

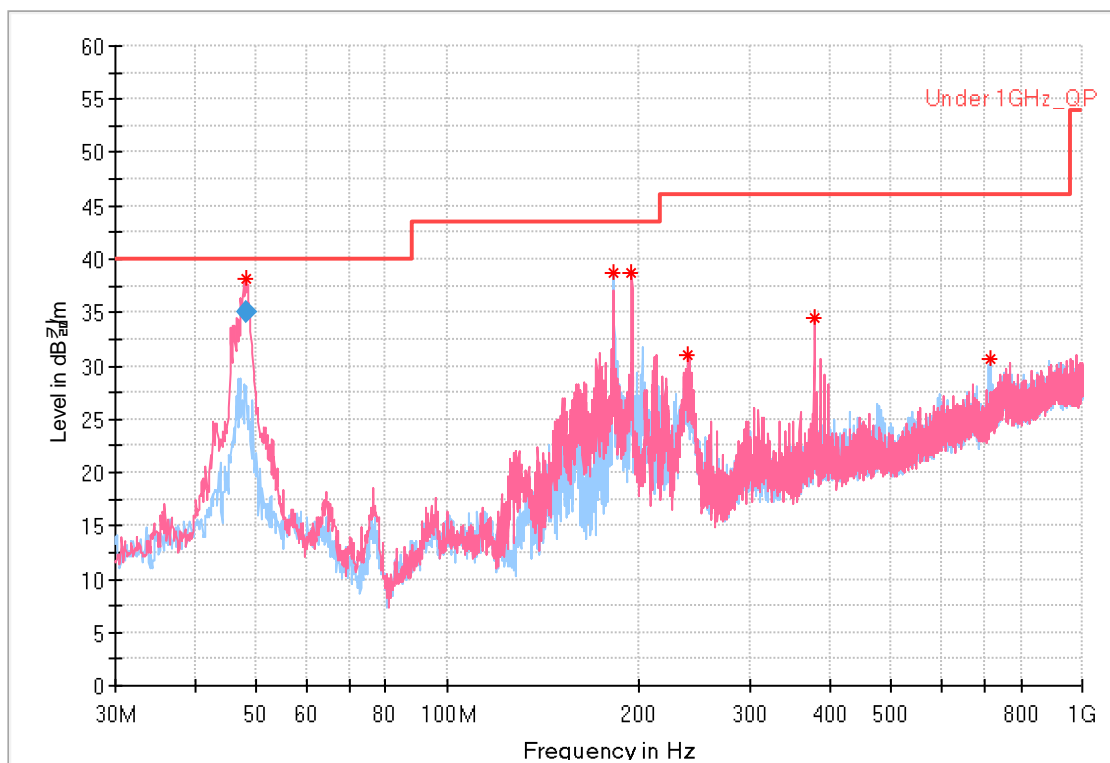
3.5.4 Test Result of Radiated Spurious Emission

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(HT40)



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]
2437	48.24	56.19	V	X	Peak	-18.10	38.09	40.00	1.91
	48.24	53.23	V	X	Quasi Peak	-18.10	35.13	40.00	4.87
	182.58	60.97	H	X	Peak	-22.30	38.67	43.52	4.85
	195.29	59.02	V	X	Peak	-20.30	38.72	43.52	4.80
	239.91	50.14	V	X	Peak	-19.20	30.94	46.02	15.08
	377.94	50.12	V	X	Peak	-15.70	34.42	46.02	11.60
	716.76	40.57	H	X	Peak	-9.90	30.67	46.02	15.35



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	2 389.69	48.94	H	X	Peak	0.00	3.05	51.99	74.00	22.01
	2 389.77	36.98	H	X	Average	0.00	3.05	40.03	54.00	13.97
	4 823.90	49.57	V	X	Peak	0.00	4.73	54.30	74.00	19.70
	4 824.00	45.62	V	X	Average	0.00	4.73	50.35	54.00	3.65
	7 234.74	43.78	H	X	Peak	0.00	7.86	51.64	74.00	22.36
	7 234.90	33.92	H	X	Average	0.00	7.86	41.78	54.00	12.22
2437	4 873.75	49.29	V	X	Peak	0.00	5.08	54.37	74.00	19.63
	4 874.01	45.47	V	X	Average	0.00	5.08	50.55	54.00	3.45
	7 312.03	43.42	H	X	Peak	0.00	7.91	51.33	74.00	22.67
	7 312.14	34.71	H	X	Average	0.00	7.91	42.62	54.00	11.38
2462	2 483.89	48.49	H	X	Peak	0.00	3.43	51.92	74.00	22.08
	2 484.18	36.63	H	X	Average	0.00	3.43	40.06	54.00	13.94
	4 924.03	49.38	V	X	Peak	0.00	5.29	54.67	74.00	19.33
	4 924.03	45.60	V	X	Average	0.00	5.29	50.89	54.00	3.11
	7 387.58	43.94	H	X	Peak	0.00	8.03	51.97	74.00	22.03
	7 387.38	34.93	H	X	Average	0.00	8.03	42.96	54.00	11.04

TM 1 (802.11b) _ 24 V

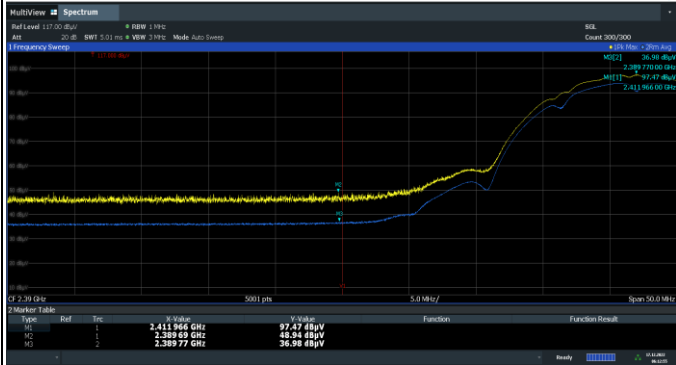
Tested Frequency [MHz]	Frequency [MHz]	Reading Value [dBuV]	Pol [H/V]	EUT Axis	Detector Mode	DCCF [dB]	T.F [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]
2412	2 389.22	48.77	H	X	Peak	0.00	3.05	51.82	74.00	22.18
	2 389.74	36.77	H	X	Average	0.00	3.05	39.82	54.00	14.18
	4 823.86	49.55	V	X	Peak	0.00	4.73	54.28	74.00	19.72
	4 823.94	45.61	V	X	Average	0.00	4.73	50.34	54.00	3.66
	7 235.58	43.59	H	X	Peak	0.00	7.86	51.45	74.00	22.55
	7 236.96	34.06	H	X	Average	0.00	7.86	41.92	54.00	12.08
2437	4 873.89	49.38	V	X	Peak	0.00	5.08	54.46	74.00	19.54
	4 874.01	45.37	V	X	Average	0.00	5.08	50.45	54.00	3.55
	7 311.88	43.58	H	X	Peak	0.00	7.91	51.49	74.00	22.51
	7 311.94	34.59	H	X	Average	0.00	7.91	42.50	54.00	11.50
2462	2 484.33	48.75	H	X	Peak	0.00	3.43	52.18	74.00	21.82
	2 484.23	36.26	H	X	Average	0.00	3.43	39.69	54.00	14.31
	4 923.95	49.58	V	X	Peak	0.00	5.29	54.87	74.00	19.13
	4 924.00	45.59	V	X	Average	0.00	5.29	50.88	54.00	3.12
	7 385.90	44.00	H	X	Peak	0.00	8.03	52.03	74.00	21.97
	7 387.26	35.10	H	X	Average	0.00	8.03	43.13	54.00	10.87



