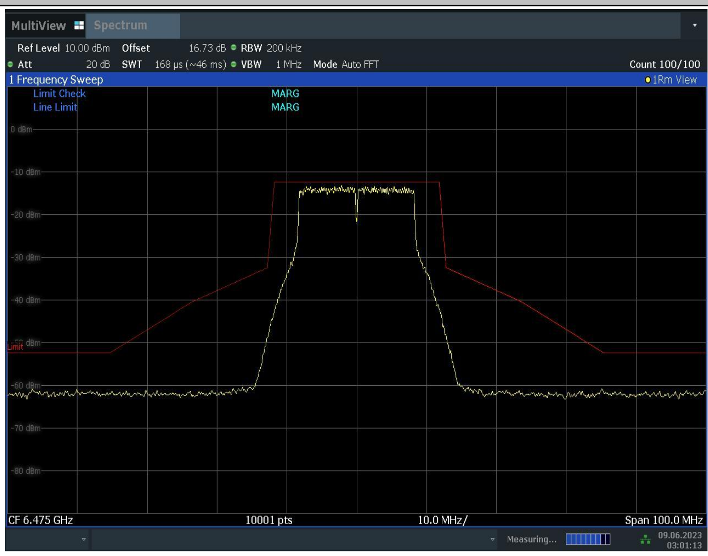
11A_Ant2_6475



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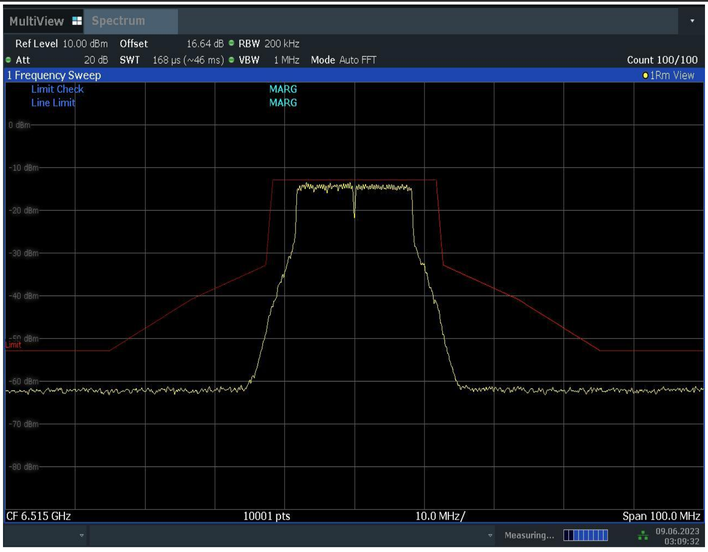
11A_Ant2_6515
 03:09:33 09.06.2023
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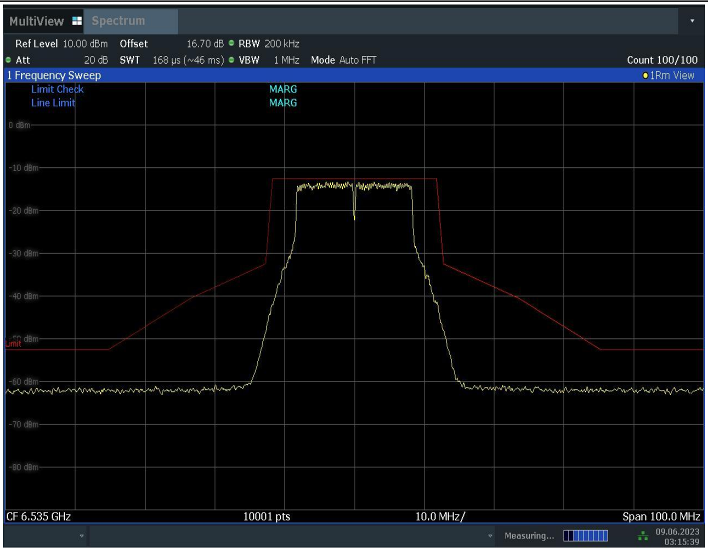 03:15:40 09.06.2023
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