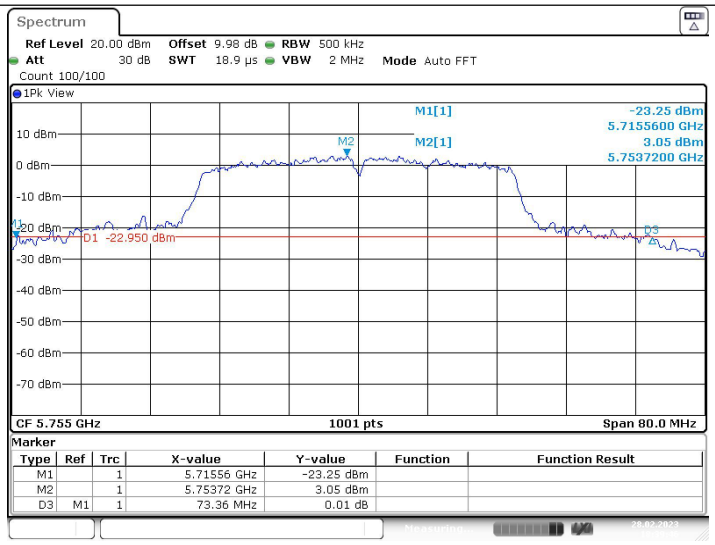

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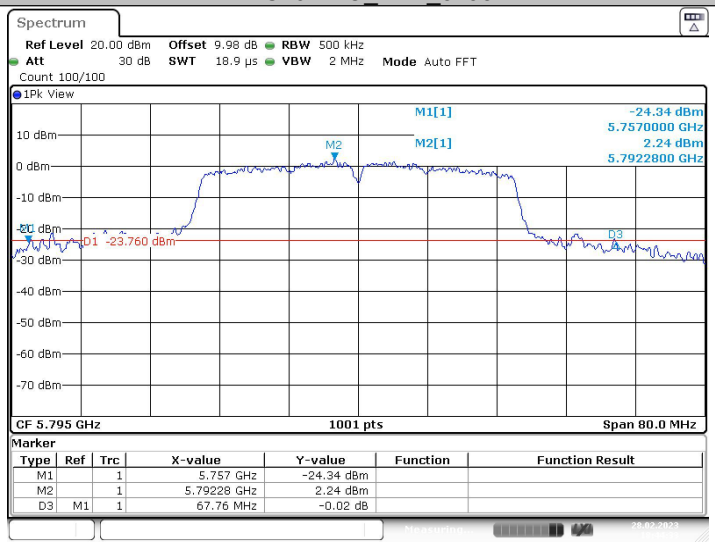

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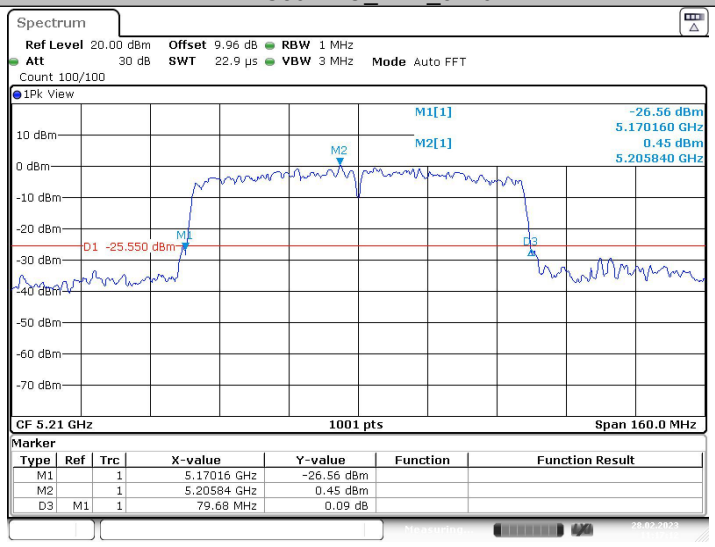

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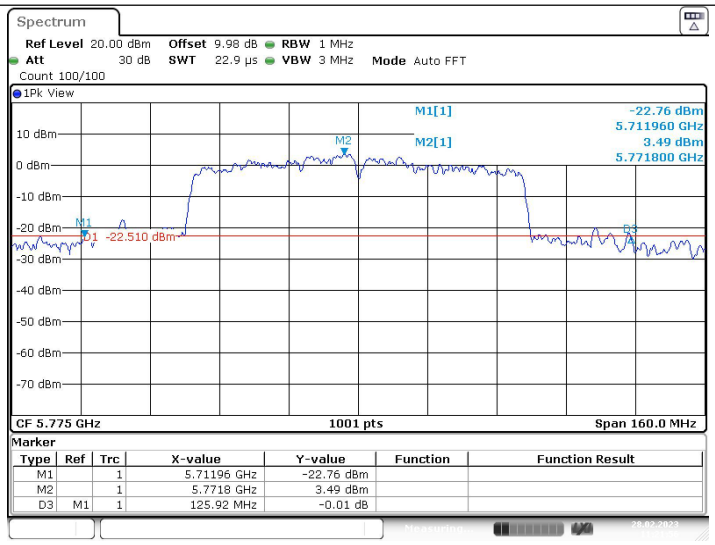
Spectrum
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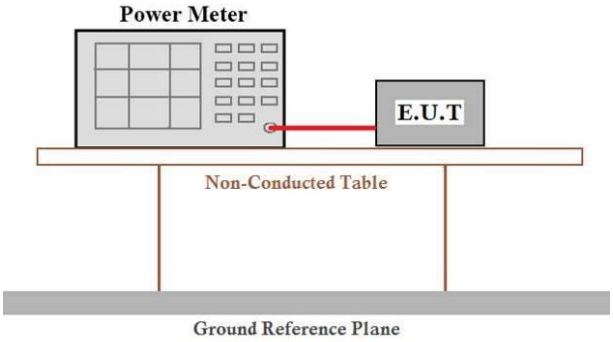
Att 30 dB SWT 22.9 µs VBW 3 MHz Mode Auto FFT
Count 100/100
1Pk View
M1[1] -22.76 dBm
5.711960 GHz
M2[1] 3.49 dBm
5.771800 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
M2
D1 -22.510 dBm
D3
CF 5.775 GHz
1001 pts
Span 160.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.71196 GHz -22.76 dBm
M2 1 5.7718 GHz 3.49 dBm
D3 M1 1 125.92 MHz -0.01 dB
Date: 28.FEB.2023 11:21:56

4.4 Peak Transmit Power

Test Requirement:	FCC Part15 E Section 15.407
Test Method:	KDB 789033 D02 General UNII Test Procedures New Rules v02r01
Limit:	For the band 5.15-5.25GHz, 5.25-5.35GHz, 5.47-5.725GHz, the maximum conducted output power over the frequency bands of operation shall not exceed 250mW. For the band 5.725-5.85GHz, the maximum conducted output power over the frequency bands of operation shall not exceed 1W.
Test setup:	
Test procedure:	**Measurement using an RF average power meter** (i) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied a) The EUT is configured to transmit continuously or to transmit with a constant duty cycle. b) At all times when the EUT is transmitting, it must be transmitting at its maximum power control level. c) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five. (ii) If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal as described in section B). (iii) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter. (iv) Adjust the measurement in dBm by adding 10 log(1/x) where x is the duty cycle (e.g., 10log(1/0.25) if the duty cycle is 25 percent).
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

