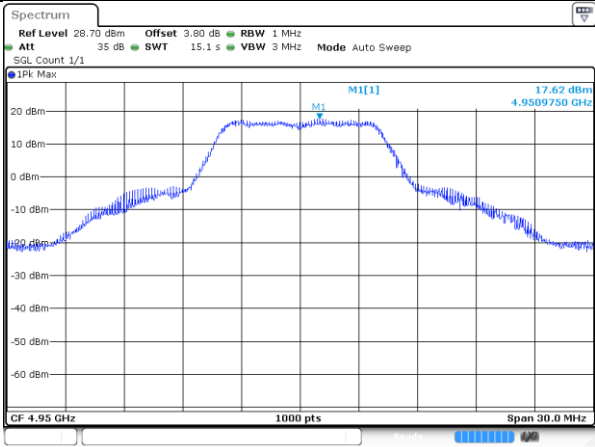
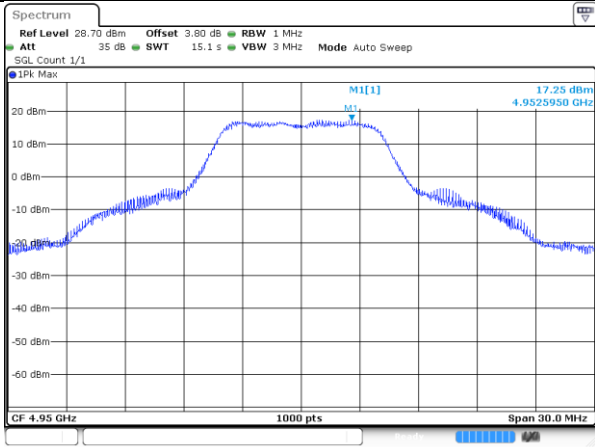




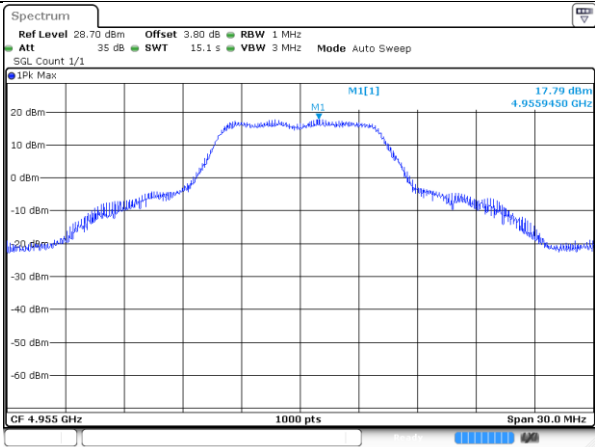
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4950-10MHz-802.11a-2-a



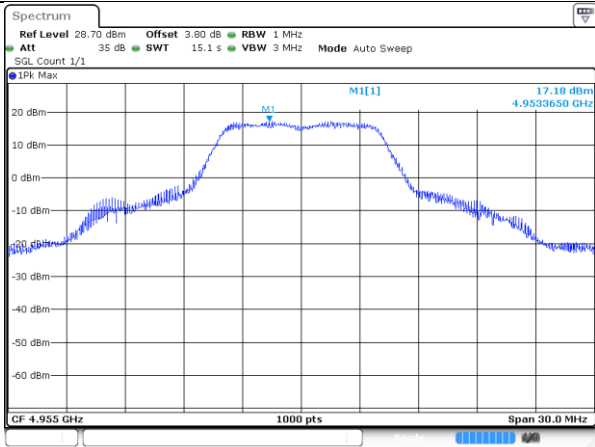
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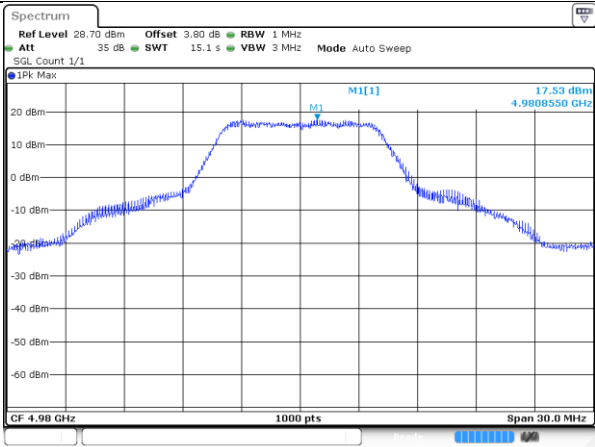
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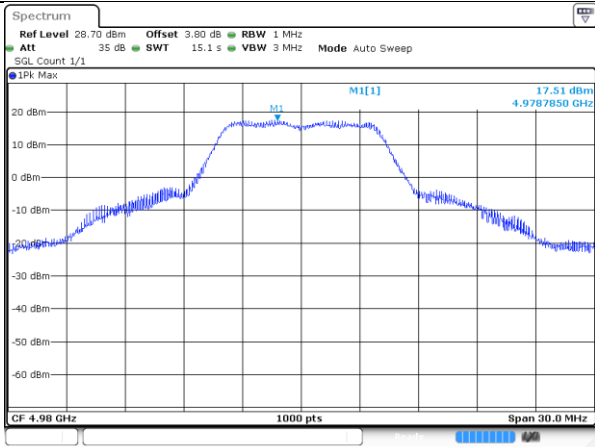
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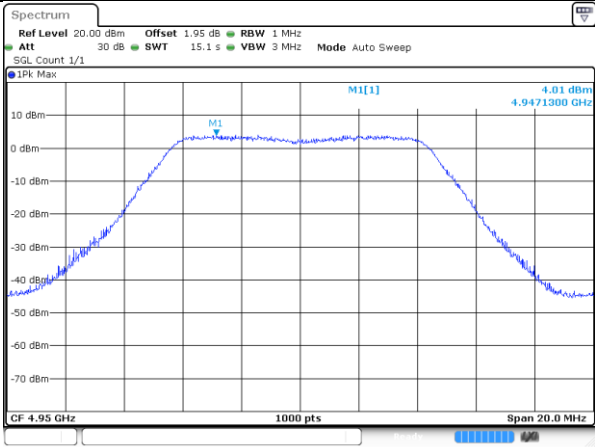
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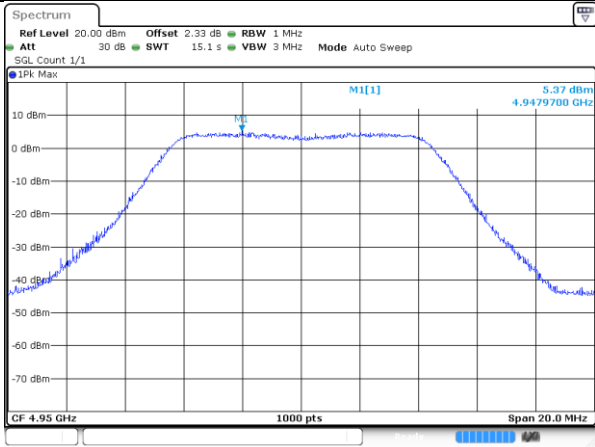
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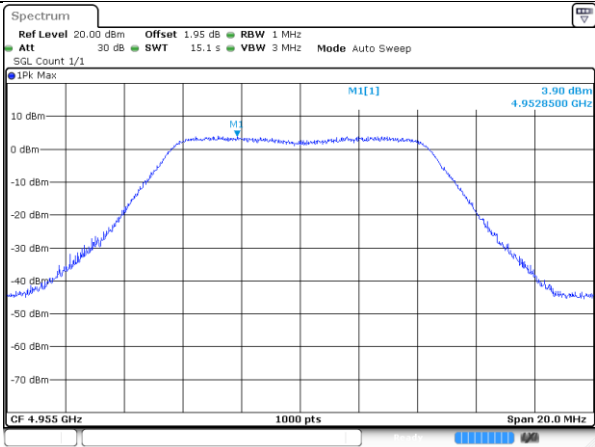
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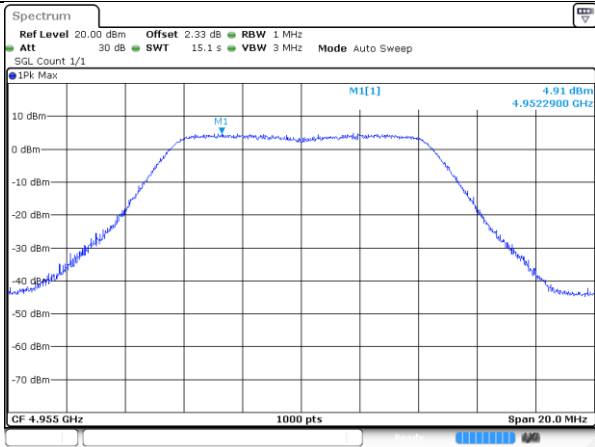
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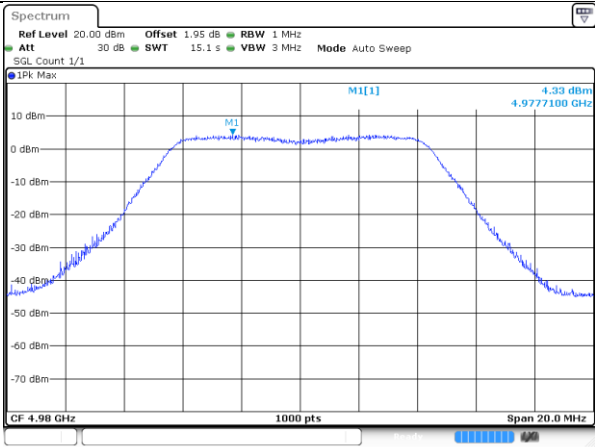
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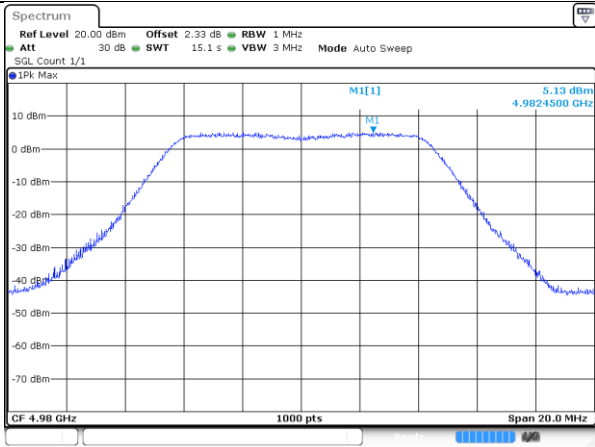
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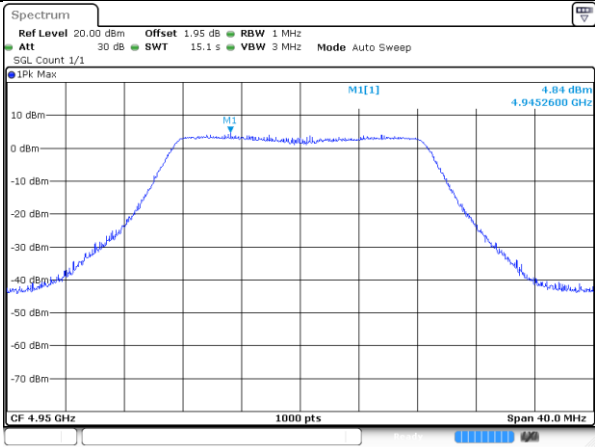
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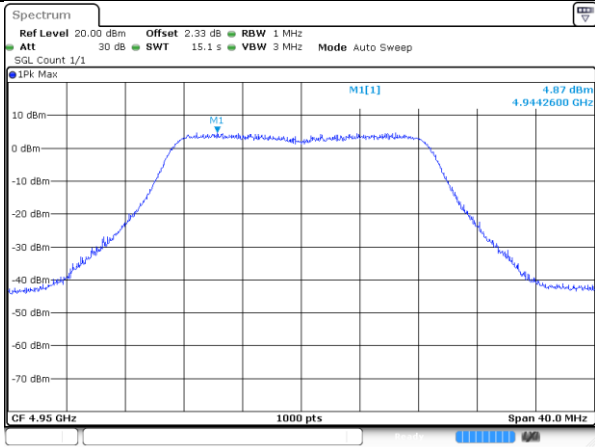


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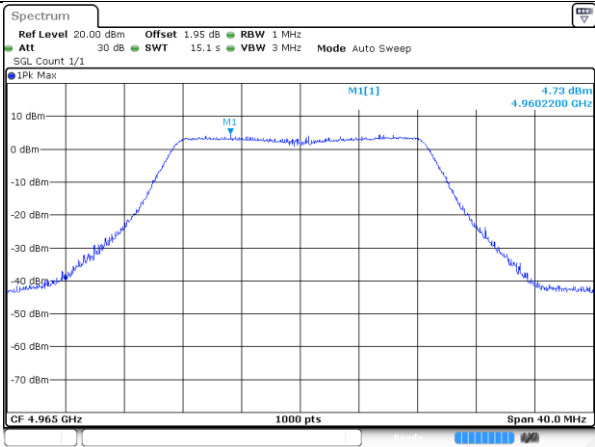
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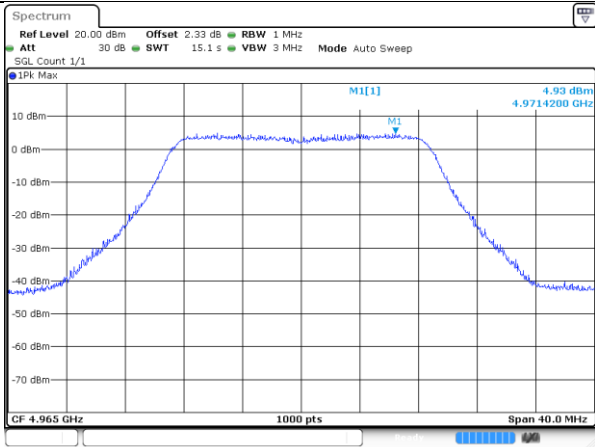
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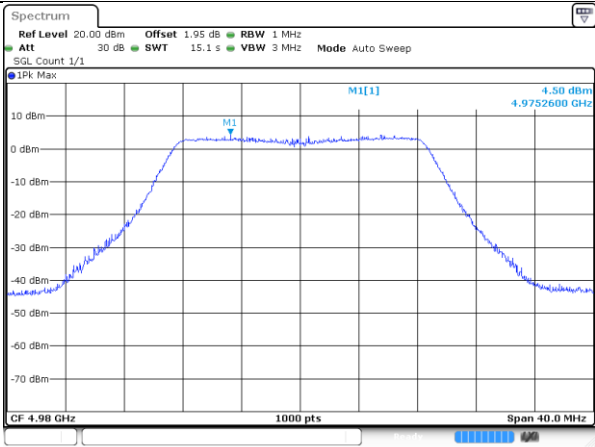
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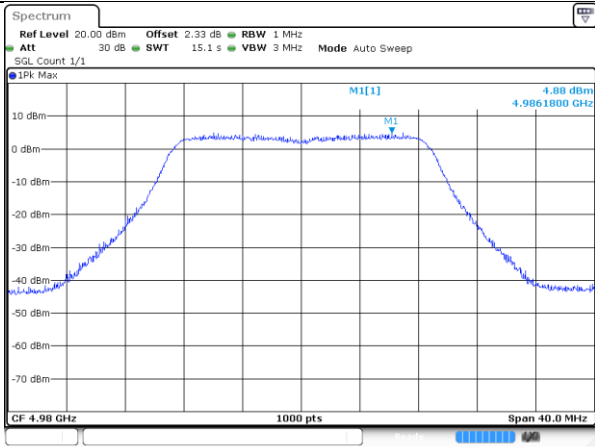
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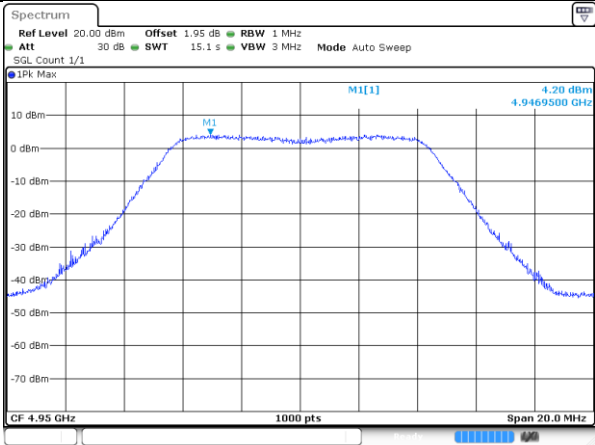
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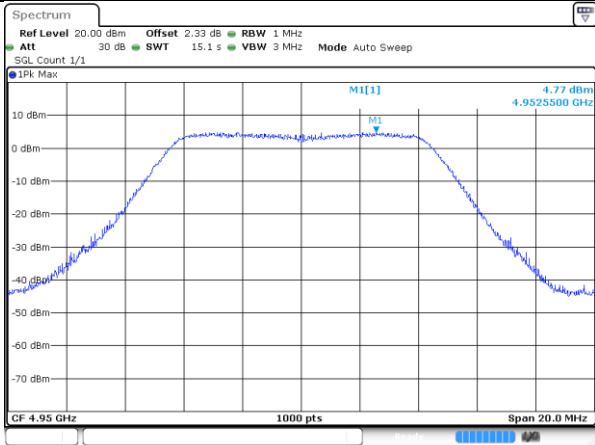


