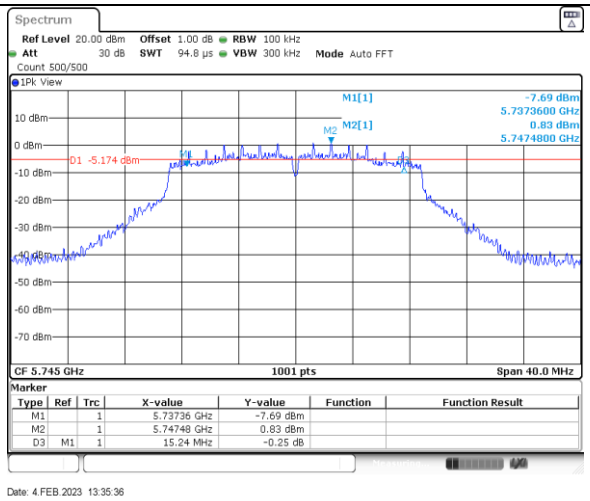
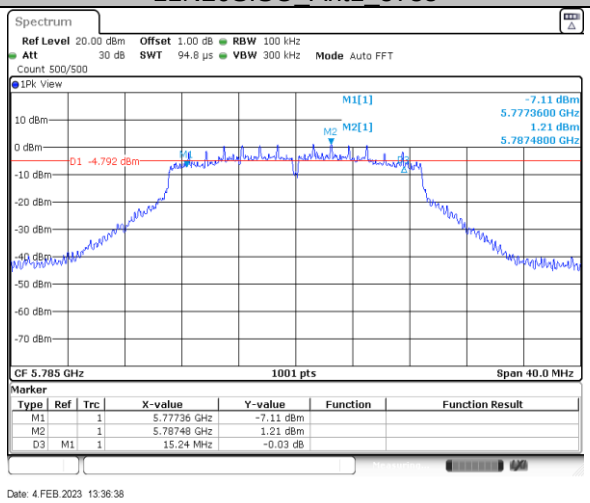
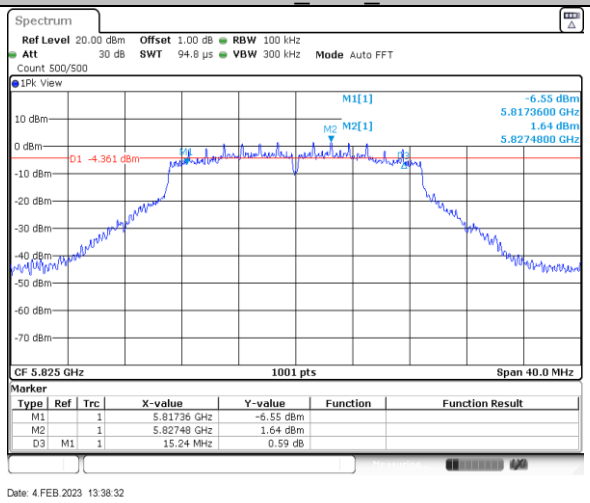


11N20SISO_Ant1_5785



11N20SISO_Ant1_5825



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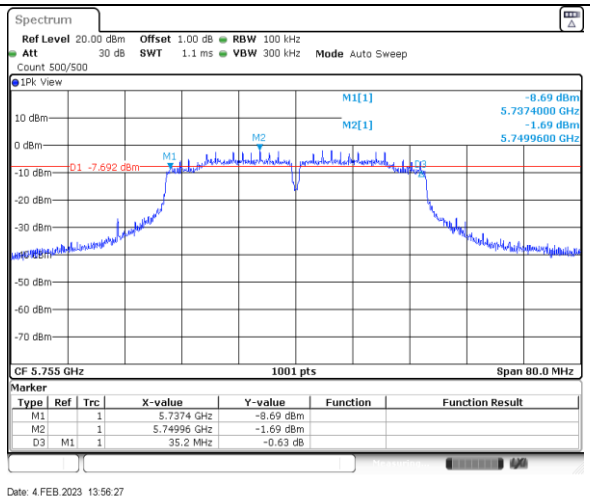

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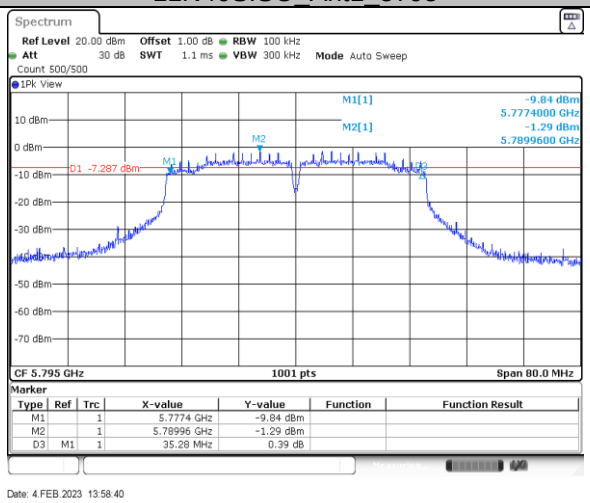

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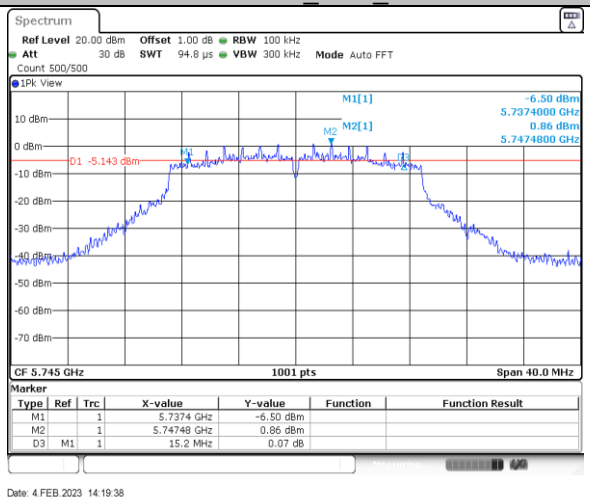
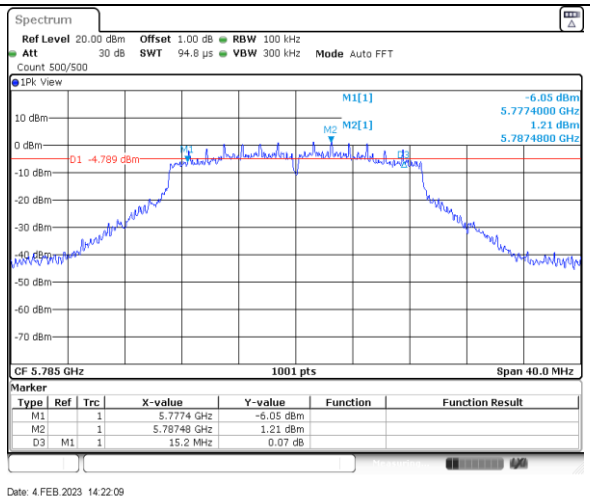
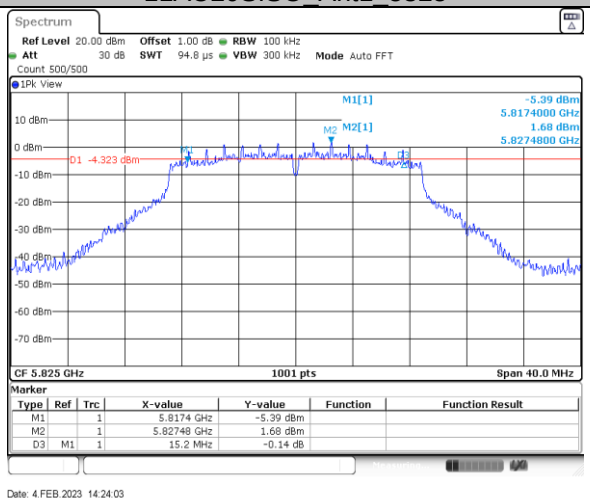


11AC20SISO_Ant1_5785



11AC20SISO_Ant1_5825



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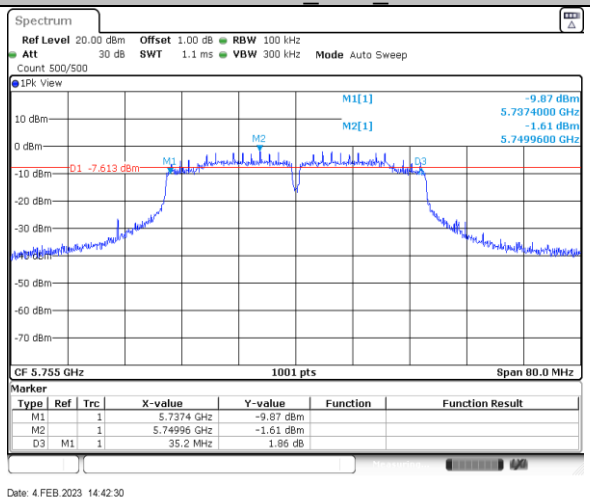

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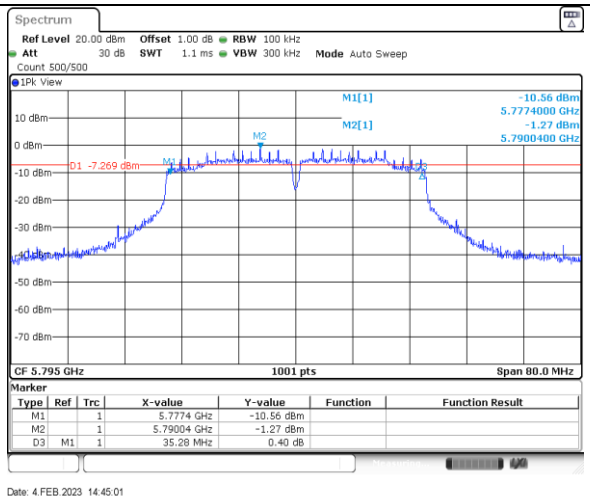

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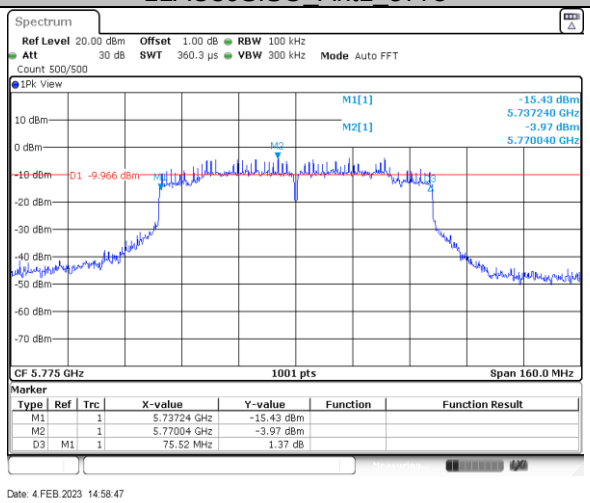

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9.3 Maximum Conducted Output Power& EIRP

Test Method
According to KDB789033 D02

Limits: For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi.
For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26dB emission bandwidth in megahertz.
For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

Test result as below table

IEEE 802.11a modulation Test Result

Band	Channel	Channel Frequency (MHz)	Maximum Conducted Output Power (dBm)		Power Limit (dBm)
			Ant0	Ant1	
U-NII-1	Low	5180	12.9	14.1	24.00
	Middle	5220	12.0	14.2	24.00
	High	5240	12.2	13.4	24.00
U-NII-2A	Low	5260	12.4	14.2	24.00
	Middle	5300	12.6	14.2	24.00
	High	5320	12.3	13.6	24.00
U-NII-2C	Low	5500	11.6	10.9	24.00
	Middle	5580	12.0	11.6	24.00
	High	5700	11.9	10.6	24.00
		5720	11.7	11.3	24.00
U-NII-3	Low	5745	12.5	13.0	30.00
	Middle	5785	12.1	13.3	30.00
	High	5825	12.1	14.6	30.00

$Power^{SUM}$ = 10*Log(10^($Power^{Ant0}$/10)+10^($Power^{Ant1}$/10))

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IEEE 802.11n-HT20 modulation Test Result

Band	Channel	Channel Frequency (MHz)	Maximum Conducted Output Power (dBm)			Power Limit (dBm)
			Ant0	Ant1	SUM	
U-NII-1	Low	5180	12.8	14.0	16.45	24.00
	Middle	5220	12.1	14.1	16.22	24.00
	High	5240	12.3	13.5	15.95	24.00
U-NII-2A	Low	5260	12.4	14.1	16.34	24.00
	Middle	5300	12.5	14.1	16.38	24.00
	High	5320	12.2	13.6	15.96	24.00
U-NII-2C	Low	5500	11.6	11.8	14.71	24.00
	Middle	5580	11.0	11.6	14.32	24.00
	High	5700	12.3	11.5	14.93	24.00
		5720	11.9	11.3	14.62	24.00
U-NII-3	Low	5745	12.2	13.0	15.63	30.00
	Middle	5785	12.3	13.2	15.78	30.00
	High	5825	12.4	14.6	16.65	30.00

IEEE 802.11n-HT40 modulation Test Result

Band	Channel	Channel Frequency (MHz)	Maximum Conducted Output Power (dBm)			Power Limit (dBm)
			Ant0	Ant1	SUM	
U-NII-1	Low	5190	12.7	13.9	16.35	24.00
	High	5230	12.0	13.2	15.65	24.00
U-NII-2A	Low	5270	12.3	15.4	17.13	24.00
	High	5310	12.4	10.3	14.48	24.00
U-NII-2C	Low	5510	12.9	11.8	15.39	24.00
	Middle	5550	13.0	11.2	15.20	24.00
	High	5670	13.8	11.7	15.88	24.00
		5710	14.1	10.4	15.64	24.00
U-NII-3	Low	5755	14.3	14.0	17.16	30.00
	High	5795	14.4	13.6	17.03	30.00

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IEEE 802.11ac-VHT20 modulation Test Result

Band	Channel	Channel Frequency (MHz)	Maximum Conducted Output Power (dBm)			Power Limit (dBm)
			Ant0	Ant1	SUM	
U-NII-1	Low	5180	11.7	14.0	16.01	24.00
	Middle	5220	11.9	13.8	15.96	24.00
	High	5240	12.1	13.4	15.81	24.00
U-NII-2A	Low	5260	12.3	14.1	16.30	24.00
	Middle	5300	12.4	14.1	16.34	24.00
	High	5320	12.4	13.6	16.05	24.00
U-NII-2C	Low	5500	12.8	11.8	15.34	24.00
	Middle	5580	11.2	11.6	14.41	24.00
	High	5700	12.0	10.5	14.32	24.00
		5720	12.1	11.3	14.73	24.00
U-NII-3	Low	5745	12.2	13.0	15.63	30.00
	Middle	5785	12.3	13.2	15.78	30.00
	High	5825	12.4	14.6	16.65	30.00

IEEE 802.11ac-VHT40 modulation Test Result

Band	Channel	Channel Frequency (MHz)	Maximum Conducted Output Power (dBm)			Power Limit (dBm)
			Ant0	Ant1	SUM	
U-NII-1	Low	5190	13.7	14.0	16.86	24.00
	High	5230	12.0	13.2	15.65	24.00
U-NII-2A	Low	5270	12.3	15.3	17.06	24.00
	High	5310	12.4	14.0	16.28	24.00
U-NII-2C	Low	5510	12.9	10.8	14.98	24.00
	Middle	5550	13.0	11.1	15.16	24.00
	High	5670	13.8	11.7	15.88	24.00
		5710	14.1	11.4	15.96	24.00
U-NII-3	Low	5755	14.3	14.0	17.16	30.00
	High	5795	14.4	13.6	17.03	30.00

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IEEE 802.11ac-VHT80 modulation Test Result

Band	Channel	Channel Frequency (MHz)	Maximum Conducted Output Power (dBm)			Power Limit (dBm)
			Ant0	Ant1	SUM	
U-NII-1	42	5210	11.9	15.2	16.86	24.00
U-NII-2A	58	5290	12.3	15.6	17.26	24.00
U-NII-2C	Low	5530	12.9	10.7	14.95	24.00
	Middle	5610	13.4	10.3	15.13	24.00
	High	5690	13.9	12.1	16.10	24.00
U-NII-3	155	5755	14.4	12.5	16.56	30.00

NOTE 1: the 11 dBm + 10 log B is greater than 250mW.
NOTE 2: PowerSUM = 10*Log(10^(PowerAnt0/10)+10^(PowerAnt1/10))

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9.4 Maximum Power Spectral Density

Test Method

According to KDB789033 D02

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or bandwidth" to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:

a) Set RBW ≥ 1/T, where T is defined in section II.B.l.a).

b) Set VBW ≥ 3 RBW.

c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (< 500 KHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10log(1MHz/RBW) to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.

e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 KHz for the sections 5.c) and 5.d) above, since RBW=100 KHZ is available on nearly all spectrum analyzers.