802.11b

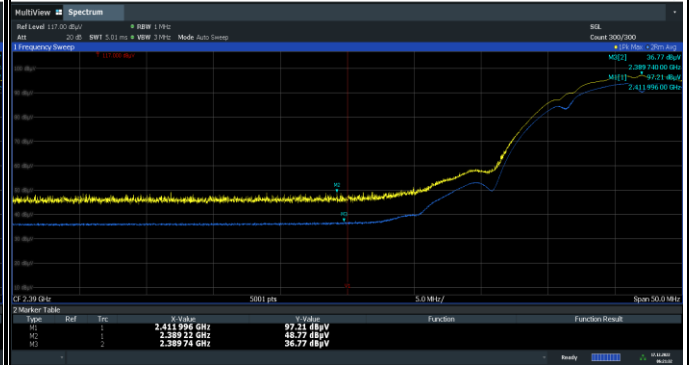
12 V

Bandedge_2 412 MHz

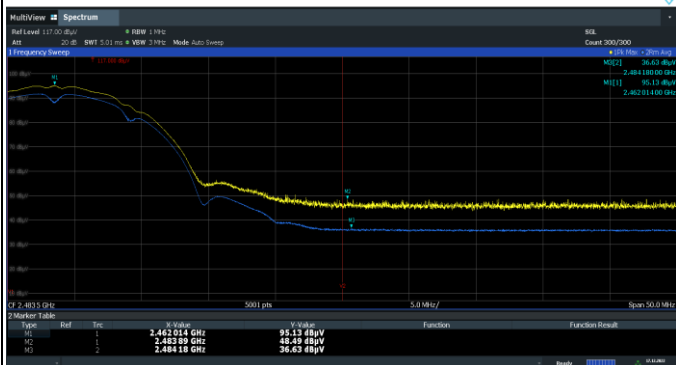


24 V

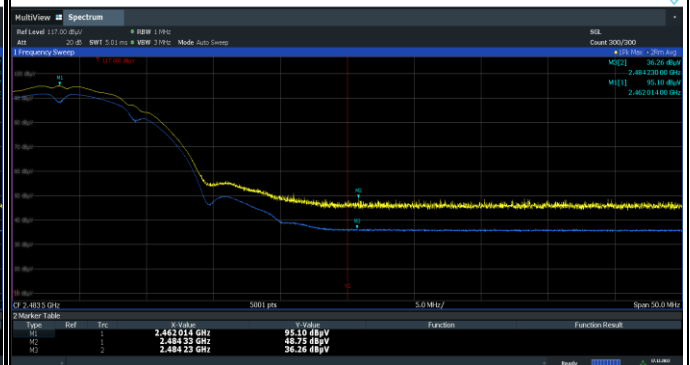
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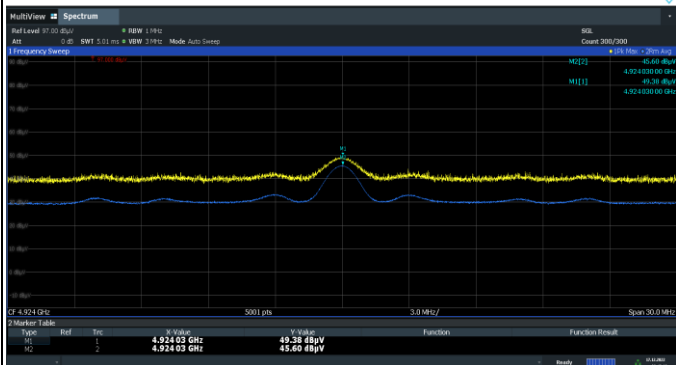
Bandedge_2 462 MHz



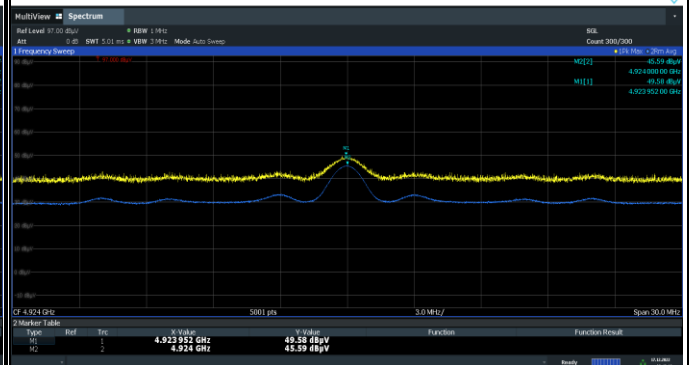
Bandedge_2 462 MHz



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	2 389.92	65.07	H	X	Peak	0.00	3.05	68.12	74.00	5.88
	2 389.90	49.01	H	X	Average	0.00	3.05	52.06	54.00	1.94
	4 824.92	53.59	V	X	Peak	0.00	4.74	58.33	74.00	15.67
	4 823.80	42.11	V	X	Average	0.00	4.73	46.84	54.00	7.16
	7 232.56	51.70	H	X	Peak	0.00	7.86	59.56	74.00	14.44
	7 235.04	38.13	H	X	Average	0.00	7.86	45.99	54.00	8.01
2437	4 874.94	52.27	V	X	Peak	0.00	5.09	57.36	74.00	16.64
	4 873.86	40.61	V	X	Average	0.00	5.08	45.69	54.00	8.31
	7 307.78	51.87	H	X	Peak	0.00	7.91	59.78	74.00	14.22
	7 310.20	38.86	H	X	Average	0.00	7.91	46.77	54.00	7.23
2462	2 484.00	62.57	H	X	Peak	0.00	3.43	66.00	74.00	8.00
	2 483.61	46.78	H	X	Average	0.00	3.43	50.21	54.00	3.79
	4 924.86	53.13	V	X	Peak	0.00	5.29	58.42	74.00	15.58
	4 924.10	41.15	V	X	Average	0.00	5.29	46.44	54.00	7.56
	7 380.00	52.01	H	X	Peak	0.00	8.01	60.02	74.00	13.98
	7 384.94	39.15	H	X	Average	0.00	8.03	47.18	54.00	6.82

TM 2 (802.11g) _ 24 V

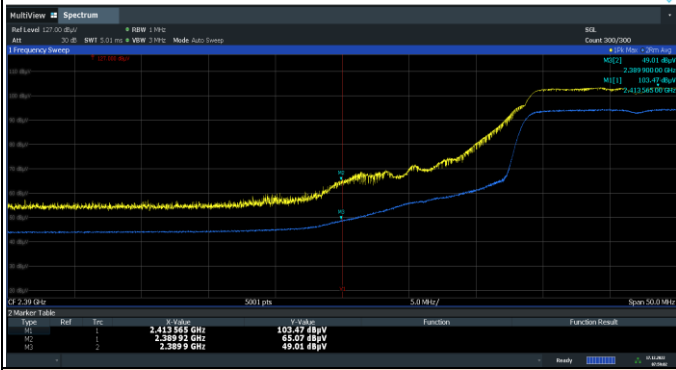
Tested Frequency [MHz]	Frequency [MHz]	Reading Value [dBuV]	Pol [H/V]	EUT Axis	Detector Mode	DCCF [dB]	T.F [dB/M]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]
2412	2 389.83	65.15	H	X	Peak	0.00	3.05	68.20	74.00	5.80
	2 389.92	48.46	H	X	Average	0.00	3.05	51.51	54.00	2.49
	4 825.08	52.69	V	X	Peak	0.00	4.74	57.43	74.00	16.57
	4 824.20	41.82	V	X	Average	0.00	4.73	46.55	54.00	7.45
	7 232.72	51.66	H	X	Peak	0.00	7.86	59.52	74.00	14.48
	7 234.86	38.85	H	X	Average	0.00	7.86	46.71	54.00	7.29
2437	4 875.22	52.52	V	X	Peak	0.00	5.09	57.61	74.00	16.39
	4 873.86	40.71	V	X	Average	0.00	5.08	45.79	54.00	8.21
	7 307.58	51.61	H	X	Peak	0.00	7.91	59.52	74.00	14.48
	7 308.86	38.65	H	X	Average	0.00	7.91	46.56	54.00	7.44
2462	2 484.10	62.17	H	X	Peak	0.00	3.43	65.60	74.00	8.40
	2 483.97	46.44	H	X	Average	0.00	3.43	49.87	54.00	4.13
	4 925.10	52.99	V	X	Peak	0.00	5.29	58.28	74.00	15.72
	4 923.84	41.19	V	X	Average	0.00	5.29	46.48	54.00	7.52
	7 379.86	51.57	H	X	Peak	0.00	8.01	59.58	74.00	14.42
	7 385.08	39.33	H	X	Average	0.00	8.03	47.36	54.00	6.64