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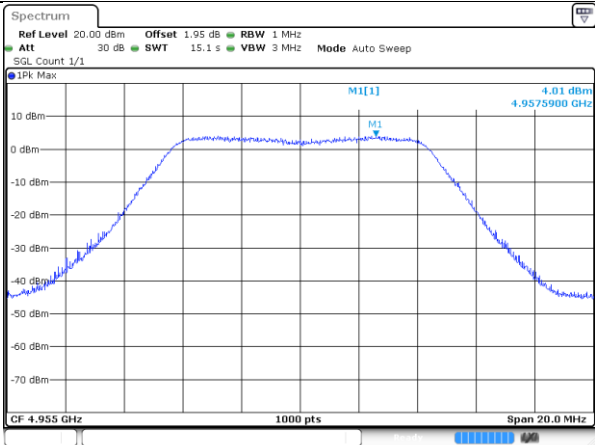
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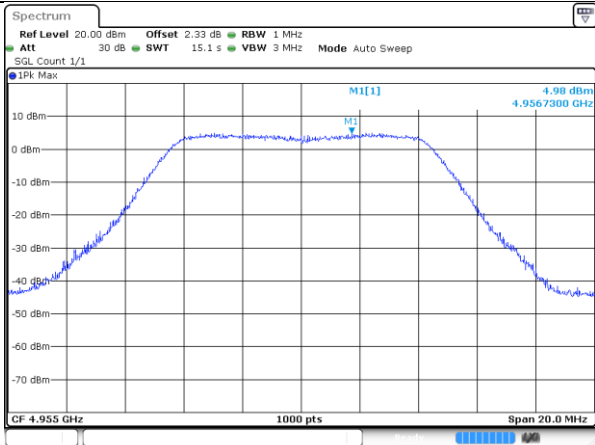
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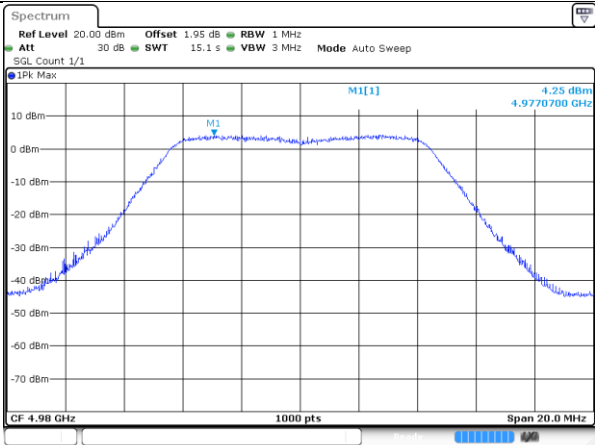
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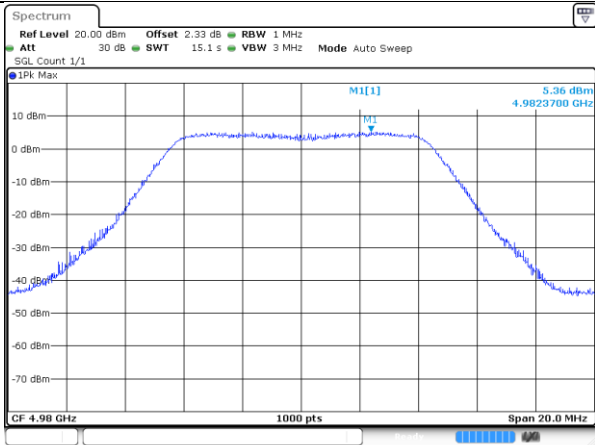
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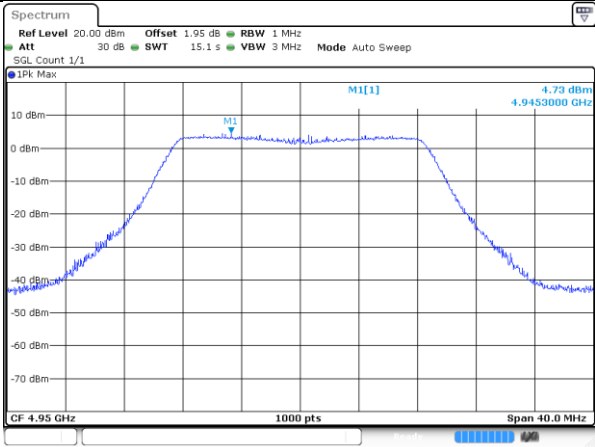
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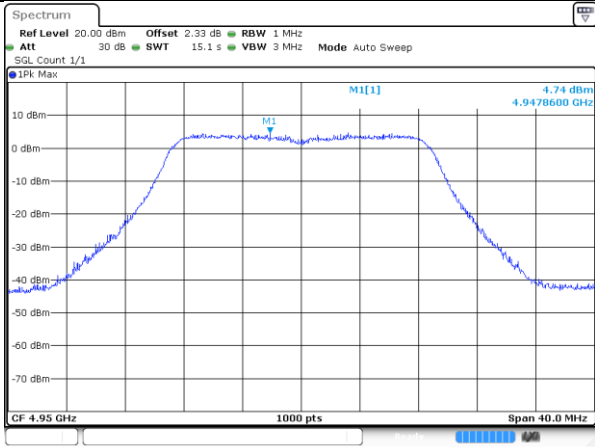
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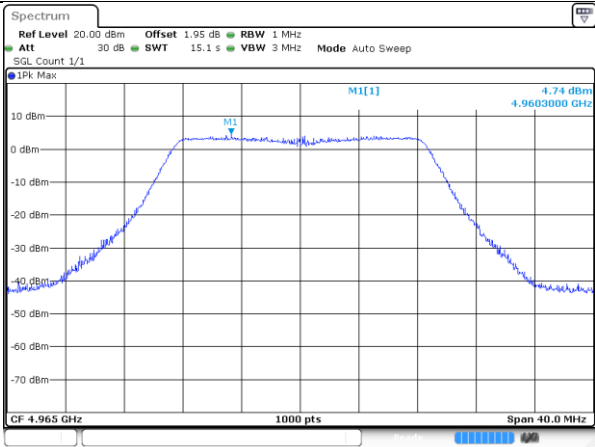
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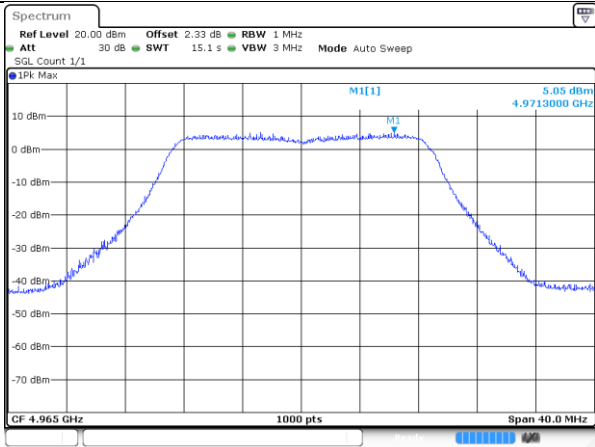
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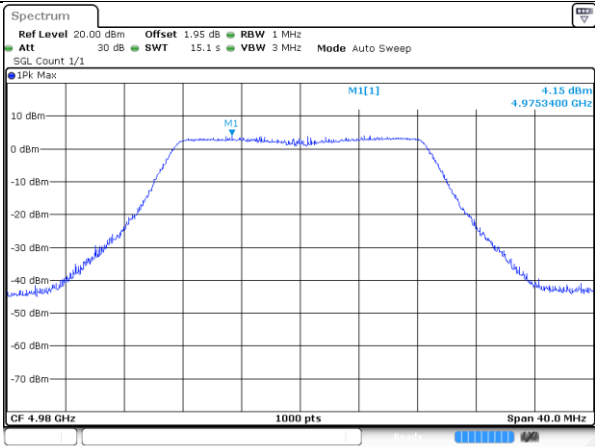
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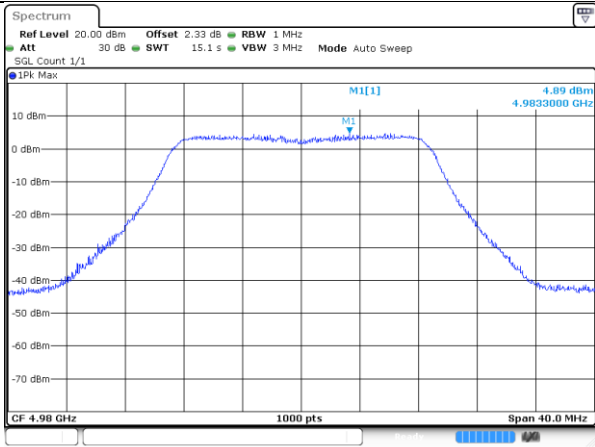
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4965-20MHz-802.11ac-2-b



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4980-20MHz-802.11ac-2-a



Date: 17 MAY 2024 19:53:15

4980-20MHz-802.11ac-2-b

7 FCC §90.1215 & RSS-111 § 5.4 – Transmitter Peak to Average Ratio

7.1 Applicable Standards

FCC §90.1215: The transmitting power of stations operating in the 4940–4990 MHz band must not exceed the maximum limits in this section. (e) The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

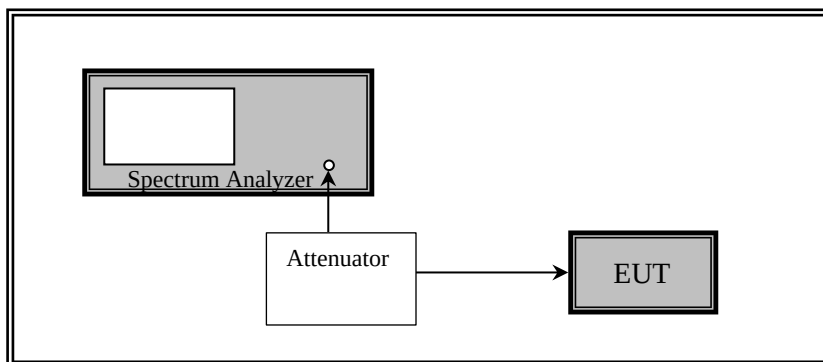
RSS-111, Clause 5.4: The PAPR of the equipment shall not exceed 13 dB for more than 0.1% of the time, using a signal that corresponds to the highest PAPR during periods of continuous transmission.

7.2 Test Procedure

ANSI C63.26-2015 section 5.2.3.5.

ANSI C63.26-2015 section 5.2.4.

7.3 Test Setup Block Diagram



7.4 Test Equipment List and Details

BACL No.	Manufacturers	Descriptions	Models	Serial Numbers	Calibration Dates	Calibration Interval
912	Rhode & Schwarz	Signal Analyzer	FSV40	1321.3008k39 -101203-UW	2023-06-02	13 months
-	-	RF Cable	-	-	Each time ¹	N/A
-	-	20dB Attenuator	-	-	Each time ¹	N/A

Note¹: Equipment was calibrated for each test.

Statement of Traceability: **BACL Corp.** attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 “A2LA Policy on Metrological Traceability”.

7.5 Test Environmental Conditions

Temperature:	18.8° C
Relative Humidity:	34 %
ATM Pressure:	101.8 kPa

The testing was performed by Kevin Chau from 2024-04-16 to 2024-06-11 in the RF Site.

7.6 Test Results

15dBi SISO

Radio	Freq. (MHz)	Mode	Peak PSD (dBm/MHz)	Avg PSD (dBm/MHz)	Corrected Avg PSD (dBm/MHz)	Ratio (dB)	Limit (dB)
Radio 2	4950	802.11a10	14.38	-0.85	2.28	12.10	≤ 13
	4955		14.38	-0.01	3.12	11.26	≤ 13
	4980		14.22	-0.46	2.67	11.55	≤ 13
Radio 1	4950		14.80	-1.32	1.81	12.99	≤ 13
	4955		14.92	-0.50	2.63	12.29	≤ 13
	4980		14.94	-0.86	2.27	12.67	≤ 13
Radio 2	4950	802.11n10	1.70	-7.29	-6.98	8.68	≤ 13
	4955		1.88	-7.17	-6.86	8.74	≤ 13
	4980		1.91	-6.93	-6.62	8.53	≤ 13
Radio 1	4950		1.89	-5.00	-4.52	6.41	≤ 13
	4955		1.85	-4.71	-4.23	6.08	≤ 13
	4980		1.99	-4.66	-4.18	6.17	≤ 13
Radio 2	4950	802.11n20	1.83	-5.80	-5.62	7.45	≤ 13
	4965		1.40	-5.60	-5.42	6.82	≤ 13
	4980		1.63	-5.81	-5.63	7.26	≤ 13
Radio 1	4950		1.73	-4.69	-4.43	6.16	≤ 13
	4965		1.17	-4.93	-4.67	5.84	≤ 13
	4980		1.81	-4.74	-4.48	6.29	≤ 13
Radio 2	4950	802.11ac10	1.78	-7.15	-6.8	8.58	≤ 13
	4955		1.99	-7.60	-7.25	9.24	≤ 13
	4980		1.61	-7.43	-7.08	8.69	≤ 13
Radio 1	4950		1.61	-5.26	-4.81	6.42	≤ 13
	4955		1.91	-5.09	-4.64	6.55	≤ 13
	4980		1.73	-5.19	-4.74	6.47	≤ 13
Radio 2	4950	802.11ac20	1.78	-5.83	-5.65	7.43	≤ 13
	4965		1.21	-5.91	-5.73	6.94	≤ 13
	4980		1.92	-6.04	-5.86	7.78	≤ 13

Radio 1	4950		1.81	-4.54	-4.21	6.02	≤ 13
	4965		1.13	-4.84	-4.51	5.64	≤ 13
	4980		1.76	-4.86	-4.53	6.29	≤ 13

Note: above PSD values are based on higher value between two ports on each radio

15dBi MIMO

Radio	Freq. (MHz)	Mode	Peak PSD (dBm/MHz)	Avg PSD (dBm/MHz)	Corrected Avg PSD (dBm/MHz)	Ratio (dB)	Limit (dB)
Radio 2	4950	802.11a10	13.841	-0.125	3.005	10.84	≤ 13
	4955		14.059	-0.363	2.767	11.29	≤ 13
	4980		13.906	-0.156	2.974	10.93	≤ 13
Radio 1	4950		14.567	-0.449	2.681	11.89	≤ 13
	4955		14.382	0.221	3.351	11.03	≤ 13
	4980		14.521	-0.269	2.861	11.66	≤ 13
Radio 2	4950	802.11n10	1.995	-8.219	-7.909	9.90	≤ 13
	4955		1.792	-8.837	-8.527	10.32	≤ 13
	4980		1.809	-8.740	-8.43	10.24	≤ 13
Radio 1	4950		1.231	-6.392	-5.912	7.14	≤ 13
	4955		1.738	-6.868	-6.388	8.13	≤ 13
	4980		1.711	-6.949	-6.469	8.18	≤ 13
Radio 2	4950	802.11n20	1.517	-8.406	-8.226	9.74	≤ 13
	4965		1.079	-8.140	-7.96	9.04	≤ 13
	4980		1.681	-7.973	-7.793	9.47	≤ 13
Radio 1	4950		1.805	-5.104	-4.844	6.65	≤ 13
	4965		1.334	-5.290	-5.03	6.36	≤ 13
	4980		1.934	-5.226	-4.966	6.90	≤ 13
Radio 2	4950	802.11ac10	1.990	-9.064	-8.714	10.70	≤ 13
	4955		1.621	-9.343	-8.993	10.61	≤ 13
	4980		1.757	-8.851	-8.501	10.26	≤ 13
Radio 1	4950		1.401	-5.179	-4.729	6.13	≤ 13
	4955		1.567	-5.200	-4.75	6.32	≤ 13
	4980		1.800	-5.300	-4.85	6.65	≤ 13
Radio 2	4950	802.11ac20	1.908	-7.818	-7.638	9.55	≤ 13
	4965		0.887	-8.089	-7.909	8.80	≤ 13
	4980		1.610	-8.064	-7.884	9.49	≤ 13
Radio 1	4950		1.796	-5.255	-4.925	6.72	≤ 13
	4965		1.227	-5.404	-5.074	6.30	≤ 13
	4980		1.819	-5.278	-4.948	6.77	≤ 13