Limit: The maximum power spectral density shall not exceed 11dBm for the 5.15-5.25GHz, 5.25-5.35GHz, 5.47-5.725 GHz Band and 30dBm for the 5.8GHz Band in any 1 megahertz band.

NOTE: The power of Ant0 is higher than Ant1, so PSD are performed at Ant0, the final result will add 3dB (10log2) according to the method from KDB 662911 D01.

IEEE 802.11a modulation Test Result

Band	Channel	Channel Frequency (MHz)	Maximum PSD (dBm/MHz)		PSD Limit (dBm/MHz)
			Ant0	Ant1	
U-NII-1	Low	5180	3.85	2.44	11.00
	Middle	5220	3.75	2.92	11.00
	High	5240	2.65	1.95	11.00
U-NII-2A	Low	5260	3.14	3.13	11.00
	Middle	5300	3.61	3.26	11.00
	High	5320	3.61	2.54	11.00
U-NII-2C	Low	5500	2.61	-0.68	11.00
	Middle	5580	3.03	-1.28	11.00
	High	5700	2.6	-1.46	11.00
		5720_UNII-2C	2.7	-1.42	11.00
U-NII-3		5720_UNII-3	-1.24	-4.8	30.00
	Low	5745	3.08	-0.36	30.00
	Middle	5785	3.21	0.06	30.00
	High	5825	2.84	0.45	30.00

IEEE 802.11n-HT20 modulation Test Result

Band	Channel	Channel Frequency (MHz)	Maximum PSD (dBm/MHz)			PSD Limit (dBm/MHz)
			Ant0	Ant1	SUM	
U-NII-1	Low	5180	4.16	2.73	6.513	11.00
	Middle	5220	3.4	2.9	6.167	11.00
	High	5240	2.82	1.96	5.421	11.00
U-NII-2A	Low	5260	3.02	3.07	6.055	11.00
	Middle	5300	3.45	3.01	6.246	11.00
	High	5320	3.42	2.51	5.991	11.00
U-NII-2C	Low	5500	2.32	-0.59	4.11	11.00
	Middle	5580	2.73	-1.32	4.171	11.00
	High	5700	2.54	-1.52	3.978	11.00
		5720_UNII-2C	3.43	-1.48	4.645	11.00
U-NII-3		5720_UNII-3	0.53	-4.53	1.709	30.00
	Low	5745	4.14	-0.17	5.509	30.00
	Middle	5785	4.08	0.2	5.57	30.00
	High	5825	4.02	0.69	5.677	30.00

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IEEE 802.11n-HT40_MIMO modulation Test Result

Band	Channel	Frequency (MHz)	Maximum PSD (dBm/MHz)			PSD Limit (dBm/MHz)
			Ant0	Ant1	SUM	
U-NII-1	Low	5190	1.38	-0.54	3.535	11.00
	High	5230	-0.14	-1.61	2.197	11.00
U-NII-2A	Low	5270	2.17	0.74	4.524	11.00
	High	5310	1.52	-0.43	3.664	11.00
U-NII-2C	Low	5510	0.19	-3.8	1.648	11.00
	Middle	5550	0.3	-3.64	1.772	11.00
	High	5670	0.34	-4.51	1.57	11.00
		5710_UNII-2C	0.4	-4.72	1.565	11.00
U-NII-3	Low	5710_UNII-3	-5.11	-9.85	-3.85	11.00
		5755	0.84	-3.07	2.321	30.00
	High	5795	0.75	-2.73	2.36	30.00

IEEE 802.11ac-VHT20_MIMO modulation Test Result

Band	Channel	Channel Frequency (MHz)	Maximum PSD (dBm/MHz)			PSD Limit (dBm/MHz)
			Ant0	Ant1	SUM	
U-NII-1	Low	5180	4.61	2.62	6.738	11.00
	Middle	5220	4.2	3.17	6.725	11.00
	High	5240	3.41	2.07	5.802	11.00
U-NII-2A	Low	5260	3.73	3.25	6.507	11.00
	Middle	5300	3.97	2.93	6.491	11.00
	High	5320	4.26	2.8	6.601	11.00
U-NII-2C	Low	5500	3.3	-0.53	4.804	11.00
	Middle	5580	3.52	-1.18	4.787	11.00
	High	5700	3.16	-1.77	4.37	11.00
		5720_UNII-2C	3.24	-1.46	4.507	11.00
U-NII-3		5720_UNII-3	-0.03	-4.82	1.214	11.00
	Low	5745	3.89	-0.22	5.314	30.00
	Middle	5785	3.78	0.22	5.365	30.00
	High	5825	3.72	0.74	5.491	30.00

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IEEE 802.11ac-VHT40_MIMO modulation Test Result

Band	Channel	Frequency (MHz)	Maximum PSD (dBm/MHz)			PSD Limit (dBm/MHz)
			Ant0	Ant1	SUM	
U-NII-1	Low	5190	1.12	-0.35	3.457	11.00
	High	5230	-0.53	-1.64	1.96	11.00
U-NII-2A	Low	5270	2.07	0.87	4.521	11.00
	High	5310	1.17	-0.41	3.462	11.00
U-NII-2C	Low	5510	0.21	-3.67	1.7	11.00
	Middle	5550	-0.05	-3.56	1.55	11.00
	High	5670	0.04	-4.53	1.34	11.00
		5710_UNII-2C	-0.15	-4.65	1.169	11.00
U-NII-3	Low	5710_UNII-3	-5.33	-9.84	-4.013	11.00
		5755	0.53	-2.82	2.180	30.00
	High	5795	0.44	-2.55	2.207	30.00

IEEE 802.11ac-VHT80_MIMO modulation Test Result

Band	Channel	Frequency (MHz)	Maximum PSD (dBm/MHz)			PSD Limit (dBm/MHz)
			Ant0	Ant1	SUM	
U-NII-1	42	5210	-0.02	-1.34	2.380	11.00
U-NII-2A	58	5290	-0.95	-2.53	1.342	11.00
U-NII-2C	Low	5530	-2.15	-5.92	-0.63	11.00
	Middle	5610	-2.23	-6.19	-0.76	11.00
	High	5690_UNII-2C	-0.67	-4.78	0.754	11.00
		5690_UNII-3	-6.71	-11.28	-5.409	11.00
U-NII-3	155	5775	-1.91	-5.49	-0.33	30.00

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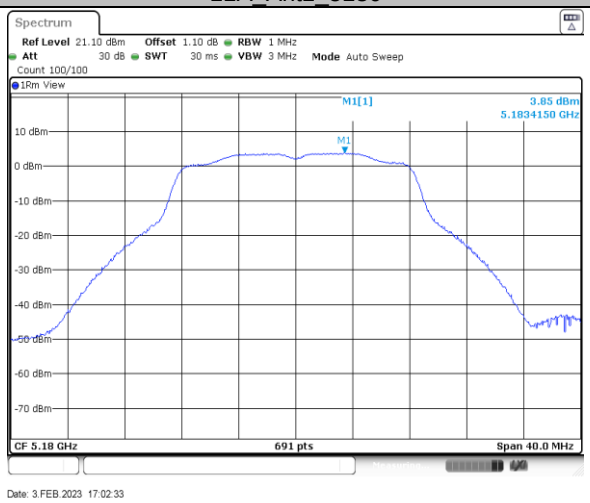
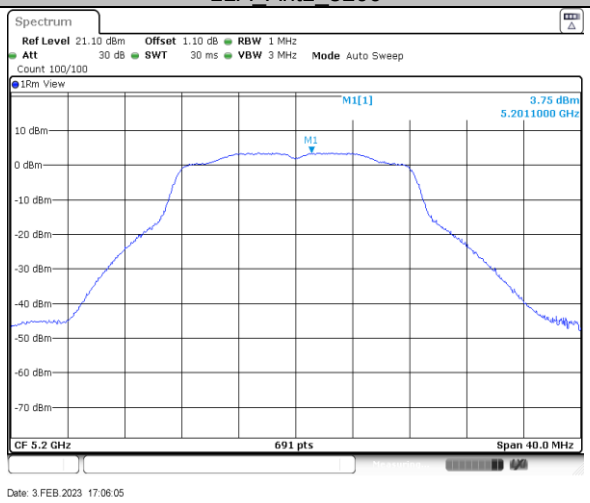
Test Graphs:

11A_Ant1_5180



11A_Ant1_5200



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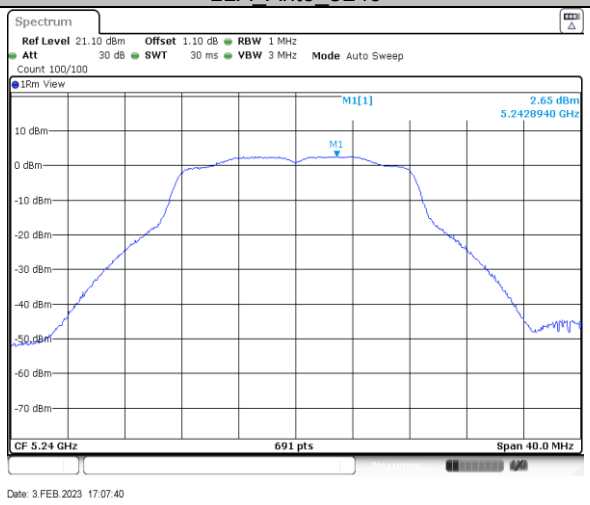

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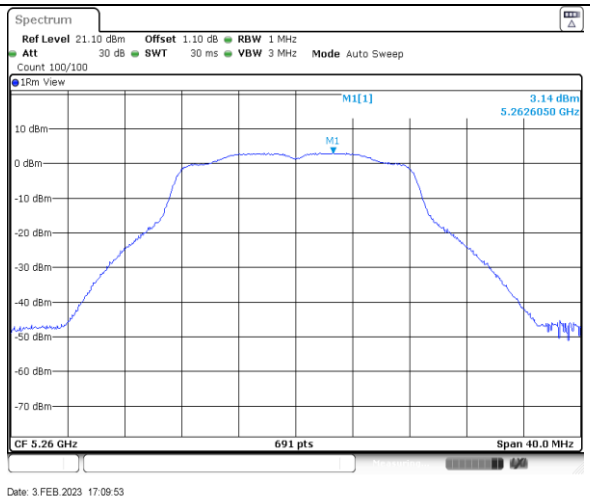

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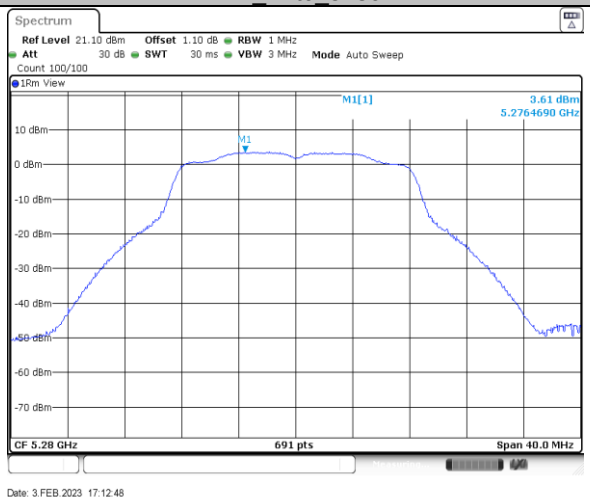
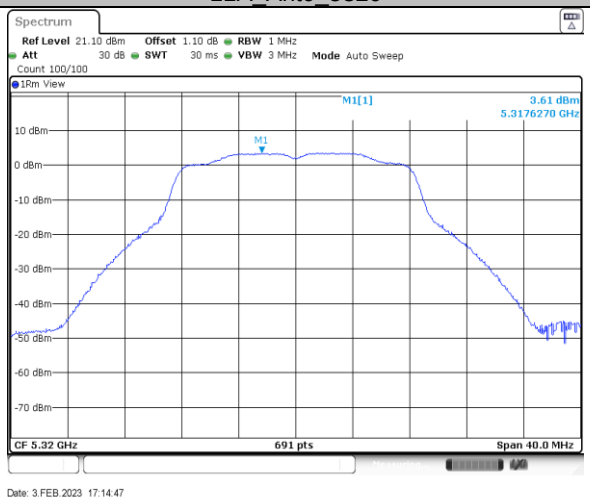


11A_Ant0_5320



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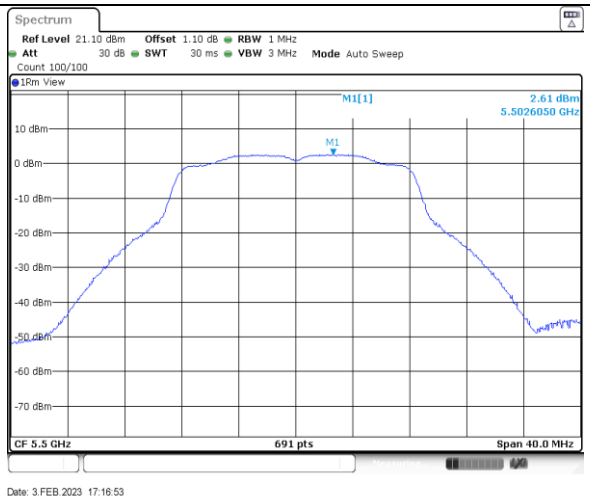

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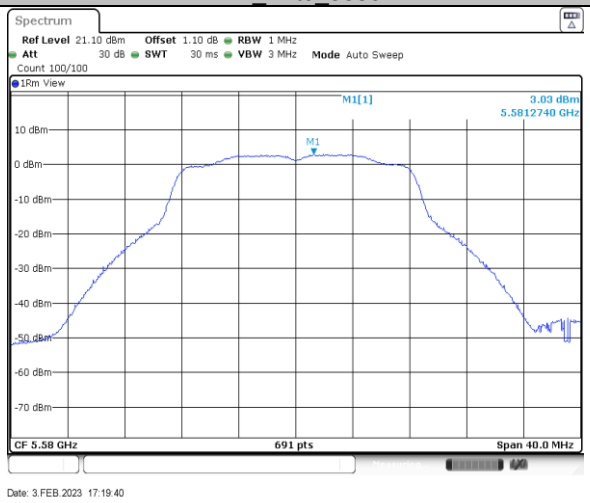

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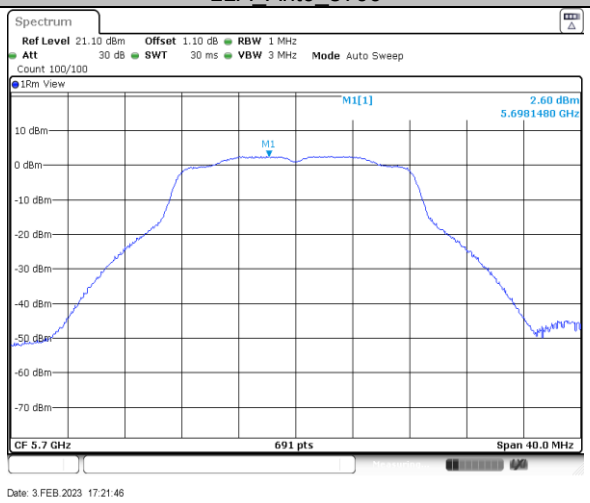
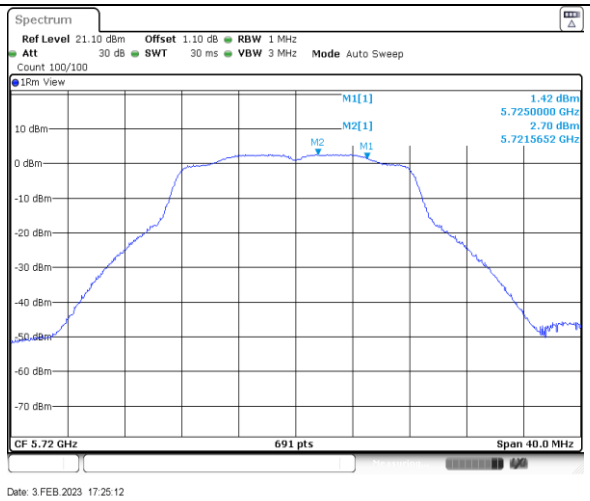


11A_Ant0_5720_UNII-2C



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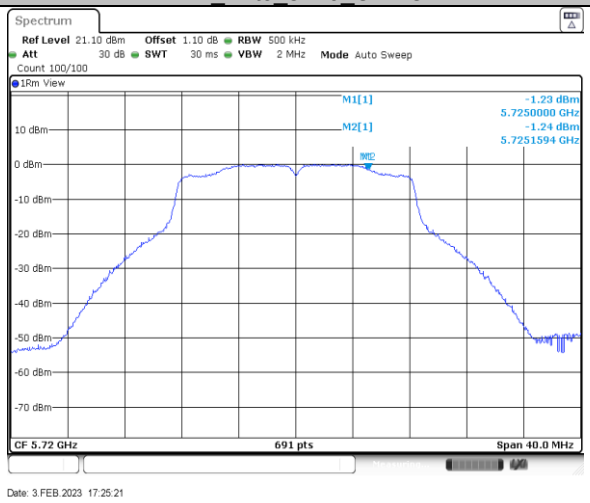

