

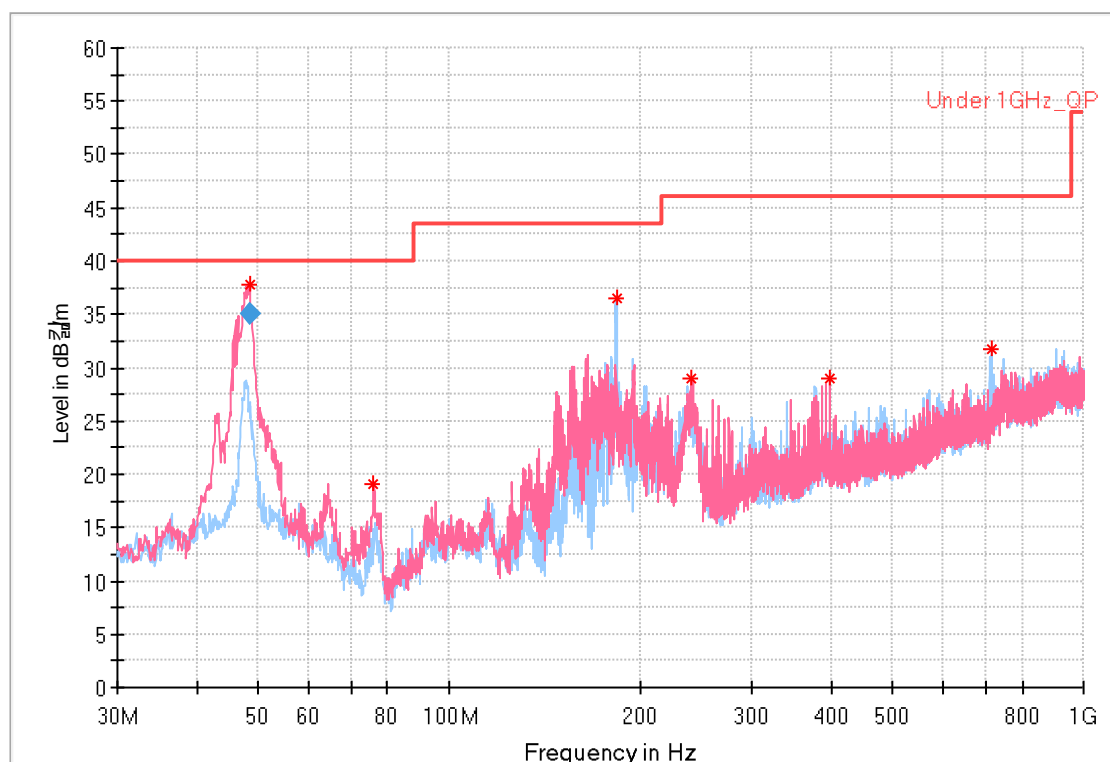
3.5.4 Test Result of Radiated Spurious Emission

Remarks

1. Quasi Peak(dBμV/m) = Quasi Peak Reading Value(dBμV/m) + Correction Factor(dB)
2. Total Factor(dB) = T.F (dB) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin(dB) = (Quasi Peak) Result (dBμV/m) – (Quasi Peak) Limit (dBμV/m)
4. Measurement Distance = 3 m
5. The intent is to test at 100 % duty cycle.
6. DCCF = Duty Cycle Correction Factor.
7. No other spurious and harmonic emissions were found greater than listed emissions on above table

3.5.4.1 Radiated Emissions (Below 1 GHz)

Worst case - RSE(Below 1 GHz)_2.4GHz WLAN_802.11n(HT20)



Tested Frequency [MHz]	Frequency [MHz]	Reading Value [dBuV]	Pol [H/V]	EUT Axis	Detector Mode	T.F [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]
2462	48.53	55.94	V	X	Peak	-18.10	37.84	40.00	2.16
	48.53	53.11	V	X	Quasi Peak	-18.10	35.01	40.00	4.99
	76.08	44.29	V	X	Peak	-25.30	18.99	40.00	21.01
	183.36	58.53	H	X	Peak	-22.10	36.43	43.52	7.09
	240.10	48.24	V	X	Peak	-19.20	29.04	46.02	16.98
	398.02	44.17	V	X	Peak	-15.20	28.97	46.02	17.05
	715.69	41.66	H	X	Peak	-9.90	31.76	46.02	14.26

3.5.4.2 Radiated Emissions (Above 1 GHz)

TM 1 (802.11b) _ 12 V

Tested Frequency [MHz]	Frequency [MHz]	Reading Value [dBuV]	Pol [H/V]	EUT Axis	Detector Mode	DCCF [dB]	T.F [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]
2412	2 388.89	48.45	H	X	Peak	0.00	3.05	51.50	74.00	22.50
	2 389.32	36.59	H	X	Average	0.00	3.05	39.64	54.00	14.36
	4 824.05	48.80	V	X	Peak	0.00	4.73	53.53	74.00	20.47
	4 823.99	44.00	V	X	Average	0.00	4.73	48.73	54.00	5.27
	7 234.76	42.23	H	X	Peak	0.00	7.86	50.09	74.00	23.91
	7 235.00	31.76	H	X	Average	0.00	7.86	39.62	54.00	14.38
2437	4 874.14	47.94	V	X	Peak	0.00	5.08	53.02	74.00	20.98
	4 873.96	43.43	V	X	Average	0.00	5.08	48.51	54.00	5.49
	7 309.72	41.83	H	X	Peak	0.00	7.91	49.74	74.00	24.26
	7 309.97	31.92	H	X	Average	0.00	7.91	39.83	54.00	14.17
2462	2 483.73	56.57	H	X	Peak	0.00	3.43	60.00	74.00	14.00
	2 484.00	44.49	H	X	Average	0.00	3.43	47.92	54.00	6.08
	4 923.74	48.38	V	X	Peak	0.00	5.29	53.67	74.00	20.33
	4 923.98	43.91	V	X	Average	0.00	5.29	49.20	54.00	4.80
	7 387.66	42.27	H	X	Peak	0.00	8.03	50.30	74.00	23.70
	7 387.20	32.50	H	X	Average	0.00	8.03	40.53	54.00	13.47

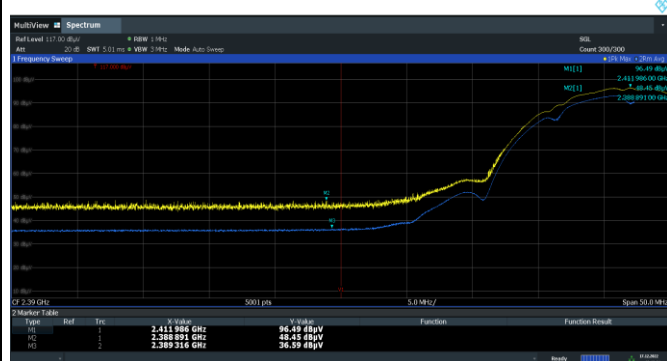
TM 1 (802.11b) _ 24 V

Tested Frequency [MHz]	Frequency [MHz]	Reading Value [dBuV]	Pol [H/V]	EUT Axis	Detector Mode	DCCF [dB]	T.F [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]
2412	2 389.61	47.82	H	X	Peak	0.00	3.05	50.87	74.00	23.13
	2 389.73	36.72	H	X	Average	0.00	3.05	39.77	54.00	14.23
	4 823.94	48.52	V	X	Peak	0.00	4.73	53.25	74.00	20.75
	4 823.96	43.93	V	X	Average	0.00	4.73	48.66	54.00	5.34
	7 234.84	42.15	H	X	Peak	0.00	7.86	50.01	74.00	23.99
	7 235.00	31.65	H	X	Average	0.00	7.86	39.51	54.00	14.49
2437	4 874.02	48.02	V	X	Peak	0.00	5.08	53.10	74.00	20.90
	4 873.99	43.38	V	X	Average	0.00	5.08	48.46	54.00	5.54
	7 312.36	42.58	H	X	Peak	0.00	7.91	50.49	74.00	23.51
	7 311.98	32.23	H	X	Average	0.00	7.91	40.14	54.00	13.86
2462	2 484.15	56.74	H	X	Peak	0.00	3.43	60.17	74.00	13.83
	2 483.91	44.33	H	X	Average	0.00	3.43	47.76	54.00	6.24
	4 923.99	48.45	V	X	Peak	0.00	5.29	53.74	74.00	20.26
	4 923.93	43.75	V	X	Average	0.00	5.29	49.04	54.00	4.96
	7 384.10	43.18	H	X	Peak	0.00	8.02	51.20	74.00	22.80
	7 384.92	32.46	H	X	Average	0.00	8.03	40.49	54.00	13.51