≤8dBi SISO

Radio	Freq. (MHz)	Mode	Peak PSD (dBm/MHz)	Avg PSD (dBm/MHz)	Corrected Avg PSD (dBm/MHz)	Ratio (dB)	Limit (dB)
Radio 1	4950	802.11a10	18.07	3.30	6.43	11.64	≤ 13
	4955		17.82	3.23	6.36	11.46	≤ 13
	4980		17.80	4.49	7.62	10.18	≤ 13
	4950	802.11n10	7.83	-0.20	0.28	7.55	≤ 13
	4955		7.90	-0.36	0.12	7.78	≤ 13
	4980		7.94	-0.83	-0.35	8.29	≤ 13
	4950	802.11n20	7.83	0.10	0.36	7.47	≤ 13
	4965		7.82	-0.14	0.12	7.70	≤ 13
	4980		7.70	-0.72	-0.46	8.16	≤ 13
	4950	802.11ac10	7.97	-0.21	0.24	7.73	≤ 13
	4955		7.35	-0.44	0.01	7.34	≤ 13
	4980		7.80	-0.37	0.08	7.72	≤ 13
	4950	802.11ac20	7.91	0.20	0.53	7.38	≤ 13
	4965		7.96	-0.20	0.13	7.83	≤ 13
	4980		7.63	-0.71	-0.38	8.01	≤ 13

≤ 8 dBi MIMO

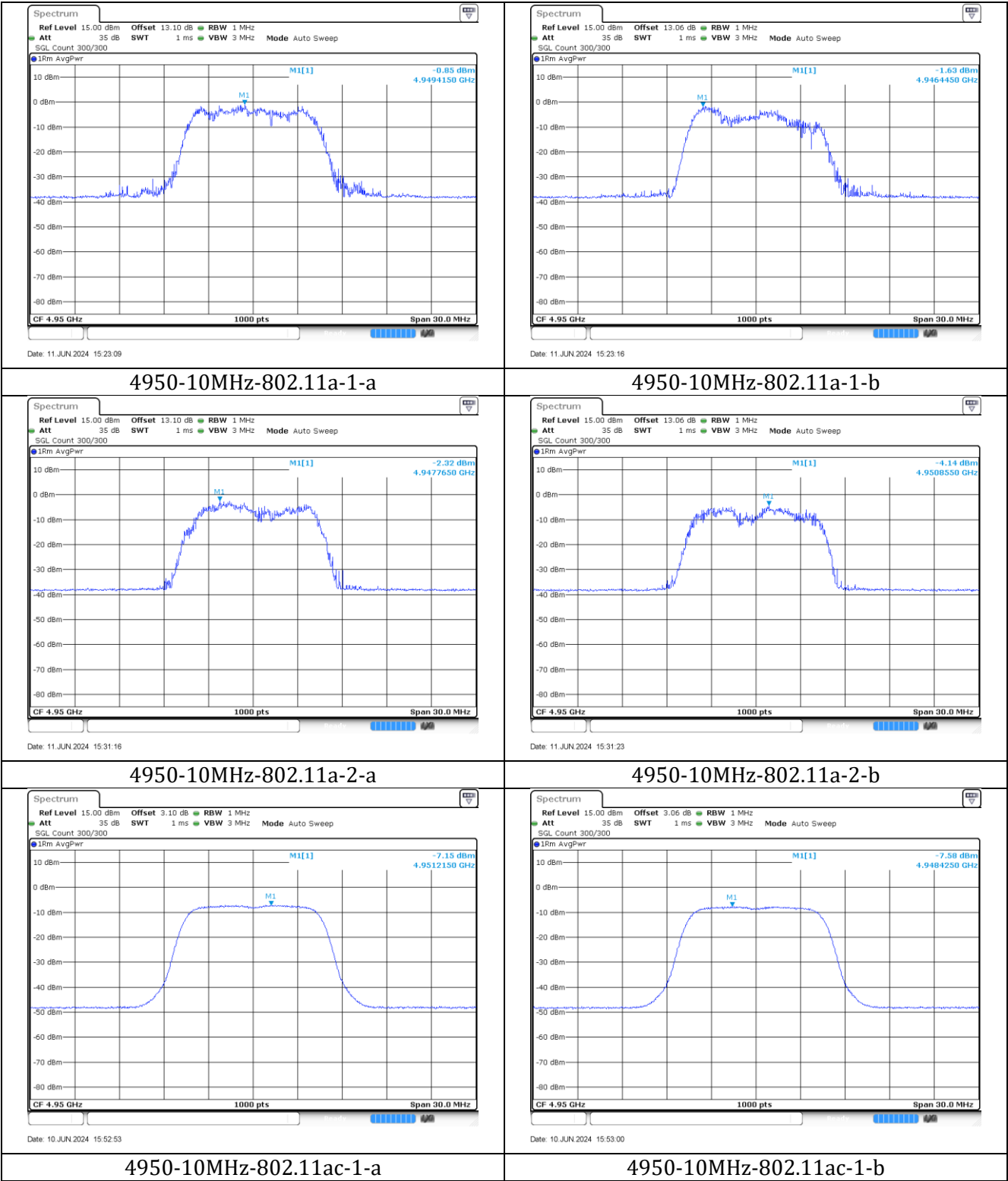
Radio	Freq. (MHz)	Mode	Peak PSD (dBm/MHz)	Avg PSD (dBm/MHz)	Corrected Avg PSD (dBm/MHz)	Ratio (dB)	Limit (dB)
Radio 1	4950	802.11a10	20.449	4.927	8.057	12.39	≤ 13
	4955		20.506	4.887	8.017	12.49	≤ 13
	4980		20.530	4.861	7.991	12.54	≤ 13
	4950	802.11a20	20.913	1.447	8.727	12.19	≤ 13
	4965		20.819	1.292	8.572	12.25	≤ 13
	4980		20.648	1.457	8.737	11.91	≤ 13
	4950	802.11n10	7.753	0.706	1.186	6.57	≤ 13
	4955		7.445	0.732	1.212	6.23	≤ 13
	4980		7.759	0.519	0.999	6.76	≤ 13
	4950	802.11n20	7.865	-0.386	-0.126	7.99	≤ 13
	4965		7.841	-0.613	-0.353	8.19	≤ 13
	4980		7.704	-0.912	-0.652	8.36	≤ 13
	4950	802.11ac10	7.505	0.684	1.134	6.37	≤ 13
	4955		7.532	0.793	1.243	6.29	≤ 13
	4980		7.851	0.681	1.131	6.72	≤ 13
	4950	802.11ac20	7.745	-0.396	-0.066	7.81	≤ 13
	4965		7.908	-0.565	-0.235	8.14	≤ 13
	4980		7.546	-0.942	-0.612	8.16	≤ 13

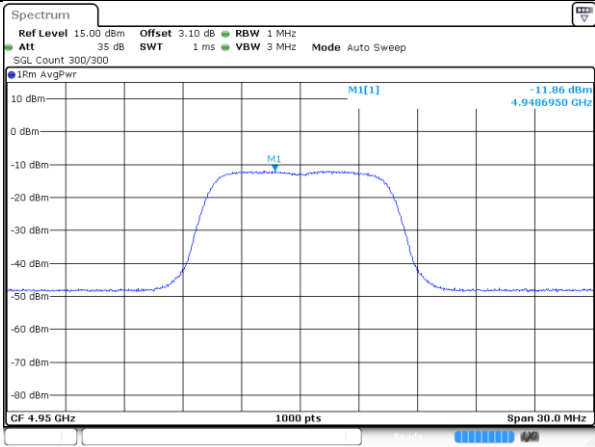
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Please refer to the below tables for the average PSD plots.

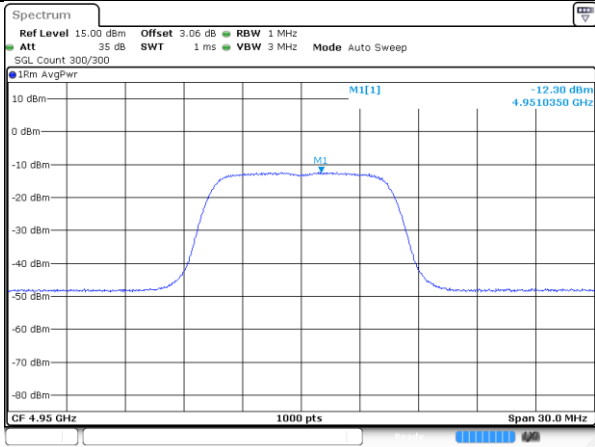
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Radio 2 15dBi Antenna Gain

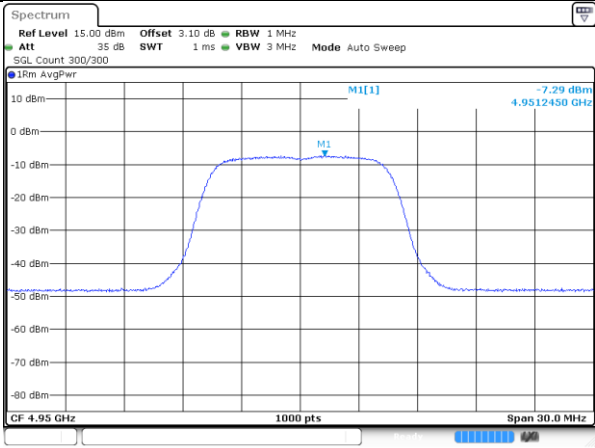




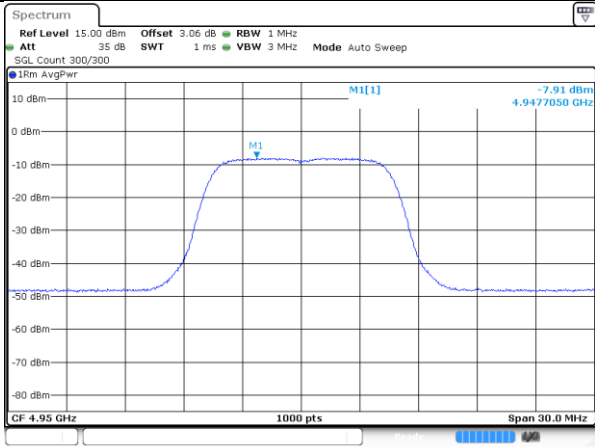
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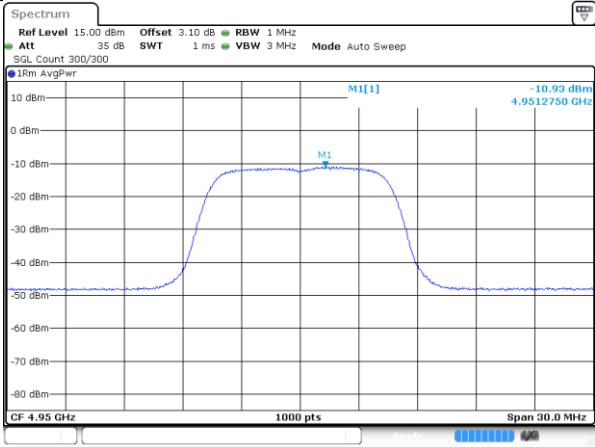
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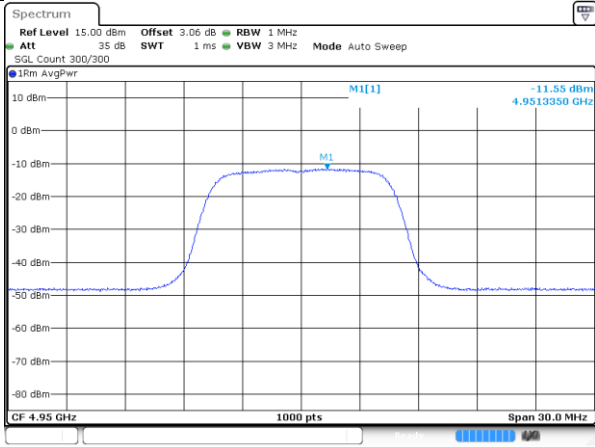
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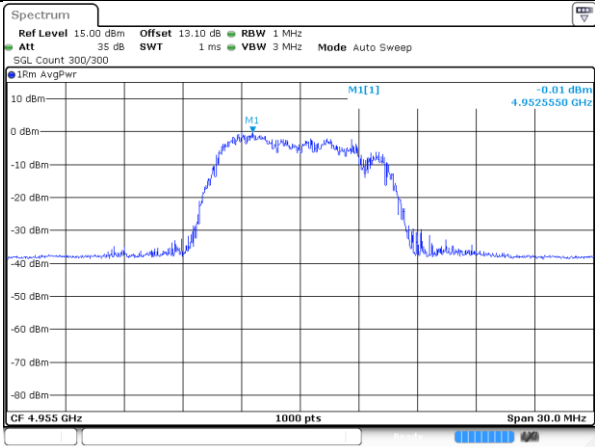
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4950-10MHz-802.11n-2-a

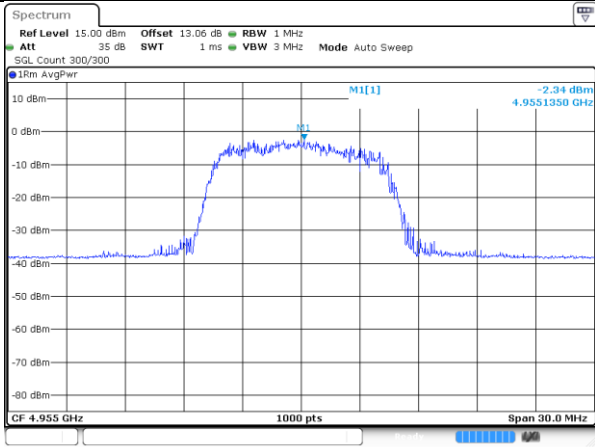


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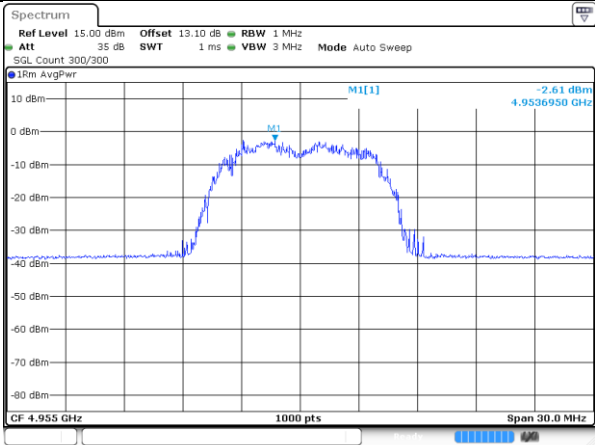
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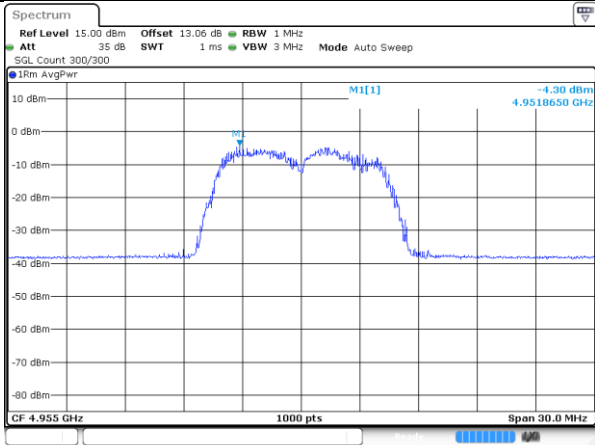
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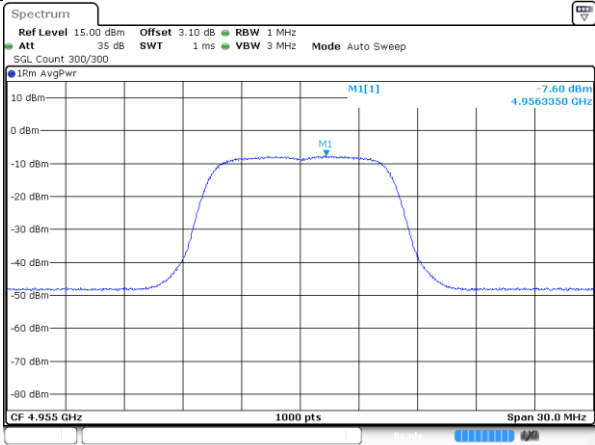
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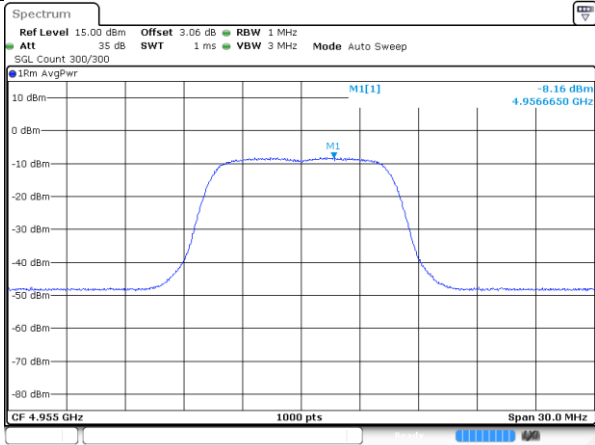
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4955-10MHz-802.11a-2-b