802.11g

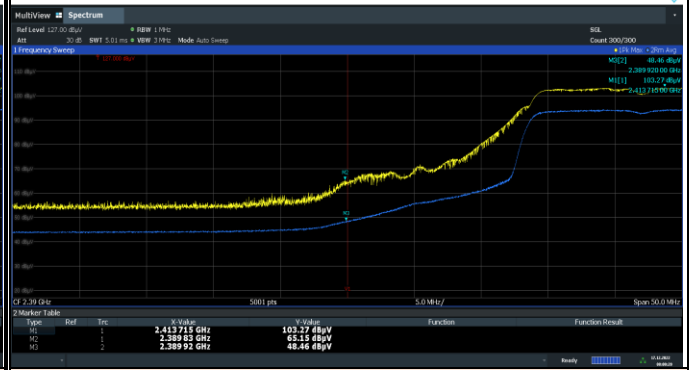
12 V

Bandedge_2 412 MHz

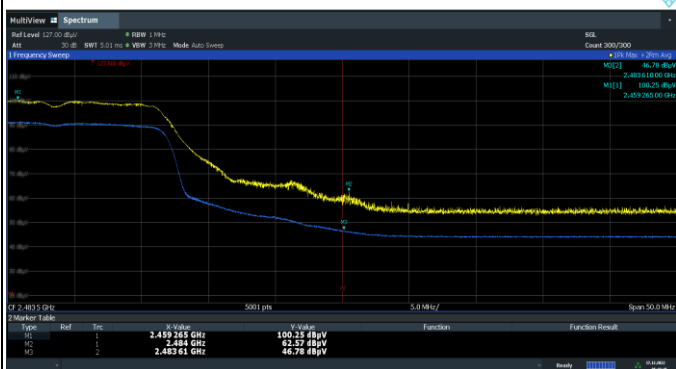


24 V

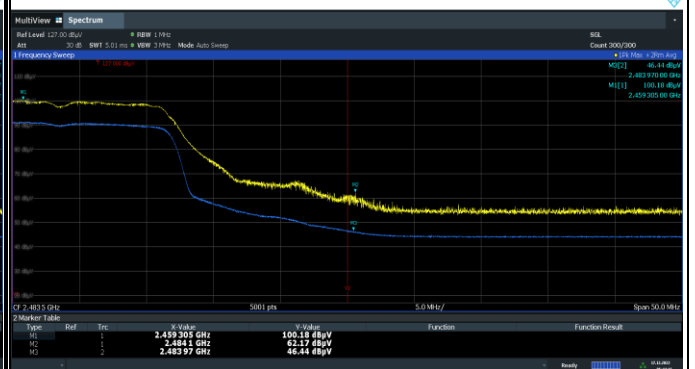
Bandedge_2 412 MHz



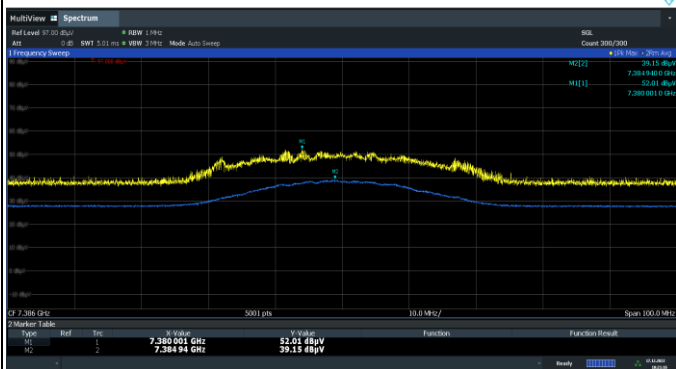
Bandedge_2 462 MHz



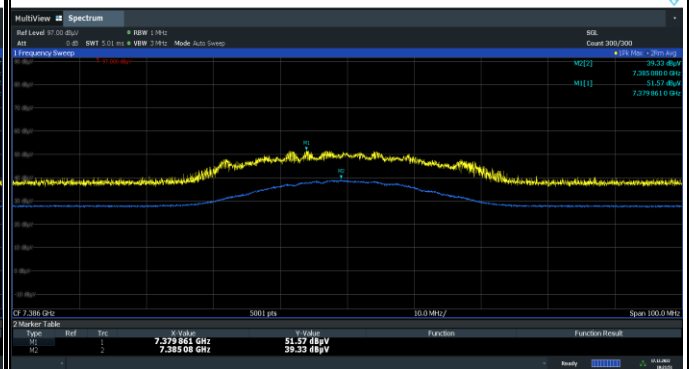
Bandedge_2 462 MHz



Spurious _ Worst case



Spurious _ Worst case





TM 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	2 389.90	65.40	H	X	Peak	0.00	3.05	68.45	74.00	5.55
	2 389.83	48.59	H	X	Average	0.00	3.05	51.64	54.00	2.36
	4 821.76	53.38	V	X	Peak	0.00	4.73	58.11	74.00	15.89
	4 823.90	41.35	V	X	Average	0.00	4.73	46.08	54.00	7.92
	7 231.85	50.64	H	X	Peak	0.00	7.86	58.50	74.00	15.50
	7 232.00	36.53	H	X	Average	0.00	7.86	44.39	54.00	9.61
2437	4 872.02	53.31	V	X	Peak	0.00	5.08	58.39	74.00	15.61
	4 874.10	40.26	V	X	Average	0.00	5.08	45.34	54.00	8.66
	7 306.68	51.89	H	X	Peak	0.00	7.91	59.80	74.00	14.20
	7 307.06	37.26	H	X	Average	0.00	7.91	45.17	54.00	8.83
2462	2 483.58	64.41	H	X	Peak	0.00	3.44	67.85	74.00	6.15
	2 483.69	48.31	H	X	Average	0.00	3.44	51.75	54.00	2.25
	4 921.96	54.04	V	X	Peak	0.00	5.29	59.33	74.00	14.67
	4 924.04	40.34	V	X	Average	0.00	5.29	45.63	54.00	8.37
	7 382.01	51.43	H	X	Peak	0.00	8.03	59.46	74.00	14.54
	7 381.92	37.48	H	X	Average	0.00	8.03	45.51	54.00	8.49