802.11b

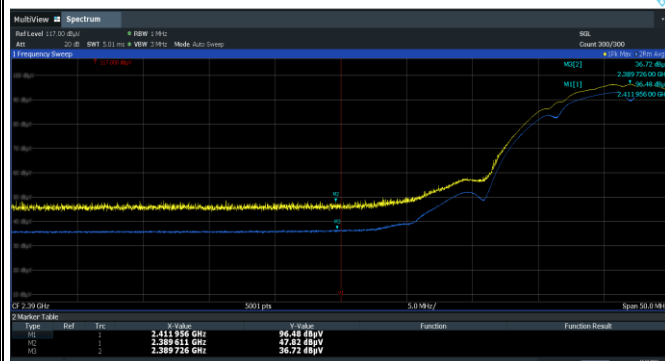
12 V

Bandedge_2 412 MHz

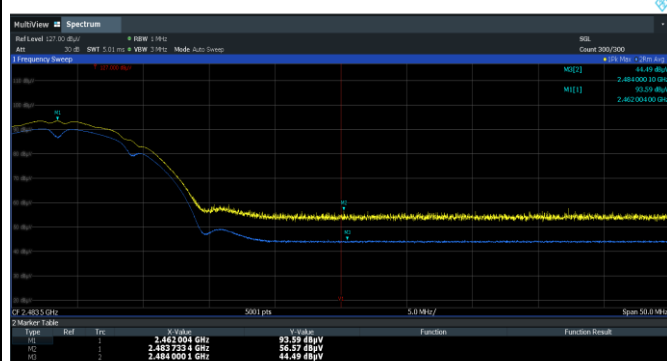


24 V

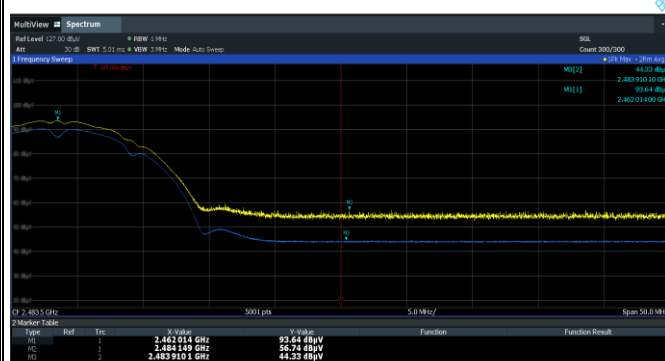
Bandedge_2 412 MHz



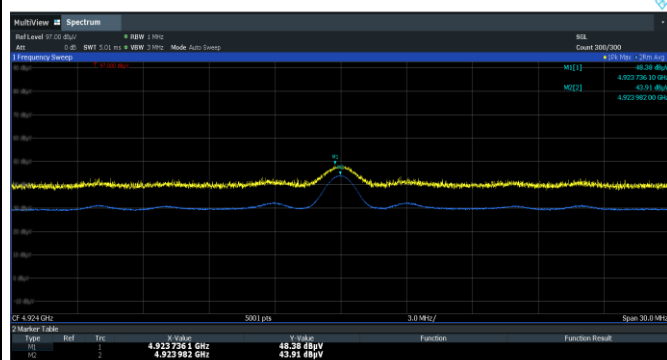
Bandedge_2 462 MHz



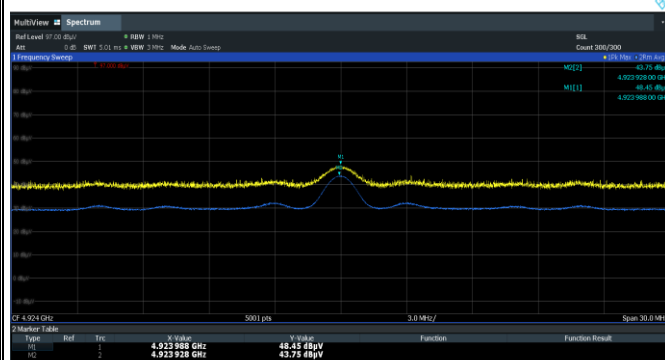
Bandedge_2 462 MHz



Spurious _ Worst case



Spurious _ Worst case



**TM 2 (802.11g) _ 12 V**

Tested Frequency [MHz]	Frequency [MHz]	Reading Value [dBuV]	Pol [H/V]	EUT Axis	Detector Mode	DCCF [dB]	T.F [dB/M]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]
2412	2 389.84	62.25	H	X	Peak	0.00	3.05	65.30	74.00	8.70
	2 389.85	46.60	H	X	Average	0.00	3.05	49.65	54.00	4.35
	4 824.56	50.98	V	X	Peak	0.00	4.74	55.72	74.00	18.28
	4 824.10	40.90	V	X	Average	0.00	4.73	45.63	54.00	8.37
	7 232.80	49.51	H	X	Peak	0.00	7.86	57.37	74.00	16.63
	7 233.52	35.97	H	X	Average	0.00	7.86	43.83	54.00	10.17
2437	4 875.06	50.88	V	X	Peak	0.00	5.09	55.97	74.00	18.03
	4 873.84	39.62	V	X	Average	0.00	5.08	44.70	54.00	9.30
	7 308.40	49.78	H	X	Peak	0.00	7.91	57.69	74.00	16.31
	7 310.44	36.87	H	X	Average	0.00	7.91	44.78	54.00	9.22
2462	2 483.90	58.96	H	X	Peak	0.00	3.43	62.39	74.00	11.61
	2 483.93	45.40	H	X	Average	0.00	3.43	48.83	54.00	5.17
	4 924.70	51.26	V	X	Peak	0.00	5.29	56.55	74.00	17.45
	4 923.96	39.85	V	X	Average	0.00	5.29	45.14	54.00	8.86
	7 382.98	50.54	H	X	Peak	0.00	8.02	58.56	74.00	15.44
	7 384.04	37.22	H	X	Average	0.00	8.02	45.24	54.00	8.76

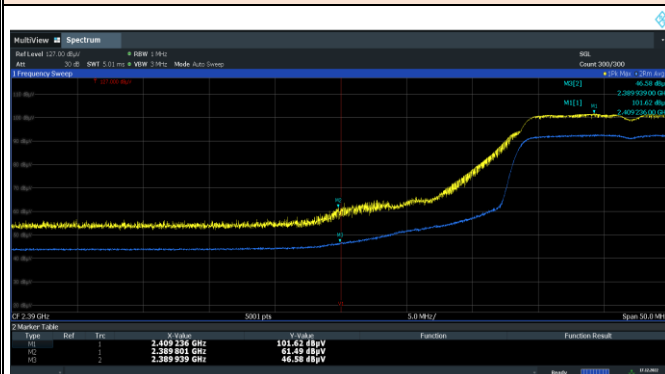
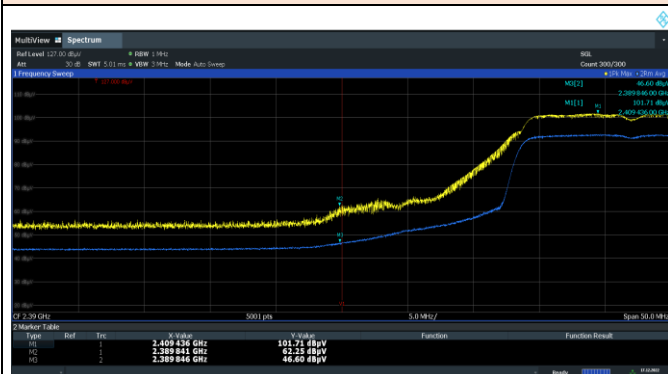
TM 2 (802.11g) _ 24 V

Tested Frequency [MHz]	Frequency [MHz]	Reading Value [dBuV]	Pol [H/V]	EUT Axis	Detector Mode	DCCF [dB]	T.F [dB/M]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]
2412	2 389.80	61.49	H	X	Peak	0.00	3.05	64.54	74.00	9.46
	2 389.94	46.58	H	X	Average	0.00	3.05	49.63	54.00	4.37
	4 824.44	51.54	V	X	Peak	0.00	4.74	56.28	74.00	17.72
	4 824.00	40.77	V	X	Average	0.00	4.73	45.50	54.00	8.50
	7 232.56	49.04	H	X	Peak	0.00	7.86	56.90	74.00	17.10
	7 233.46	35.87	H	X	Average	0.00	7.86	43.73	54.00	10.27
2437	4 874.82	50.94	V	X	Peak	0.00	5.09	56.03	74.00	17.97
	4 874.04	39.63	V	X	Average	0.00	5.08	44.71	54.00	9.29
	7 307.48	50.26	H	X	Peak	0.00	7.91	58.17	74.00	15.83
	7 310.16	36.73	H	X	Average	0.00	7.91	44.64	54.00	9.36
2462	2 483.67	59.38	H	X	Peak	0.00	3.43	62.81	74.00	11.19
	2 483.52	45.53	H	X	Average	0.00	3.43	48.96	54.00	5.04
	4 925.00	51.28	V	X	Peak	0.00	5.29	56.57	74.00	17.43
	4 923.80	39.77	V	X	Average	0.00	5.29	45.06	54.00	8.94
	7 382.72	50.48	H	X	Peak	0.00	8.02	58.50	74.00	15.50
	7 383.46	37.08	H	X	Average	0.00	8.02	45.10	54.00	8.90

24 V

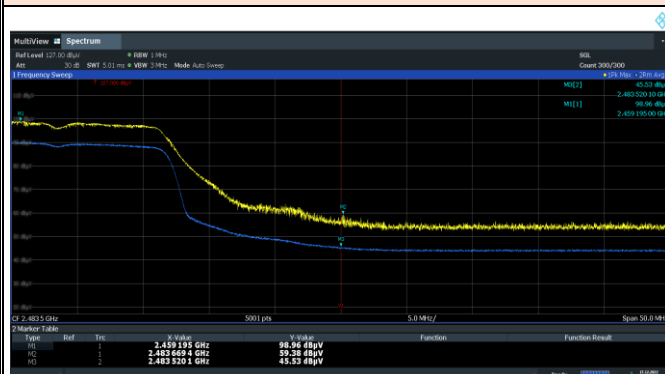
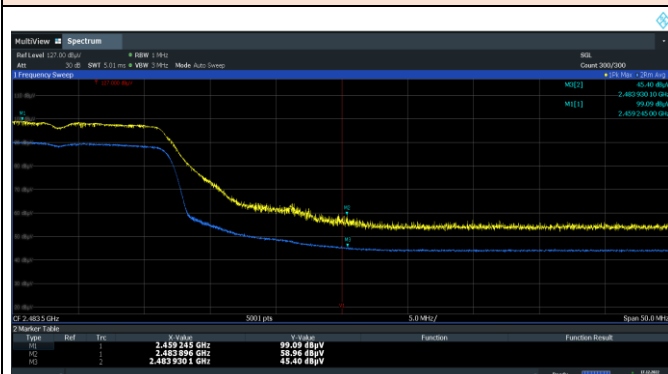
Bandedge_2 412 MHz