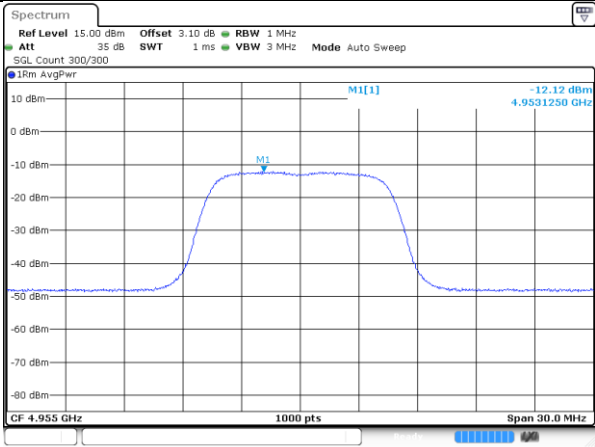
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4955-10MHz-802.11ac-1-a

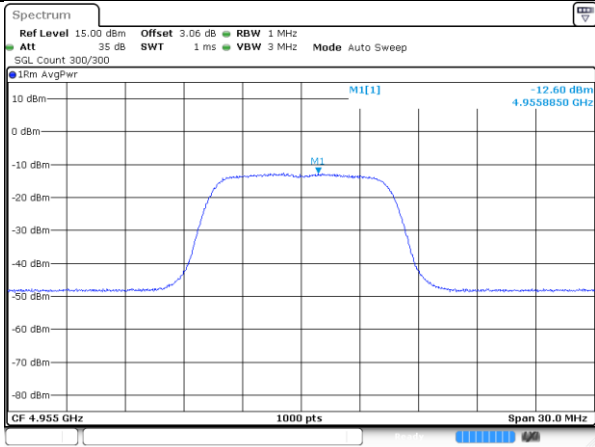


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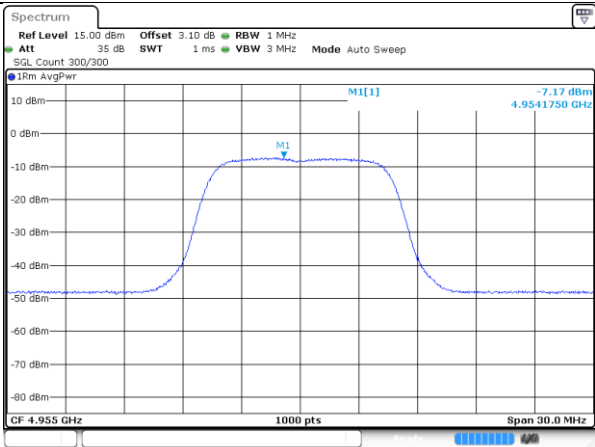
4955-10MHz-802.11ac-1-b



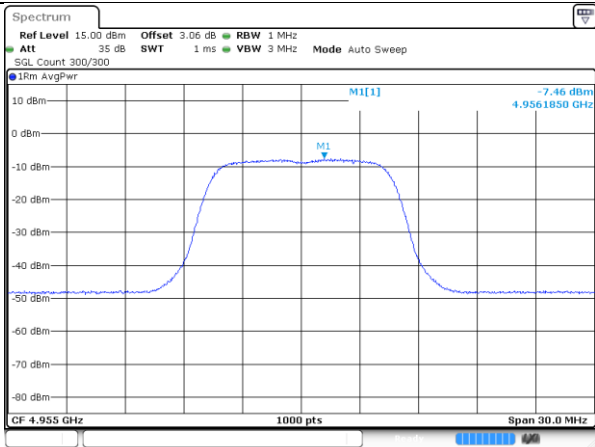
4955-10MHz-802.11ac-2-a



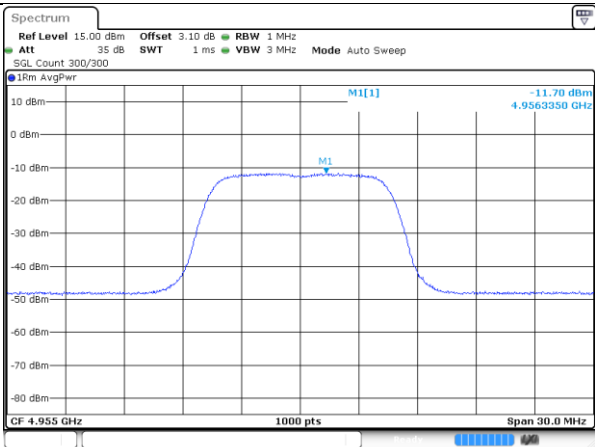
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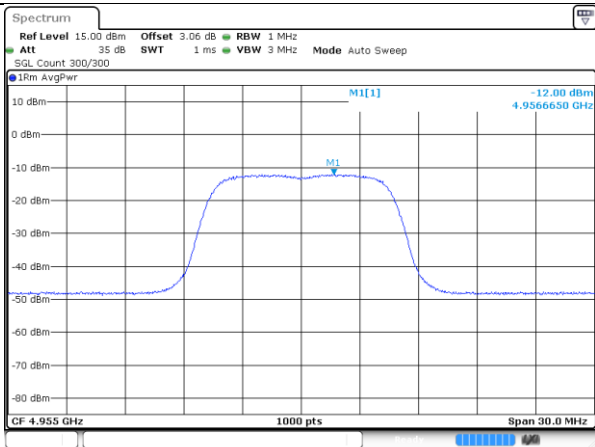
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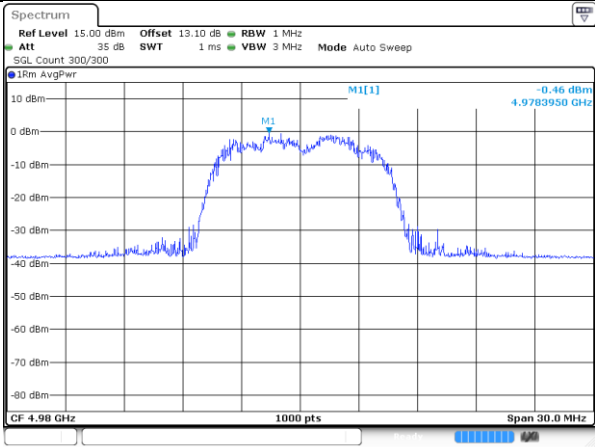
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4955-10MHz-802.11n-2-a

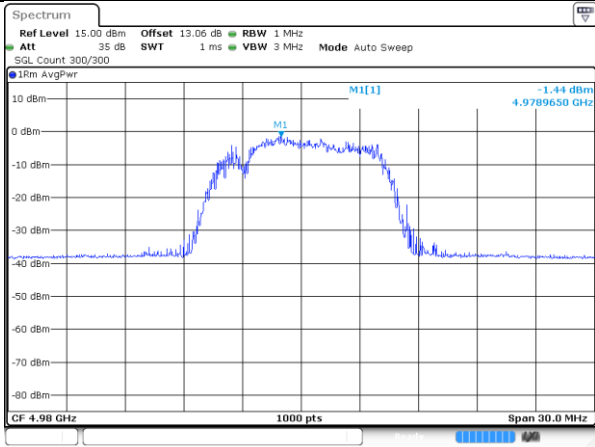


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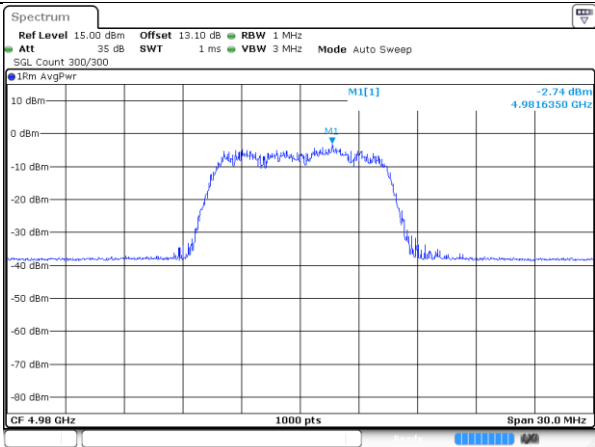
Date: 11 JUN 2024 15:23:37

4980-10MHz-802.11a-1-a



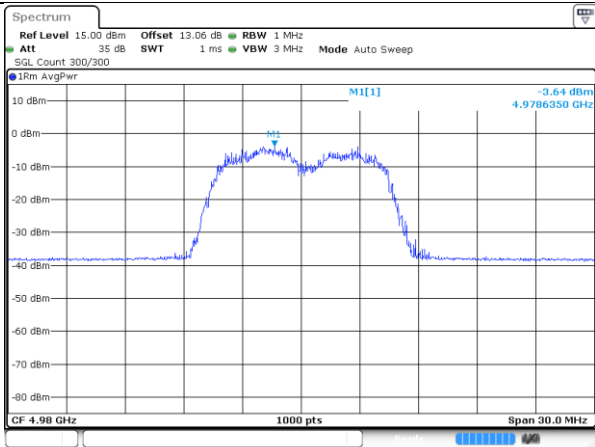
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4980-10MHz-802.11a-1-b



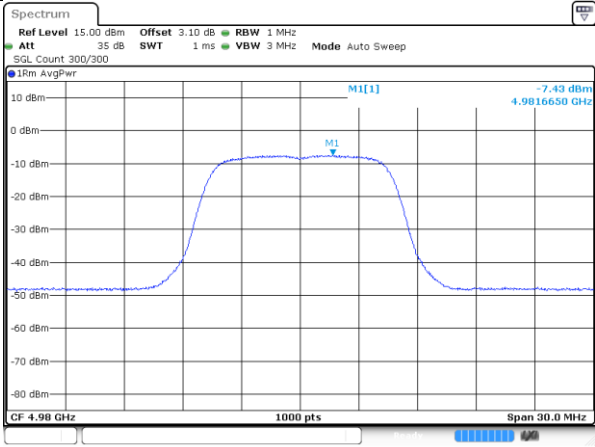
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4980-10MHz-802.11a-2-a



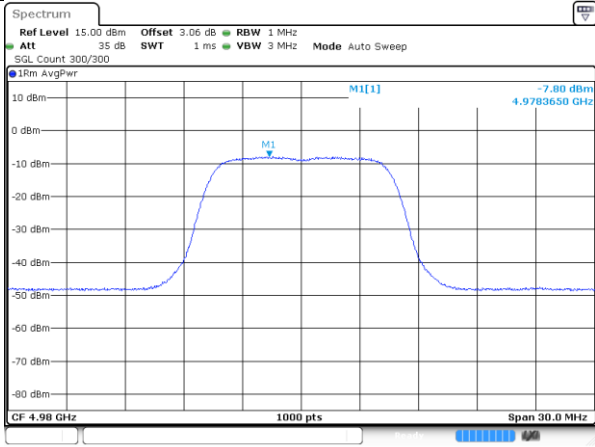
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4980-10MHz-802.11a-2-b



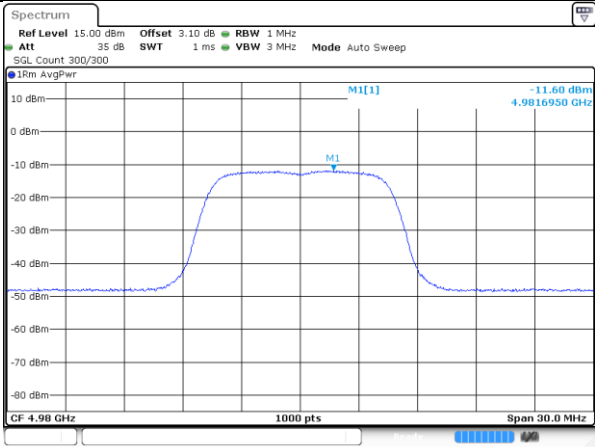
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4980-10MHz-802.11ac-1-a



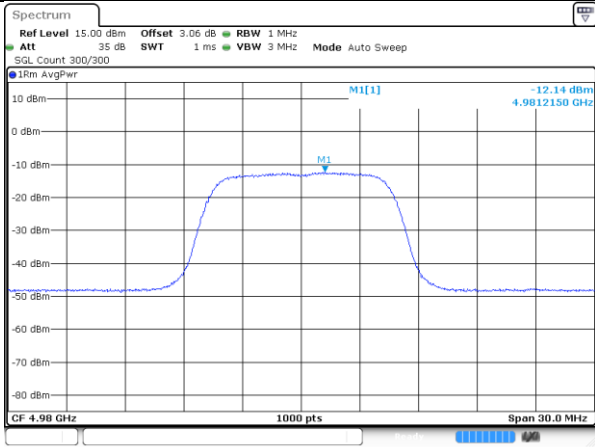
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4980-10MHz-802.11ac-1-b



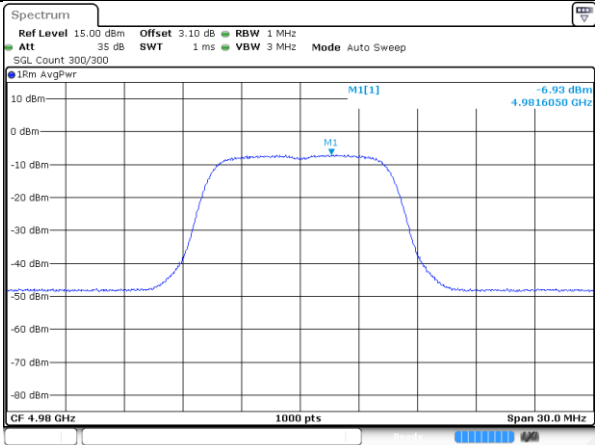
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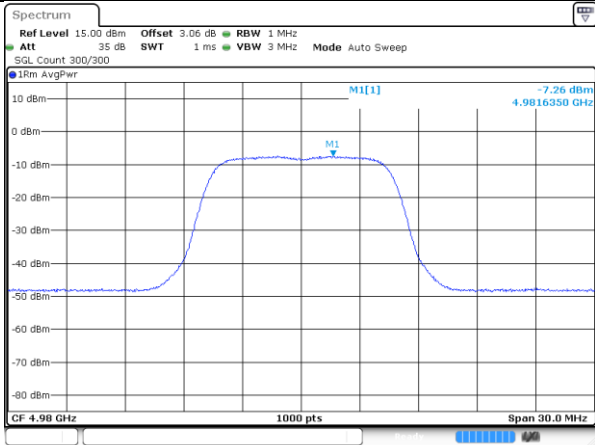
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4980-10MHz-802.11ac-2-b



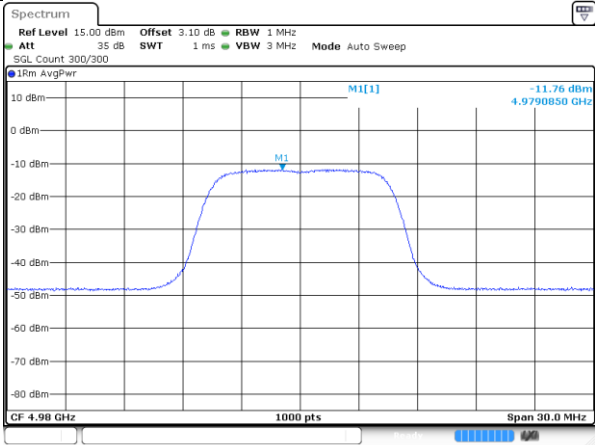
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4980-10MHz-802.11n-1-a



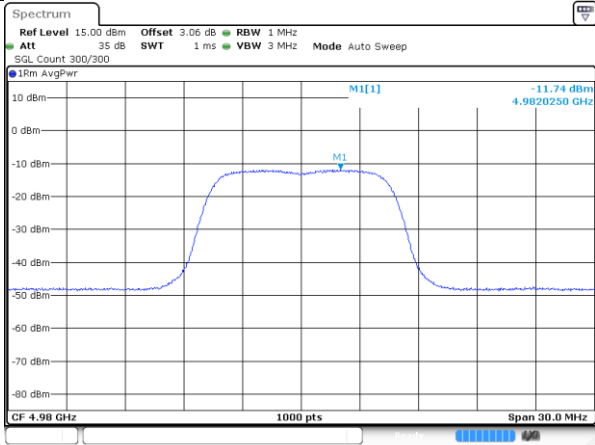
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4980-10MHz-802.11n-1-b