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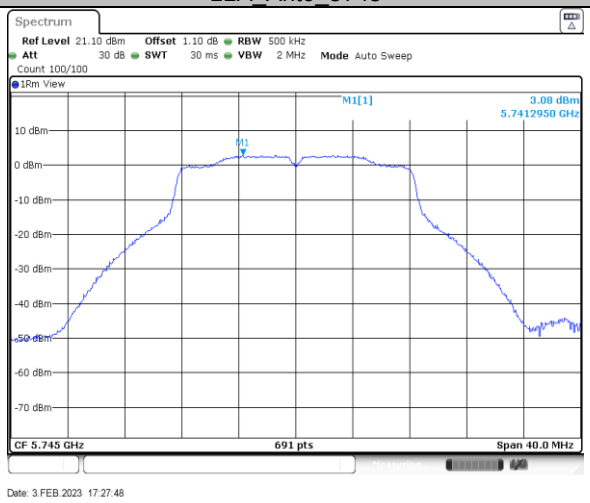

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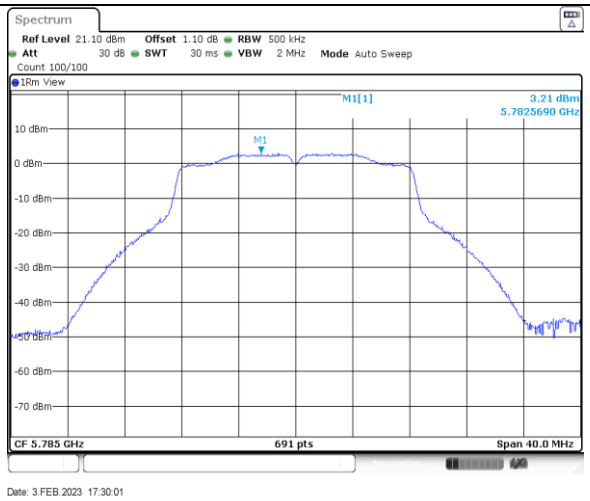

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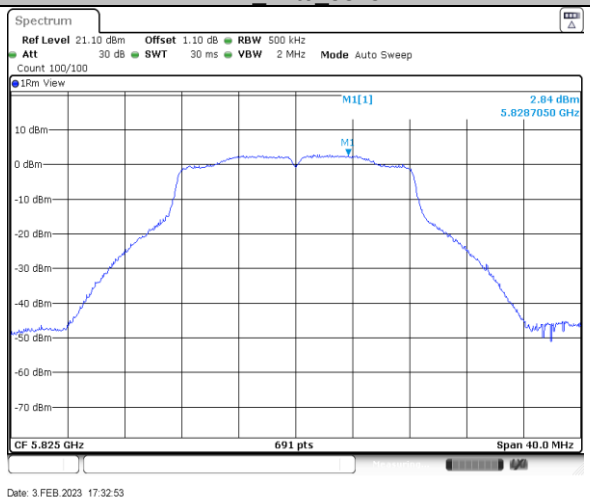

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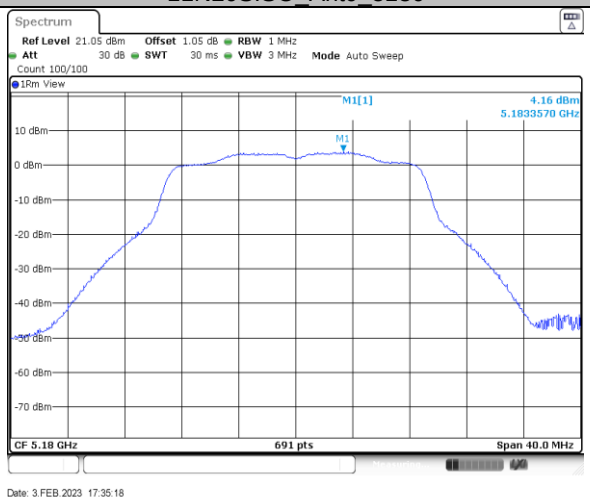

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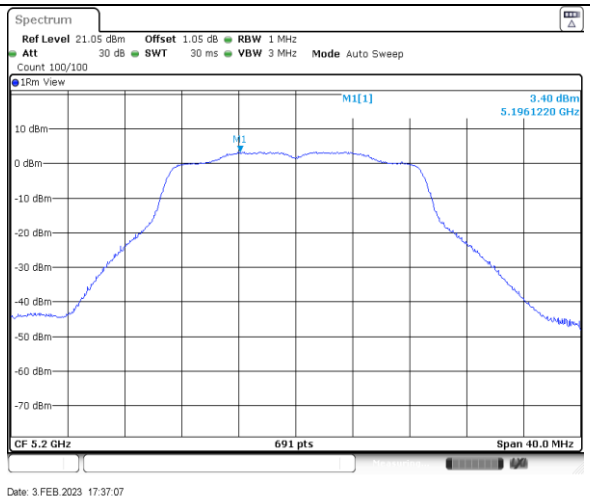

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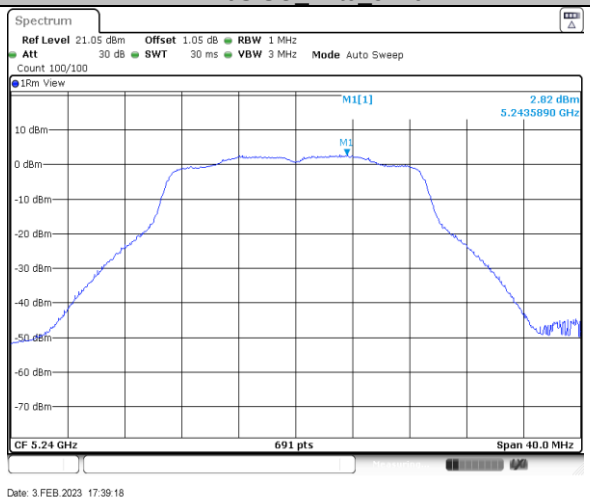

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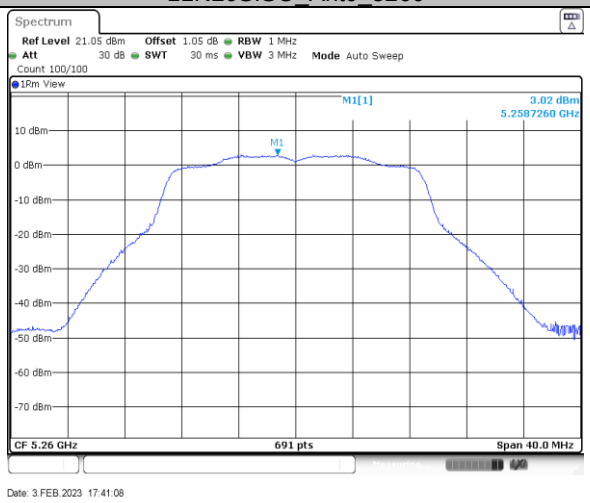

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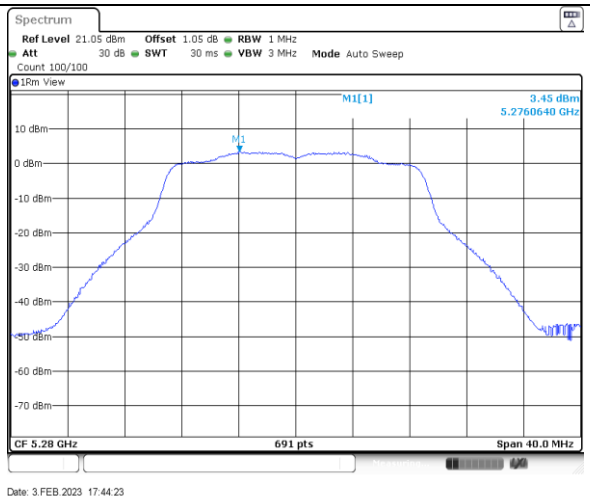

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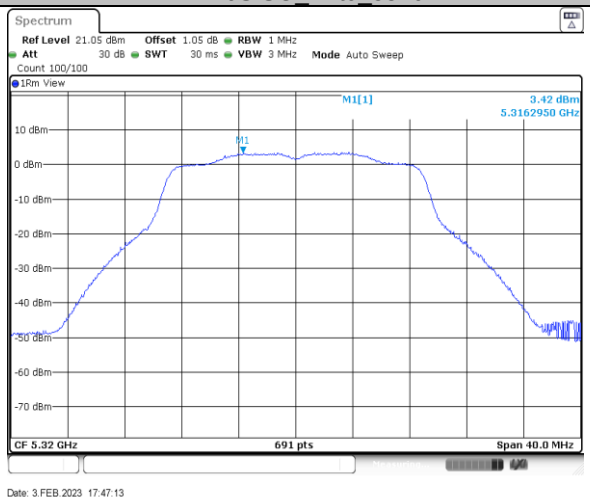

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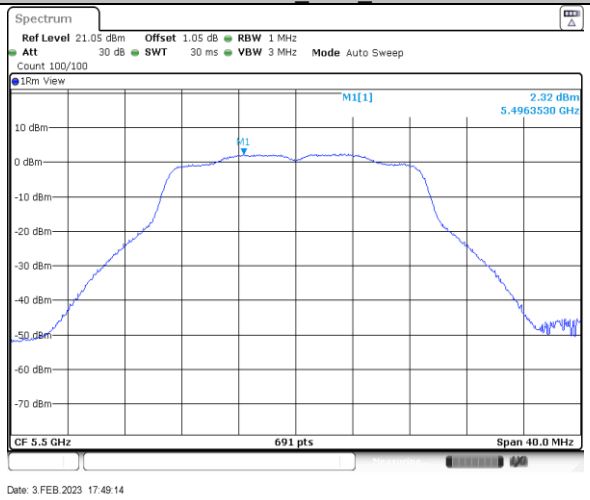

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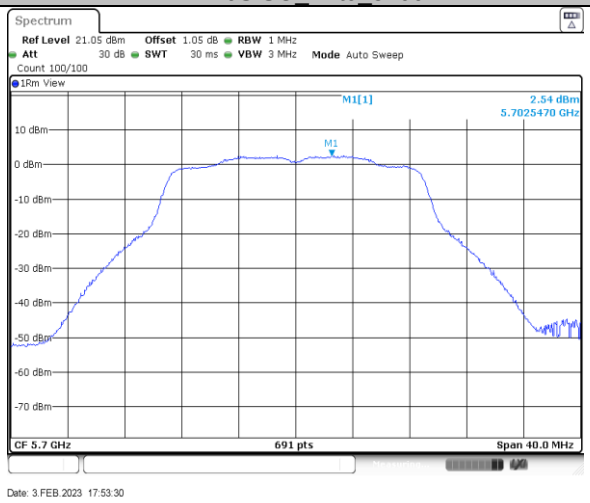

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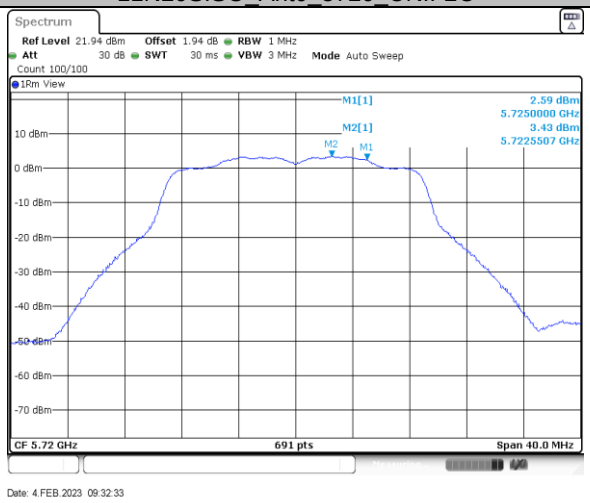

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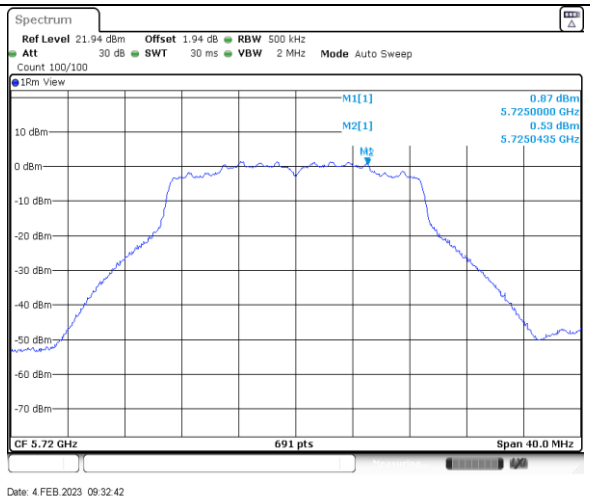

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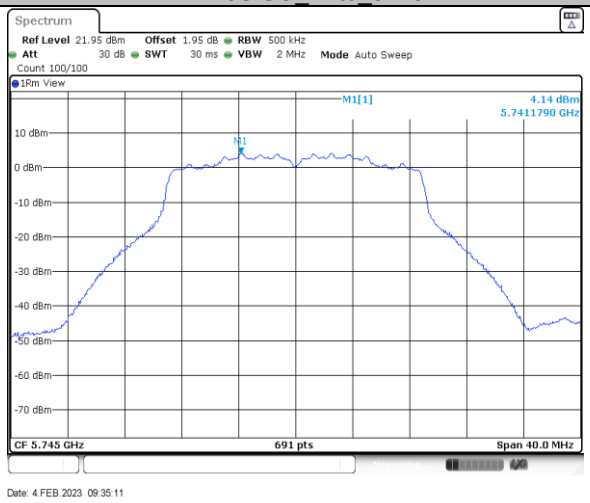

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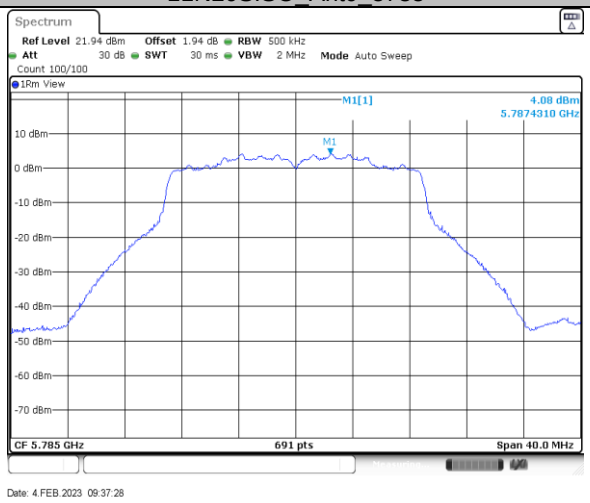

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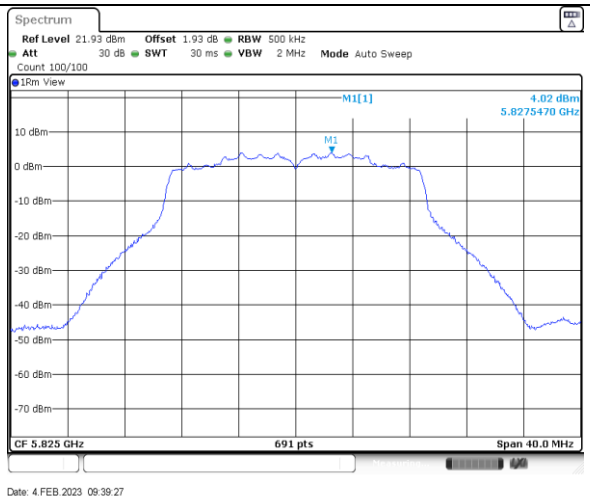

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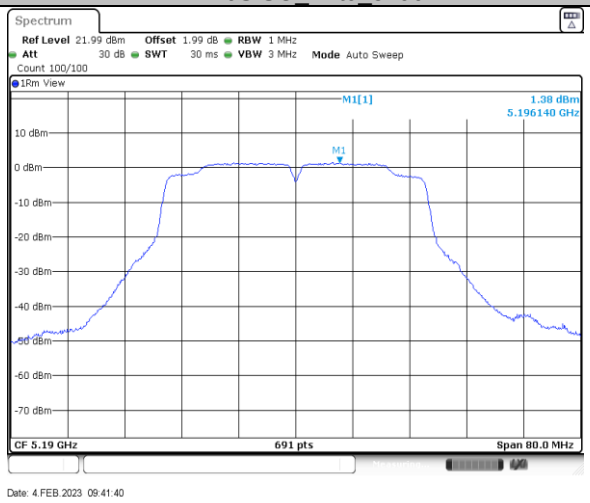