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	2 389.97	66.02	H	X	Peak	0.00	3.05	69.07	74.00	4.93
	2 389.93	48.59	H	X	Average	0.00	3.05	51.64	54.00	2.36
	4 821.88	53.26	V	X	Peak	0.00	4.73	57.99	74.00	16.01
	4 823.96	41.46	V	X	Average	0.00	4.73	46.19	54.00	7.81
	7 231.82	50.83	H	X	Peak	0.00	7.86	58.69	74.00	15.31
	7 231.88	36.48	H	X	Average	0.00	7.86	44.34	54.00	9.66
2437	4 871.88	53.27	V	X	Peak	0.00	5.08	58.35	74.00	15.65
	4 873.96	40.23	V	X	Average	0.00	5.08	45.31	54.00	8.69
	7 306.73	51.22	H	X	Peak	0.00	7.91	59.13	74.00	14.87
	7 306.70	37.22	H	X	Average	0.00	7.91	45.13	54.00	8.87
2462	2 484.13	43.63	H	X	Peak	0.00	3.44	47.07	74.00	26.93
	2 483.98	48.31	H	X	Average	0.00	3.44	51.75	54.00	2.25
	4 922.18	53.87	V	X	Peak	0.00	5.29	59.16	74.00	14.84
	4 923.76	40.39	V	X	Average	0.00	5.29	45.68	54.00	8.32
	7 387.00	51.96	H	X	Peak	0.00	8.03	59.99	74.00	14.01
	7 386.92	37.55	H	X	Average	0.00	8.03	45.58	54.00	8.42



BUREAU
VERITAS

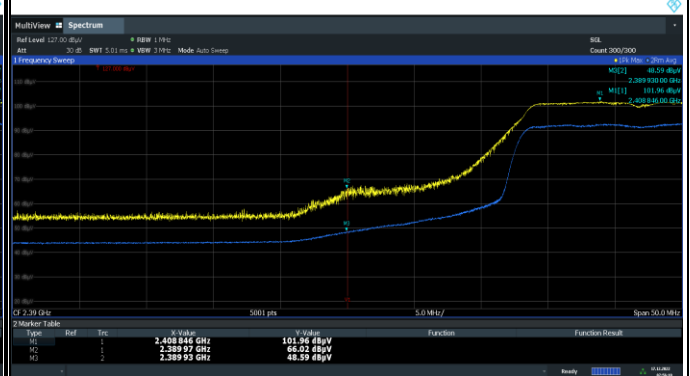
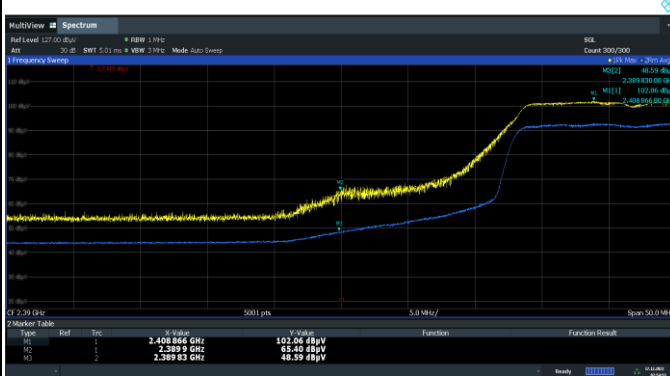
802.11n(HT20)

12 V

Bandedge_2 412 MHz

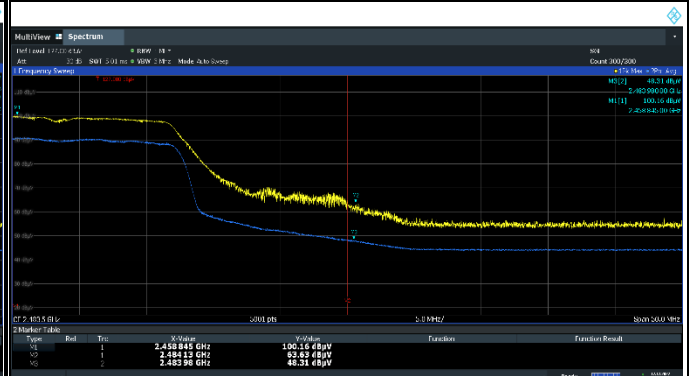
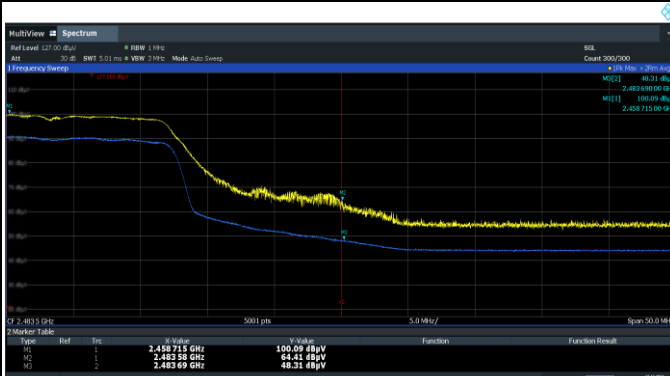
24 V

Bandedge_2 412 MHz



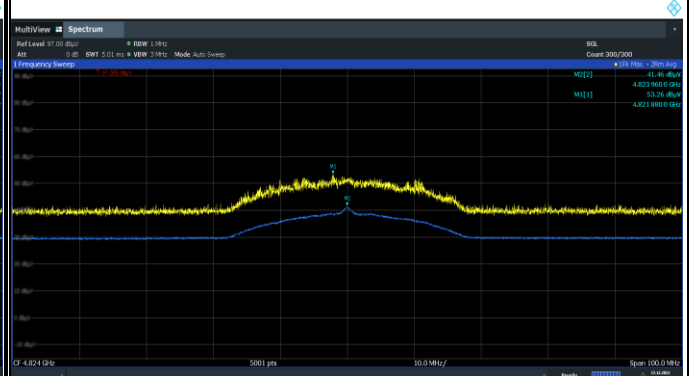
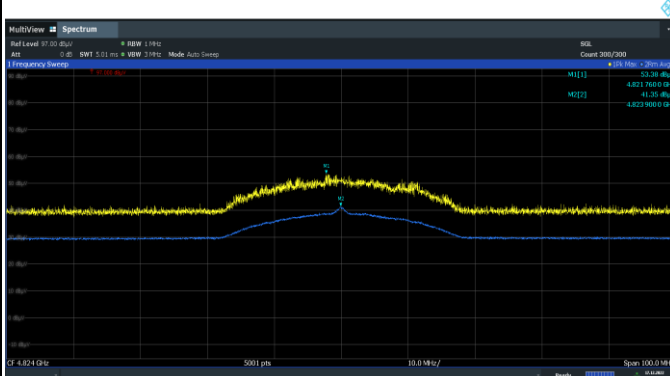
Bandedge_2 462 MHz

Bandedge_2 462 MHz



Spurious _ Worst case

Spurious _ Worst case





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	2 388.71	62.87	H	X	Peak	0.00	3.05	65.92	74.00	8.08
	2 388.91	48.02	H	X	Average	0.00	3.05	51.07	54.00	2.93
	4 843.96	47.85	V	X	Peak	0.00	4.73	52.58	74.00	21.42
	4 843.98	37.42	V	X	Average	0.00	4.73	42.15	54.00	11.85
	7 264.08	43.10	H	X	Peak	0.00	7.86	50.96	74.00	23.04
	7 269.50	30.96	H	X	Average	0.00	7.86	38.82	54.00	15.18
2437	4 973.54	49.10	V	X	Peak	0.00	5.08	54.18	74.00	19.82
	4 873.80	38.55	V	X	Average	0.00	5.08	43.63	54.00	10.37
	7 313.58	47.95	H	X	Peak	0.00	7.91	55.86	74.00	18.14
	7 314.64	35.52	H	X	Average	0.00	7.91	43.43	54.00	10.57
2452	2 487.81	61.99	H	X	Peak	0.00	3.44	65.43	74.00	8.57
	2 483.66	48.21	H	X	Average	0.00	3.44	51.65	54.00	2.35
	4 903.70	47.45	V	X	Peak	0.00	5.29	52.74	74.00	21.26
	4 904.00	37.40	V	X	Average	0.00	5.29	42.69	54.00	11.31
	7 358.12	44.97	H	X	Peak	0.00	8.03	53.00	74.00	21.00
	7 359.96	32.24	H	X	Average	0.00	8.03	40.27	54.00	13.73