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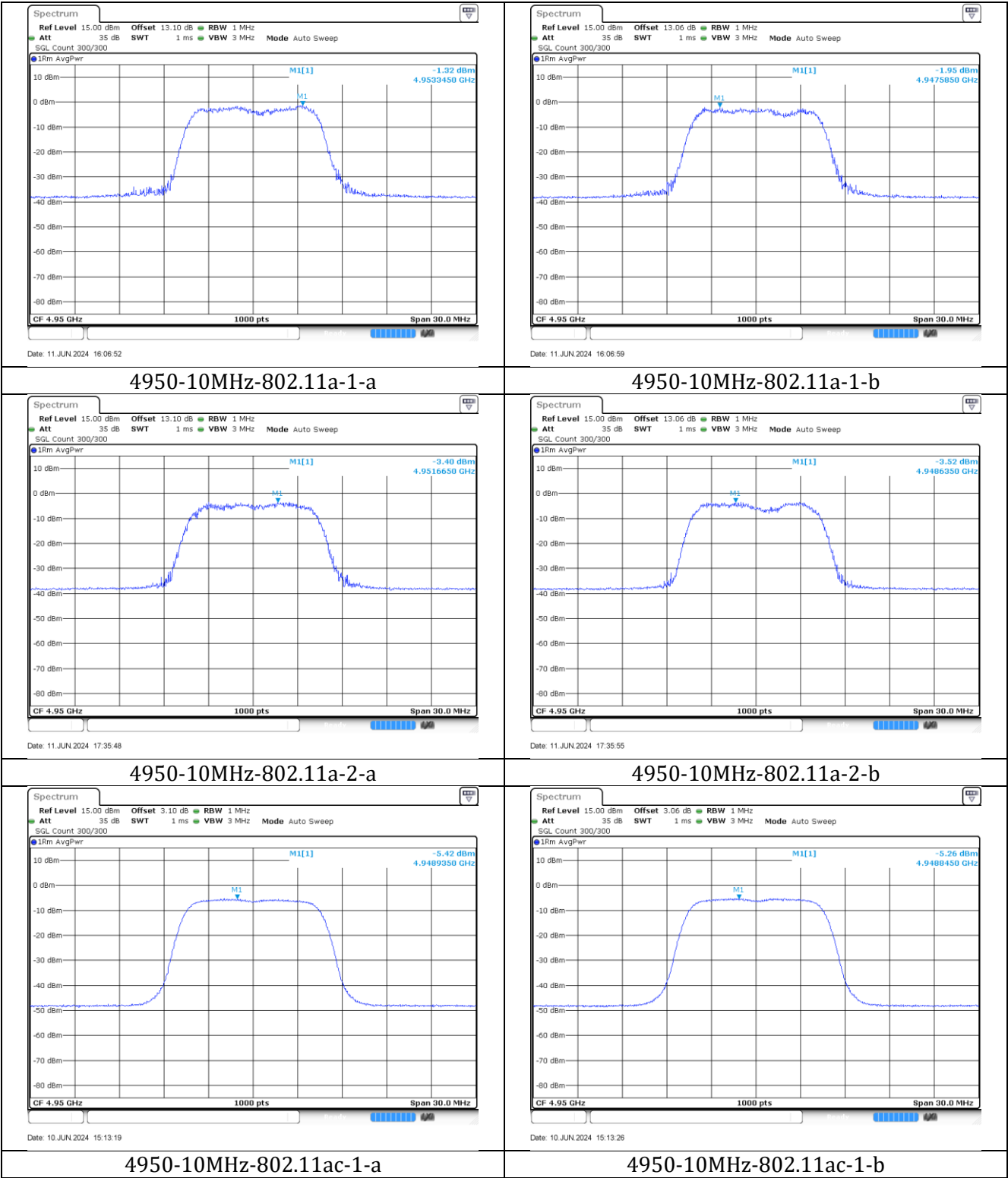
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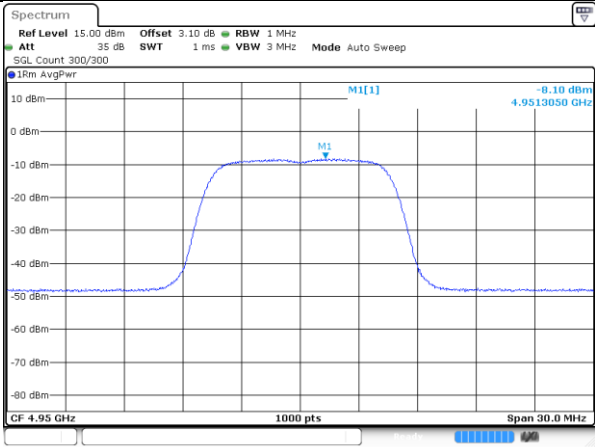


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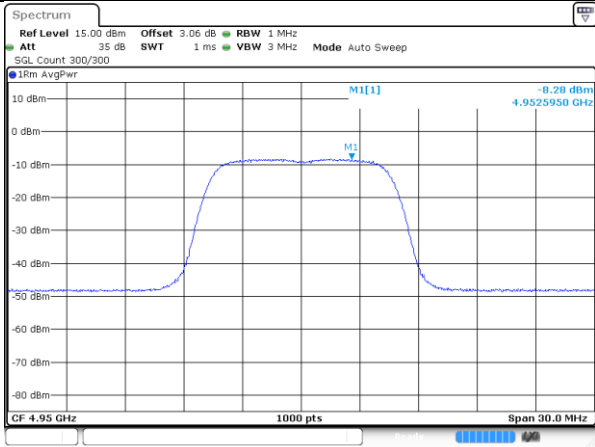
4980-10MHz-802.11n-2-b

Radio 1 15dBi Antenna Gain

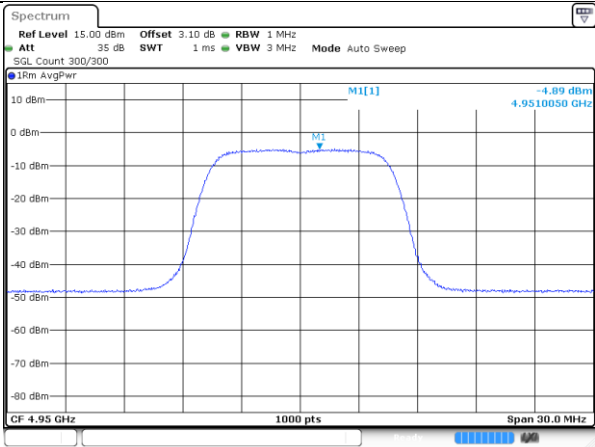




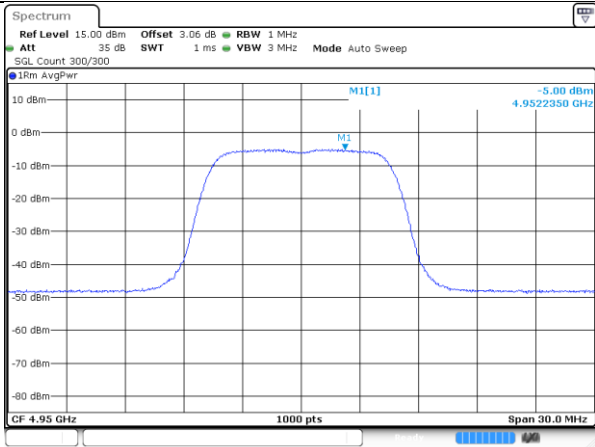
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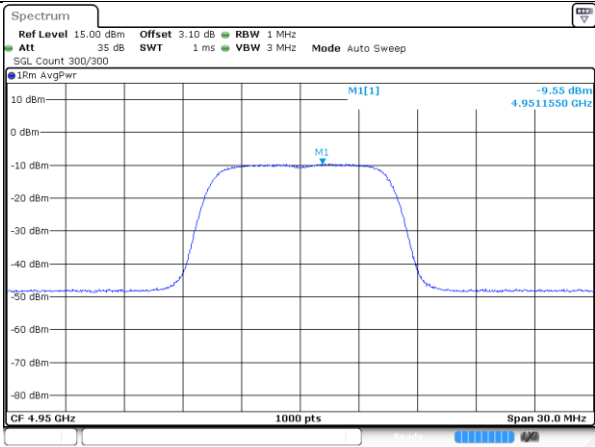
4950-10MHz-802.11ac-2-b



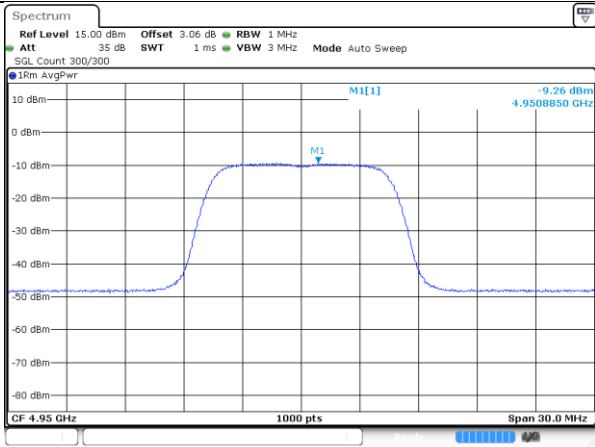
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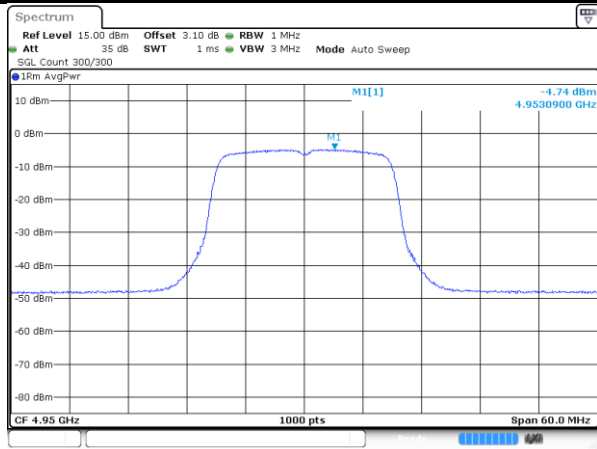
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4950-10MHz-802.11n-2-a

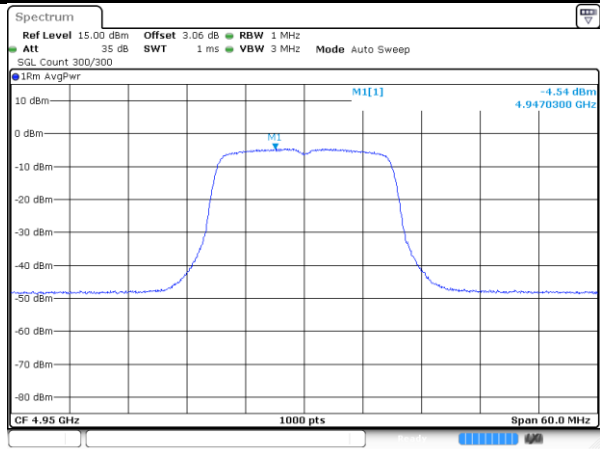


4950-10MHz-802.11n-2-b



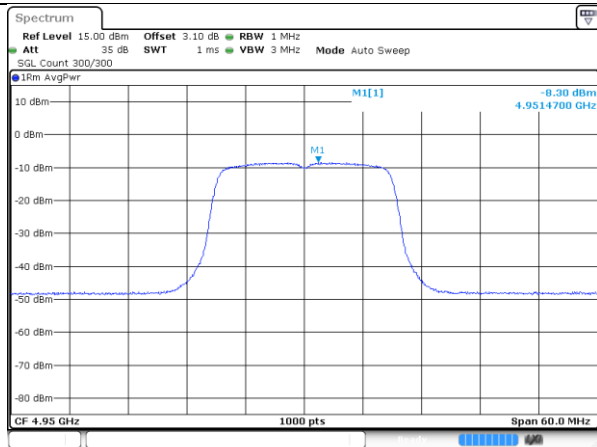
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4950-20MHz-802.11ac-1-a



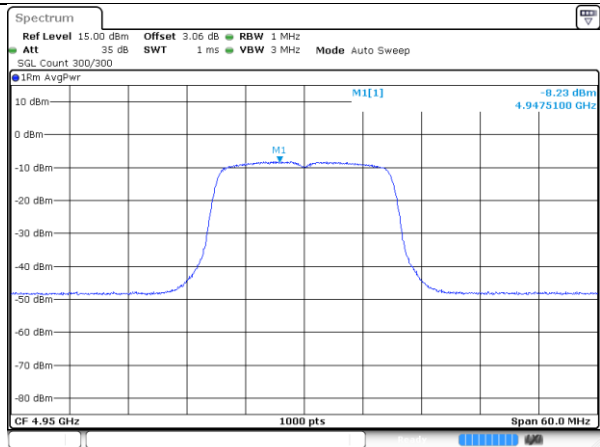
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4950-20MHz-802.11ac-1-b



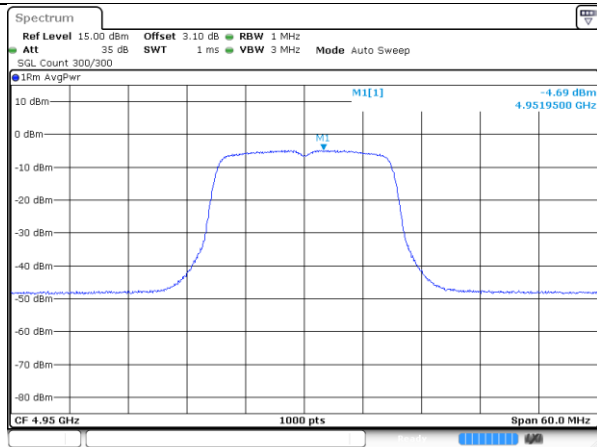
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4950-20MHz-802.11ac-2-a



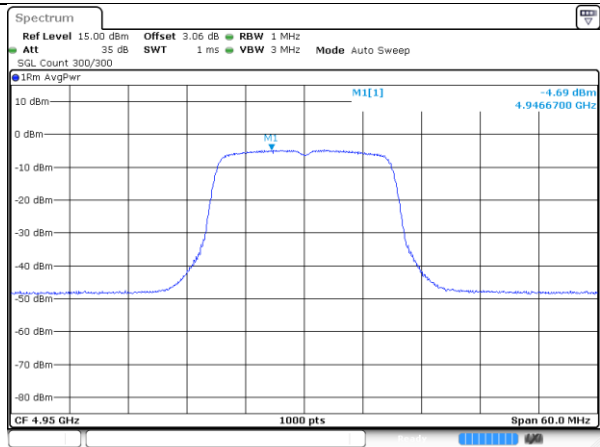
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4950-20MHz-802.11ac-2-b



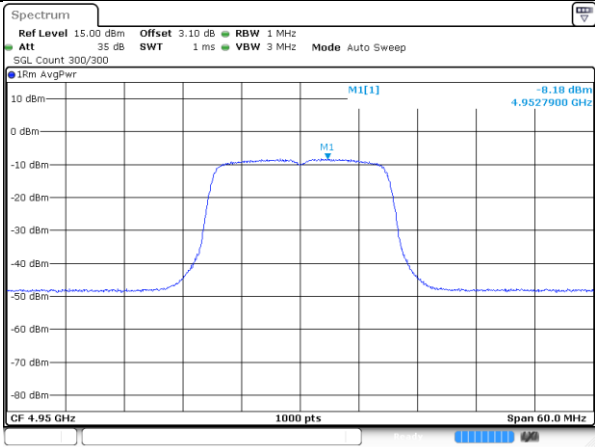
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4950-20MHz-802.11n-1-a



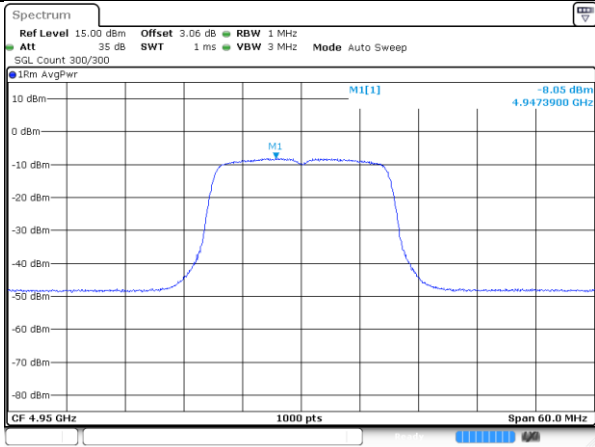
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4950-20MHz-802.11n-1-b



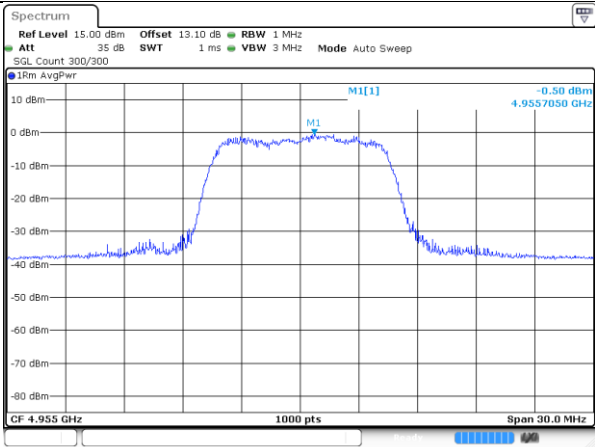
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4950-20MHz-802.11n-2-a