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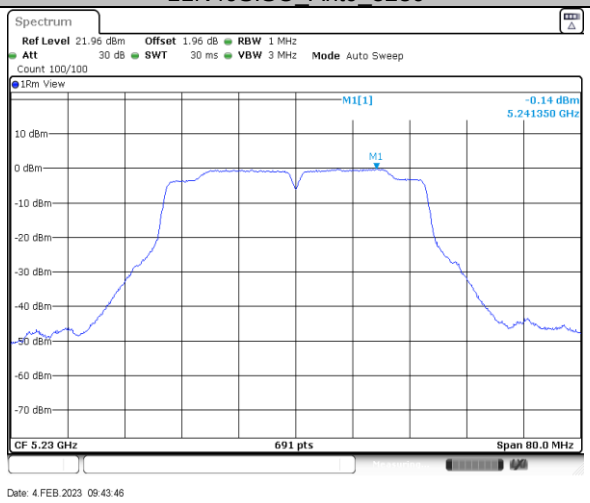

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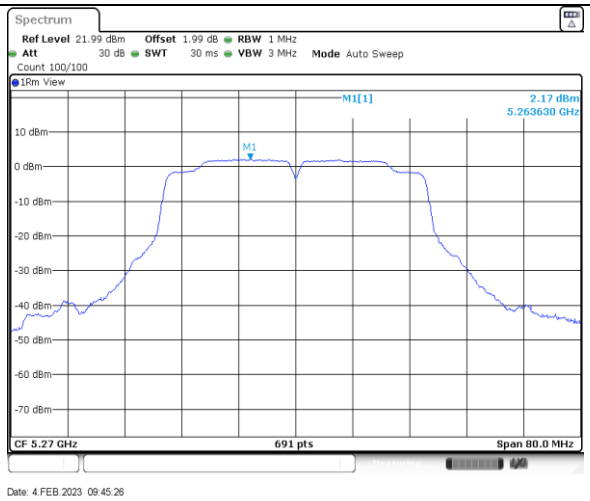

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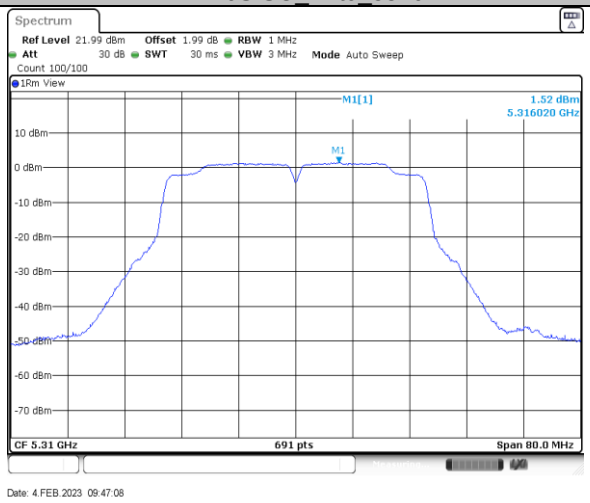

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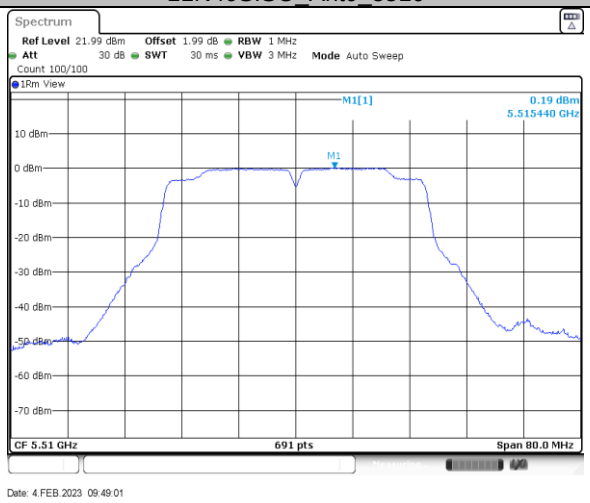

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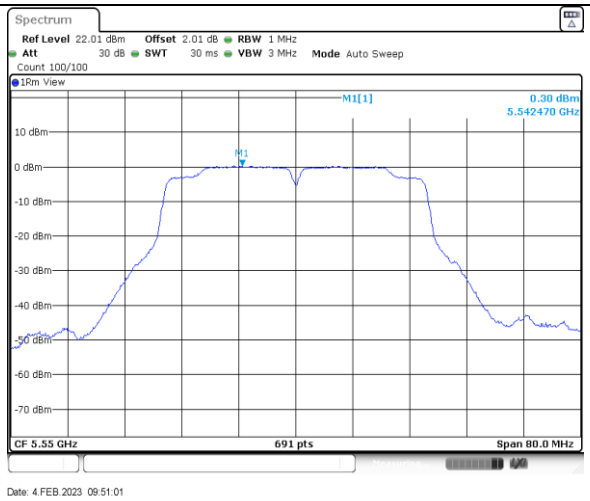

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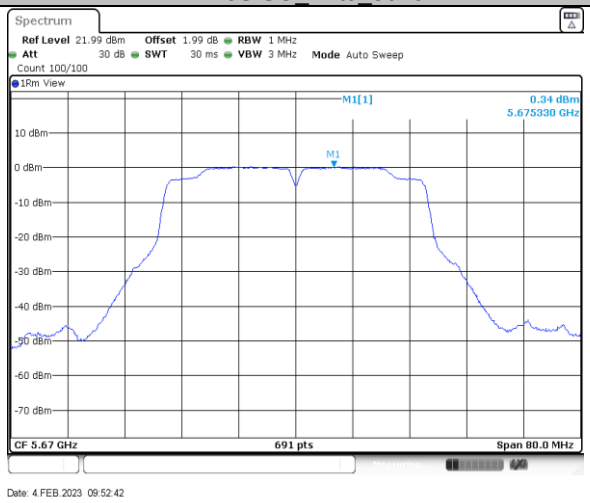

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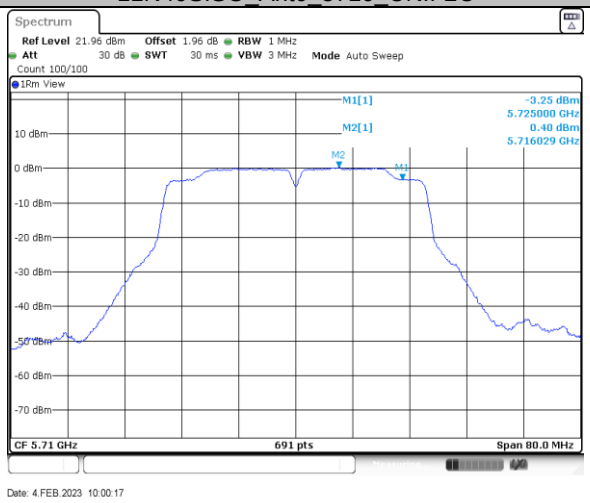

11N40SISO_Ant0_5710_UNII-3

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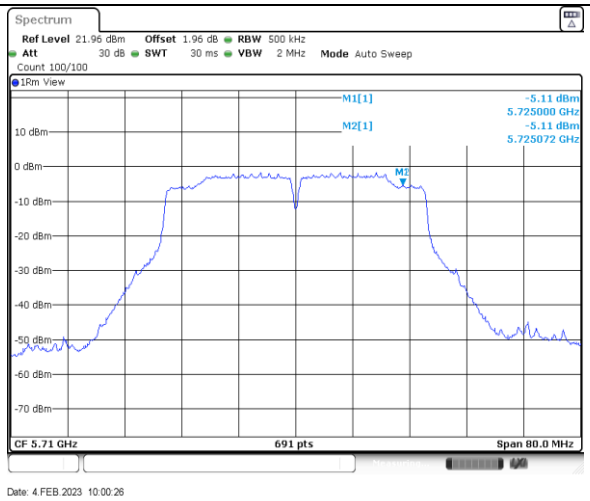
Building 12 & 13, Zhiheng Wisdomland Business Park, Guankou Erlu, Nantou, Nanshan District, Shenzhen, Guangdong, China Tel. +86 755 8828 6998, Fax: +86 755 8828 5299



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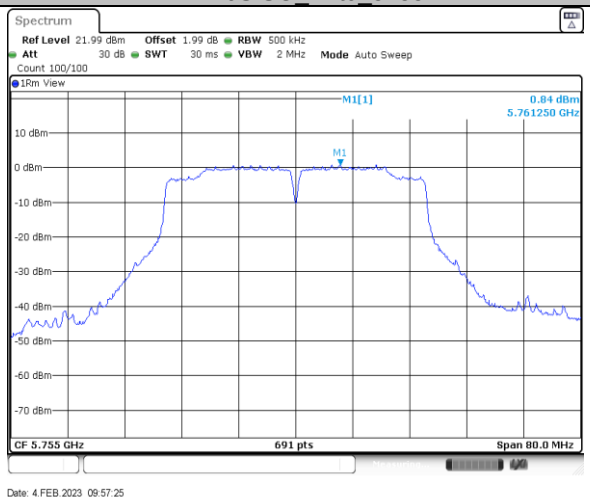

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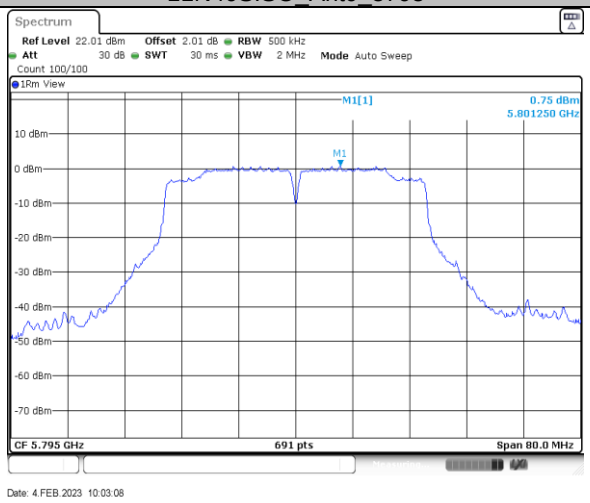

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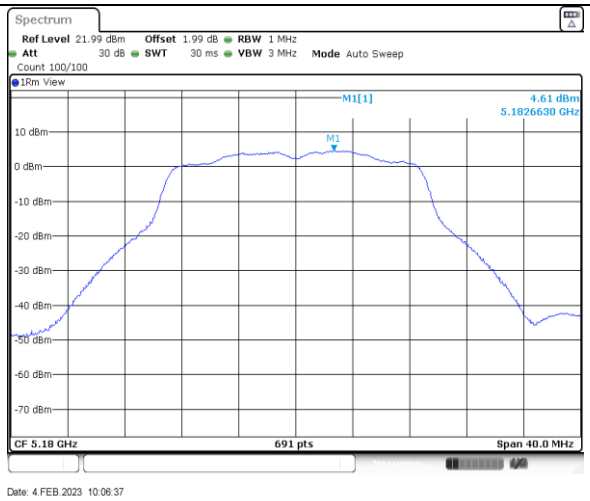
TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
Building 12 & 13, Zhiheng Wisdomland Business Park, Guankou Erlu, Nantou, Nanshan District, Shenzhen, Guangdong, China Tel. +86 755 8828 6998, Fax: +86 755 8828 5299



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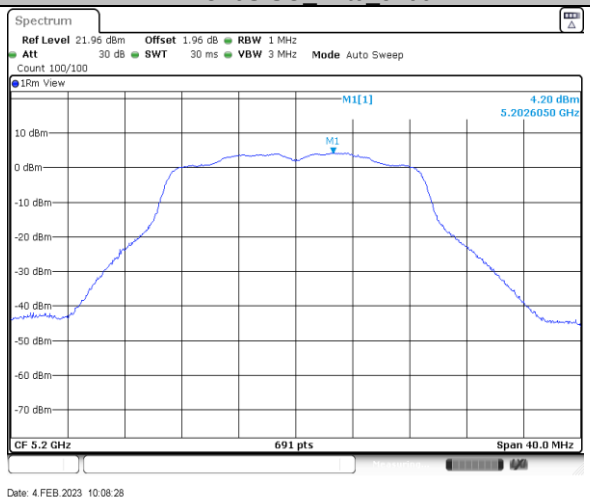

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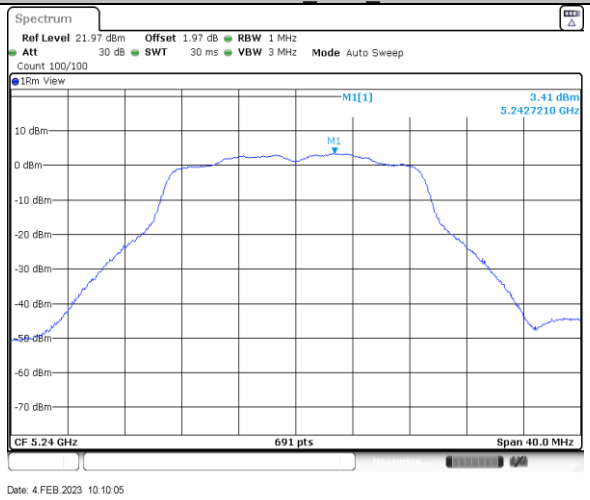

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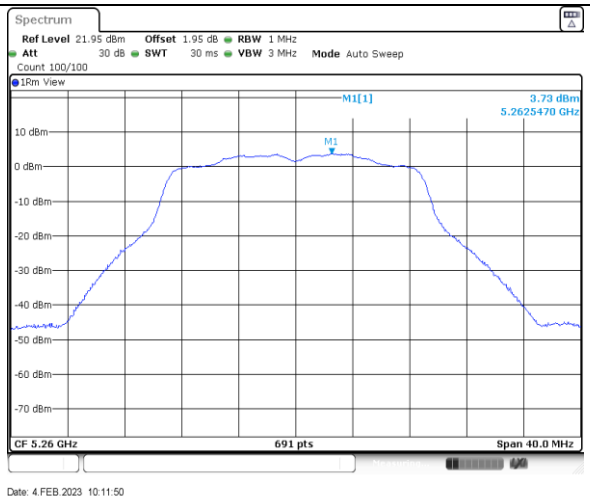

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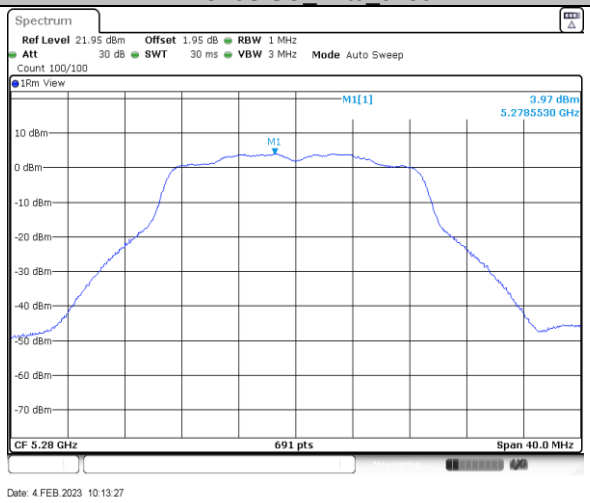

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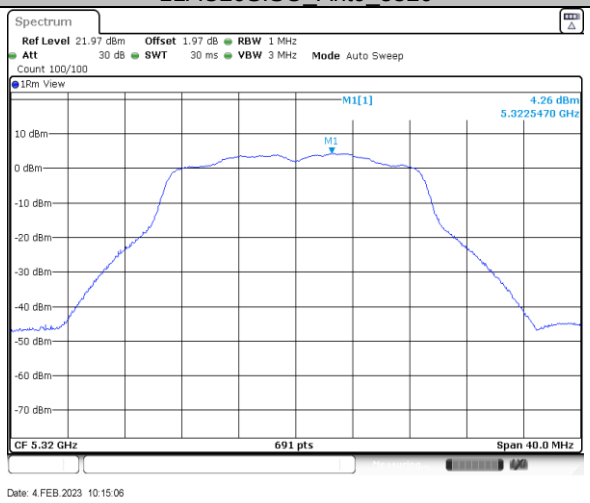

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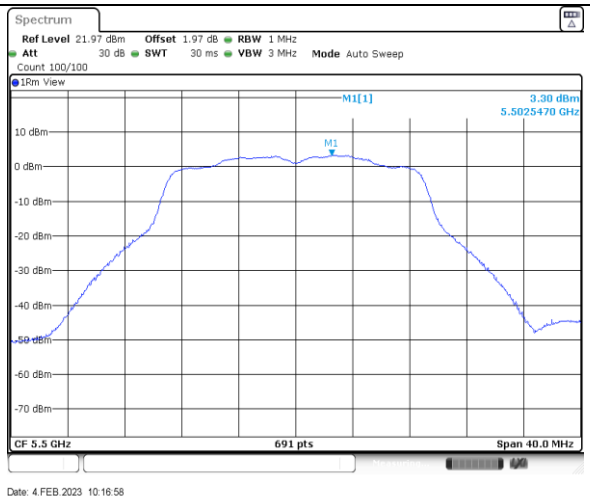