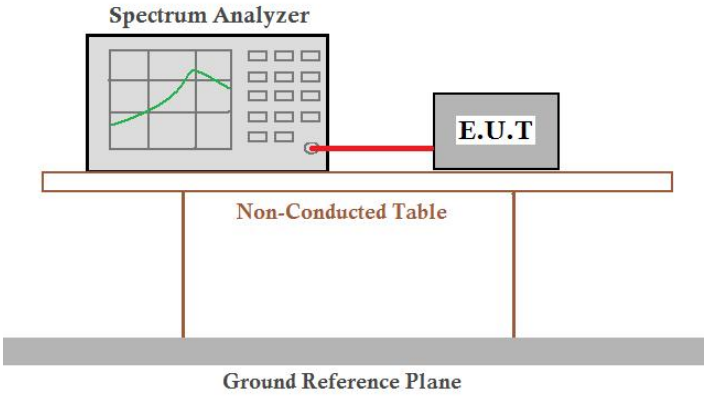
Band 1 (5150-5250 MHz)

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	12.53	0	12.53	24	Pass
NVNT	a	5200	Ant1	13.06	0	13.06	24	Pass
NVNT	a	5240	Ant1	12.48	0	12.48	24	Pass
NVNT	ac20	5180	Ant1	11.27	0	11.27	24	Pass
NVNT	ac20	5200	Ant1	11.87	0	11.87	24	Pass
NVNT	ac20	5240	Ant1	12.20	0	12.20	24	Pass
NVNT	ac40	5190	Ant1	12.58	0	12.58	24	Pass
NVNT	ac40	5230	Ant1	11.79	0	11.79	24	Pass
NVNT	ac80	5210	Ant1	13.09	0	13.09	24	Pass
NVNT	n20	5180	Ant1	11.09	0	11.09	24	Pass
NVNT	n20	5200	Ant1	12.85	0	12.85	24	Pass
NVNT	n20	5240	Ant1	12.67	0	12.67	24	Pass
NVNT	n40	5190	Ant1	**13.10**	0	**13.10**	24	Pass
NVNT	n40	5230	Ant1	12.92	0	12.92	24	Pass

Band 4 (5725 – 5850 MHz)

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	12.48	0	12.48	30	Pass
NVNT	a	5785	Ant1	13.06	0	**13.06**	30	Pass
NVNT	a	5825	Ant1	12.65	0	12.65	30	Pass
NVNT	ac20	5745	Ant1	12.04	0	12.04	30	Pass
NVNT	ac20	5785	Ant1	12.19	0	12.19	30	Pass
NVNT	ac20	5825	Ant1	12.59	0	12.59	30	Pass
NVNT	ac40	5755	Ant1	12.83	0	12.83	30	Pass
NVNT	ac40	5795	Ant1	12.12	0	12.12	30	Pass
NVNT	ac80	5775	Ant1	12.34	0	12.34	30	Pass
NVNT	n20	5745	Ant1	11.37	0	11.37	30	Pass
NVNT	n20	5785	Ant1	12.59	0	12.59	30	Pass
NVNT	n20	5825	Ant1	11.81	0	11.81	30	Pass
NVNT	n40	5755	Ant1	12.71	0	12.71	30	Pass
NVNT	n40	5795	Ant1	12.96	0	12.96	30	Pass

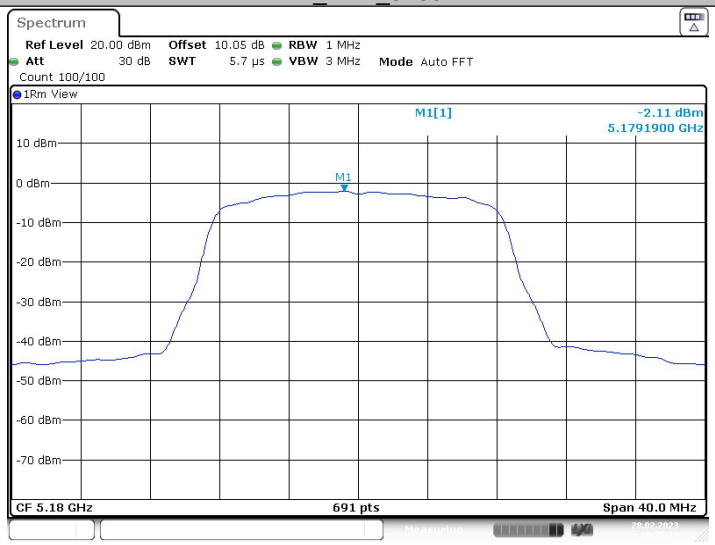
4.5 Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407
Test Method:	KDB 789033 D02 General UNII Test Procedures New Rules v02r01
Limit:	≤11.00dBm/MHz for 5150MHz-5250MHz, 5250-5350MHz and 5470-5725 MHz ≤30.00dBm/500KHz for 5725MHz-5850MHz
Test setup:	
Test procedure:	1) Create an average power spectrum for the EUT operating mode being tested by following the instructions in section E)2) for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-1, SA-2, SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, “Compute power…”. 2) Use the peak search function on the instrument to find the peak of the spectrum. 3) Make the following adjustments to the peak value of the spectrum, if applicable: a) If Method SA-2 or SA-2 Alternative was used, add 10 log(1/x), where x is the duty cycle, to the peak of the spectrum. b) If Method SA-3 Alternative was used and the linear mode was used in step E)2)g)(viii), add 1 dB to the final result to compensate for the difference between linear averaging and power averaging. 4) The result is the PSD.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

TestMode	Antenna	Freq(MHz)	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	-2.11	≤11.00	PASS
		5200	-1.12	≤11.00	PASS
		5240	-0.81	≤11.00	PASS
		5745	-0.69	≤30.00	PASS
		5785	-1.48	≤30.00	PASS
		5825	-2.49	≤30.00	PASS
11N20SISO	Ant1	5180	-1.06	≤11.00	PASS
		5200	-1.36	≤11.00	PASS
		5240	-1.18	≤11.00	PASS
		5745	-0.4	≤30.00	PASS
		5785	-1.66	≤30.00	PASS
		5825	-3.25	≤30.00	PASS
11N40SISO	Ant1	5190	-3.21	≤11.00	PASS
		5230	-4.78	≤11.00	PASS
		5755	-3.55	≤30.00	PASS
		5795	-4.89	≤30.00	PASS
11AC20SISO	Ant1	5180	-1.66	≤11.00	PASS
		5200	-1.84	≤11.00	PASS
		5240	-1.48	≤11.00	PASS
		5745	-0.78	≤30.00	PASS
		5785	-1.68	≤30.00	PASS
		5825	-3.84	≤30.00	PASS
11AC40SISO	Ant1	5190	-4.17	≤11.00	PASS
		5230	-4.24	≤11.00	PASS
		5755	-3.3	≤30.00	PASS
		5795	-5.37	≤30.00	PASS
11AC80SISO	Ant1	5210	-7.41	≤11.00	PASS
		5775	-6.23	≤30.00	PASS