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	2 389.04	61.94	H	X	Peak	0.00	3.05	64.99	74.00	9.01
	2 389.33	47.97	H	X	Average	0.00	3.05	51.02	54.00	2.98
	4 843.74	48.10	V	X	Peak	0.00	4.73	52.83	74.00	21.17
	4 843.98	37.29	V	X	Average	0.00	4.73	42.02	54.00	11.98
	7 263.64	43.68	H	X	Peak	0.00	7.86	51.54	74.00	22.46
	7 268.30	30.67	H	X	Average	0.00	7.86	38.53	54.00	15.47
2437	4 873.46	49.22	V	X	Peak	0.00	5.08	54.30	74.00	19.70
	4 873.92	38.53	V	X	Average	0.00	5.08	43.61	54.00	10.39
	7 313.84	48.09	H	X	Peak	0.00	7.91	56.00	74.00	18.00
	7 314.62	35.68	H	X	Average	0.00	7.91	43.59	54.00	10.41
2452	2 488.14	61.80	H	X	Peak	0.00	3.44	65.24	74.00	8.76
	2 483.74	48.12	H	X	Average	0.00	3.44	51.56	54.00	2.44
	4 903.86	47.34	V	X	Peak	0.00	5.29	52.63	74.00	21.37
	4 903.96	37.47	V	X	Average	0.00	5.29	42.76	54.00	11.24
	7 357.44	44.87	H	X	Peak	0.00	8.03	52.90	74.00	21.10
	7 360.28	32.28	H	X	Average	0.00	8.03	40.31	54.00	13.69



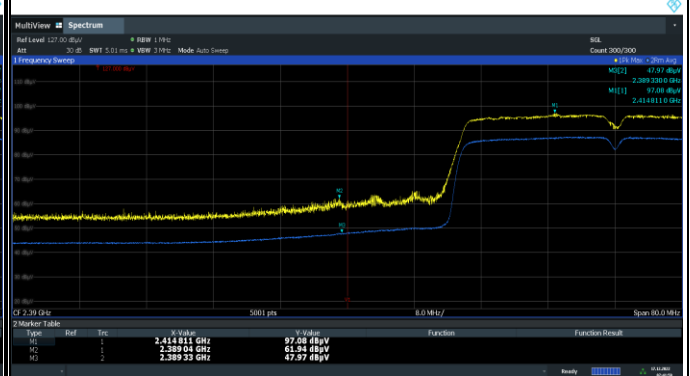
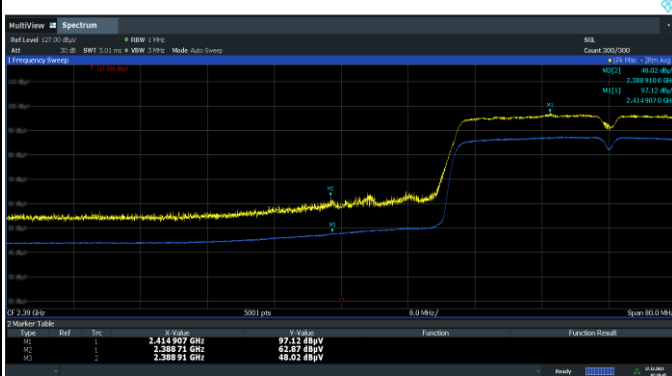
802.11n(HT40)

12 V

Bandedge_2 422 MHz

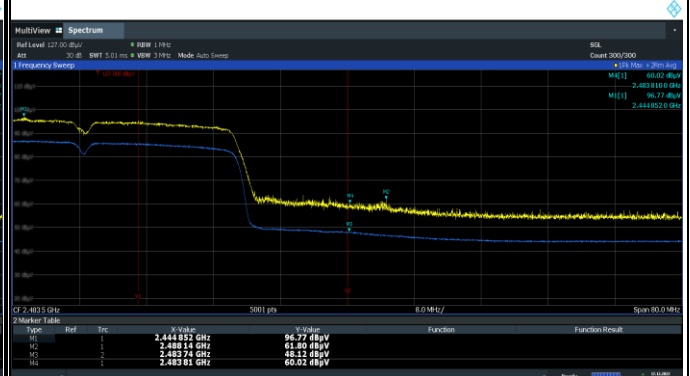
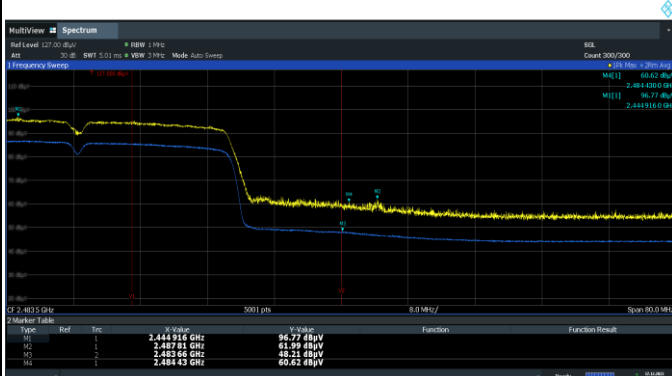
24 V

Bandedge_2 422 MHz



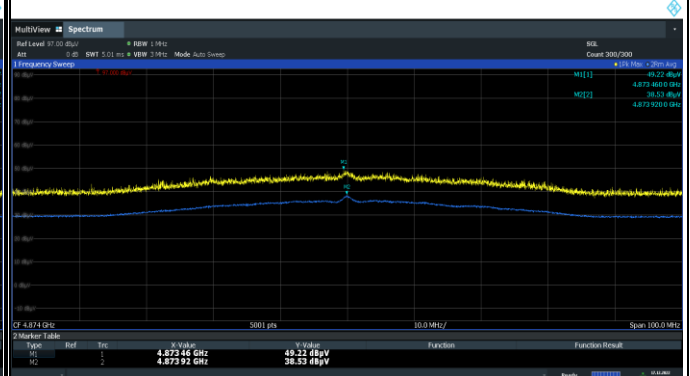
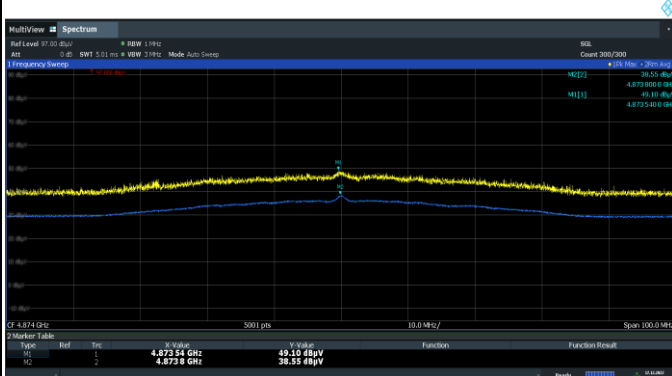
Bandedge_2 452 MHz