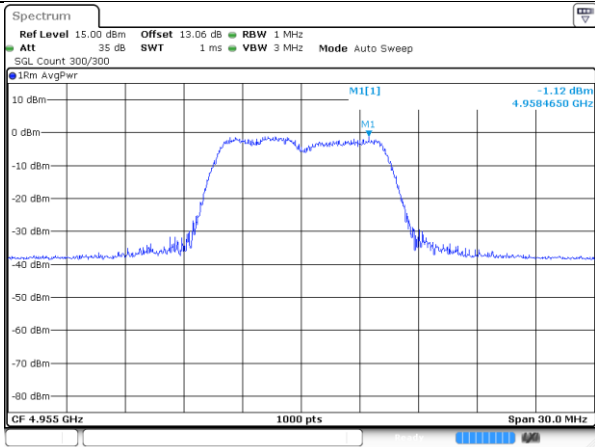
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4950-20MHz-802.11n-2-b



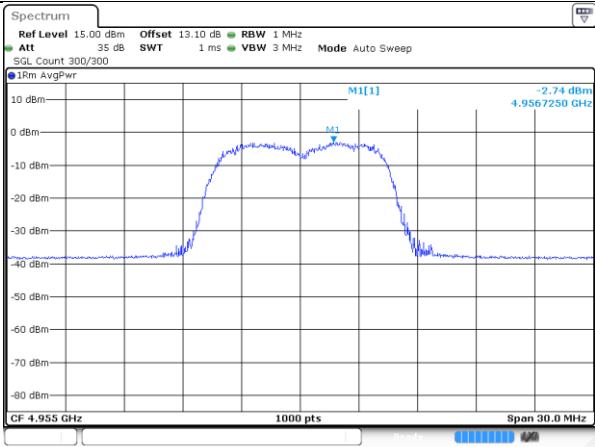
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4955-10MHz-802.11a-1-a



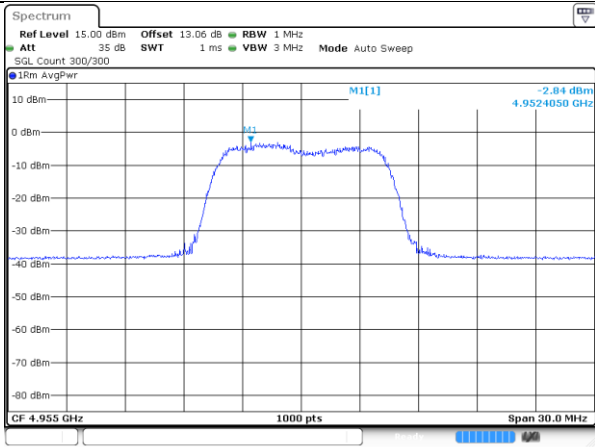
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4955-10MHz-802.11a-1-b



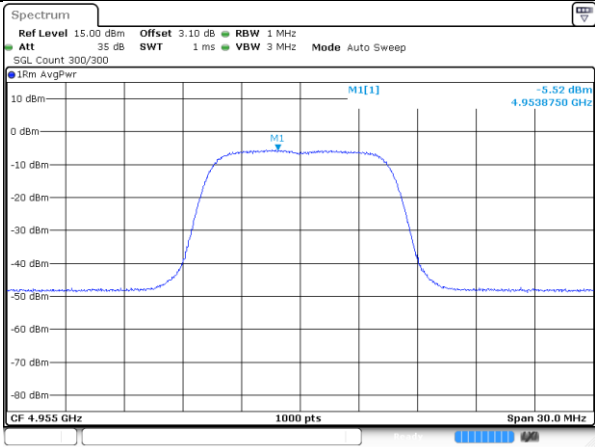
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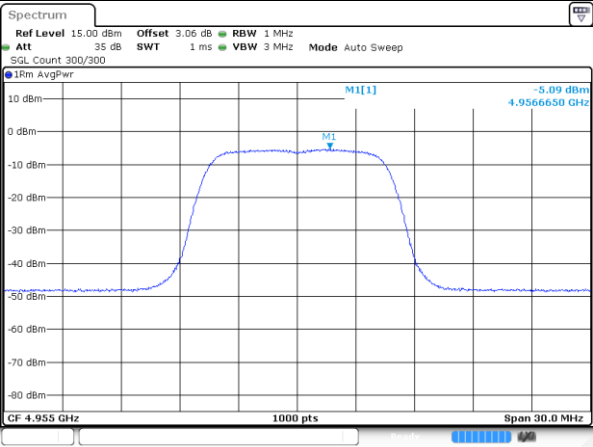
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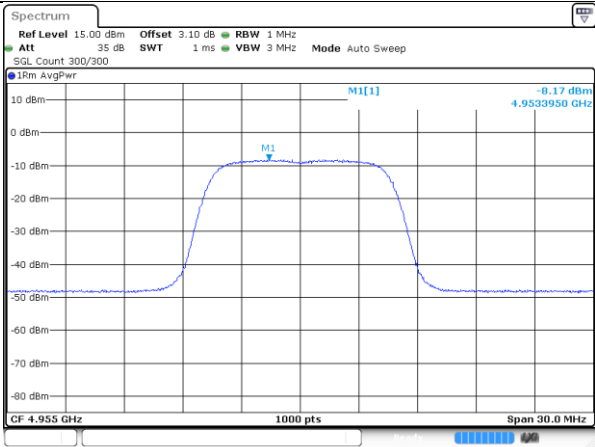
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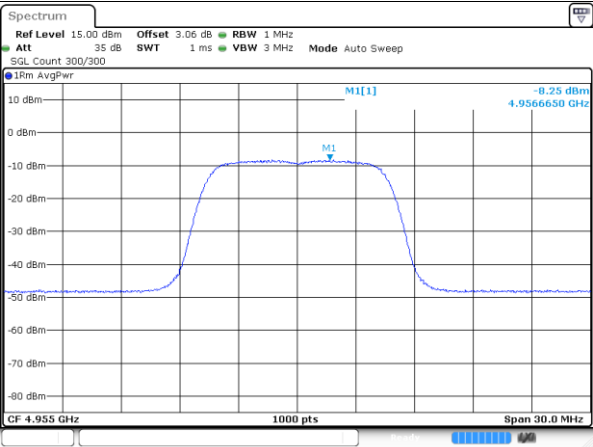
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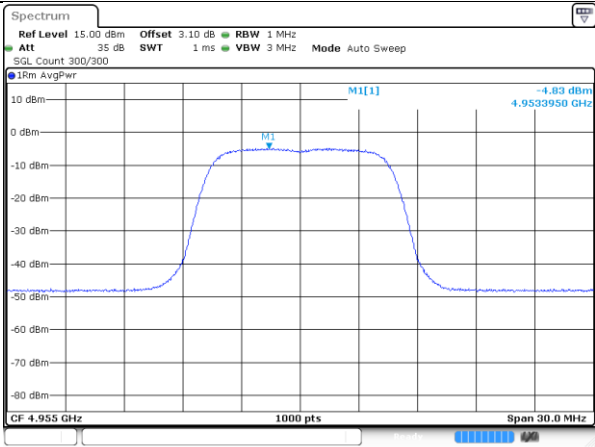
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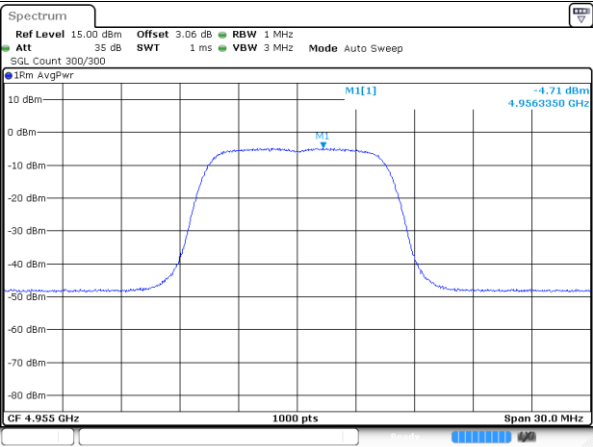
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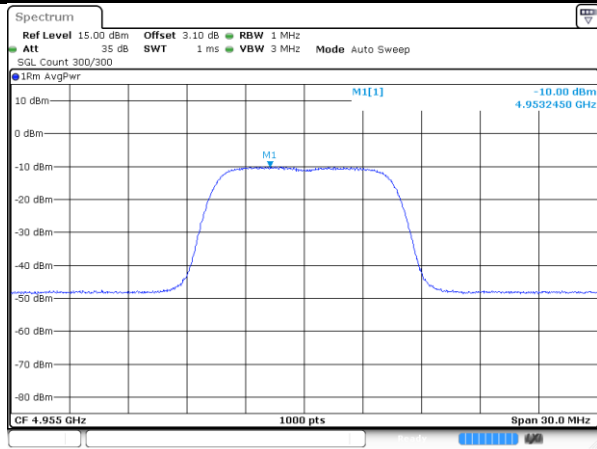
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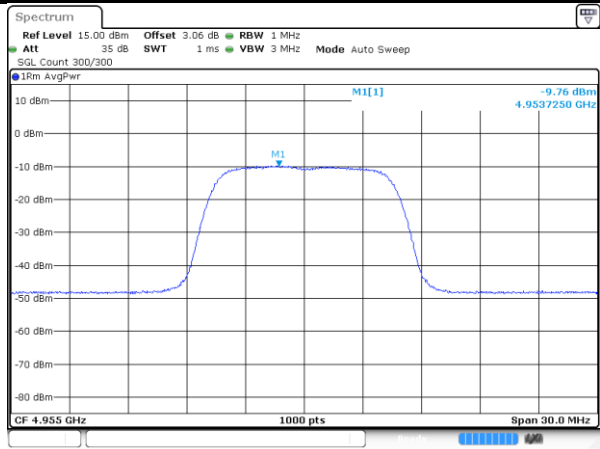
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4955-10MHz-802.11n-1-b



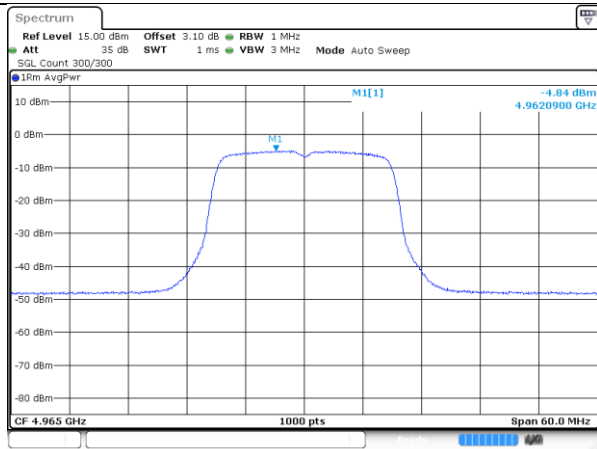
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4955-10MHz-802.11n-2-a



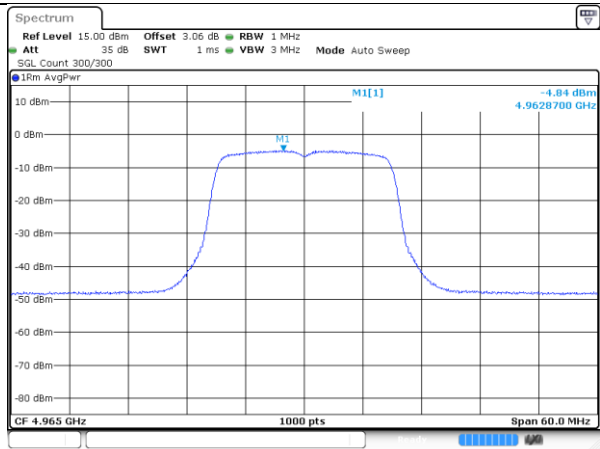
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4955-10MHz-802.11n-2-b



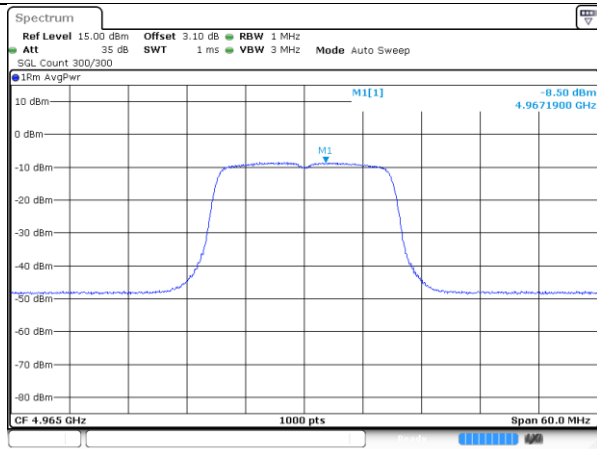
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4965-20MHz-802.11ac-1-a



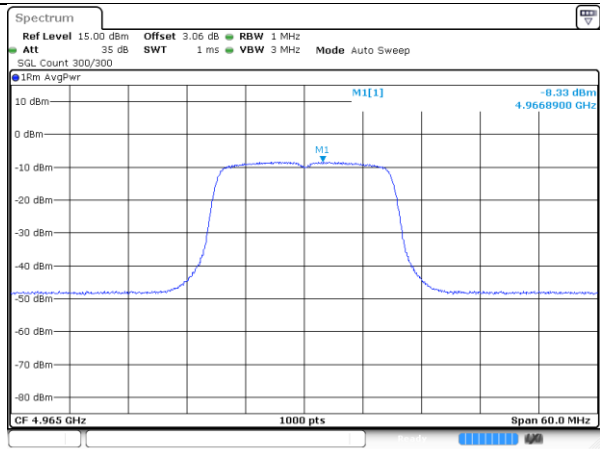
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4965-20MHz-802.11ac-1-b



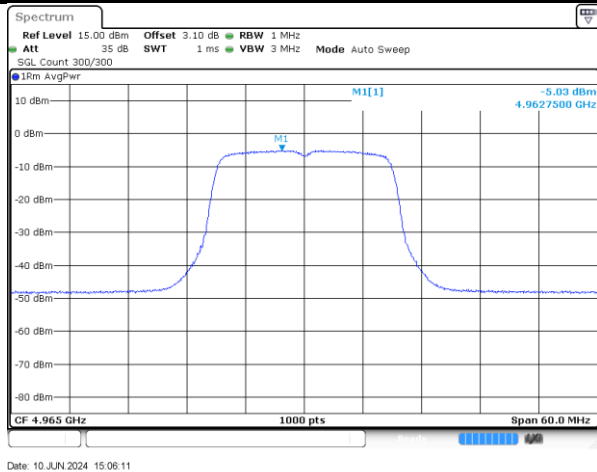
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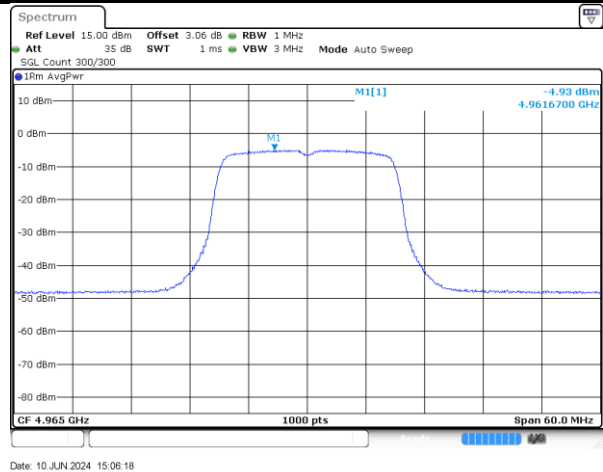