11A_Ant1_5180



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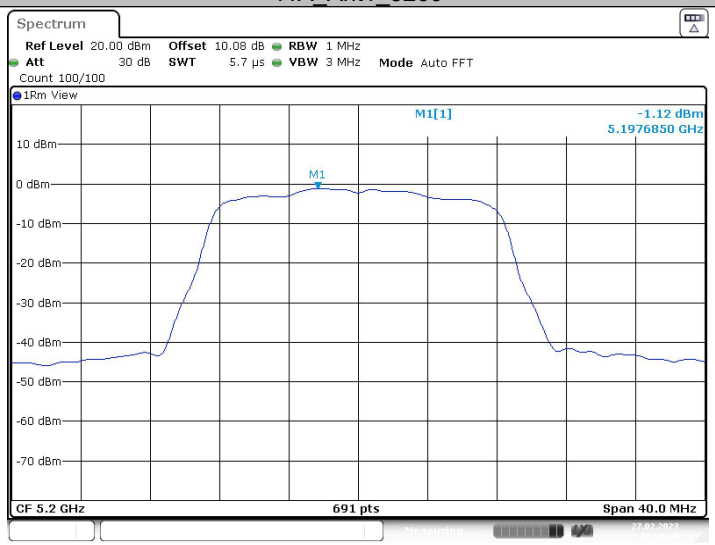

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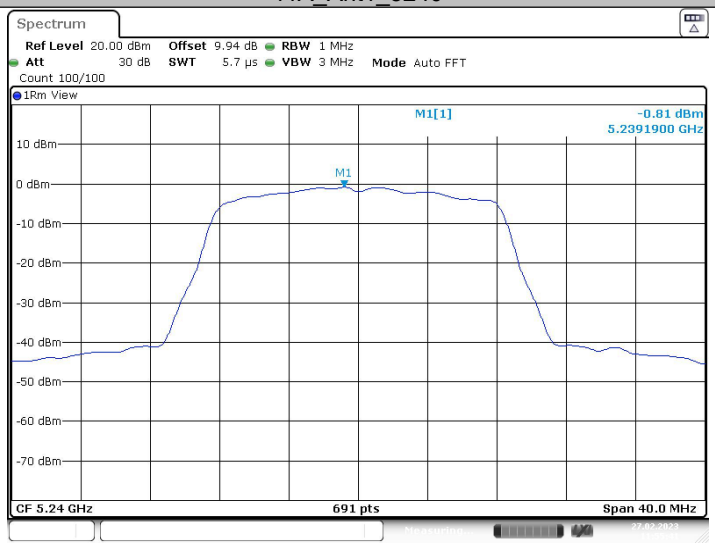

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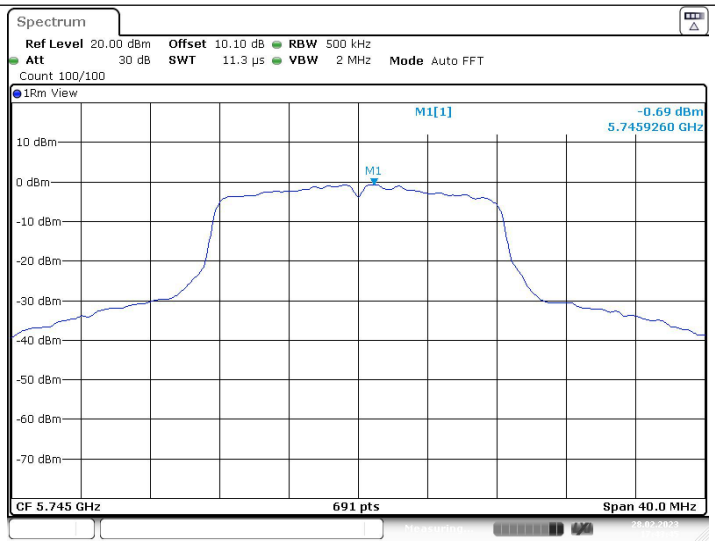

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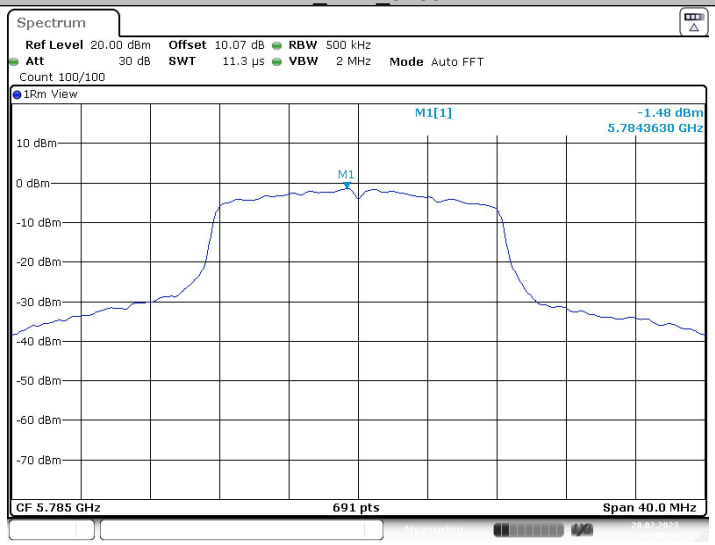

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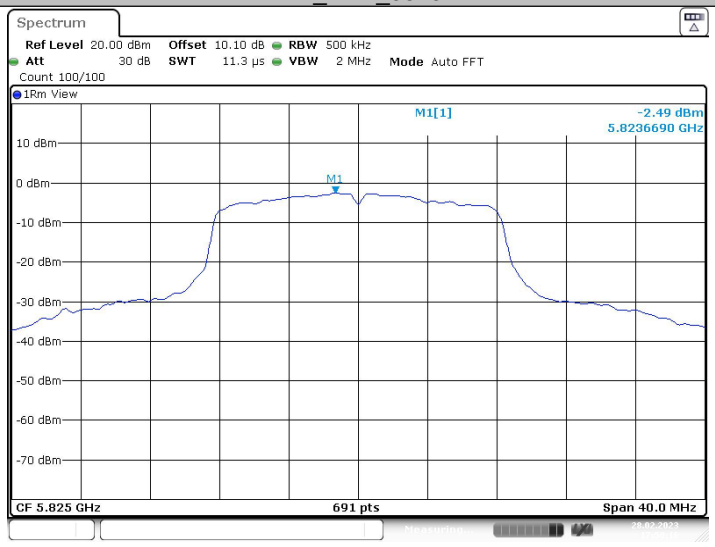