Bandedge_2 45 MHz



Spurious _ Worst case

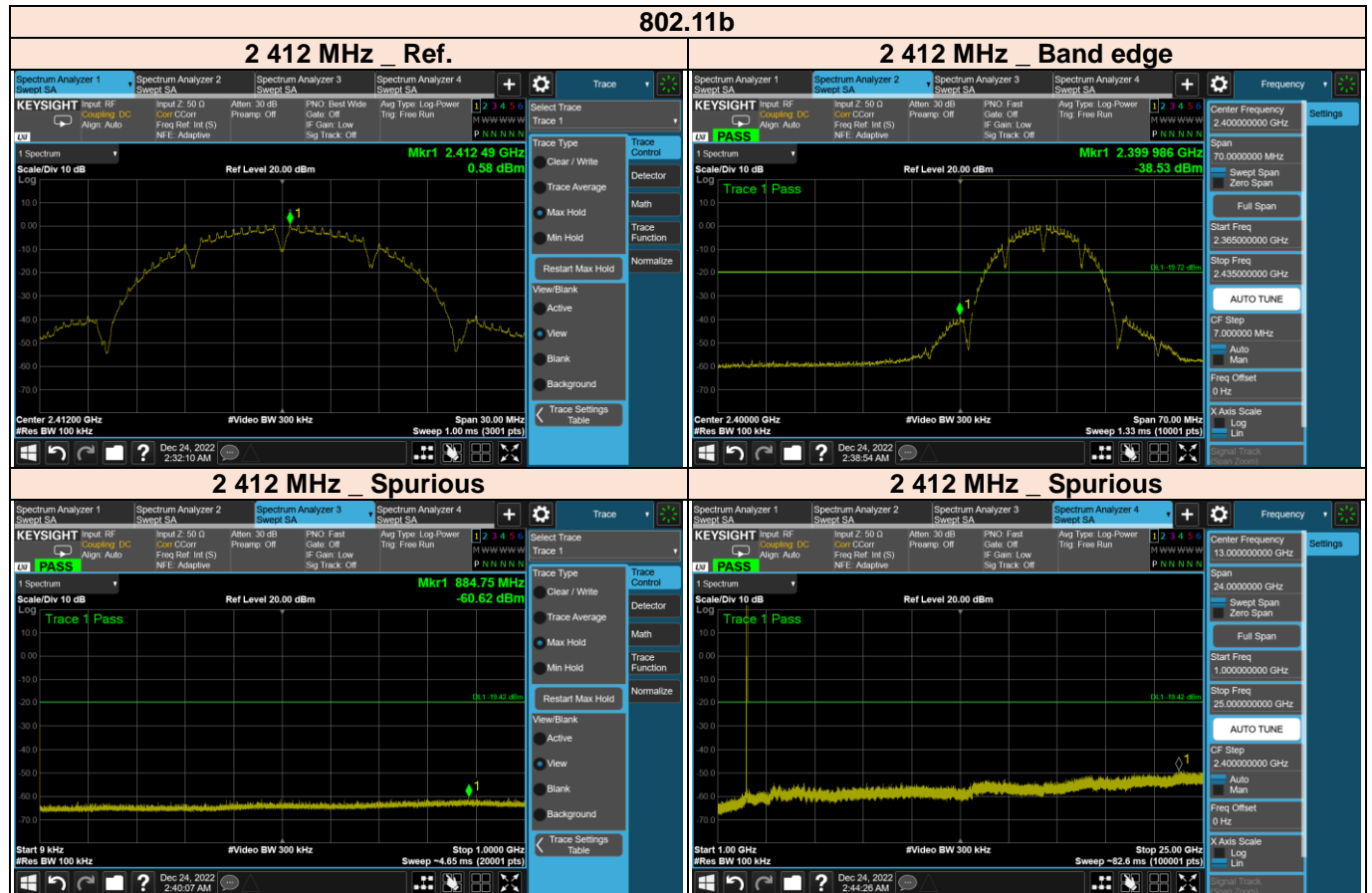
Spurious _ Worst case





3.5.5 Test Result of Conducted Spurious Emission

[DC 12 V Spurious Emission]



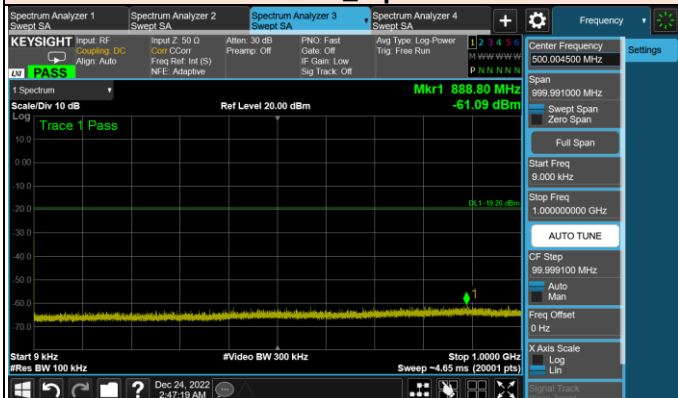


802.11b

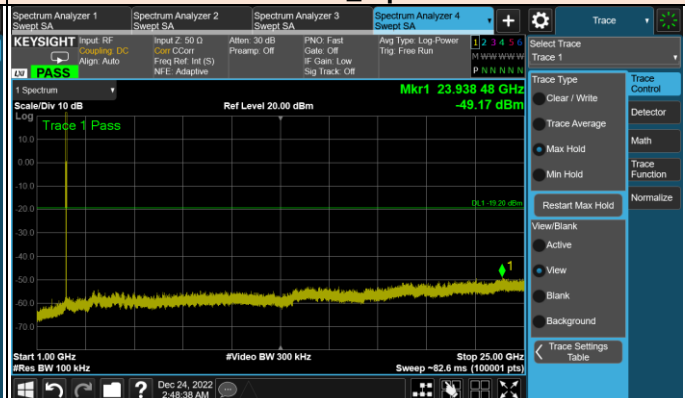
2 437 MHz _ Ref.