Bandedge_2 412 MHz



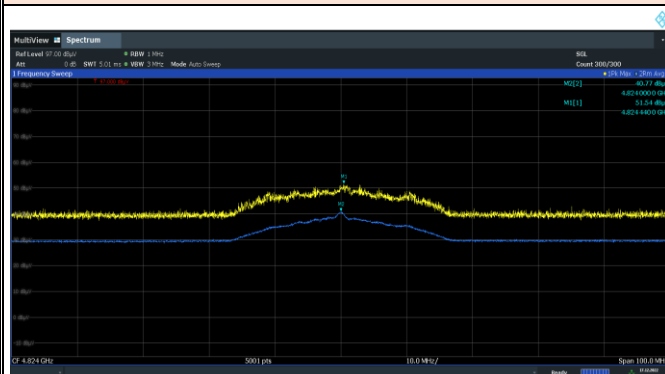
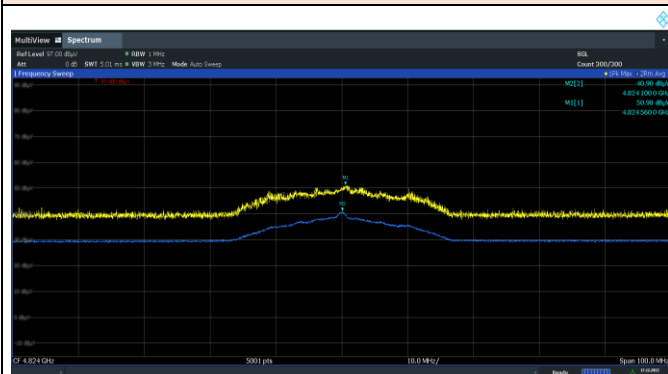
Bandedge_2 462 MHz

Bandedge_2 462 MHz



Spurious _ Worst case

Spurious _ Worst case



TM 3 (802.11n(HT20)) _ 12 V

Tested Frequency [MHz]	Frequency [MHz]	Reading Value [dBuV]	Pol [H/V]	EUT Axis	Detector Mode	DCCF [dB]	T.F [dB/M]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]
2412	2 389.85	65.85	H	X	Peak	0.00	3.05	68.90	74.00	5.10
	2 389.90	48.79	H	X	Average	0.00	3.05	51.84	54.00	2.16
	4 822.10	53.23	V	X	Peak	0.00	4.73	57.96	74.00	16.04
	4 823.98	41.16	V	X	Average	0.00	4.73	45.89	54.00	8.11
	7 231.64	49.32	H	X	Peak	0.00	7.86	57.18	74.00	16.82
	7 231.76	36.02	H	X	Average	0.00	7.86	43.88	54.00	10.12
2437	4 871.82	52.01	V	X	Peak	0.00	5.08	57.09	74.00	16.91
	4 874.14	39.63	V	X	Average	0.00	5.08	44.71	54.00	9.29
	7 312.18	51.42	H	X	Peak	0.00	7.91	59.33	74.00	14.67
	7 311.78	36.19	H	X	Average	0.00	7.91	44.10	54.00	9.90
2462	2 483.68	62.58	H	X	Peak	0.00	3.44	66.02	74.00	7.98
	2 483.61	46.80	H	X	Average	0.00	3.44	50.24	54.00	3.76
	4 924.10	52.26	V	X	Peak	0.00	5.29	57.55	74.00	16.45
	4 923.92	39.96	V	X	Average	0.00	5.29	45.25	54.00	8.75
	7 381.80	50.95	H	X	Peak	0.00	8.03	58.98	74.00	15.02
	7 381.70	36.37	H	X	Average	0.00	8.03	44.40	54.00	9.60

TM 3 (802.11n(HT20)) _ 24 V

Tested Frequency [MHz]	Frequency [MHz]	Reading Value [dBuV]	Pol [H/V]	EUT Axis	Detector Mode	DCCF [dB]	T.F [dB/M]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]
2412	2 389.87	65.19	H	X	Peak	0.00	3.05	68.24	74.00	5.76
	2 389.76	48.71	H	X	Average	0.00	3.05	51.76	54.00	2.24
	4 823.22	52.72	V	X	Peak	0.00	4.73	57.45	74.00	16.55
	4 824.04	40.77	V	X	Average	0.00	4.73	45.50	54.00	8.50
	7 232.04	50.47	H	X	Peak	0.00	7.86	58.33	74.00	15.67
	7 232.60	35.77	H	X	Average	0.00	7.86	43.63	54.00	10.37
2437	4 872.00	52.56	V	X	Peak	0.00	5.08	57.64	74.00	16.36
	4 874.16	39.57	V	X	Average	0.00	5.08	44.65	54.00	9.35
	7 312.12	51.03	H	X	Peak	0.00	7.91	58.94	74.00	15.06
	7 313.86	36.03	H	X	Average	0.00	7.91	43.94	54.00	10.06
2462	2 484.52	61.76	H	X	Peak	0.00	3.44	65.20	74.00	8.80
	2 483.69	46.80	H	X	Average	0.00	3.44	50.24	54.00	3.76
	4 924.52	52.25	V	X	Peak	0.00	5.29	57.54	74.00	16.46
	4 924.00	39.90	V	X	Average	0.00	5.29	45.19	54.00	8.81
	7 387.28	51.59	H	X	Peak	0.00	8.03	59.62	74.00	14.38
	7 386.22	36.16	H	X	Average	0.00	8.03	44.19	54.00	9.81



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VERITAS

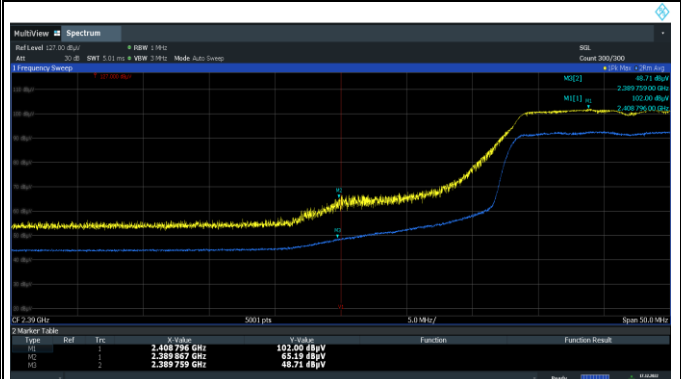
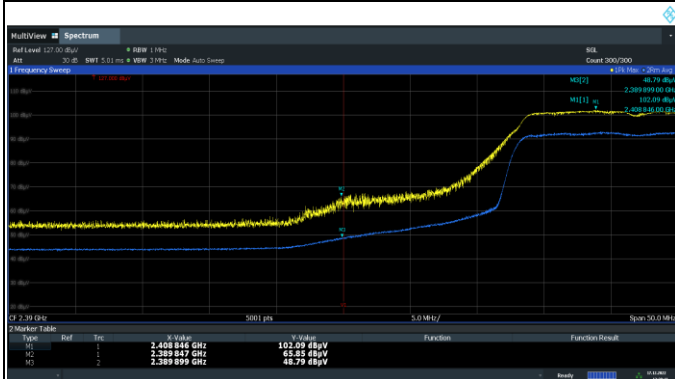
802.11n(HT20)

12 V

Bandedge_2 412 MHz

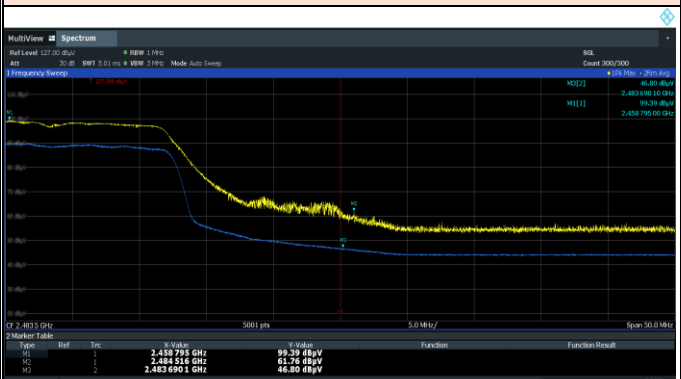
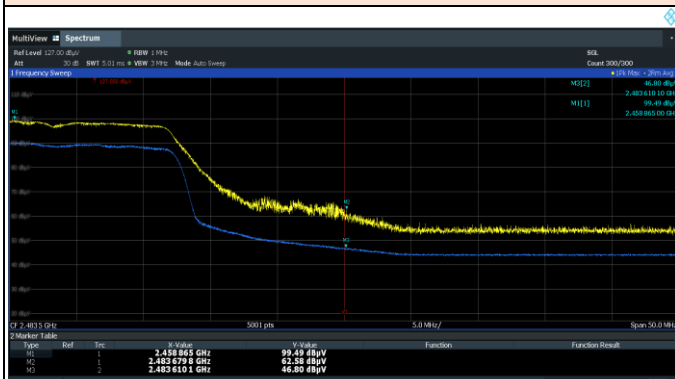
24 V