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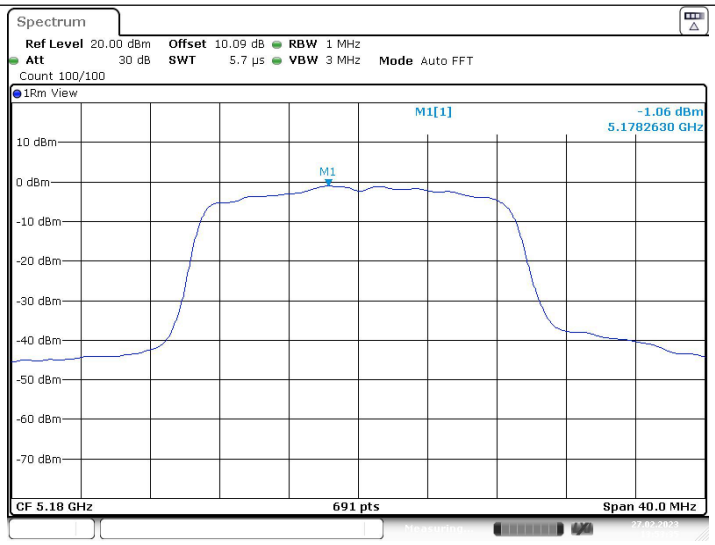

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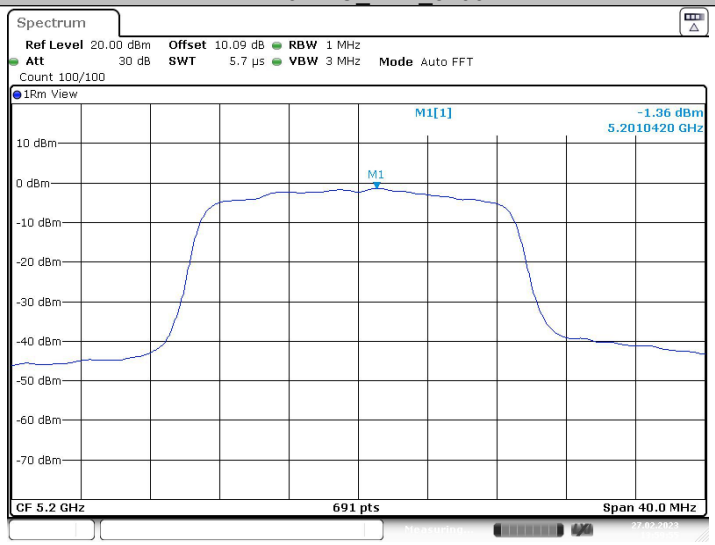

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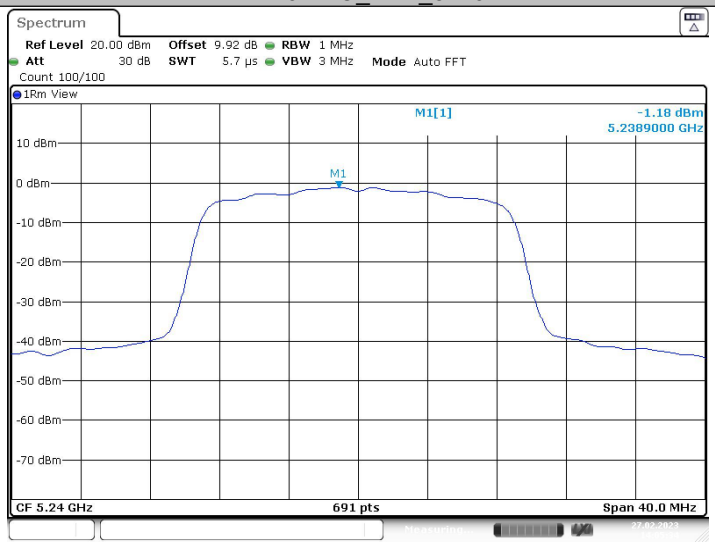

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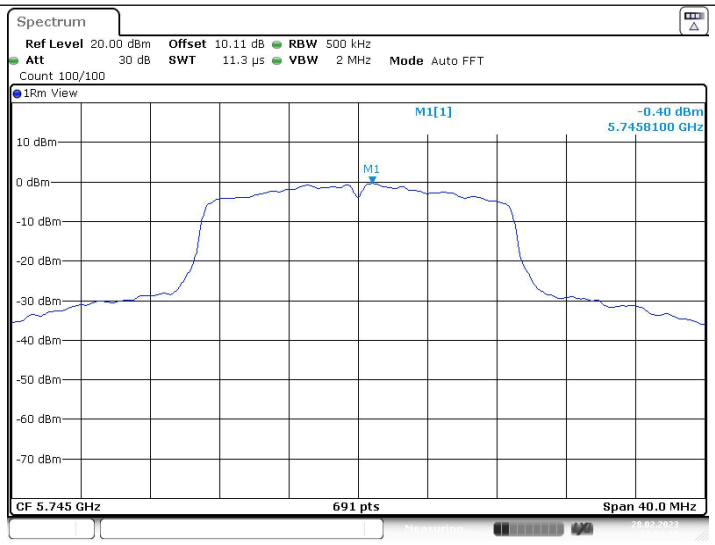

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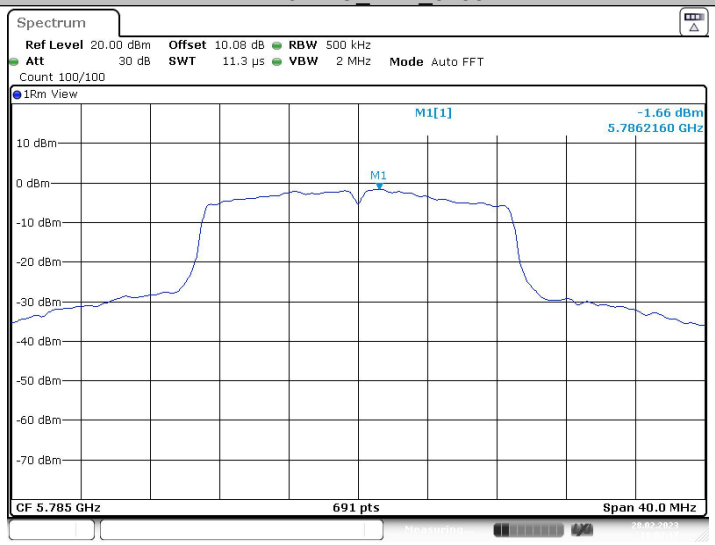

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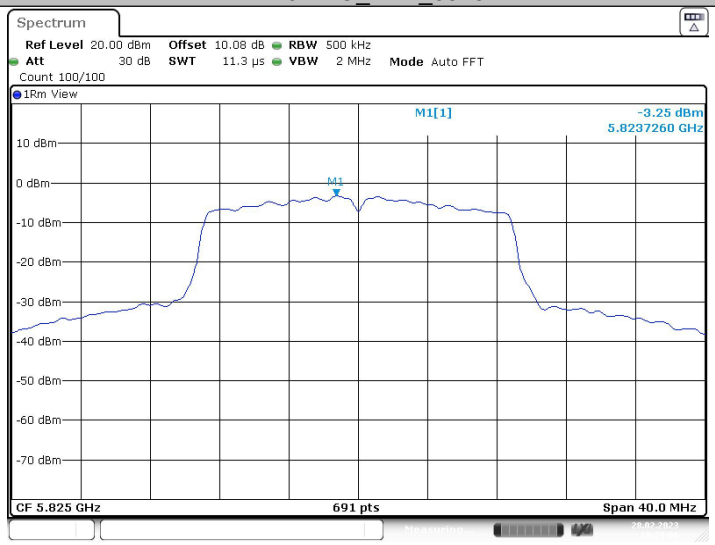