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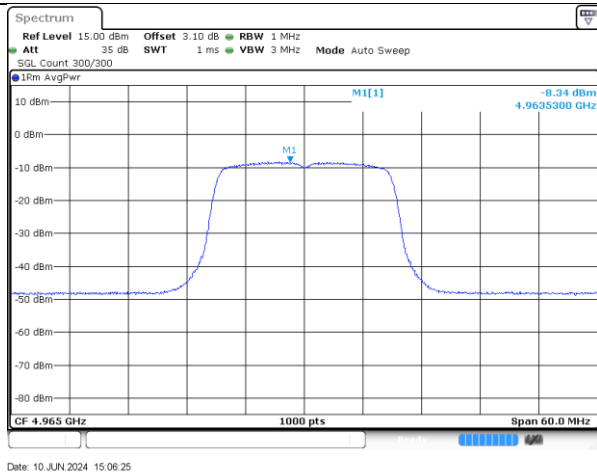
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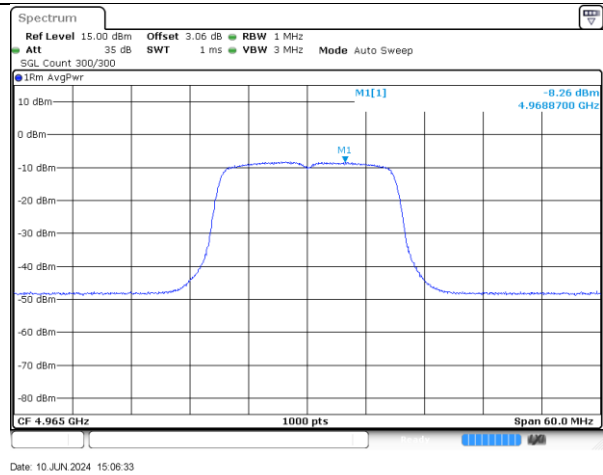
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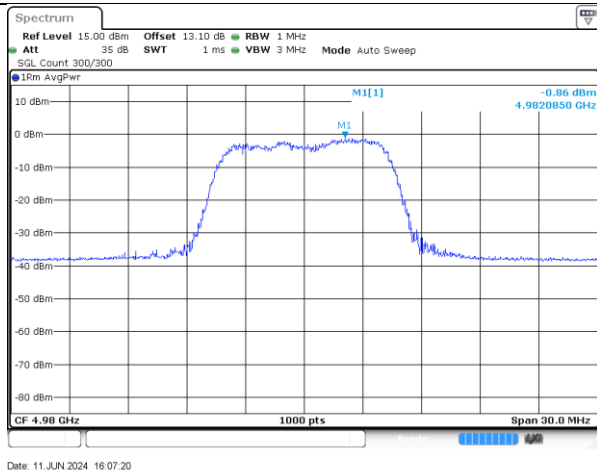
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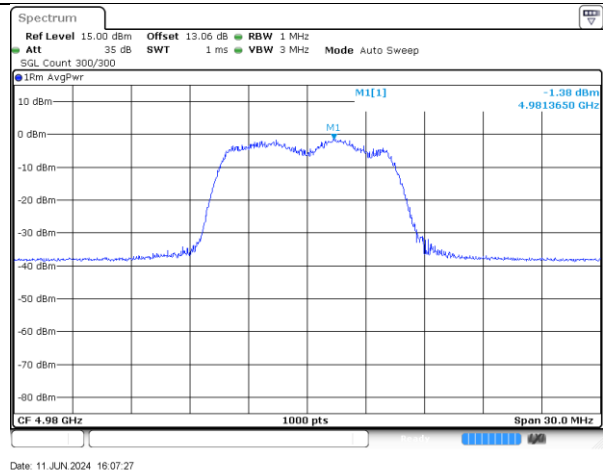
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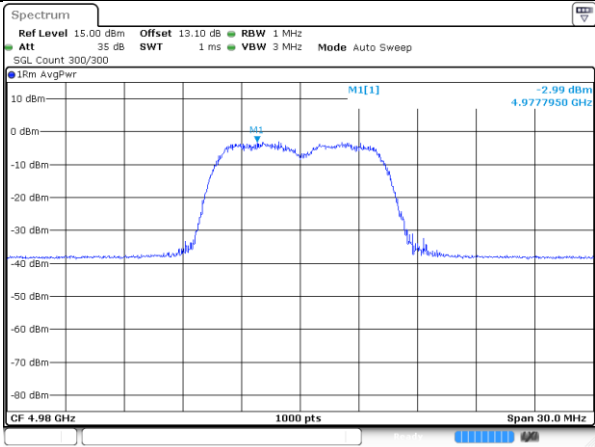
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4980-10MHz-802.11a-1-a

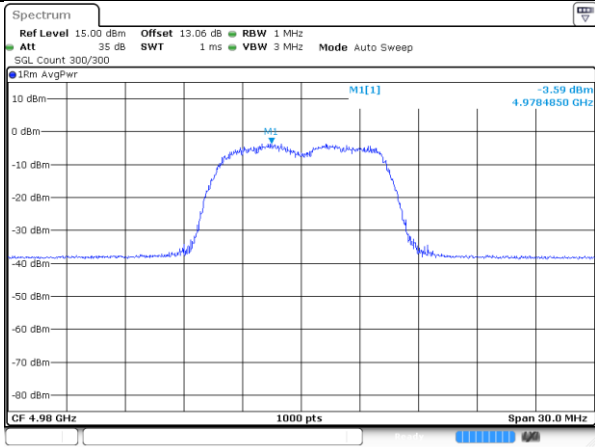


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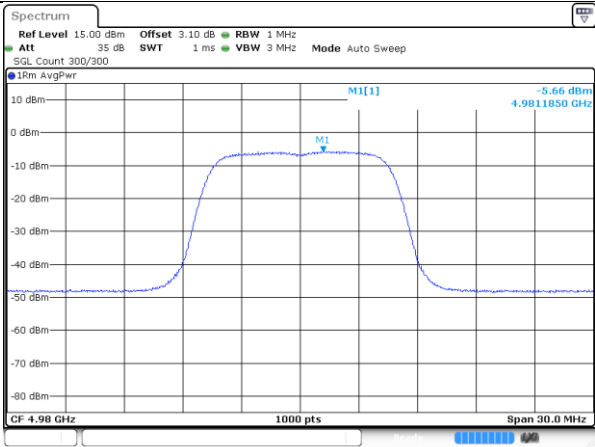
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4980-10MHz-802.11a-2-a



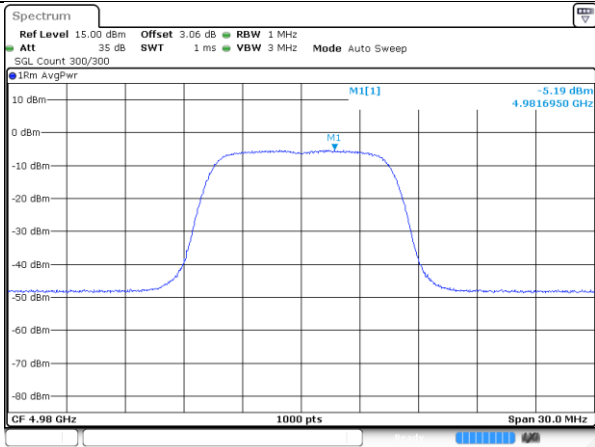
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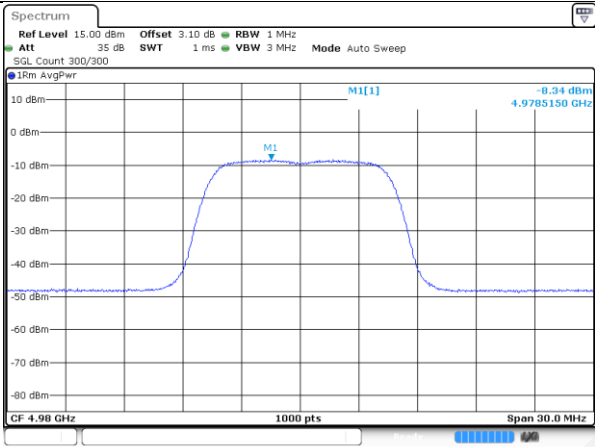
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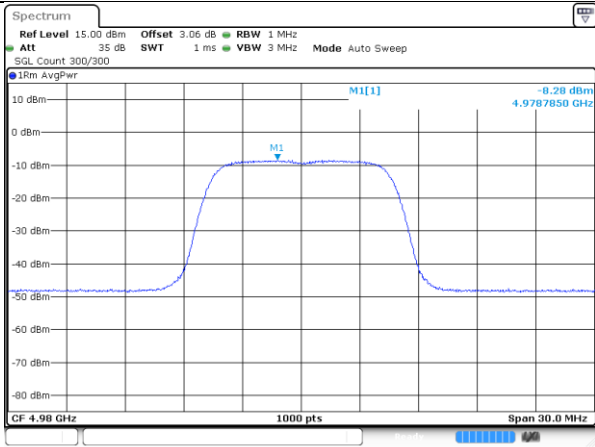
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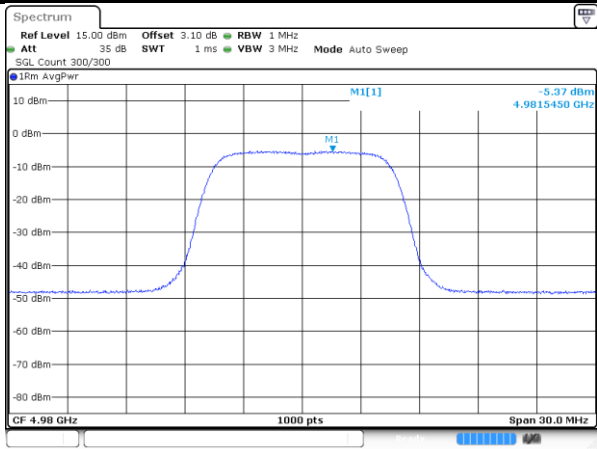
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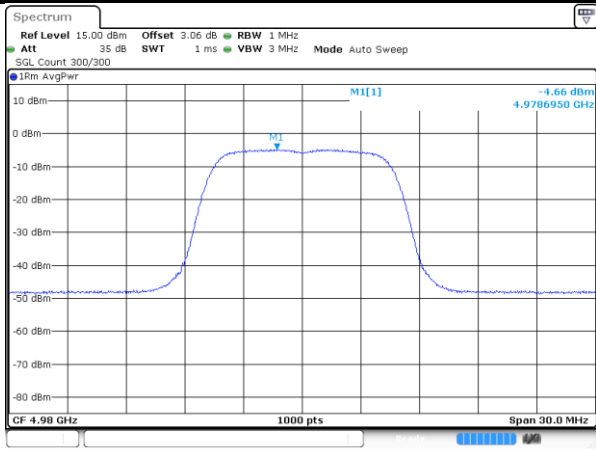


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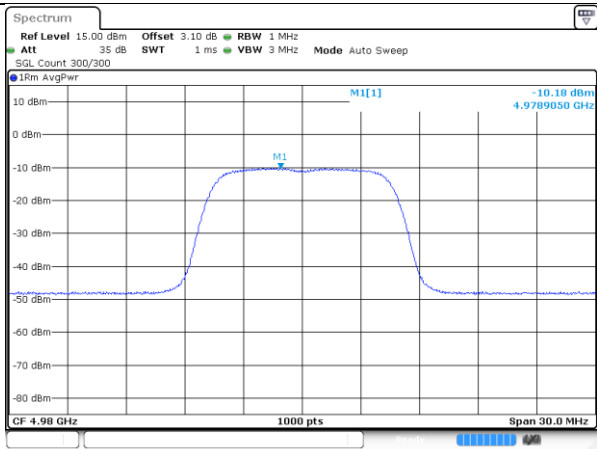
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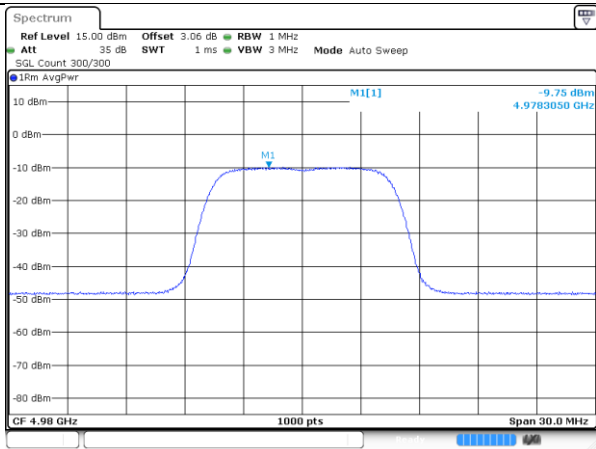
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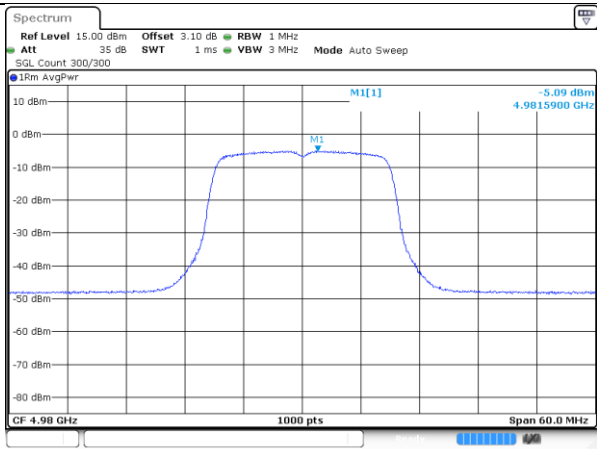
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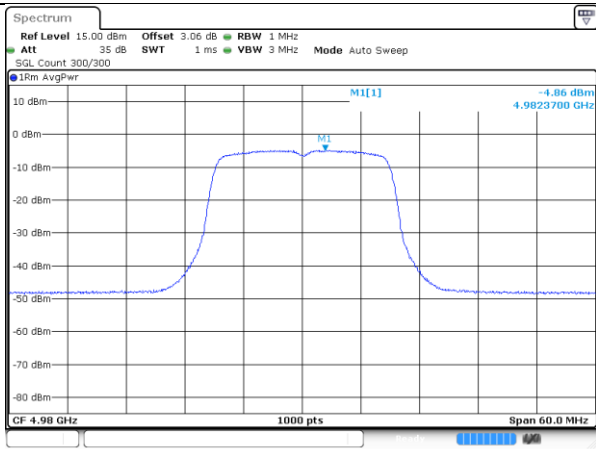
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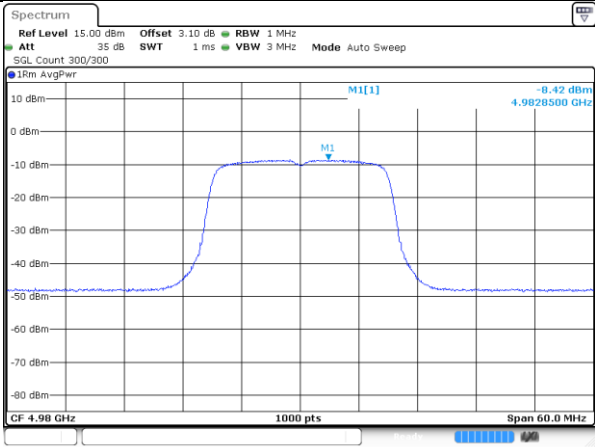
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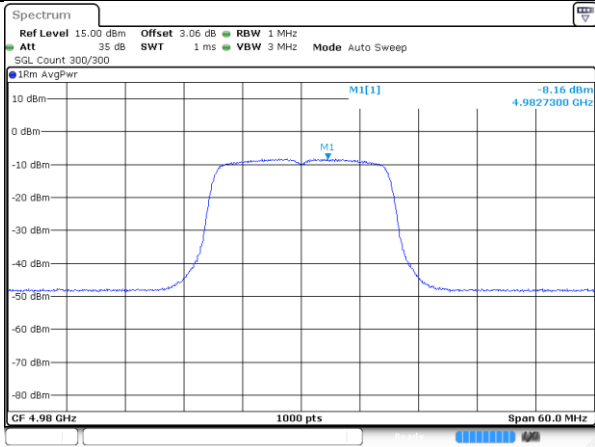
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4980-20MHz-802.11ac-1-b



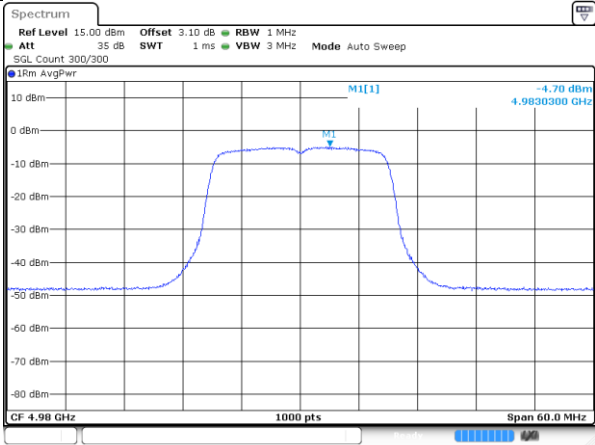
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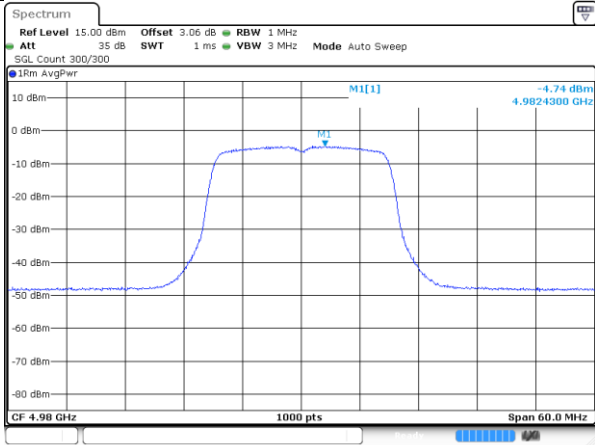
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4980-20MHz-802.11ac-2-a