Bandedge_2 412 MHz



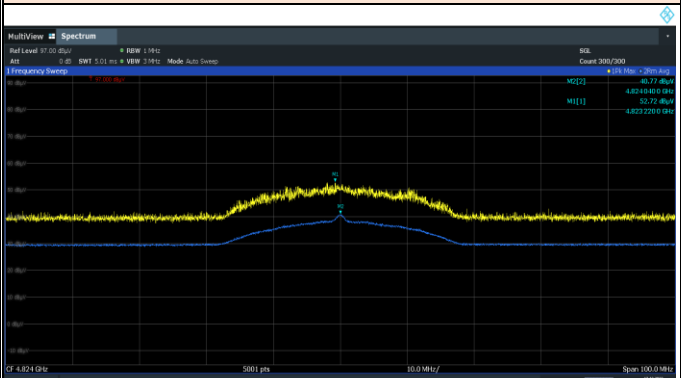
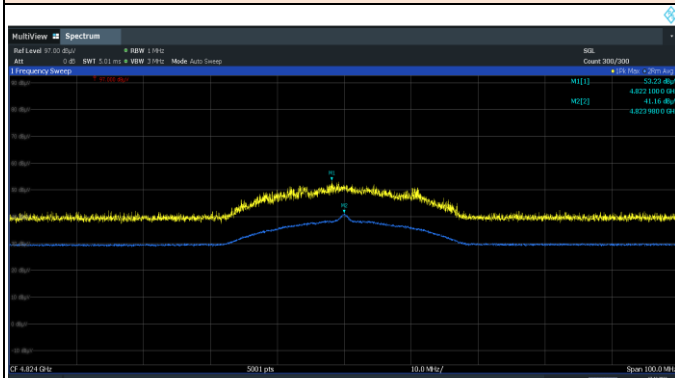
Bandedge_2 462 MHz

Bandedge_2 462 MHz



Spurious _ Worst case

Spurious _ Worst case



**TM 4 (802.11n(HT40)) _ 12 V**

Tested Frequency [MHz]	Frequency [MHz]	Reading Value [dBuV]	Pol [H/V]	EUT Axis	Detector Mode	DCCF [dB]	T.F [dB/M]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]
2422	2 388.98	61.39	H	X	Peak	0.00	3.05	64.44	74.00	9.56
	2 389.78	47.95	H	X	Average	0.00	3.05	51.00	54.00	3.00
	4 843.56	47.25	V	X	Peak	0.00	4.73	51.98	74.00	22.02
	4 844.00	37.09	V	X	Average	0.00	4.73	41.82	54.00	12.18
	7 263.58	45.98	H	X	Peak	0.00	7.86	53.84	74.00	20.16
	7 269.58	33.73	H	X	Average	0.00	7.86	41.59	54.00	12.41
2437	4 873.68	48.73	V	X	Peak	0.00	5.08	53.81	74.00	20.19
	4 873.82	37.77	V	X	Average	0.00	5.08	42.85	54.00	11.15
	7 313.52	47.00	H	X	Peak	0.00	7.91	54.91	74.00	19.09
	7 314.42	34.22	H	X	Average	0.00	7.91	42.13	54.00	11.87
2452	2 487.11	60.46	H	X	Peak	0.00	3.44	63.90	74.00	10.10
	2 484.02	47.59	H	X	Average	0.00	3.44	51.03	54.00	2.97
	4 904.00	48.65	V	X	Peak	0.00	5.29	53.94	74.00	20.06
	4 904.04	38.18	V	X	Average	0.00	5.29	43.47	54.00	10.53
	7 363.02	47.49	H	X	Peak	0.00	8.03	55.52	74.00	18.48
	7 359.32	34.83	H	X	Average	0.00	8.03	42.86	54.00	11.14

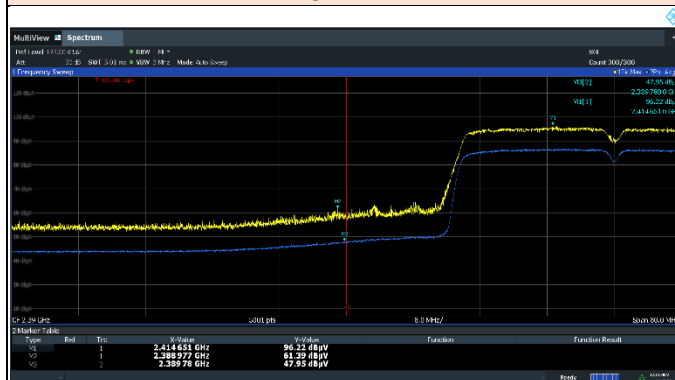
TM 4 (802.11n(HT40)) _ 24 V

Tested Frequency [MHz]	Frequency [MHz]	Reading Value [dBuV]	Pol [H/V]	EUT Axis	Detector Mode	DCCF [dB]	T.F [dB/M]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]
2422	2 388.70	61.34	H	X	Peak	0.00	3.05	64.39	74.00	9.61
	2 389.49	47.81	H	X	Average	0.00	3.05	50.86	54.00	3.14
	4 843.52	47.12	V	X	Peak	0.00	4.73	51.85	74.00	22.15
	4 844.04	36.80	V	X	Average	0.00	4.73	41.53	54.00	12.47
	7 264.04	46.13	H	X	Peak	0.00	7.86	53.99	74.00	20.01
	7 269.82	33.61	H	X	Average	0.00	7.86	41.47	54.00	12.53
2437	4 873.86	48.31	V	X	Peak	0.00	5.08	53.39	74.00	20.61
	4 873.98	37.86	V	X	Average	0.00	5.08	42.94	54.00	11.06
	7 313.82	47.33	H	X	Peak	0.00	7.91	55.24	74.00	18.76
	7 314.66	34.17	H	X	Average	0.00	7.91	42.08	54.00	11.92
2452	2 484.91	60.72	H	X	Peak	0.00	3.44	64.16	74.00	9.84
	2 484.05	47.85	H	X	Average	0.00	3.44	51.29	54.00	2.71
	4 904.16	49.04	V	X	Peak	0.00	5.29	54.33	74.00	19.67
	4 904.10	38.11	V	X	Average	0.00	5.29	43.40	54.00	10.60
	7 358.92	47.44	H	X	Peak	0.00	8.03	55.47	74.00	18.53
	7 359.48	34.79	H	X	Average	0.00	8.03	42.82	54.00	11.18

802.11n(HT40)