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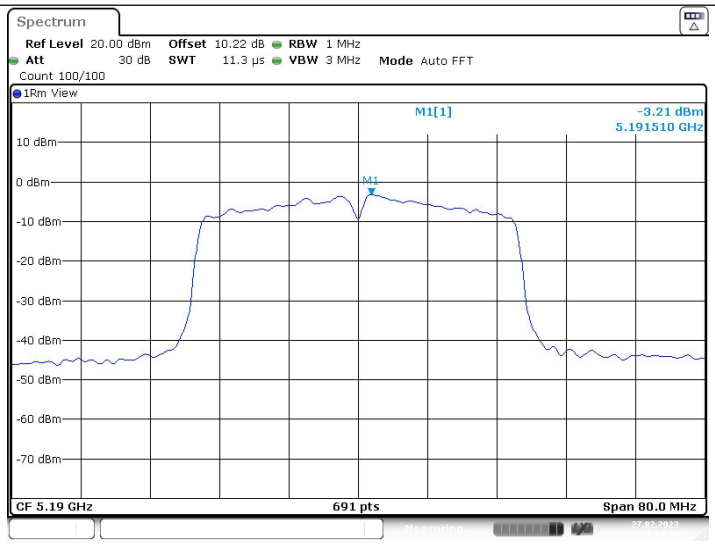

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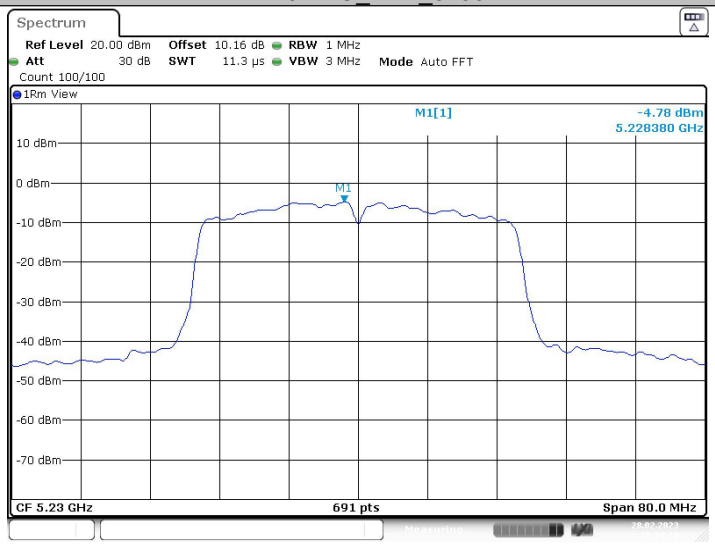

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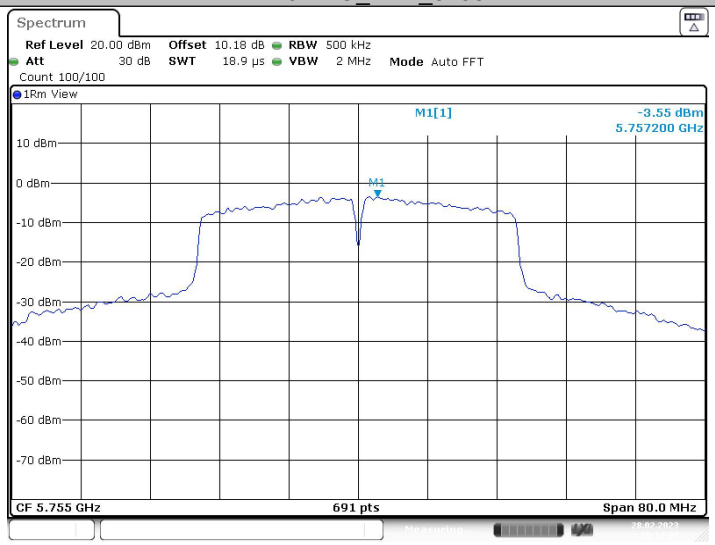

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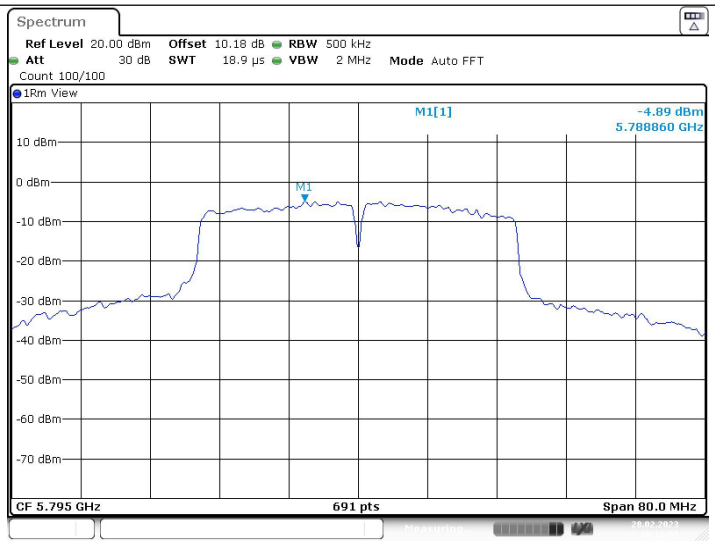

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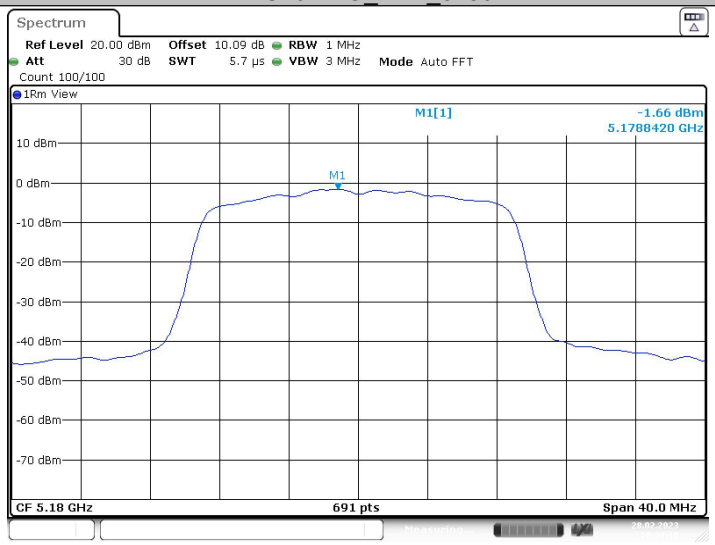