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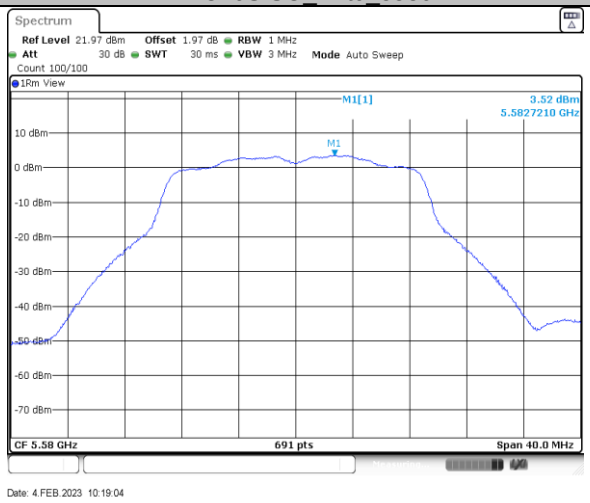

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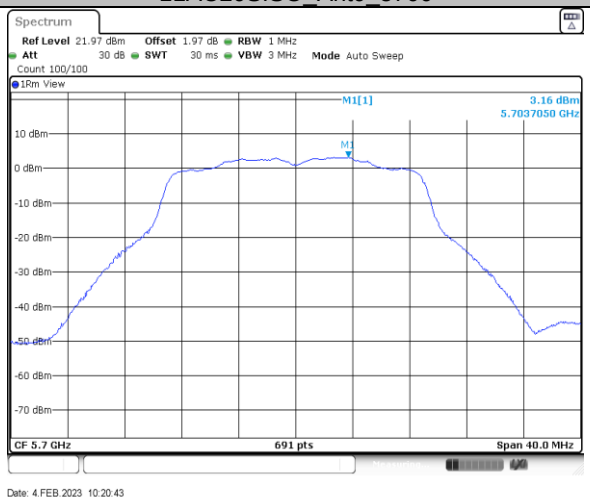

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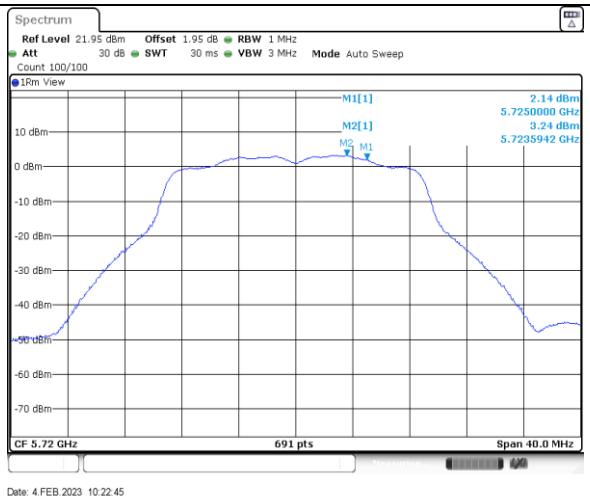

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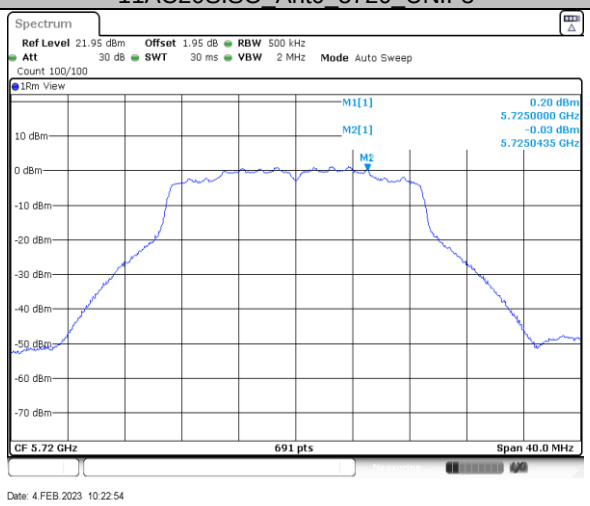

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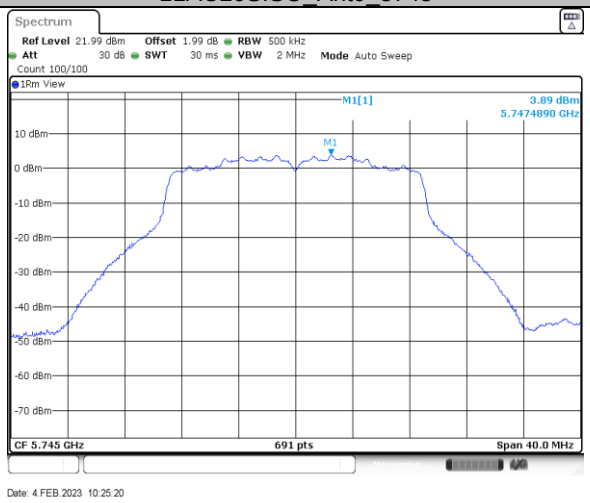

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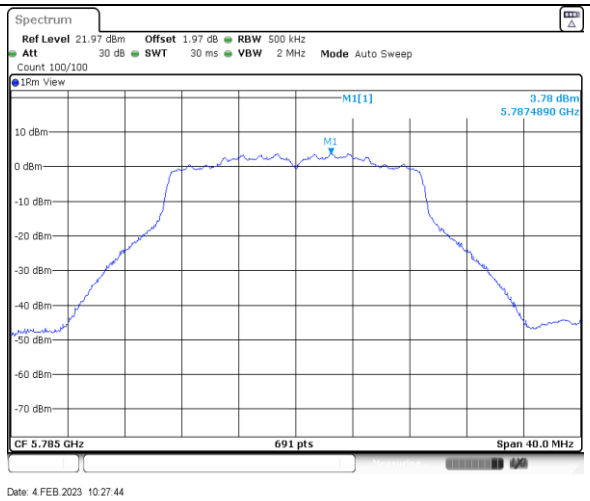

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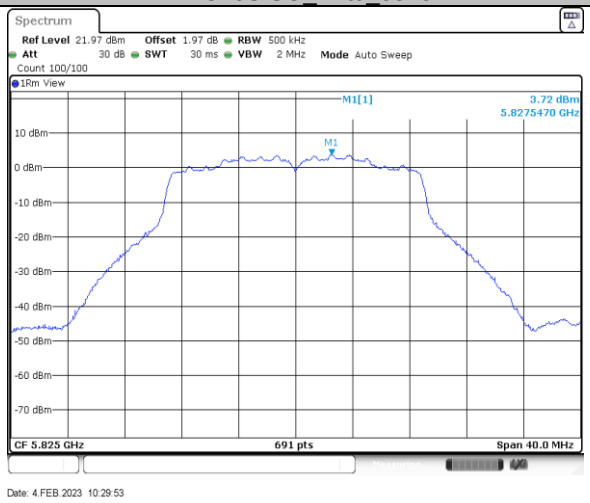

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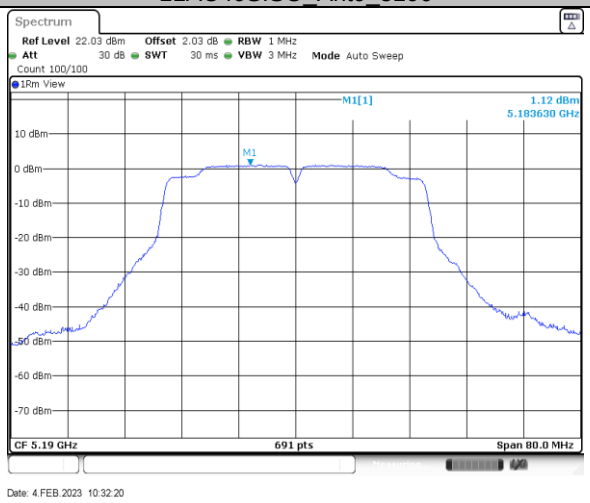

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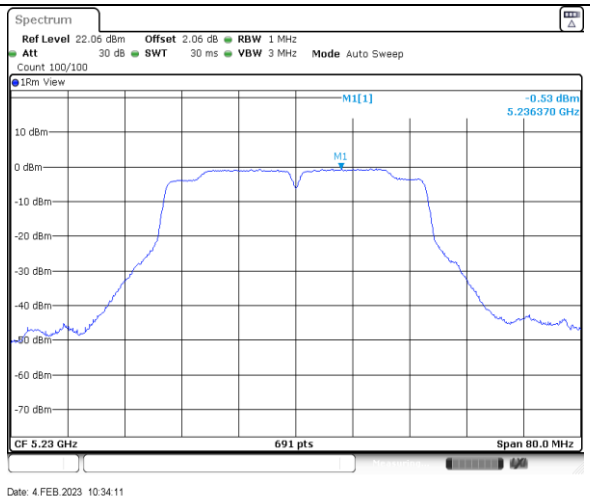

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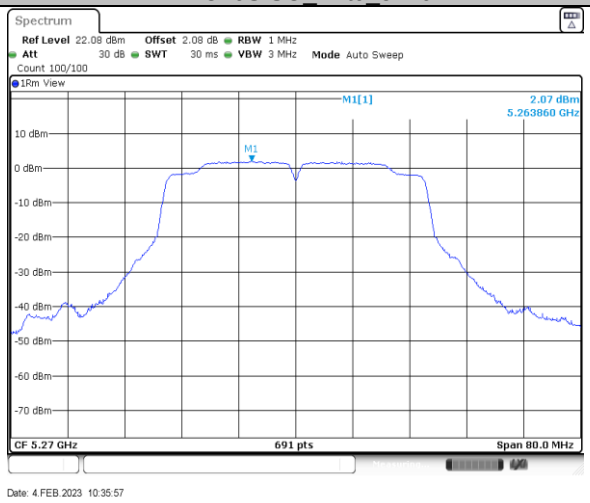

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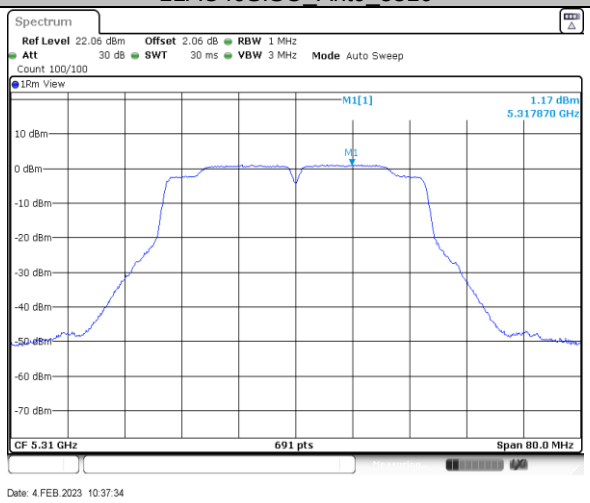

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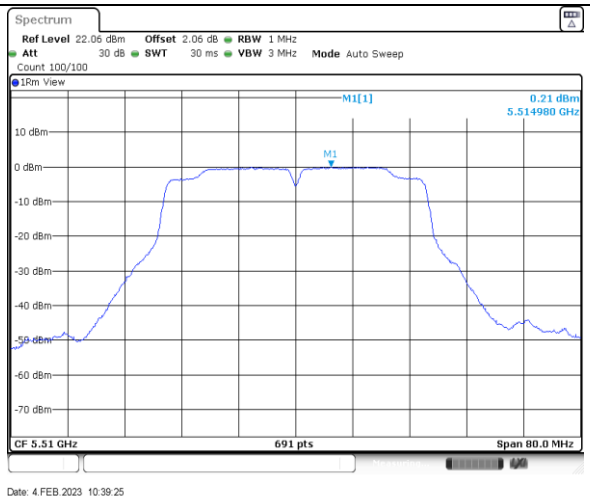

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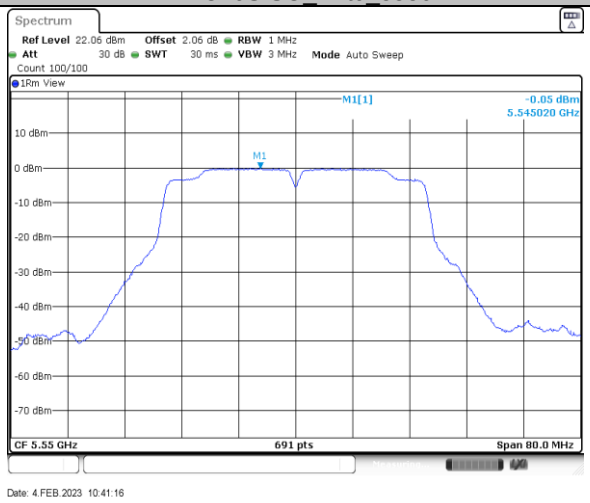

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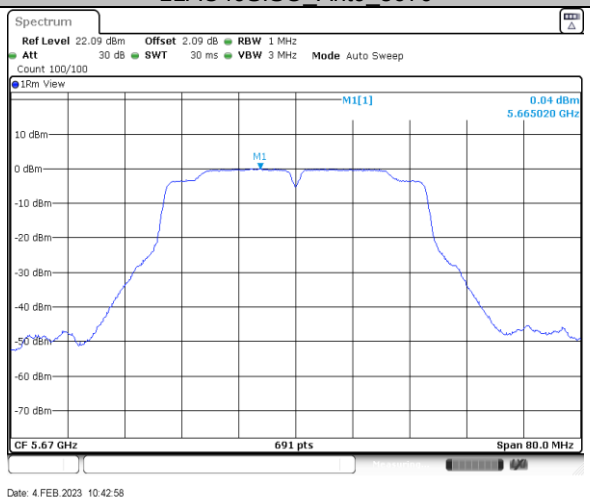

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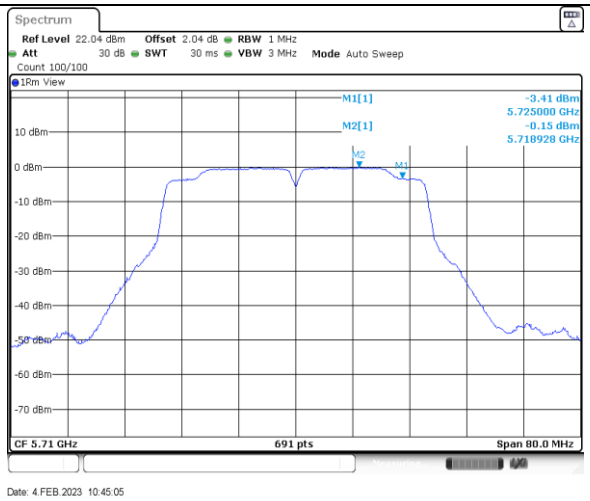

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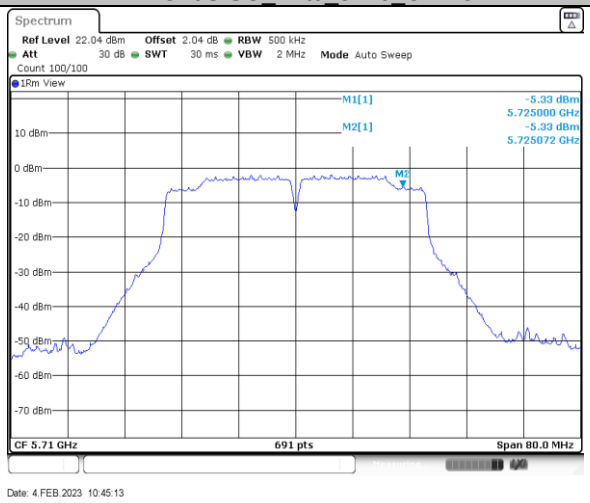

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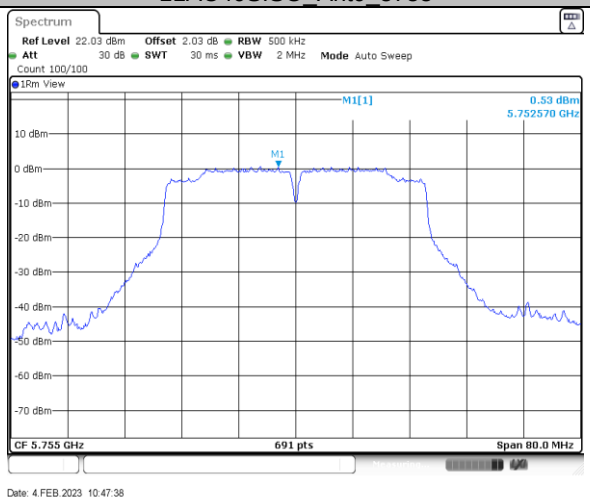