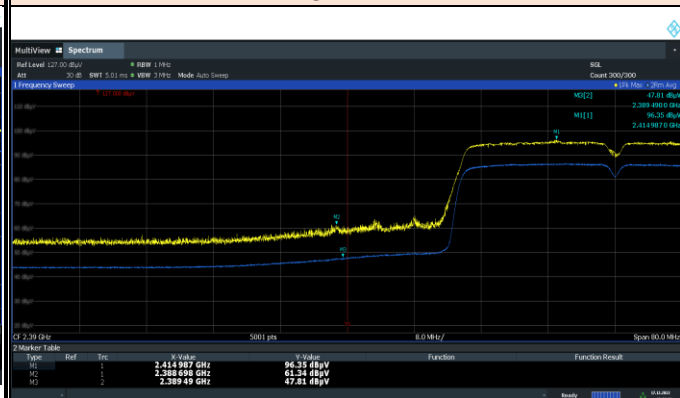
12 V

Bandedge_2 422 MHz

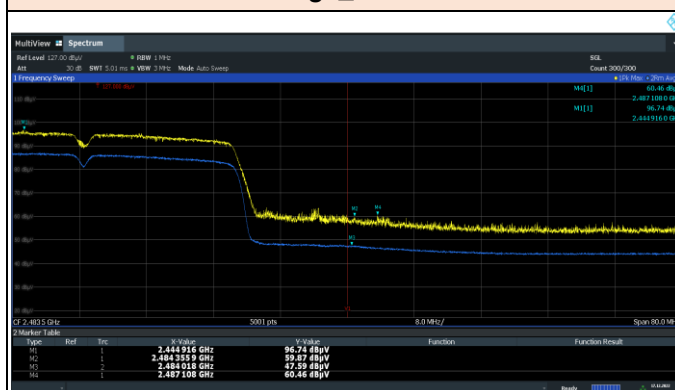


24 V

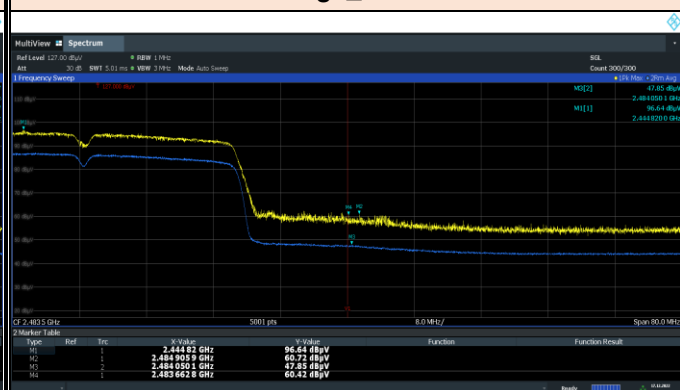
Bandedge_2 422 MHz



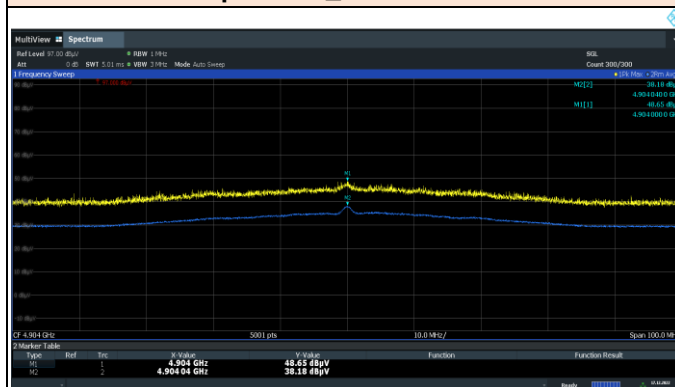
Bandedge_2 452 MHz



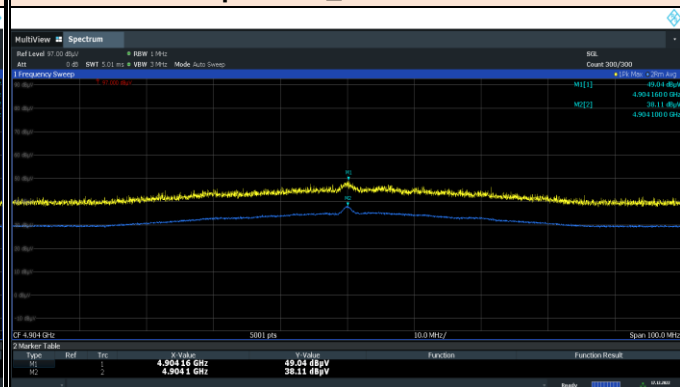
Bandedge_2 45 MHz



Spurious _ Worst case

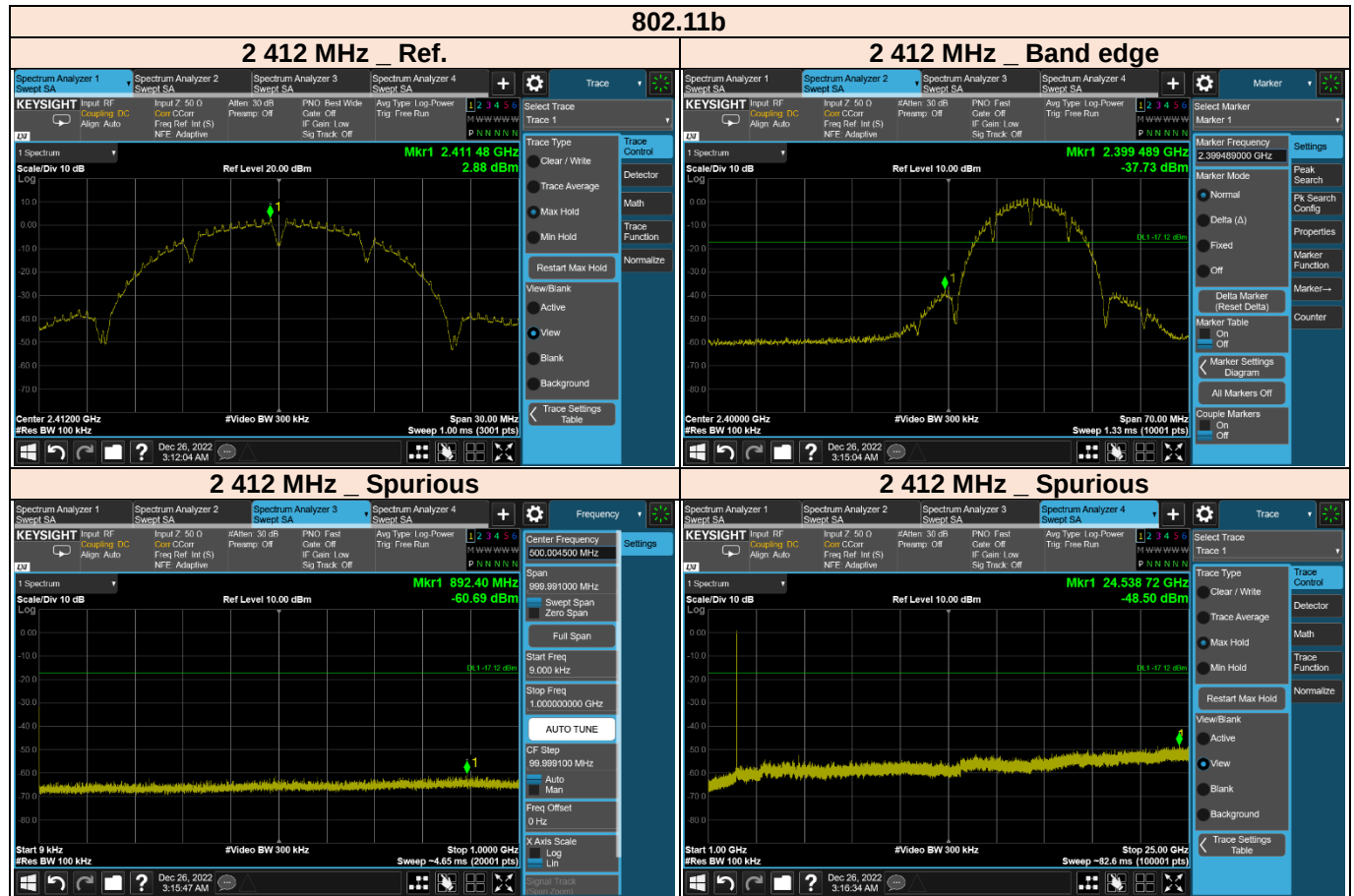


Spurious _ Worst case



3.5.5 Test Result of Conducted Spurious Emission

[DC 12 V Spurious Emission]

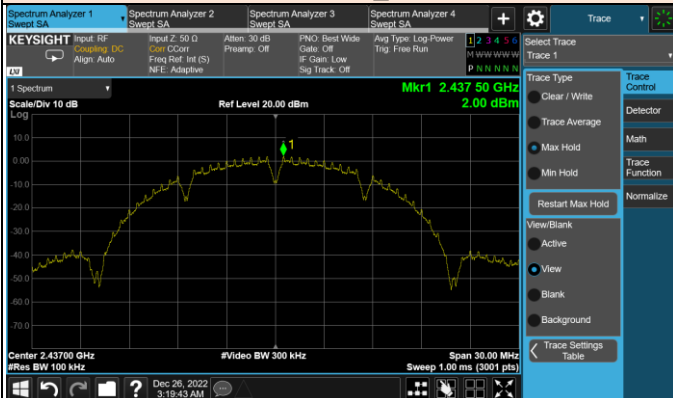




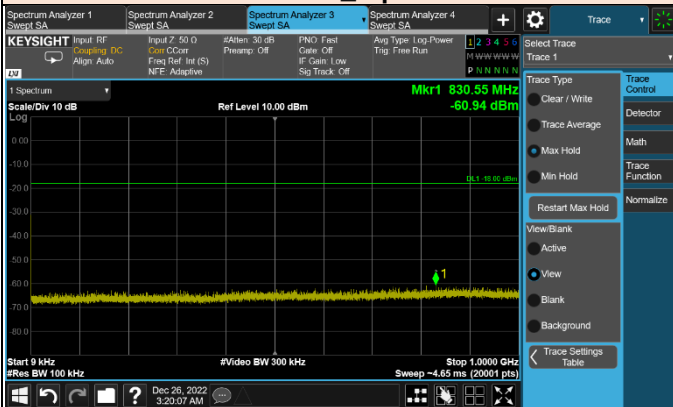
BUREAU
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802.11b

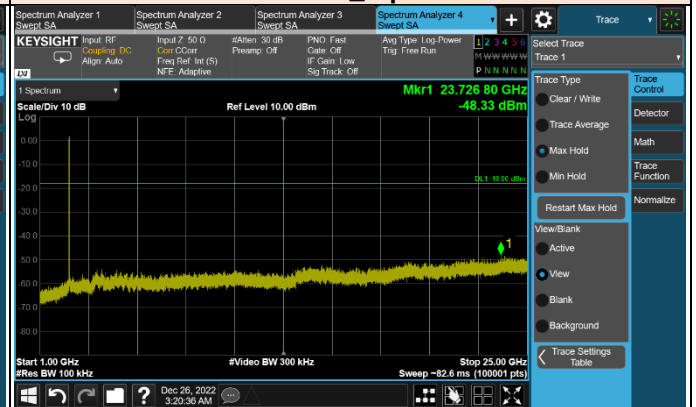
2 437 MHz _ Ref.