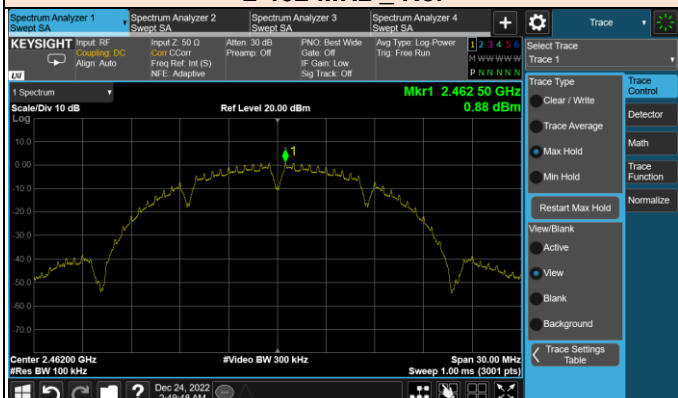
2 437 MHz _ Spurious



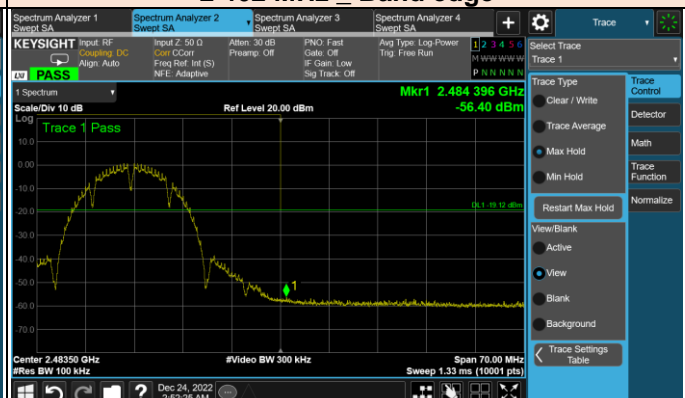
2 437 MHz _ Spurious



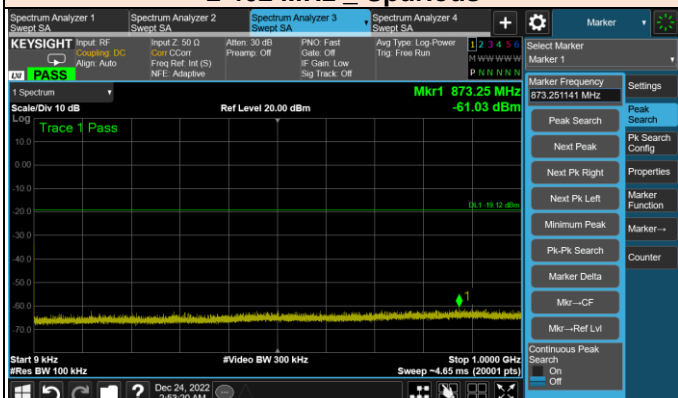
2 462 MHz _ Ref



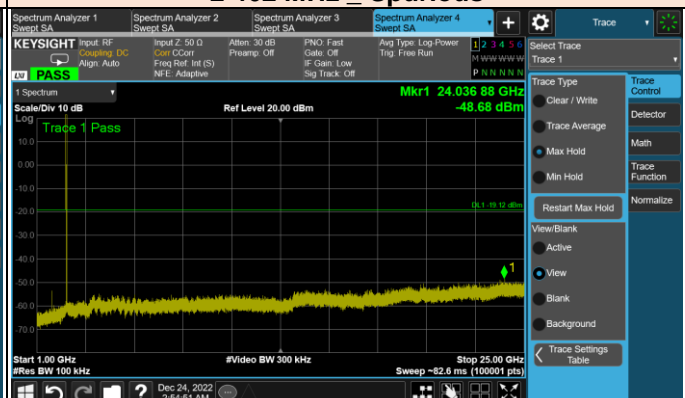
2 462 MHz _ Band edge



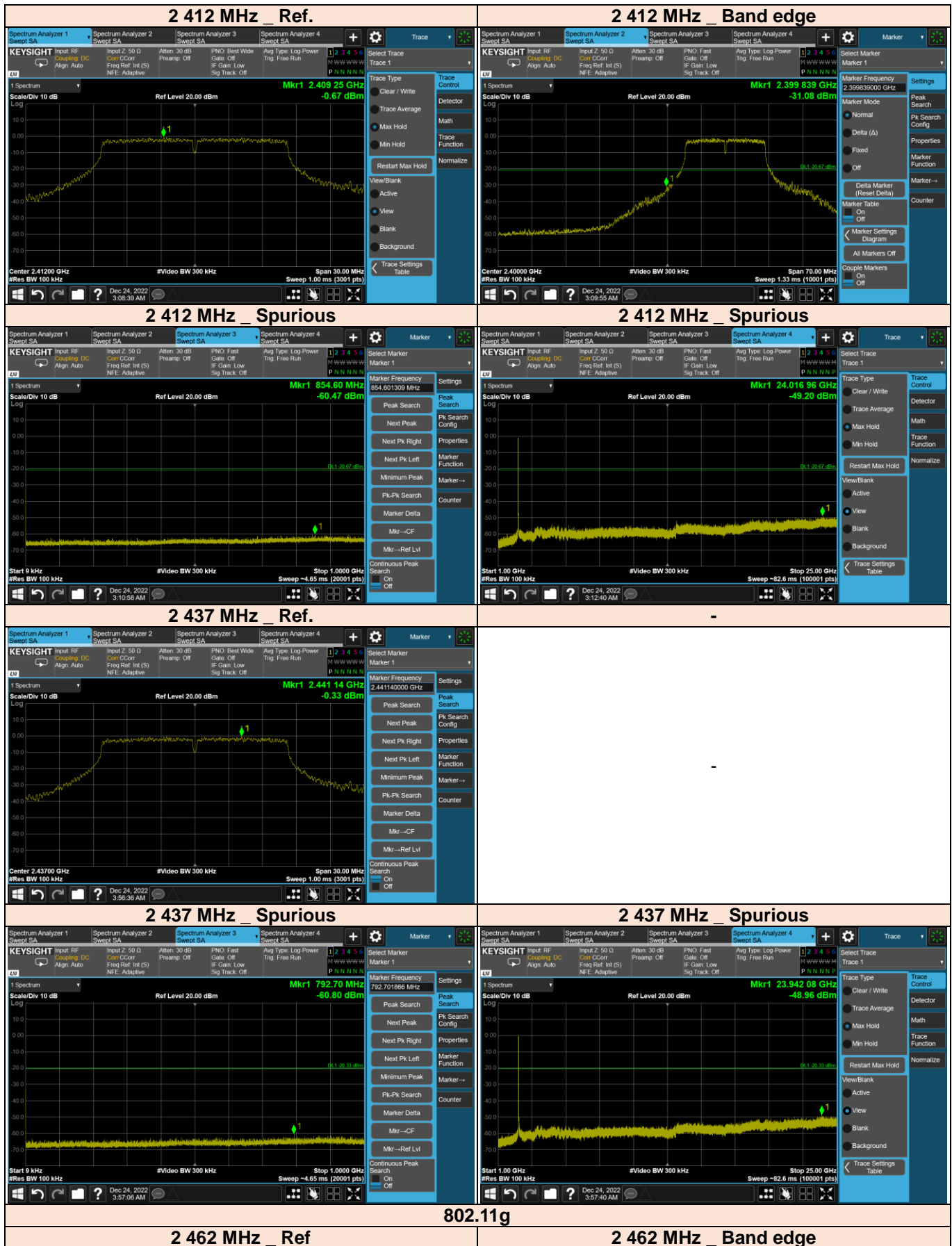
2 462 MHz _ Spurious



2 462 MHz _ Spurious

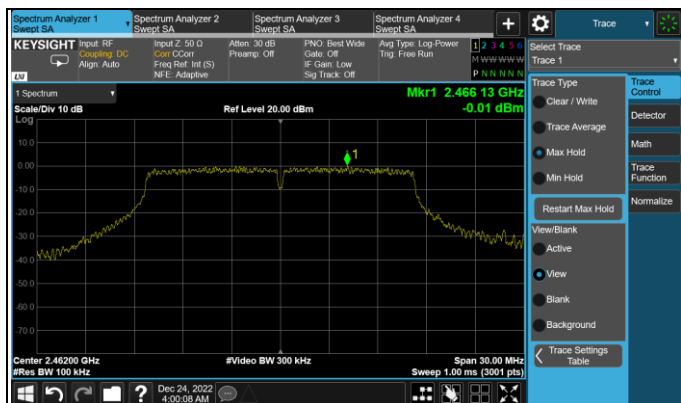


802.11g

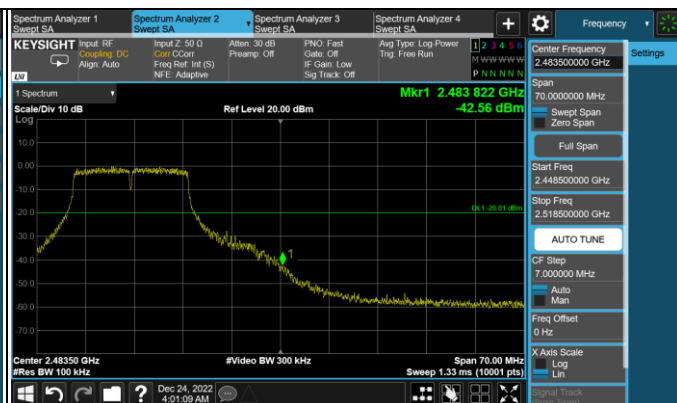




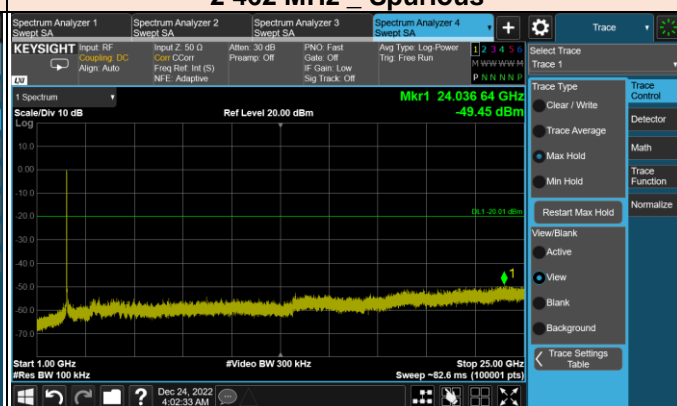