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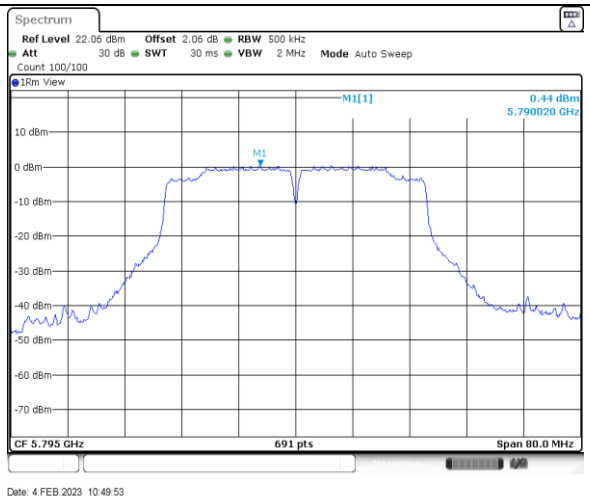

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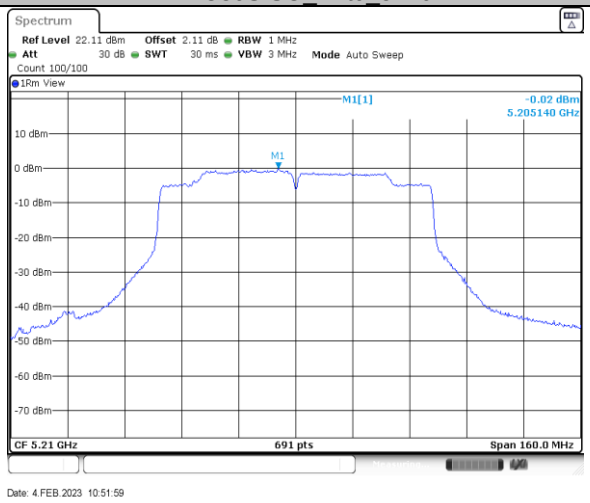

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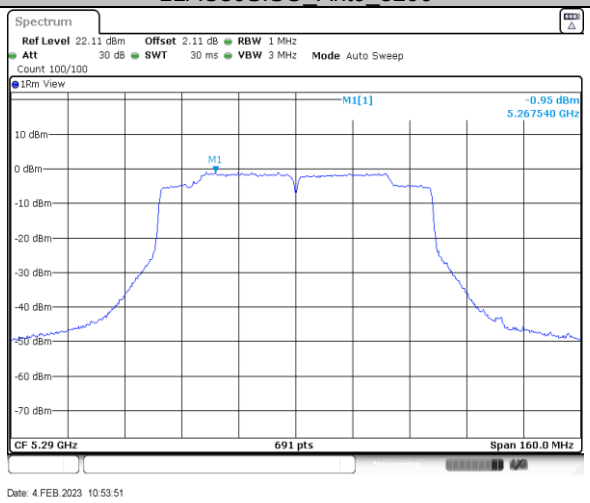

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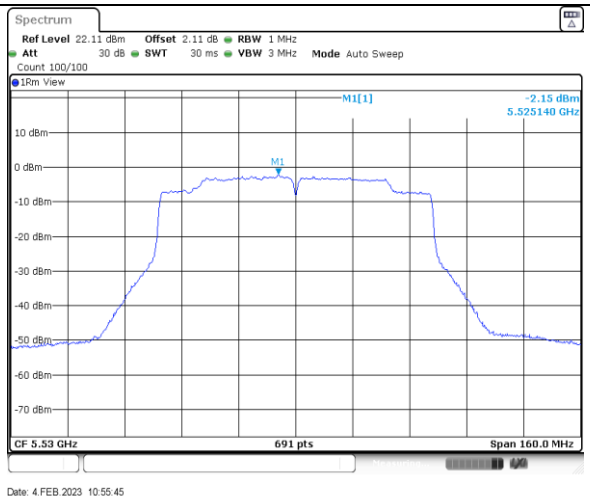

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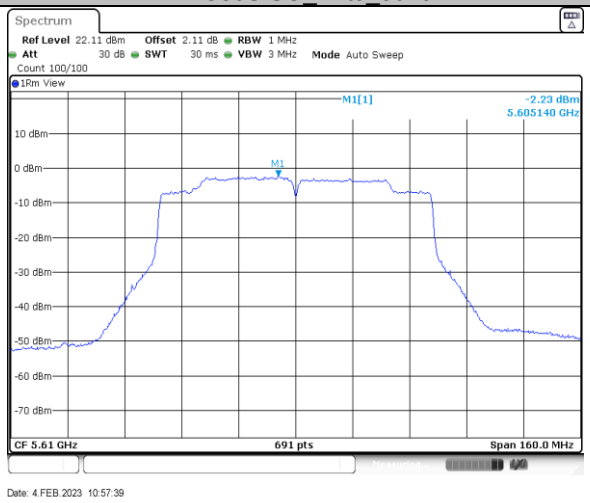

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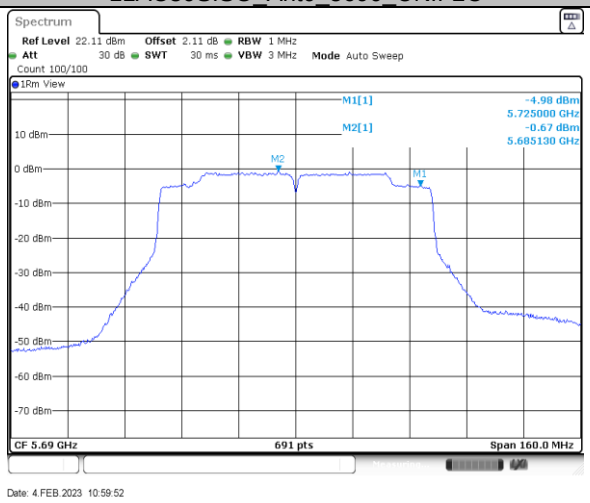

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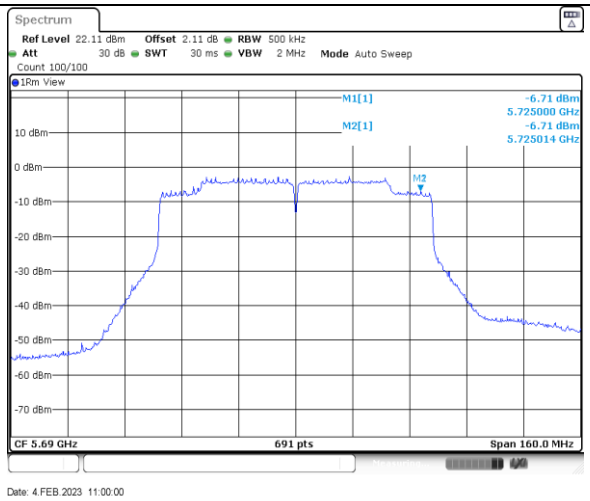

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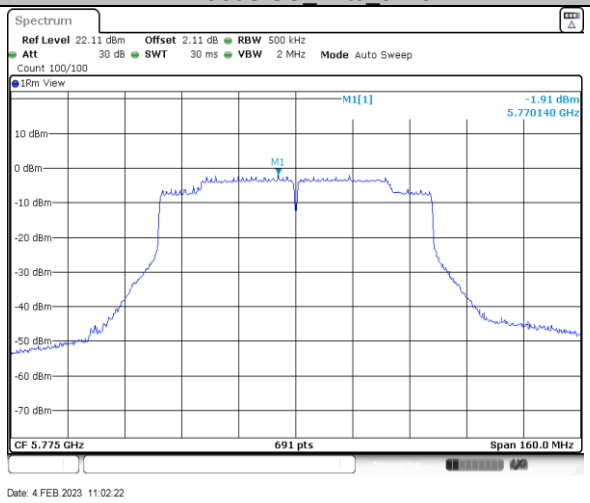

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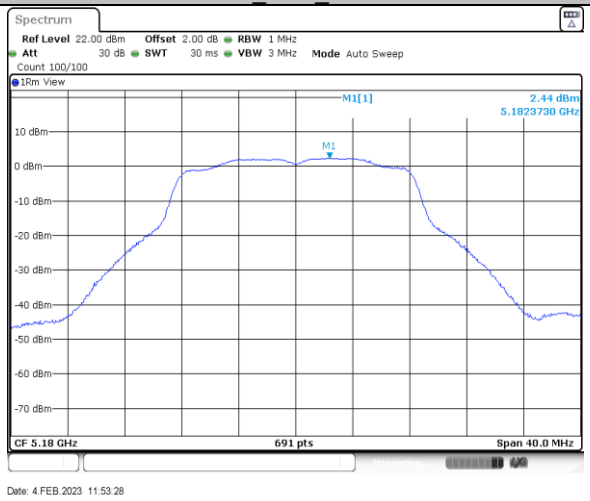

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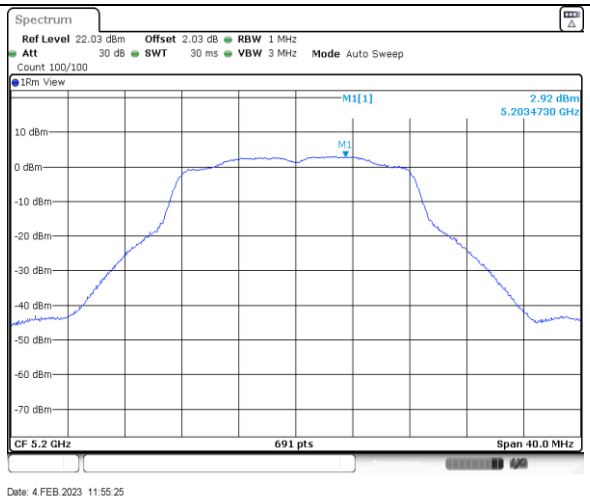

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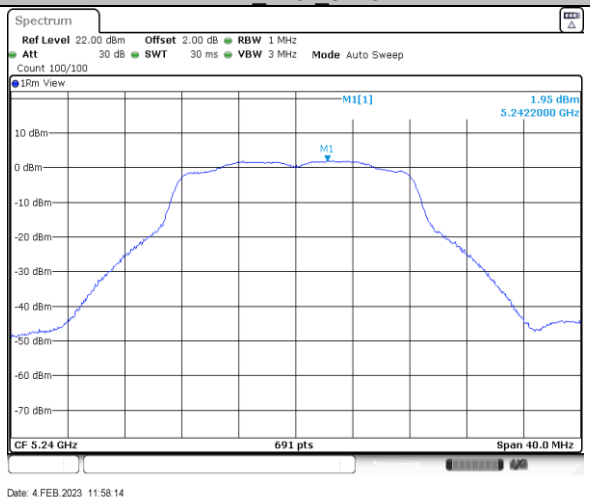

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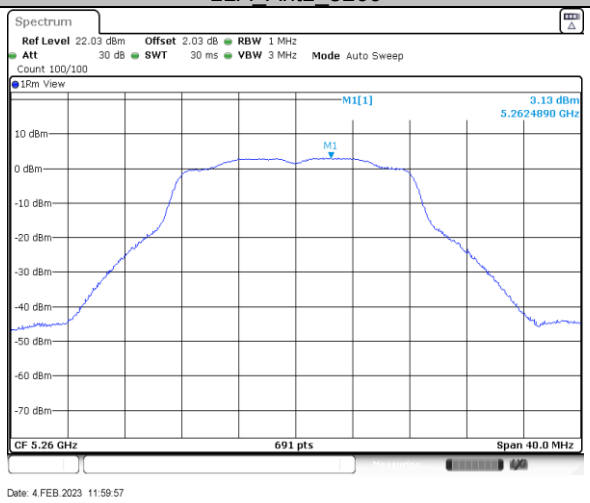

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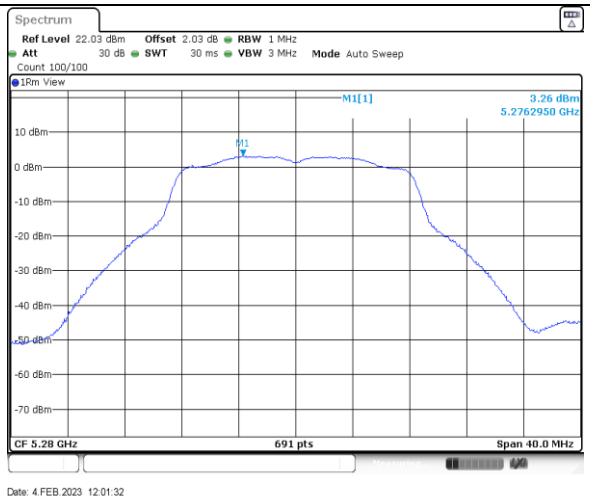

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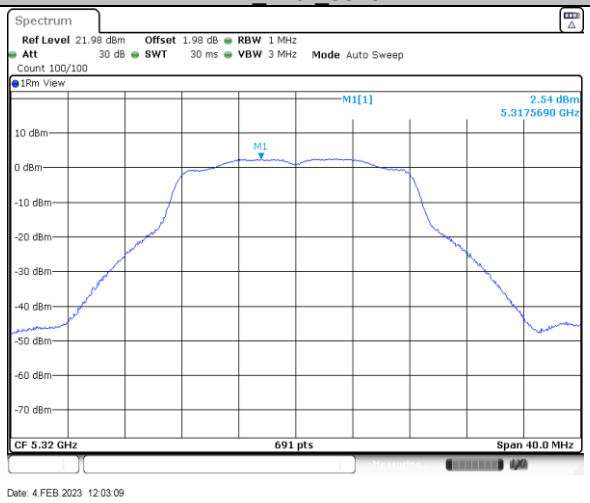

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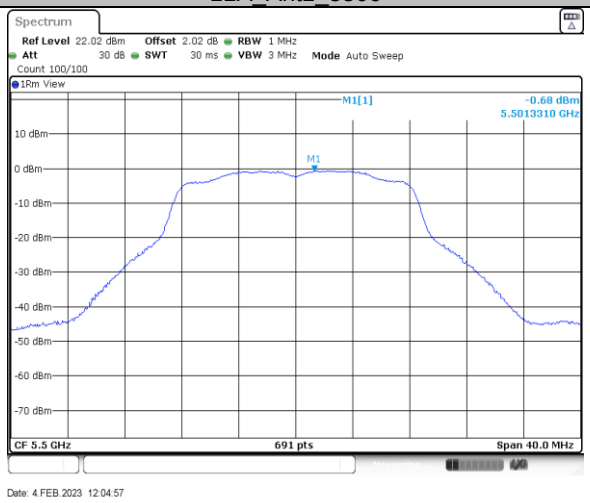

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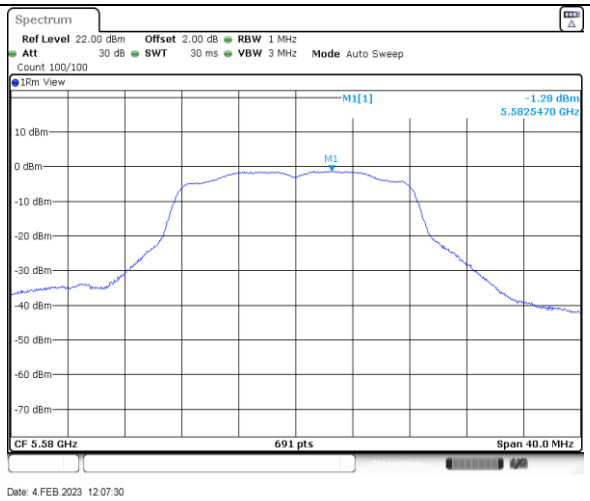