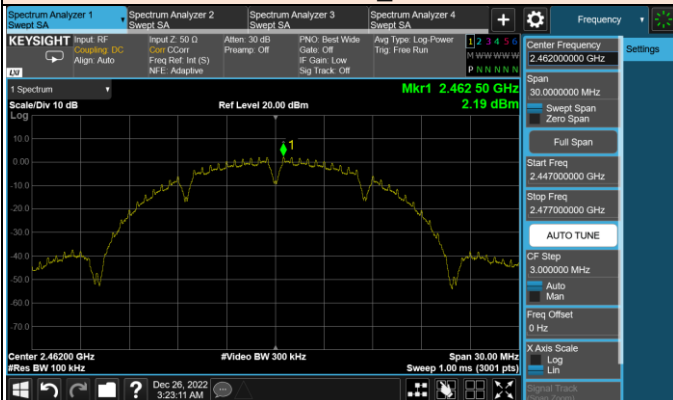
2 437 MHz _ Spurious



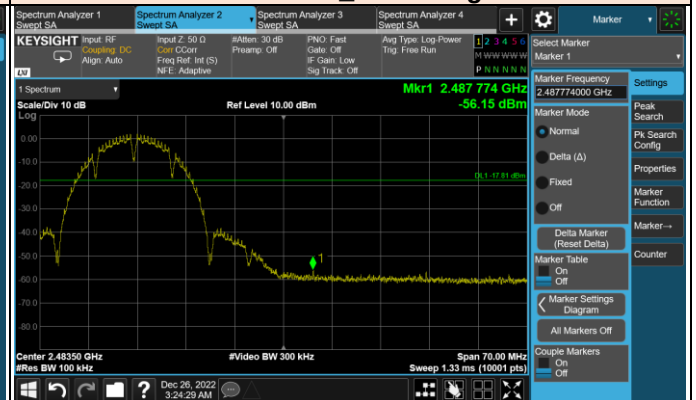
2 437 MHz _ Spurious



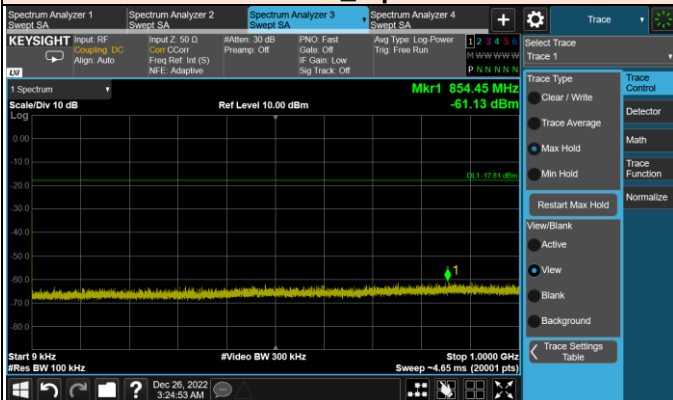
2 462 MHz _ Ref



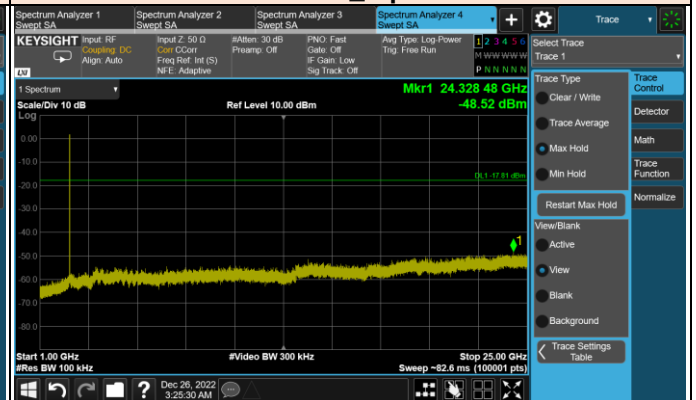
2 462 MHz _ Band edge



2 462 MHz _ Spurious



2 462 MHz _ Spurious

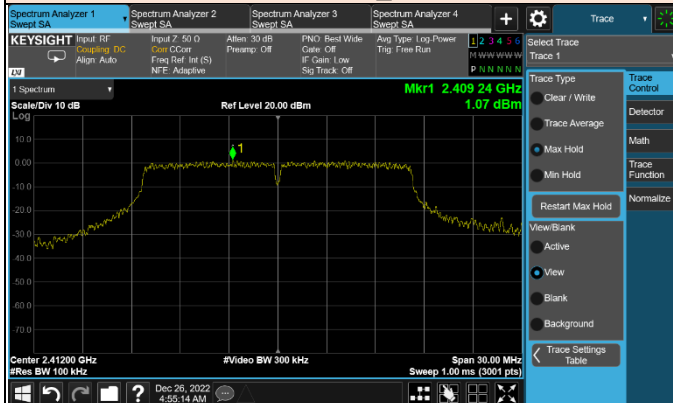




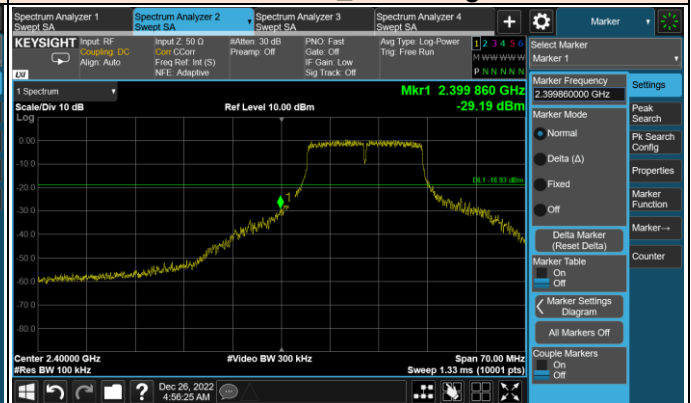
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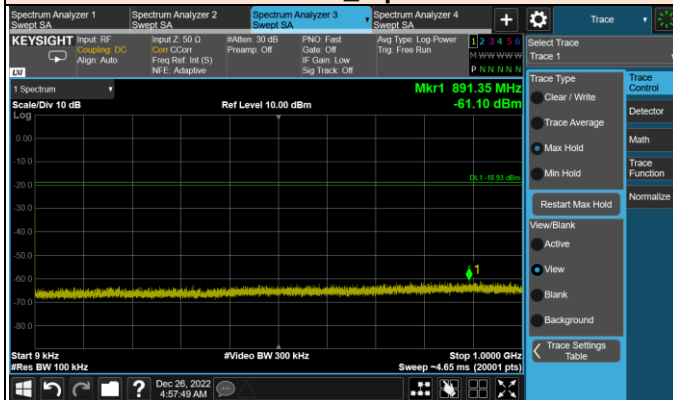
2 412 MHz _ Ref.



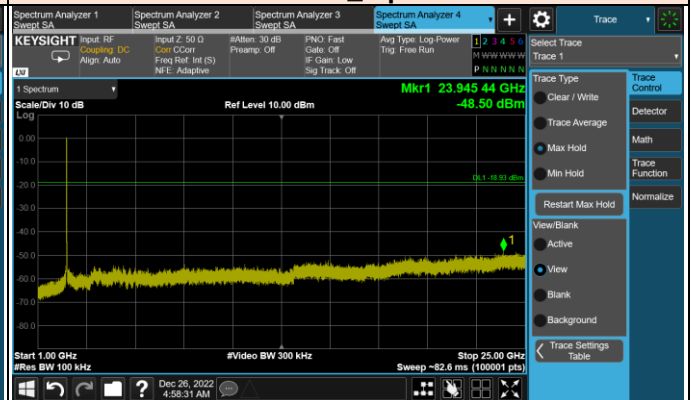
2 412 MHz _ Band edge



2 412 MHz _ Spurious



2 412 MHz _ Spurious

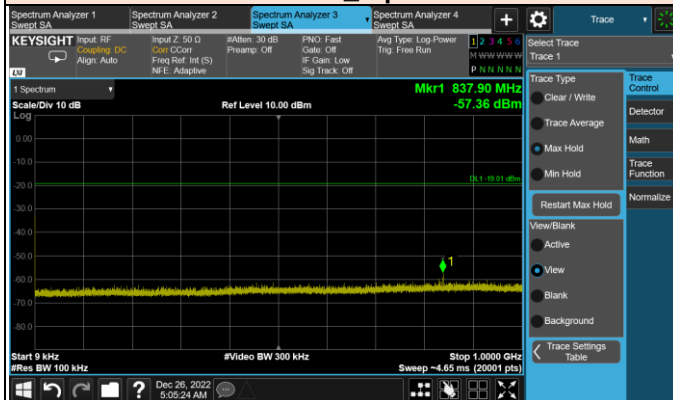


2 437 MHz _ Ref.

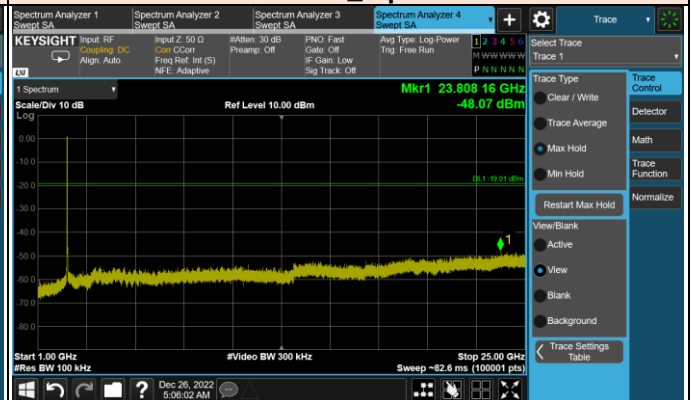


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2 437 MHz _ Spurious



2 437 MHz _ Spurious



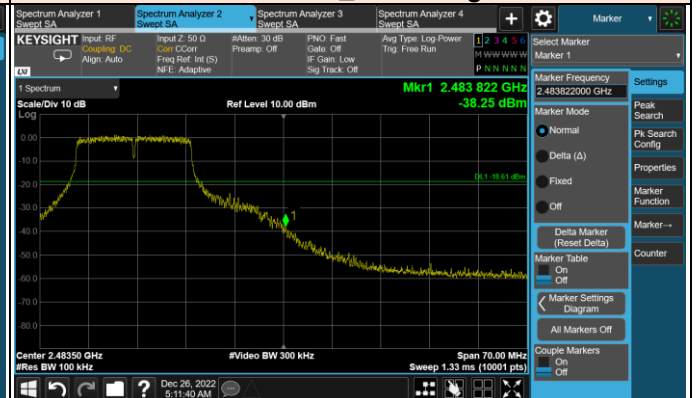
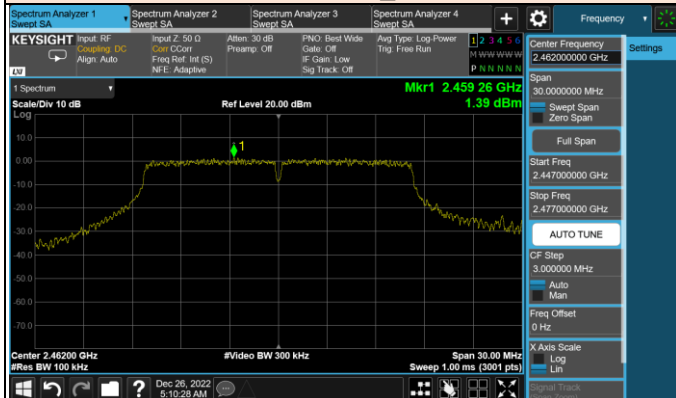