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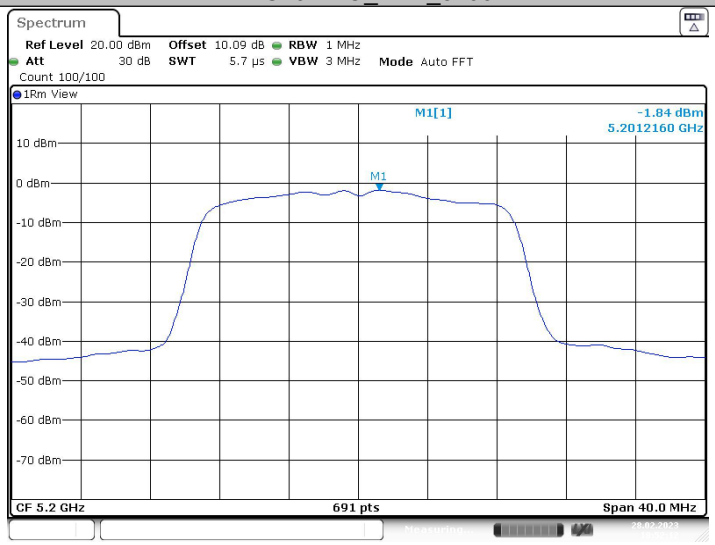

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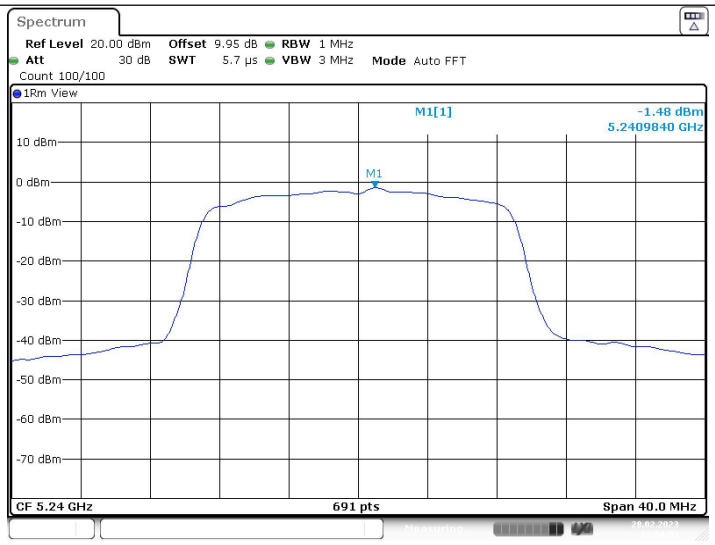

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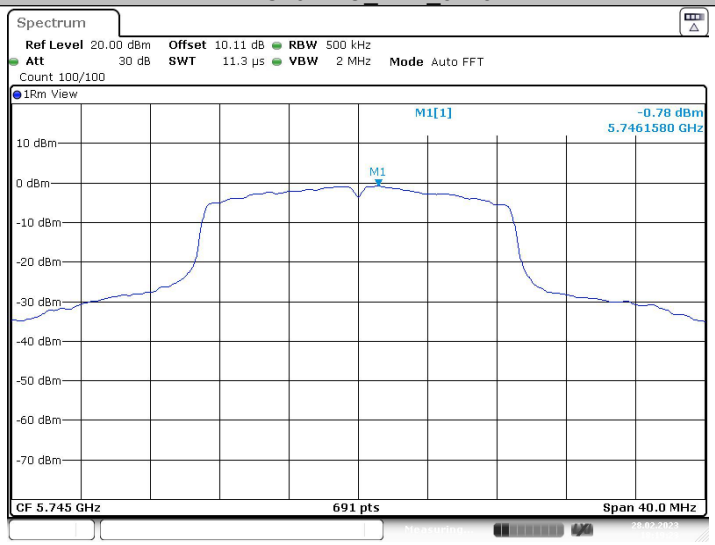

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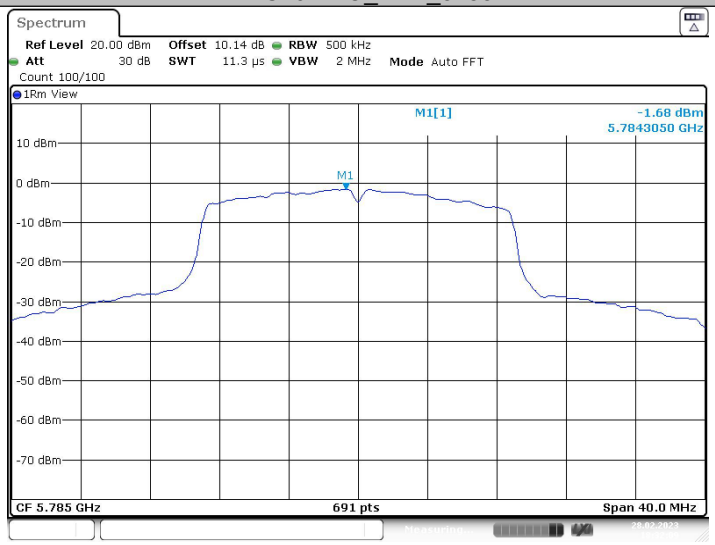

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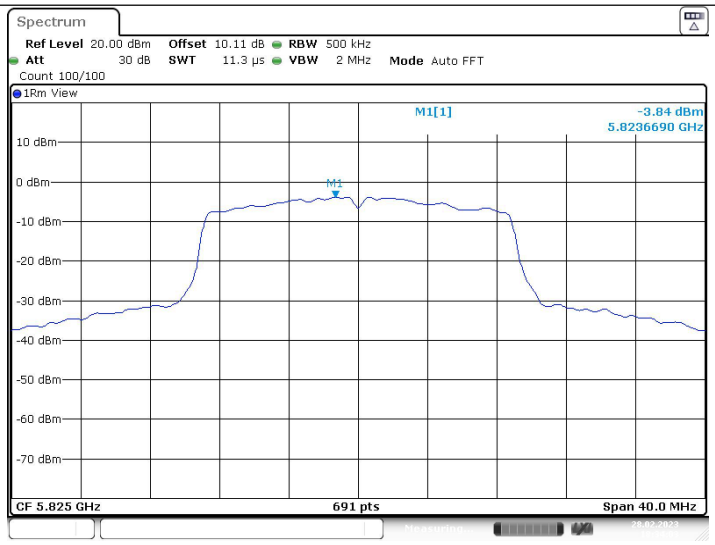