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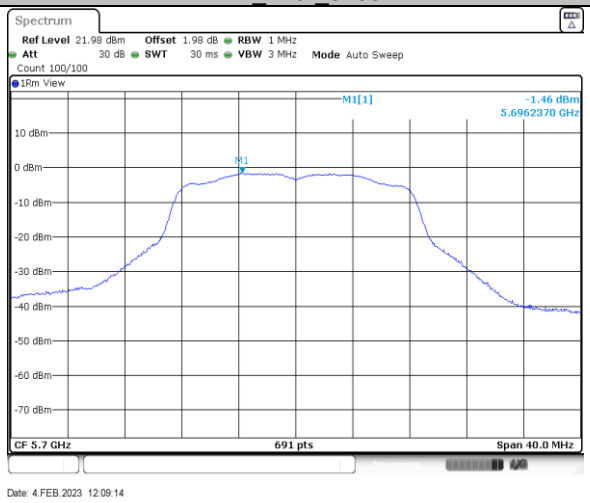
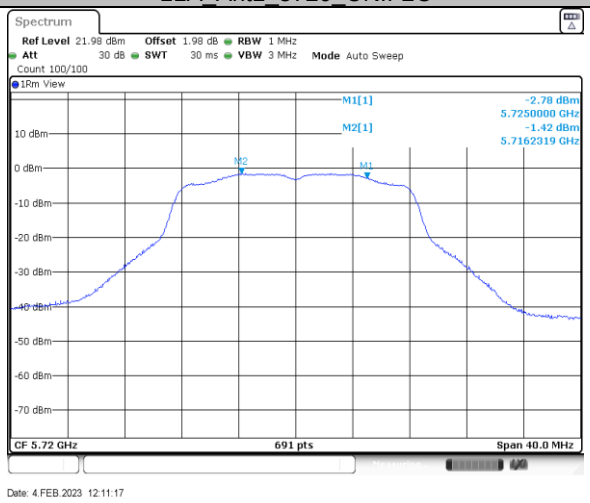


11A_Ant1_5720_UNII-2C



11A_Ant1_5720_UNII-3

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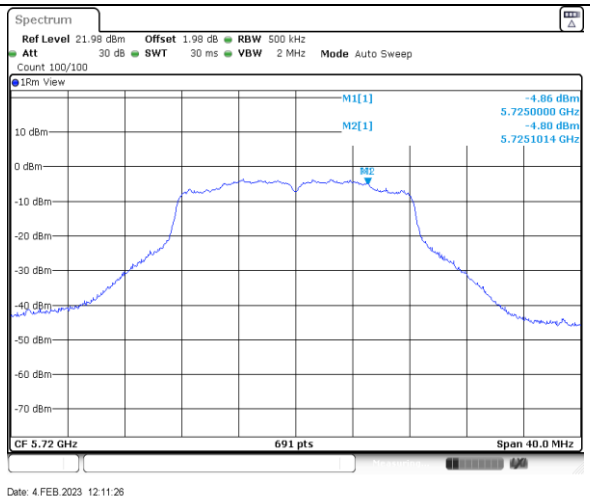
Building 12 & 13, Zhiheng Wisdomland Business Park, Guankou Erlu, Nantou, Nanshan District, Shenzhen, Guangdong, China Tel. +86 755 8828 6998, Fax: +86 755 8828 5299



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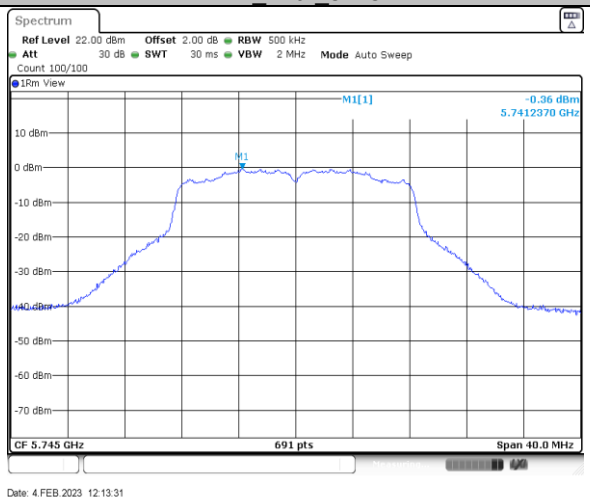

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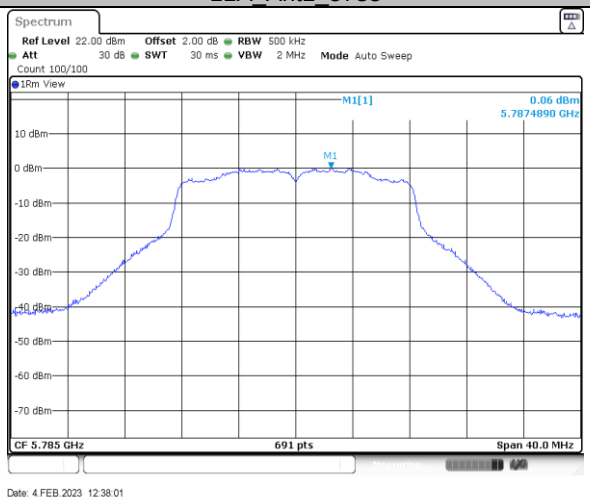

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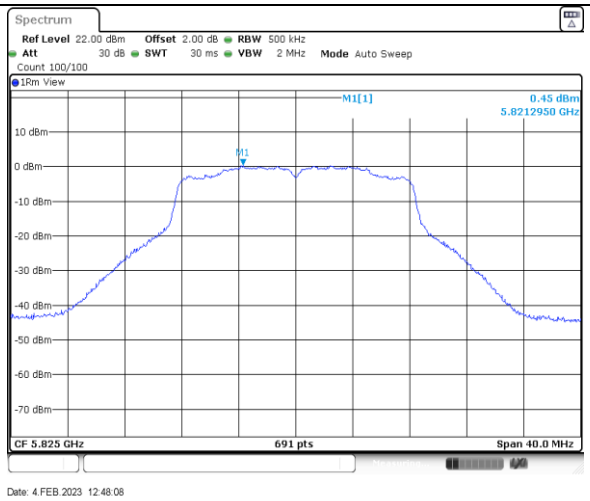

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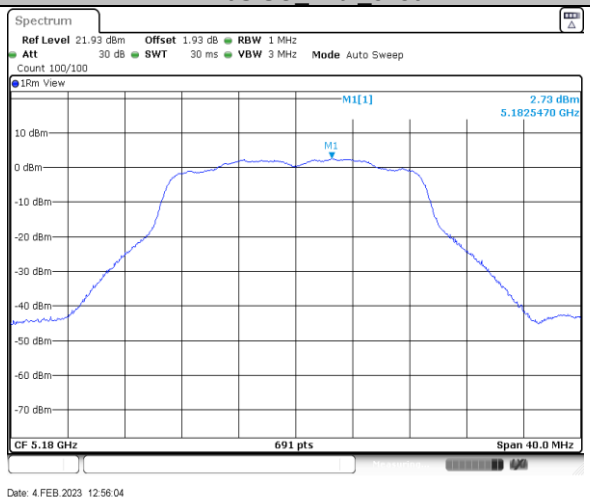

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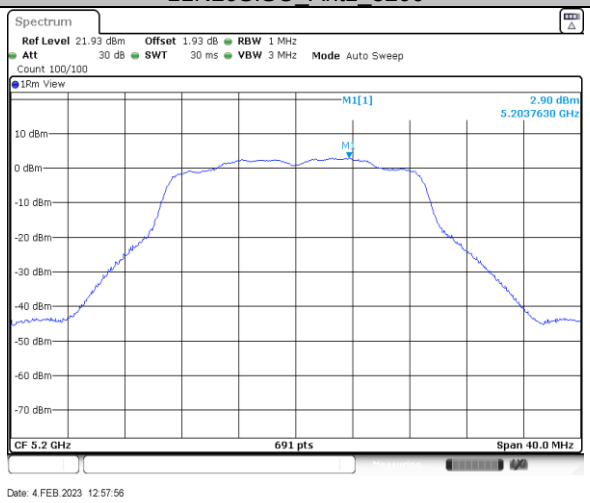

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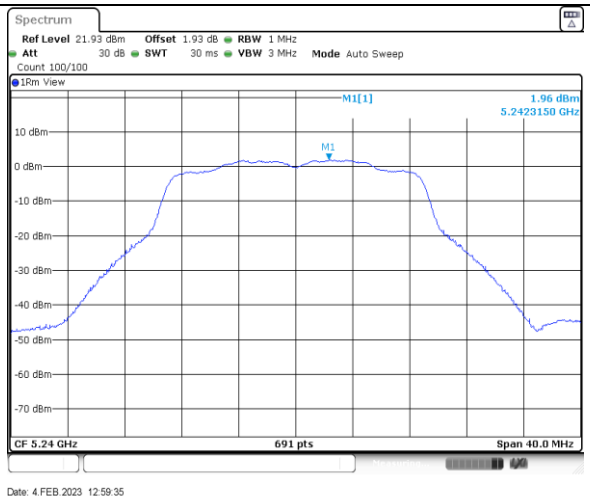

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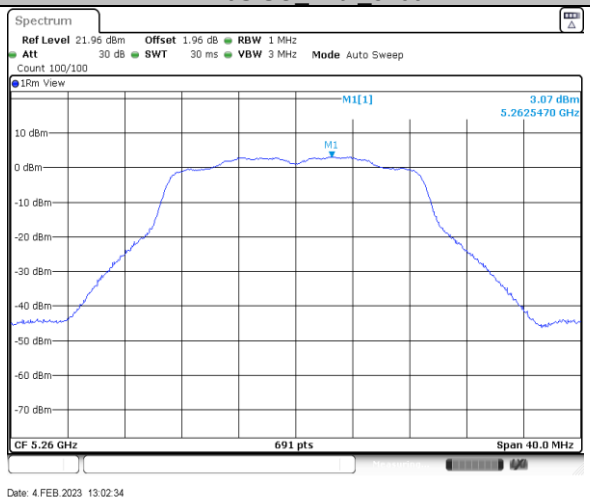

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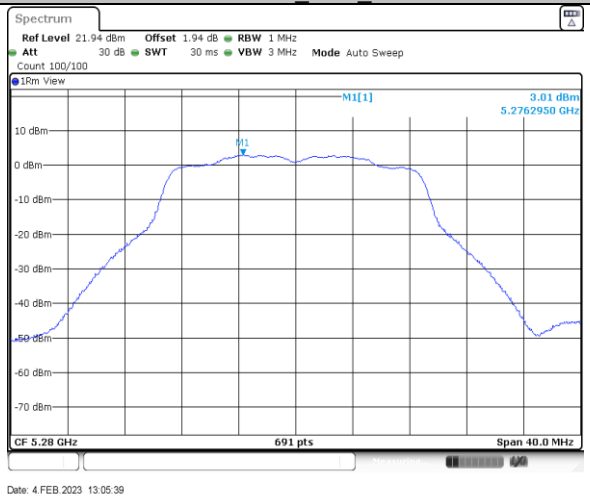

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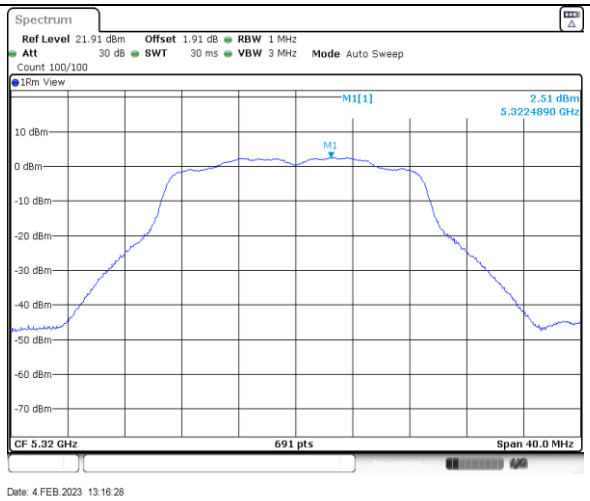

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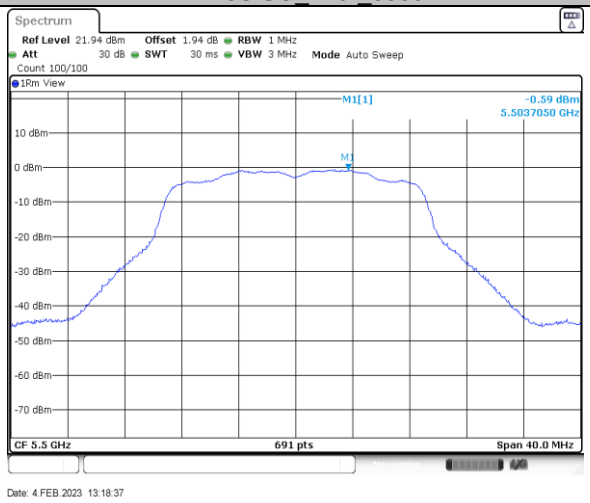

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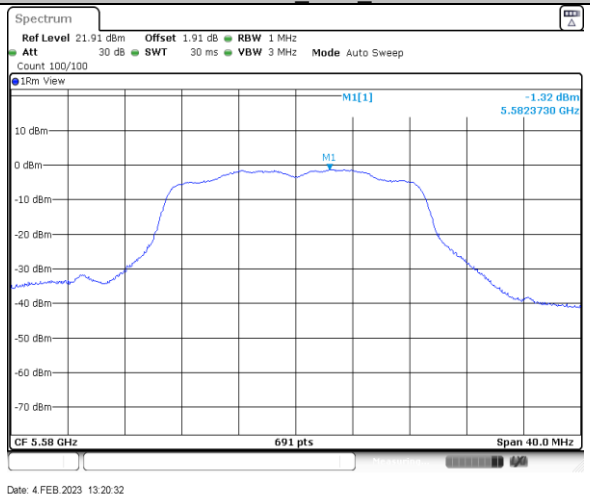

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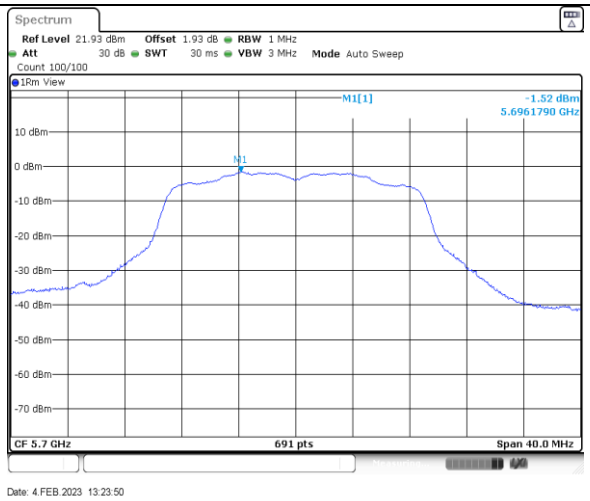

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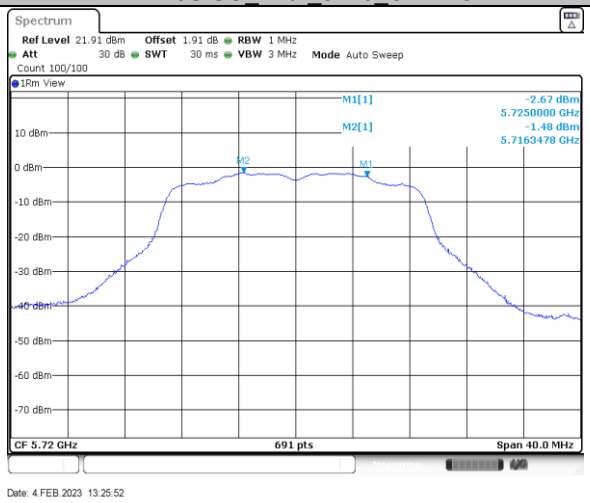

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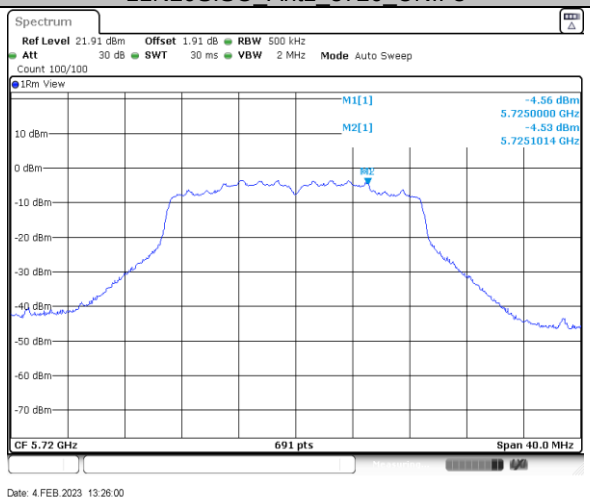

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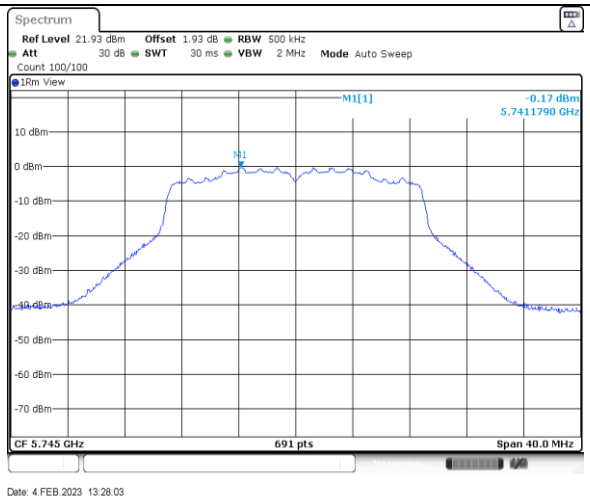