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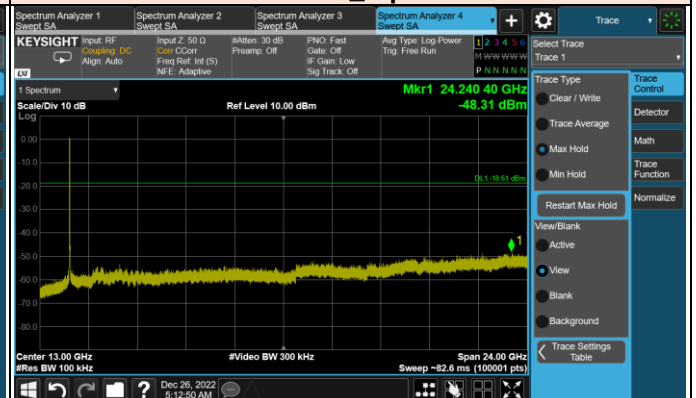
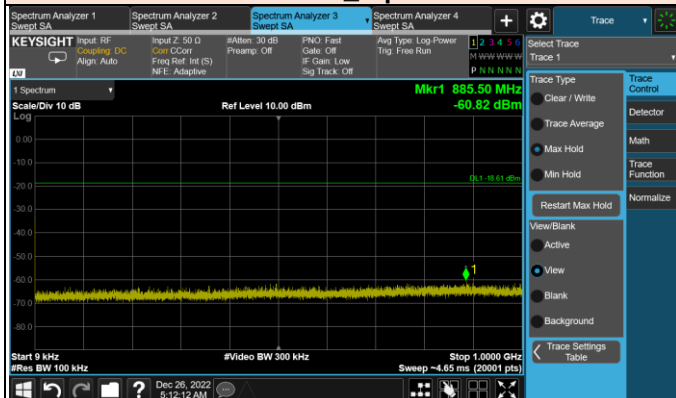
2 462 MHz _ Ref

2 462 MHz _ Band edge



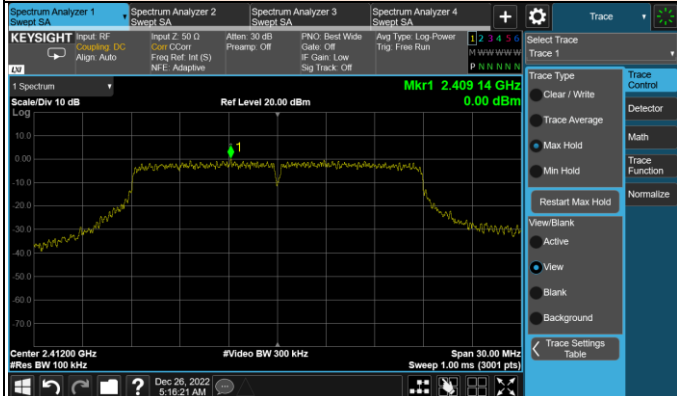
2 462 MHz _ Spurious

2 462 MHz _ Spurious



802.11n(HT20)