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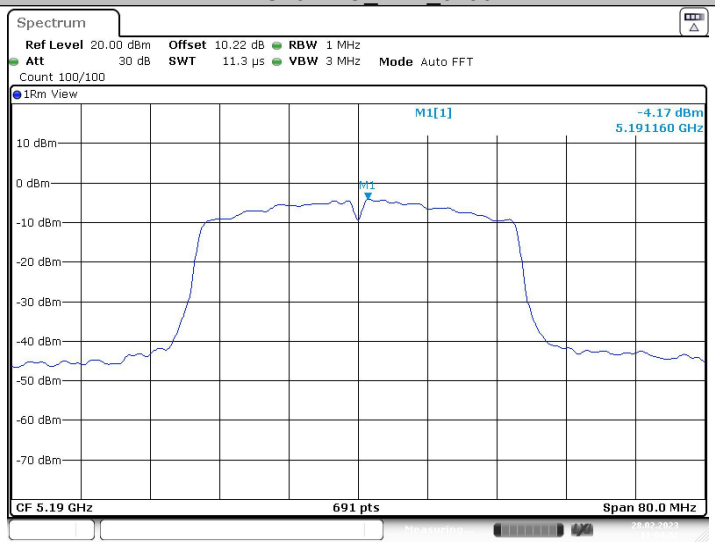

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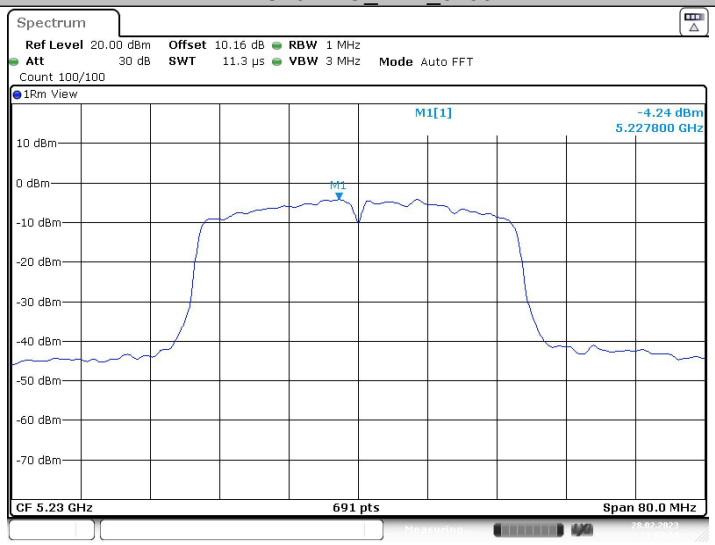

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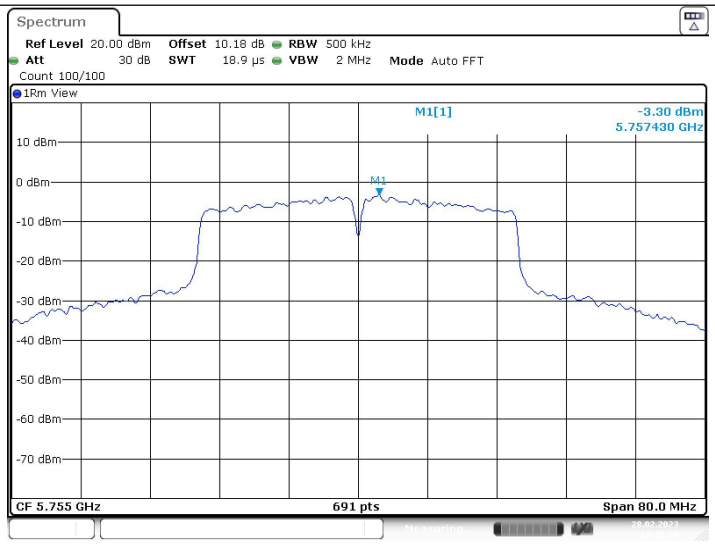

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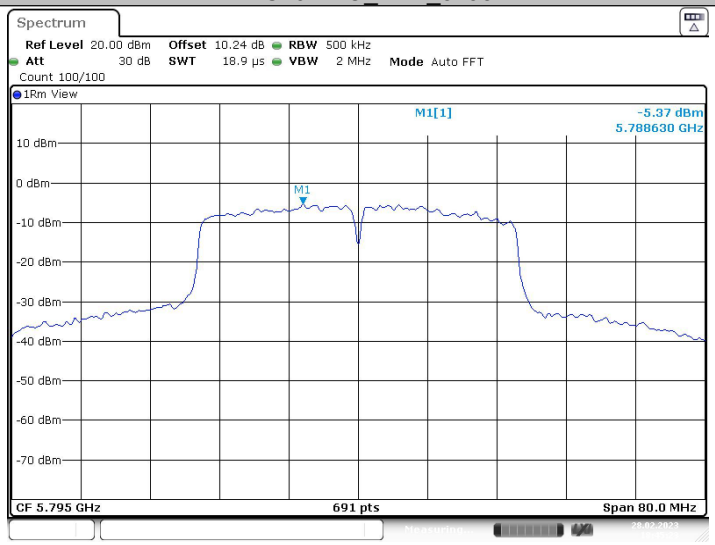

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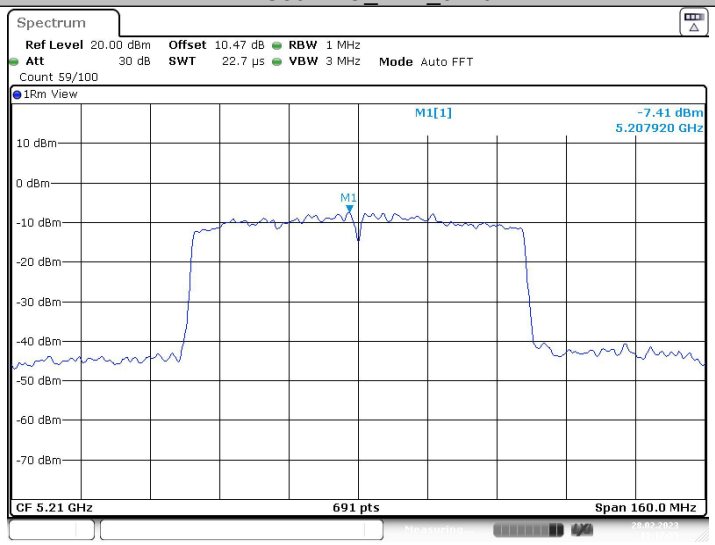