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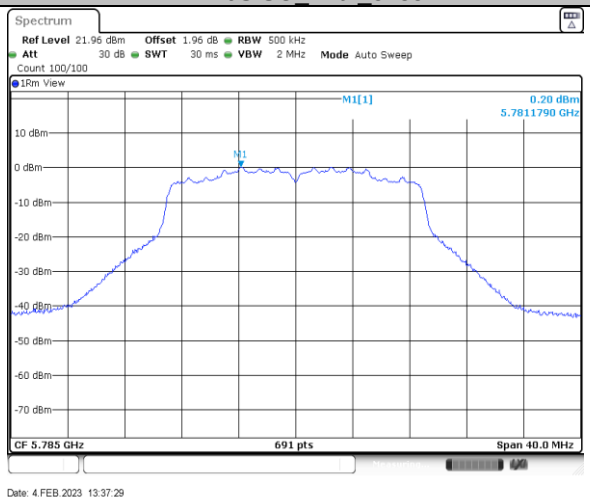

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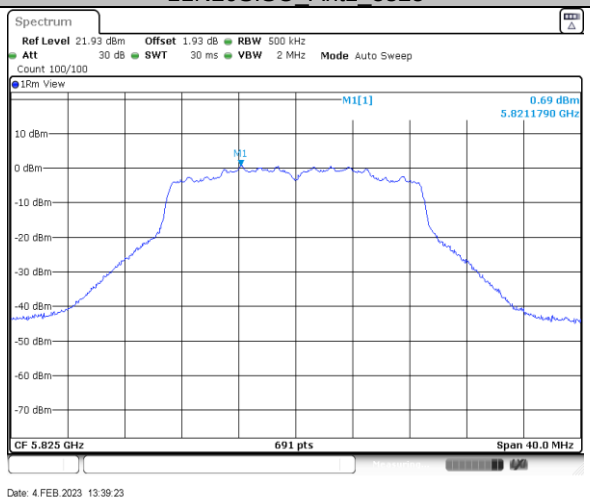

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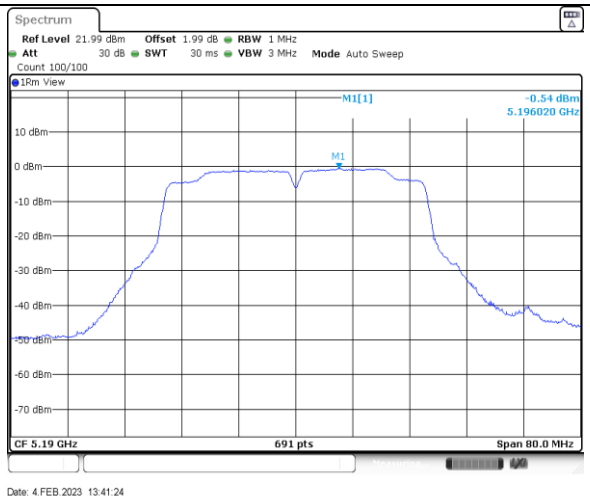

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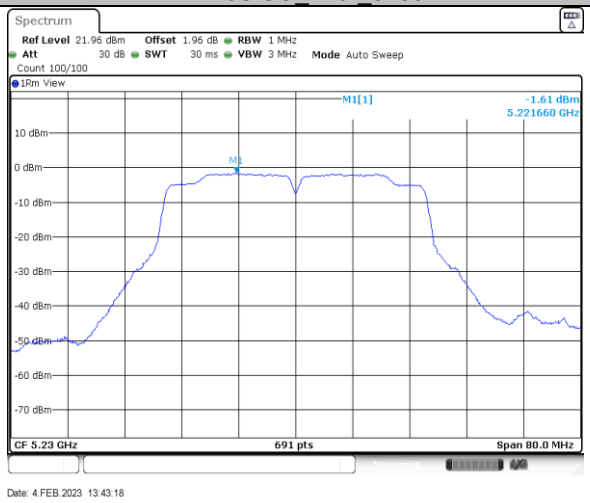

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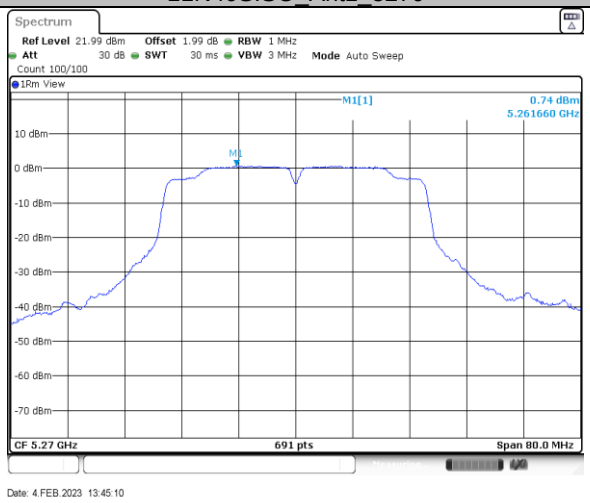

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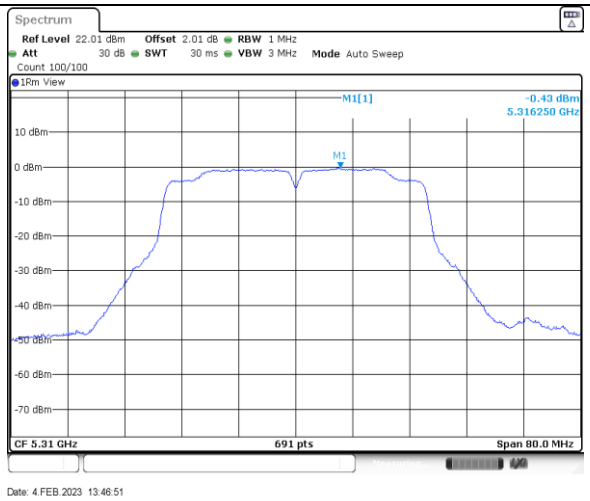

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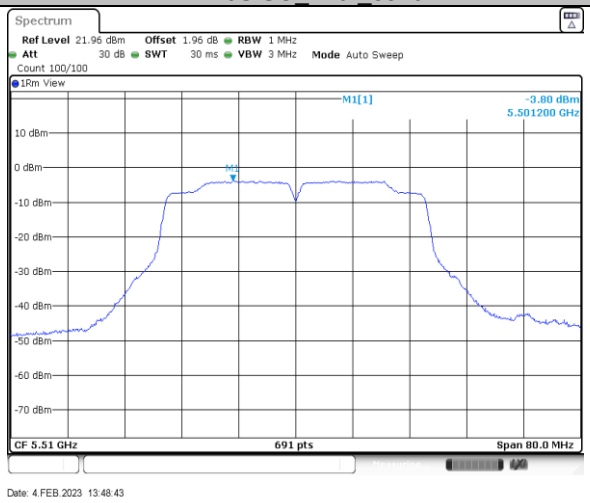

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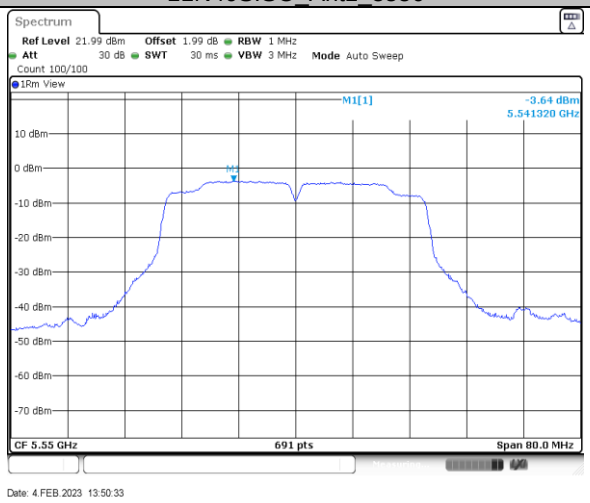

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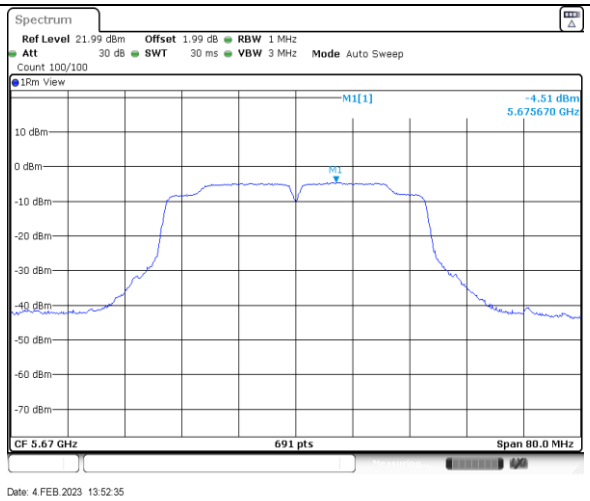

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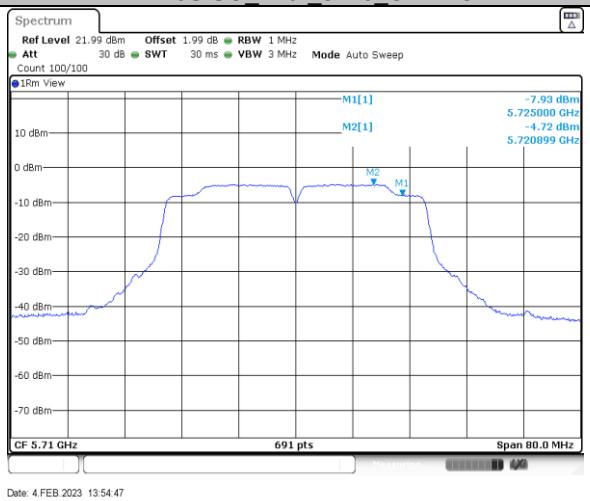

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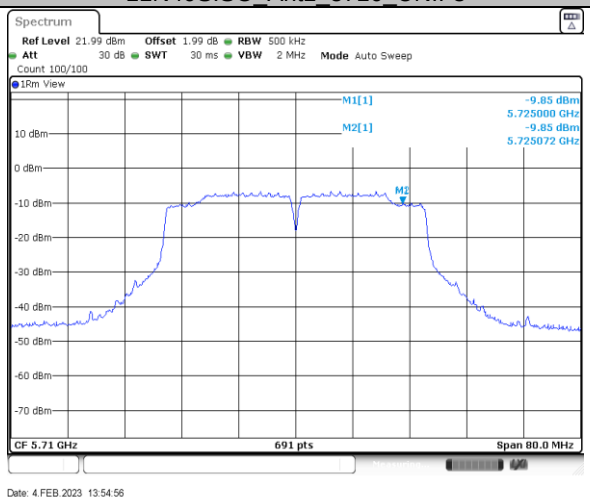
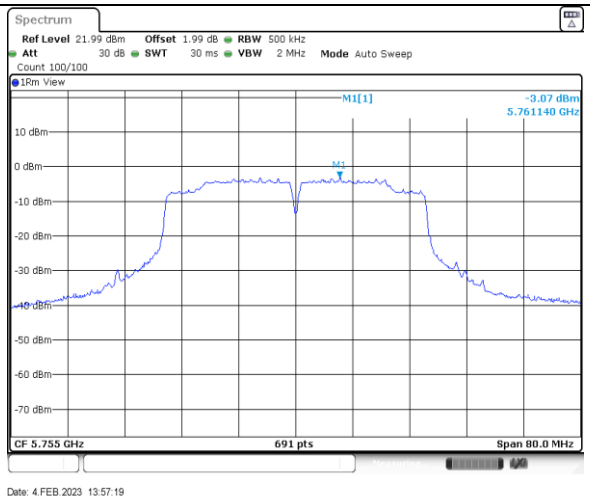


11N40SISO_Ant1_5755



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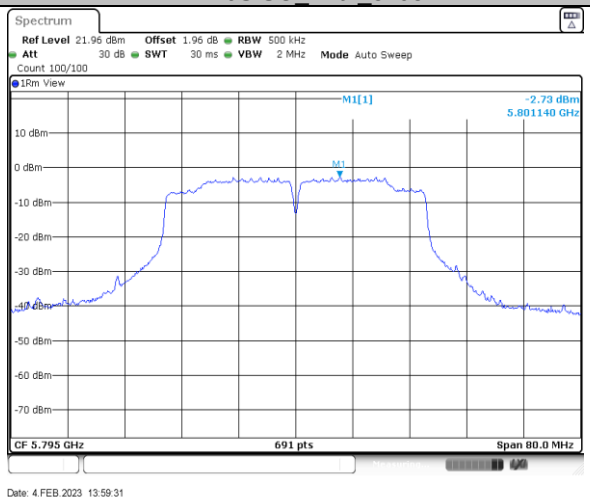

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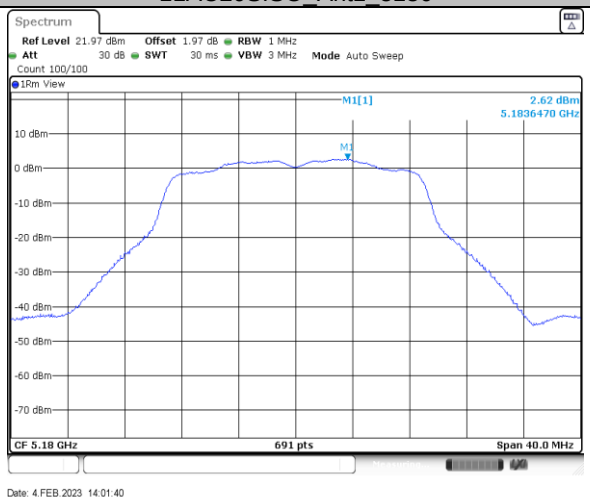

11AC20SISO_Ant1_5200

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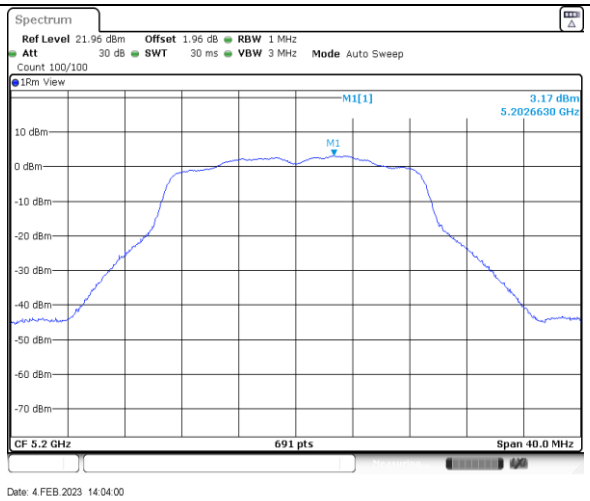

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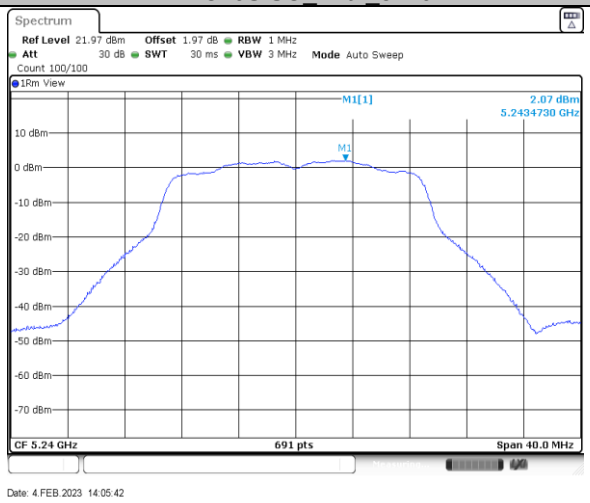

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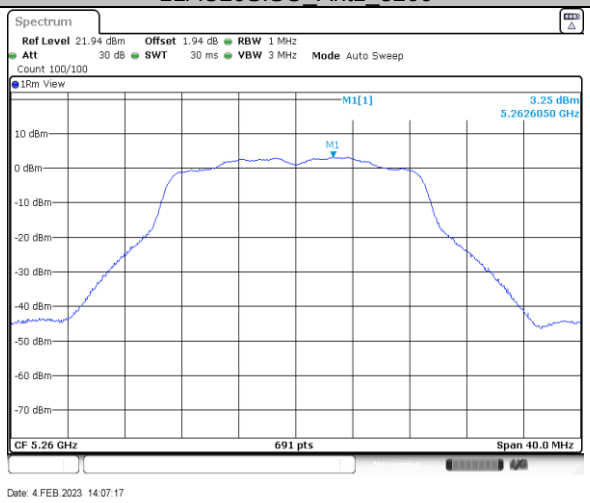

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