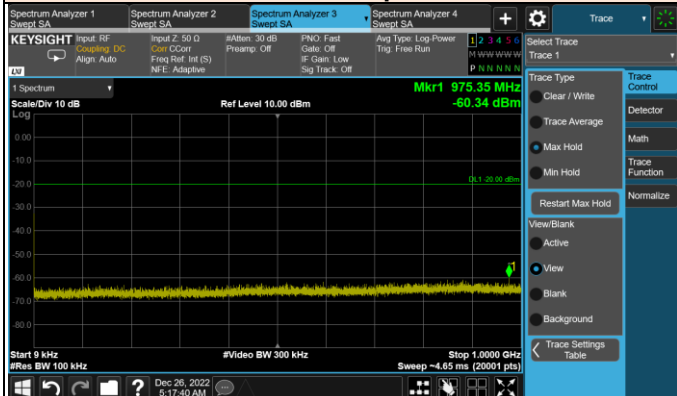
2 412 MHz _ Ref



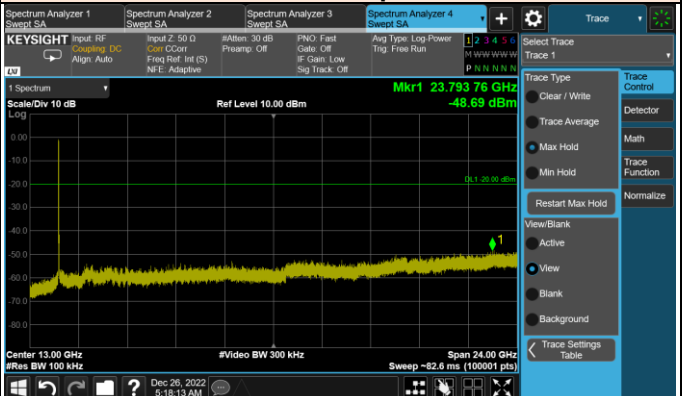
2 412 MHz _ Band edge



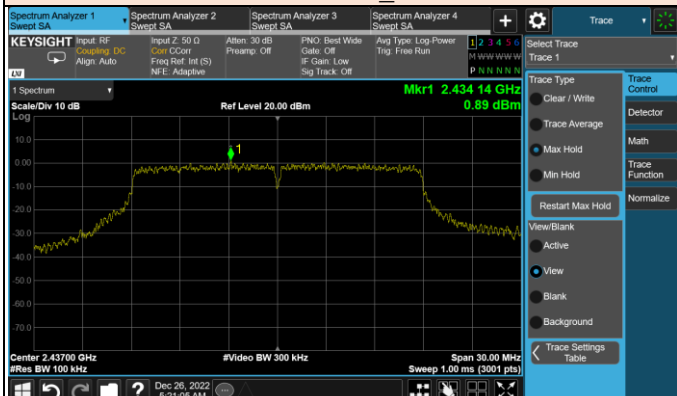
2 412 MHz _ Spurious



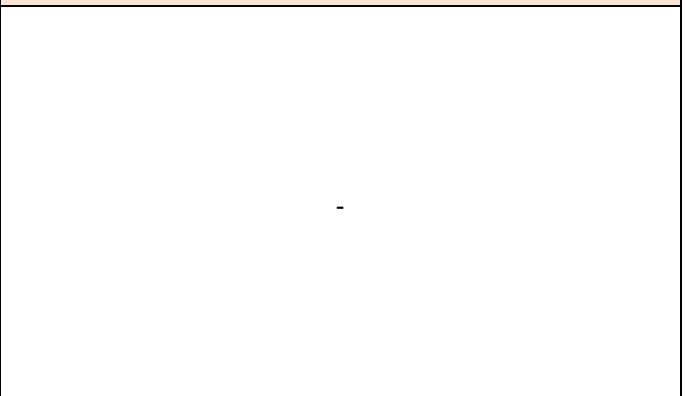
2 412 MHz _ Spurious



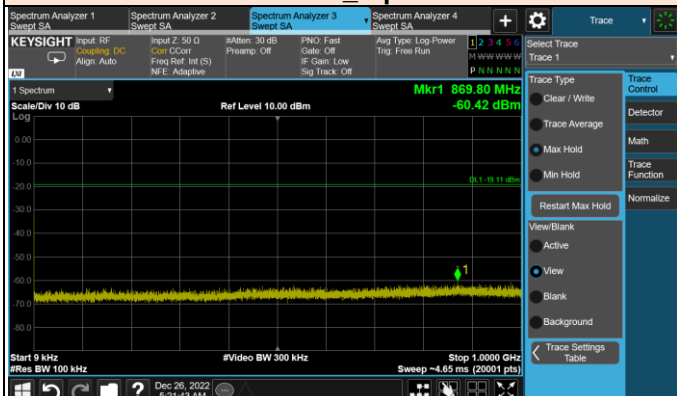
2 437 MHz _ Ref



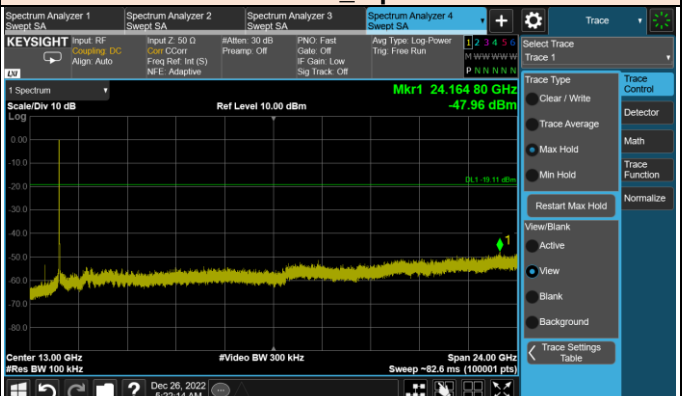
2 437 MHz _ Spurious



2 437 MHz _ Spurious



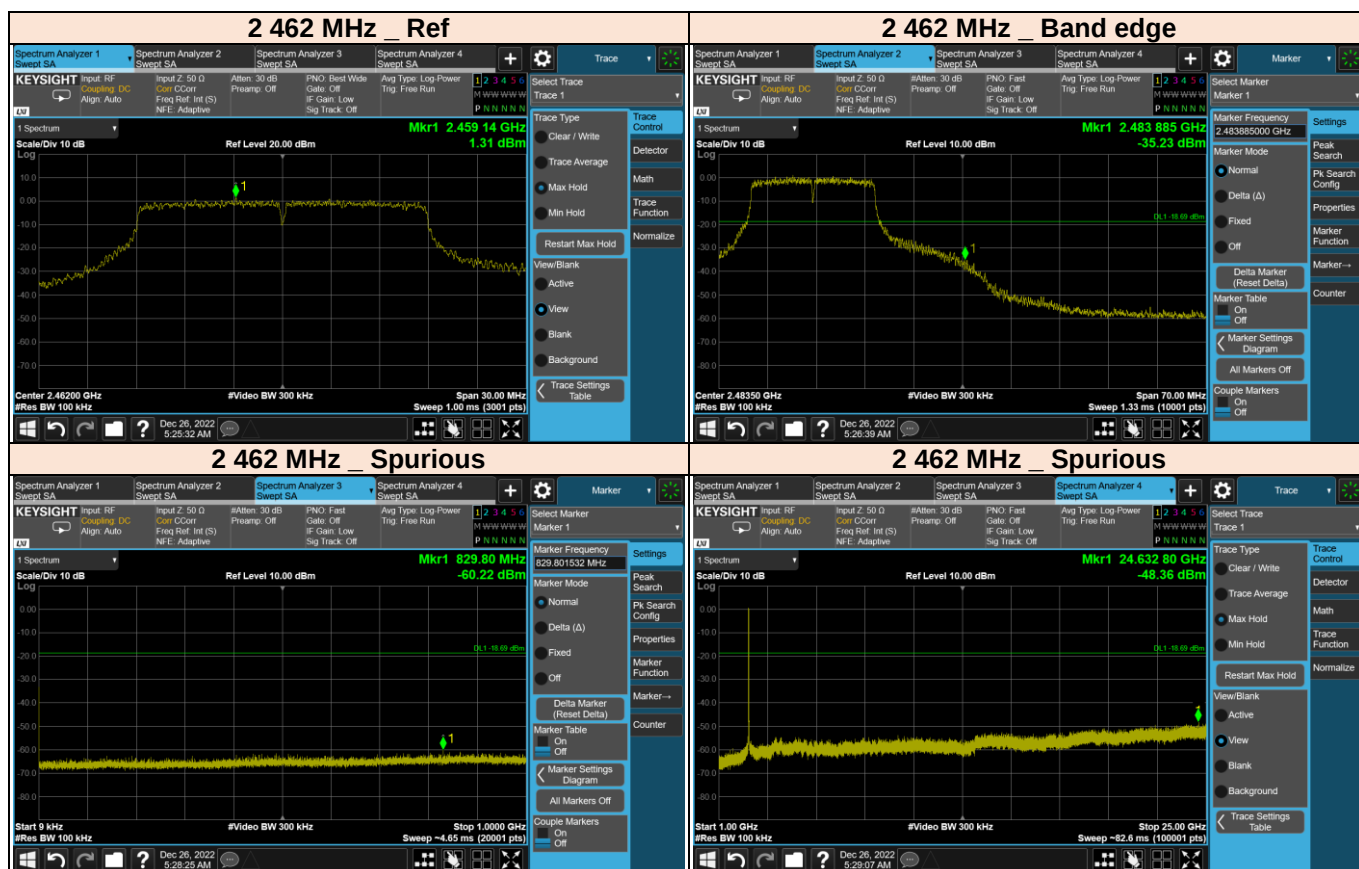
2 437 MHz _ Spurious



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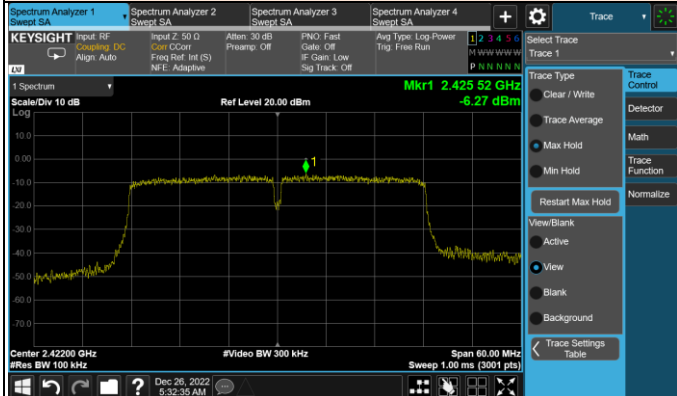




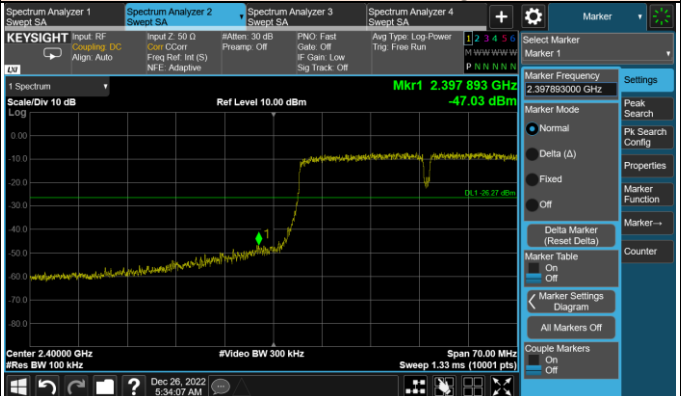
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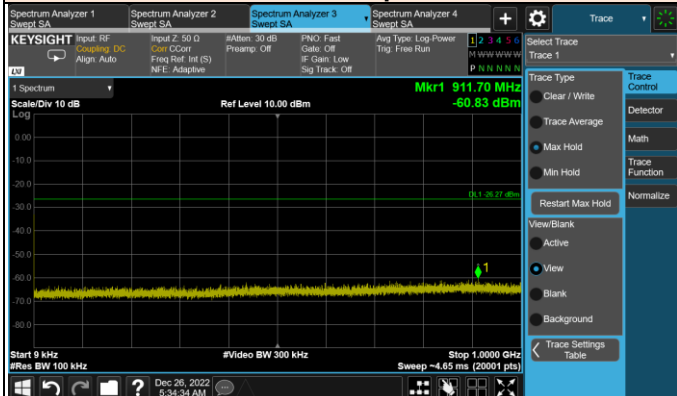
2 422 MHz _ Ref



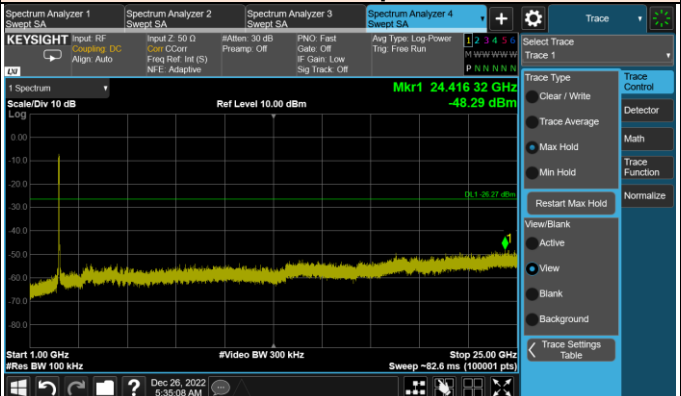
2 422 MHz _ Band edge



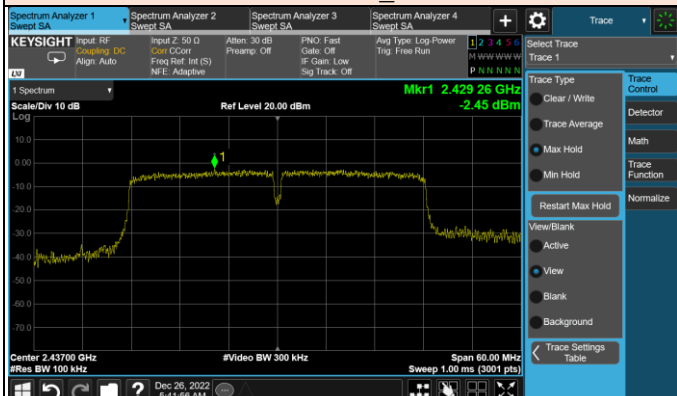
2 422 MHz _ Spurious



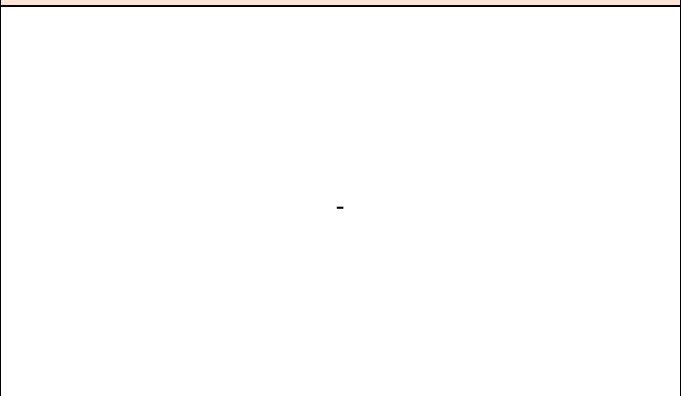
2 422 MHz _ Spurious



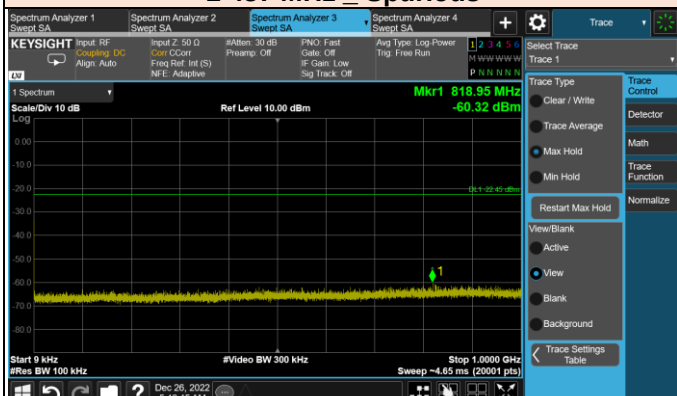
2 437 MHz _ Ref



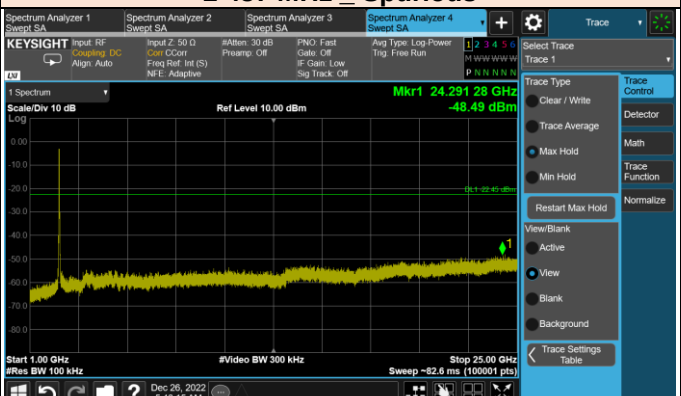
2 437 MHz _ Spurious



2 437 MHz _ Spurious



2 437 MHz _ Spurious



802.11n(HT40)



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