4980-20MHz-802.11ac-2-b



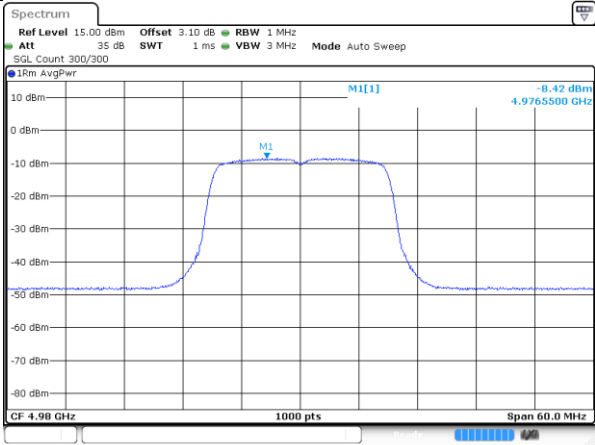
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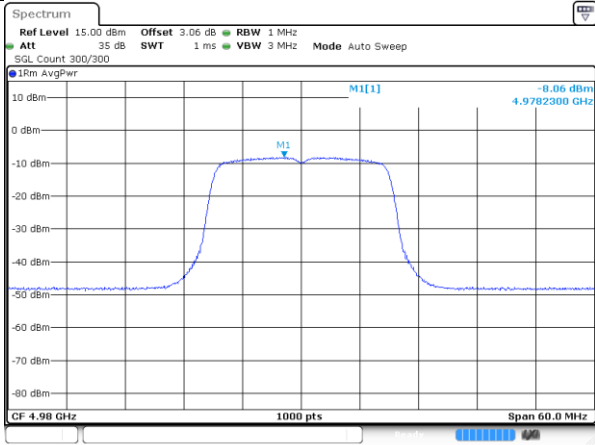
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4980-20MHz-802.11n-1-a

4980-20MHz-802.11n-1-b



Date: 10 JUN 2024 15:06:54

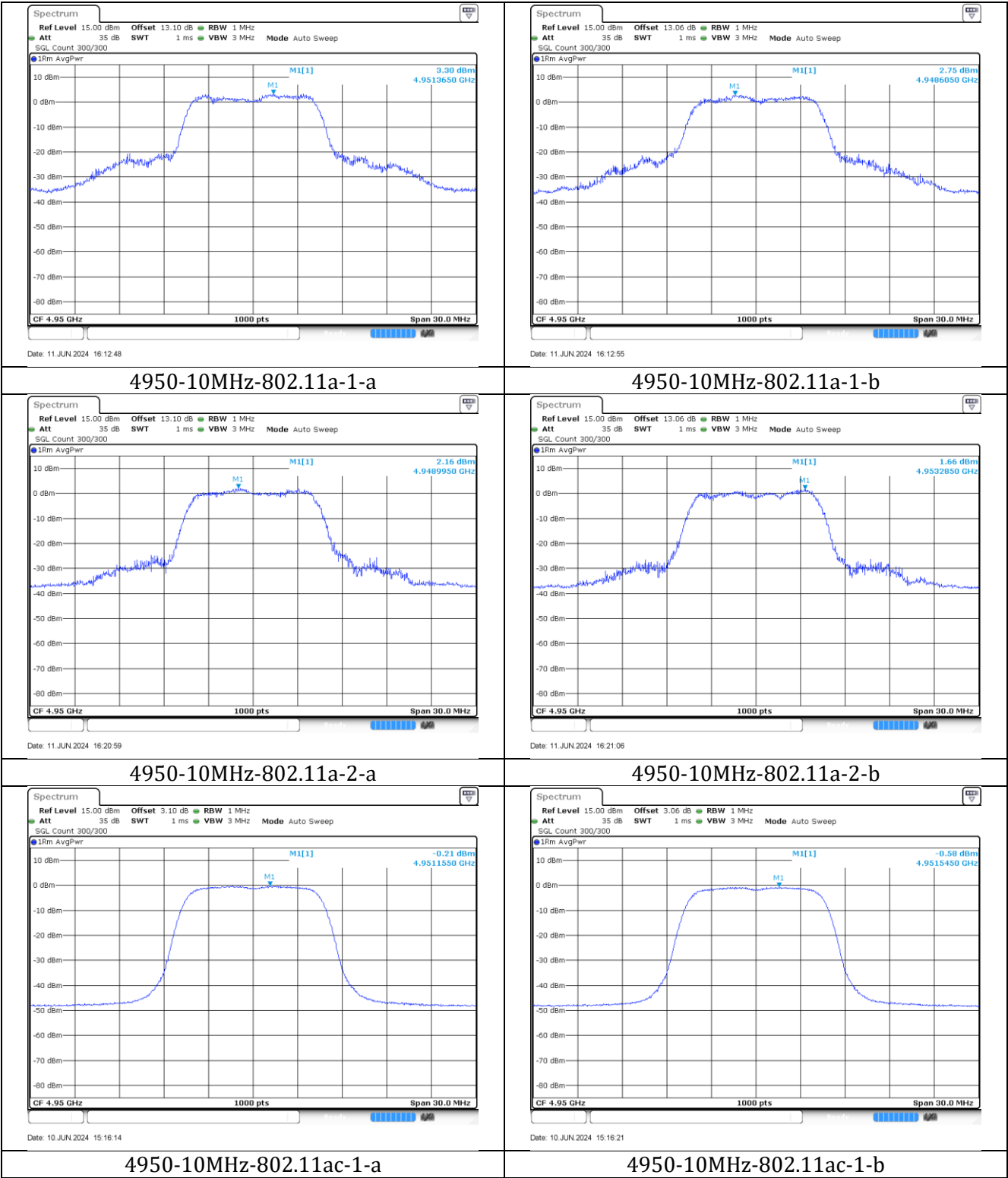


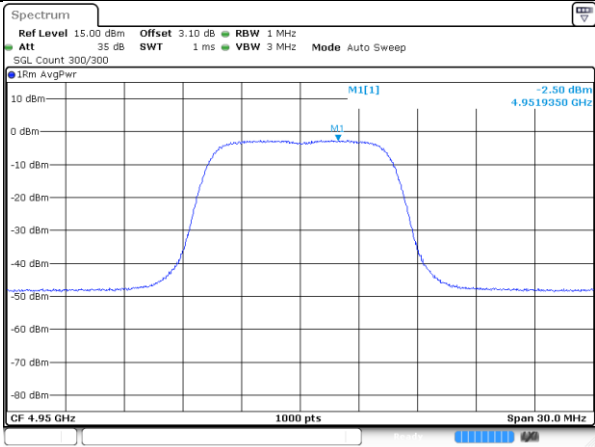
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4980-20MHz-802.11n-2-a

4980-20MHz-802.11n-2-b

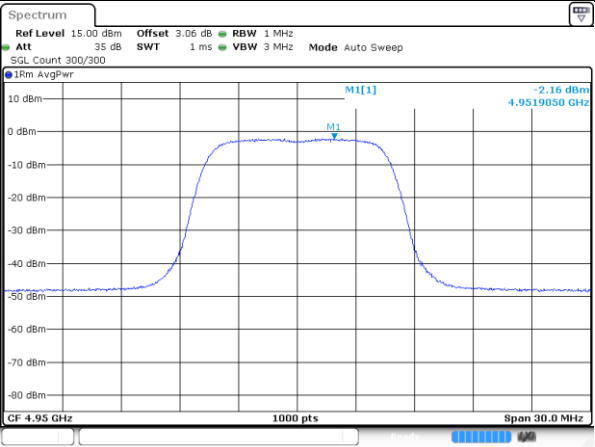
Radio 1 8dBi Antenna Gain





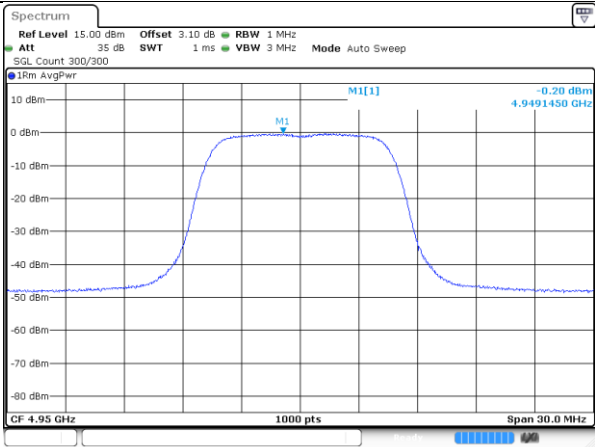
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4950-10MHz-802.11ac-2-a



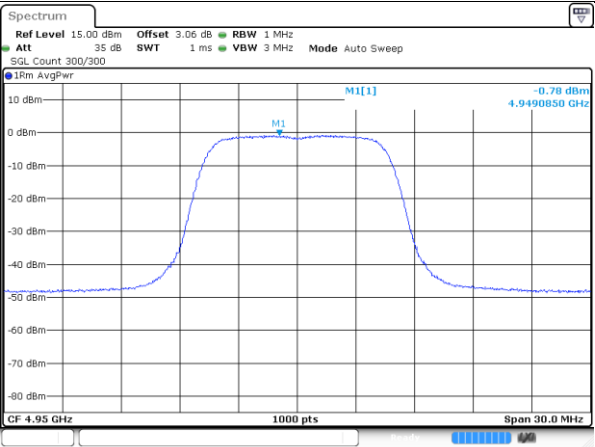
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4950-10MHz-802.11ac-2-b



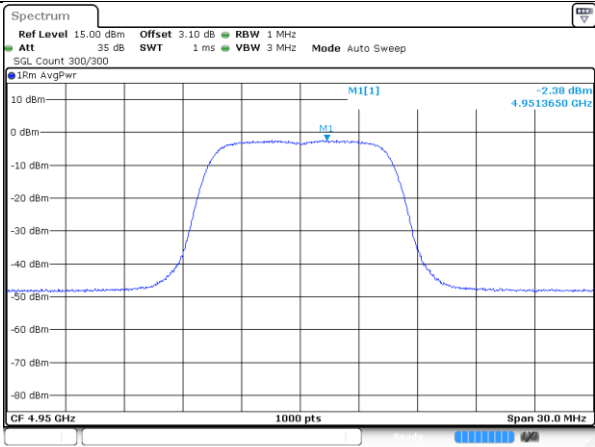
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4950-10MHz-802.11n-1-a



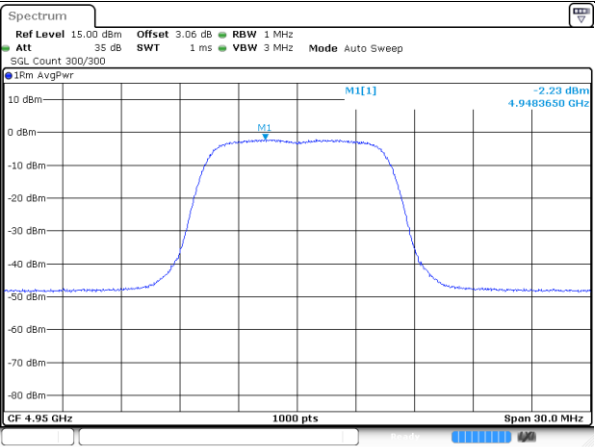
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4950-10MHz-802.11n-1-b



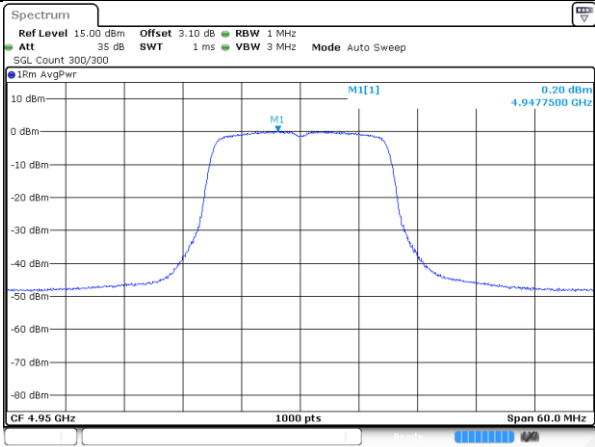
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4950-10MHz-802.11n-2-a



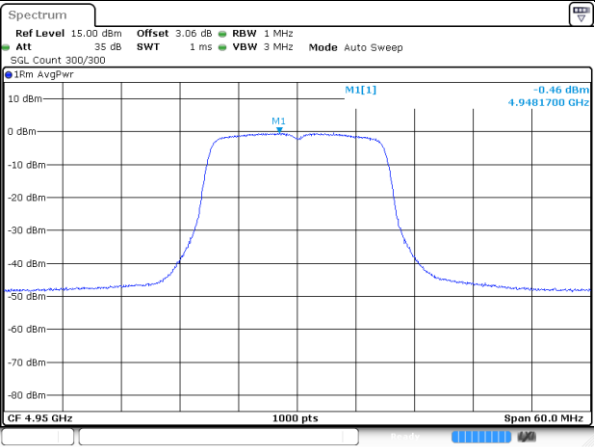
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4950-10MHz-802.11n-2-b



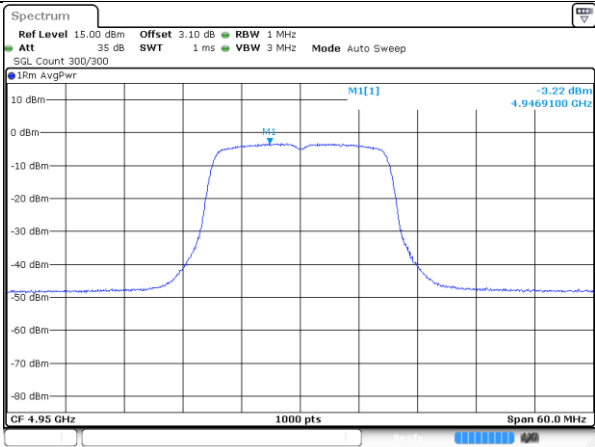
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4950-20MHz-802.11ac-1-a



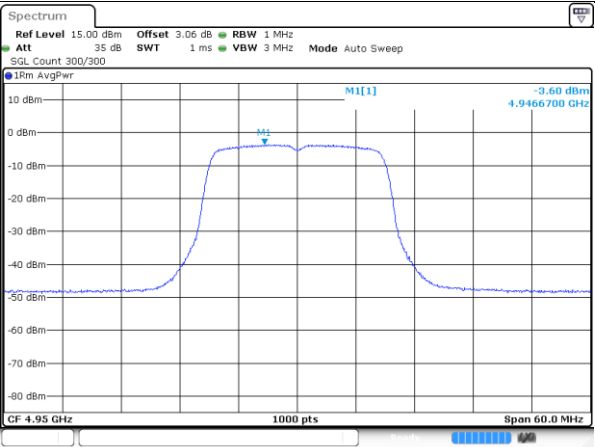
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4950-20MHz-802.11ac-1-b



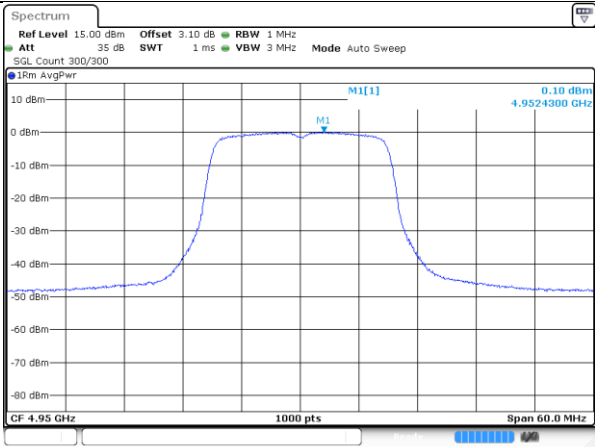
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4950-20MHz-802.11ac-2-a



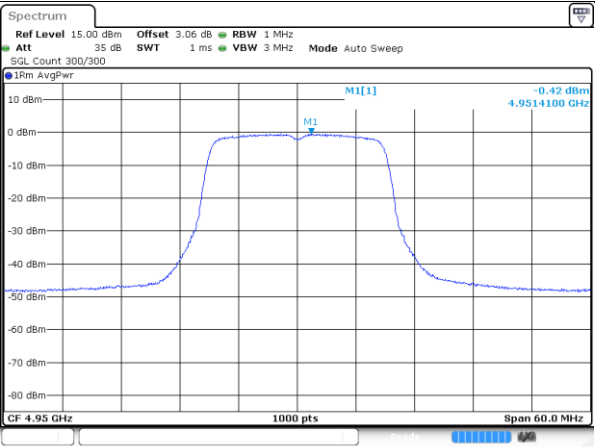
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4950-20MHz-802.11ac-2-b



Date: 10 JUN 2024 15:09:26

4950-20MHz-802.11n-1-a



Date: 10 JUN 2024 15:09:33

4950-20MHz-802.11n-1-b