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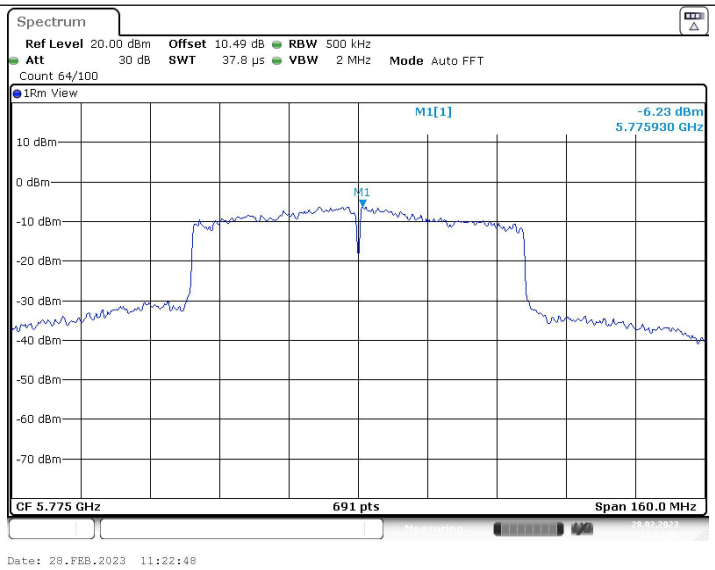
Spectrum
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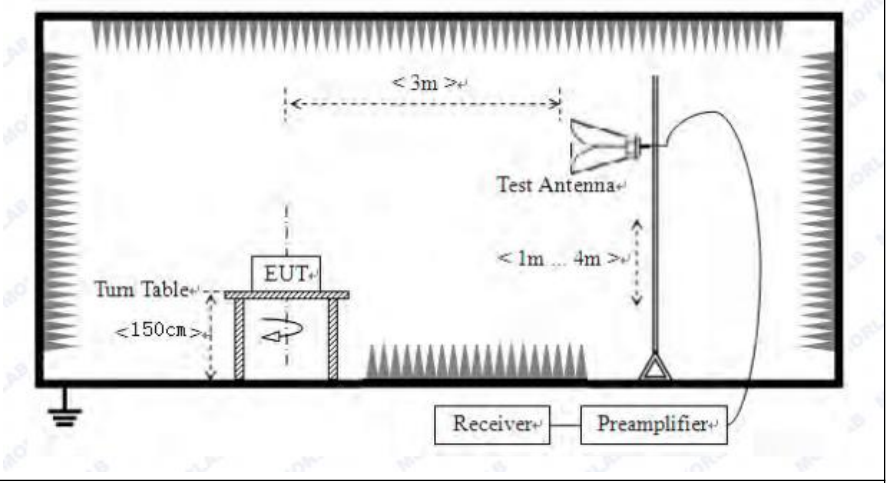
Att 30 dB SWT 37.8 µs VBW 2 MHz Mode Auto FFT
Count 64/100
1Rm View
M1[1]
-6.23 dBm
5.775930 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 5.775 GHz
691 pts
Span 160.0 MHz
Date: 28.FEB.2023 11:22:48

4.6 Band Edge

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 E Section 15.407 and 15.205</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m (Semi-Anechoic Chamber)</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>AV</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.0</td><td>Average Value</td></tr>
<tr><td>68.2</td><td>Peak Value</td></tr>
</table>
Undesirable emission limits:
(1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.
(2) For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.
(3) For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of −27 dBm/MHz.
</td></tr>
<tr><td>Test Procedure:</td><td>
a. The EUT was placed on the top of a rotating table 1.5 m above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
</td></tr>
<tr><td>Test setup:</td><td>Above 1GHz</td></tr>
</table>

	
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Remark:

According to KDB 789033 D02 v02r01 section G) 1) (d), for For measurements above 1000 MHz @ 3m distance, the limit of field strength is computed as follows:

E[dBuV/m] = EIRP[dBm] + 95.2,

For example, if EIRP = -27dBm

E[dBuV/m] = -27 + 95.2 = 68.2dBuV/m.

Measurement Data:

Band1

Mode:		802.11a		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	37.00	17.18	54.18	68.20	-14.02	PK
V	5150.00	34.47	17.18	51.65	68.20	-16.55	PK

Mode:		802.11a		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	24.69	17.18	41.87	54.00	-12.13	AV
V	5150.00	23.41	17.18	40.59	54.00	-13.41	AV

Mode:		802.11a		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	37.99	17.18	55.17	68.20	-13.03	PK
V	5350.00	34.84	17.18	52.02	68.20	-16.18	PK

Mode:		802.11a		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	26.62	17.18	43.80	54.00	-10.20	AV
V	5350.00	25.91	17.18	43.09	54.00	-10.91	AV

Mode:		802.11n(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	34.18	17.18	51.36	68.20	-16.84	PK
V	5150.00	32.89	17.18	50.07	68.20	-18.13	PK

Mode:		802.11n(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	26.70	17.18	43.88	54.00	-10.12	AV
V	5150.00	24.21	17.18	41.39	54.00	-12.61	AV

Mode:		802.11n(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	38.12	17.18	55.30	68.20	-12.90	PK
V	5350.00	36.73	17.18	53.91	68.20	-14.29	PK

Mode:		802.11n(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	26.52	17.18	43.70	54.00	-10.30	AV
V	5350.00	26.64	17.18	43.82	54.00	-10.18	AV

Mode:		802.11ac(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	35.74	17.18	52.92	68.20	-15.28	PK
V	5150.00	35.66	17.18	52.84	68.20	-15.36	PK
Mode:		802.11ac(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	24.36	17.18	41.54	54.00	-12.46	AV
V	5150.00	24.84	17.18	42.02	54.00	-11.98	AV
Mode:		802.11ac(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	35.52	17.18	52.70	68.20	-15.50	PK
V	5350.00	37.24	17.18	54.42	68.20	-13.78	PK
Mode:		802.11ac(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	25.50	17.18	42.68	54.00	-11.32	AV
V	5350.00	24.09	17.18	41.27	54.00	-12.73	AV

Mode:		802.11n(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	37.10	17.18	54.28	68.20	-13.92	PK
V	5150.00	34.47	17.18	51.65	68.20	-16.55	PK
Mode:		802.11n(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	24.54	17.18	41.72	54.00	-12.28	AV
V	5150.00	26.38	17.18	43.56	54.00	-10.44	AV
Mode:		802.11n(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	37.22	17.18	54.40	68.20	-13.80	PK
V	5350.00	35.90	17.18	53.08	68.20	-15.12	PK
Mode:		802.11n(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	27.34	17.18	44.52	54.00	-9.48	AV
V	5350.00	25.50	17.18	42.68	54.00	-11.32	AV

Mode:		802.11ac(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	36.06	17.18	53.24	68.20	-14.96	PK
V	5150.00	34.06	17.18	51.24	68.20	-16.96	PK
Mode:		802.11ac(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	26.59	17.18	43.77	54.00	-10.23	AV
V	5150.00	24.65	17.18	41.83	54.00	-12.17	AV
Mode:		802.11ac(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	36.61	17.18	53.79	68.20	-14.41	PK
V	5350.00	34.90	17.18	52.08	68.20	-16.12	PK
Mode:		802.11ac(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	27.92	17.18	45.10	54.00	-8.90	AV
V	5350.00	25.06	17.18	42.24	54.00	-11.76	AV

Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	37.58	17.18	54.76	68.20	-13.44	PK
V	5150.00	34.52	17.18	51.70	68.20	-16.50	PK
Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	26.90	17.18	44.08	54.00	-9.92	AV
V	5150.00	26.56	17.18	43.74	54.00	-10.26	AV
Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	35.64	17.18	52.82	68.20	-15.38	PK
V	5350.00	34.31	17.18	51.49	68.20	-16.71	PK
Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	27.55	17.18	44.73	54.00	-9.27	AV
V	5350.00	25.49	17.18	42.67	54.00	-11.33	AV