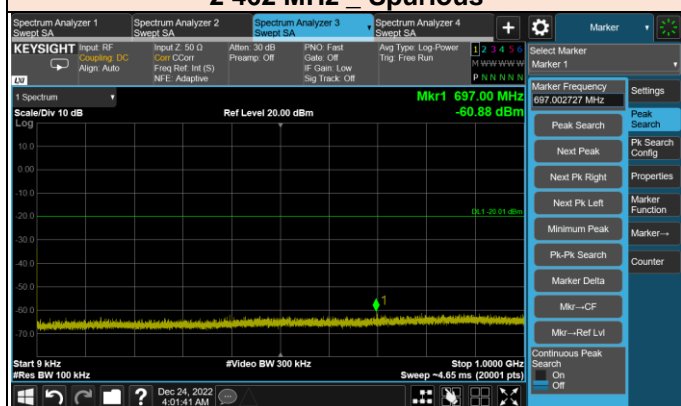
BUREAU
VERITAS



2 462 MHz Spurious



2 462 MHz Spurious

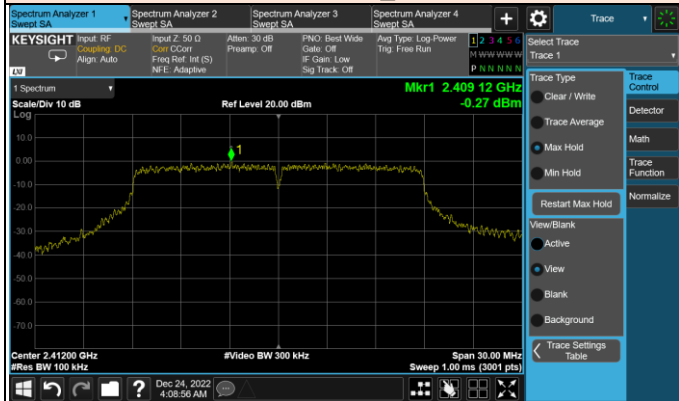




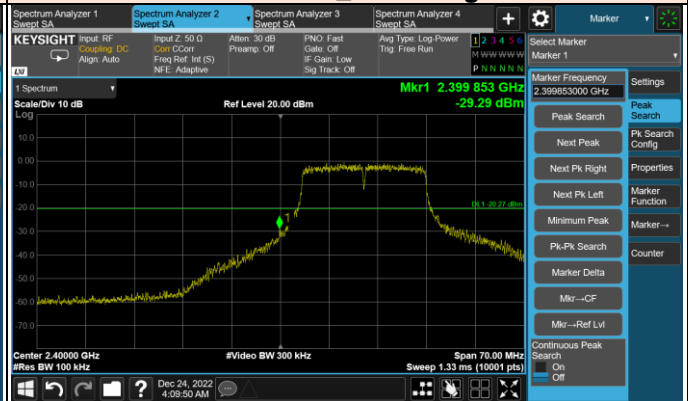
BUREAU VERITAS

802.11n(HT20)

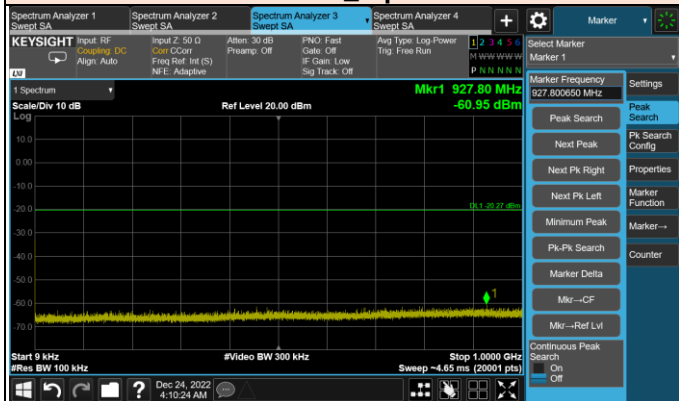
2 412 MHz _ Ref



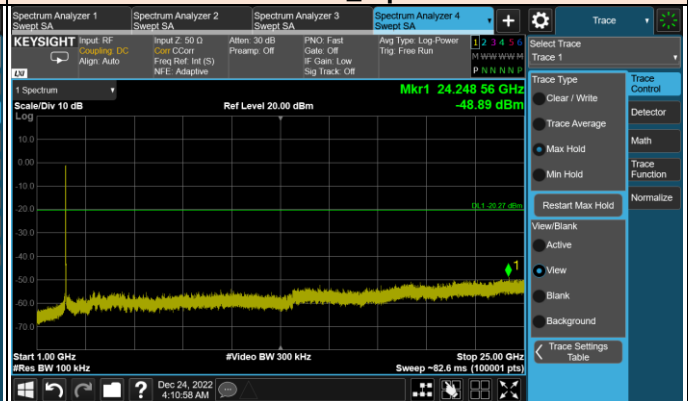
2 412 MHz _ Band edge



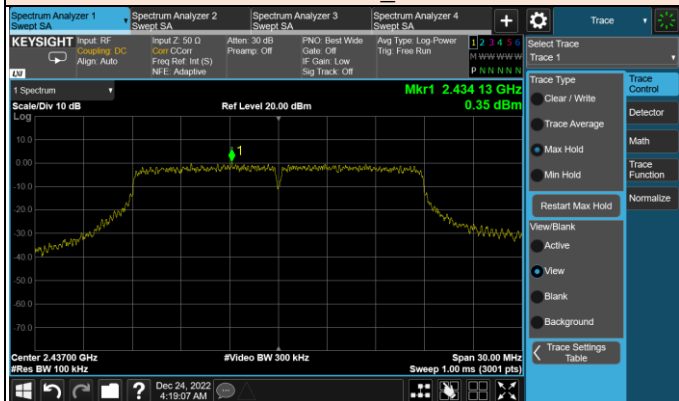
2 412 MHz _ Spurious



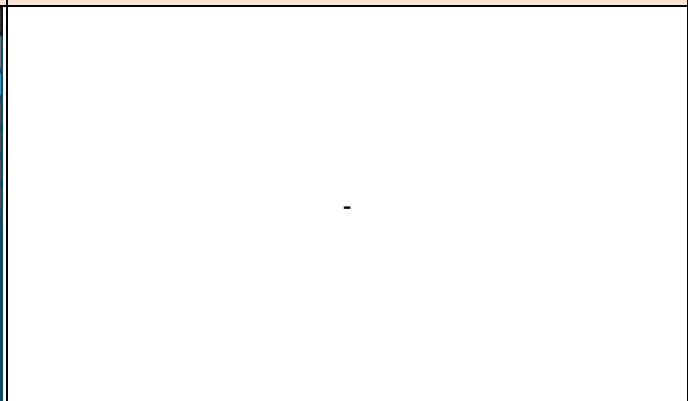
2 412 MHz _ Spurious



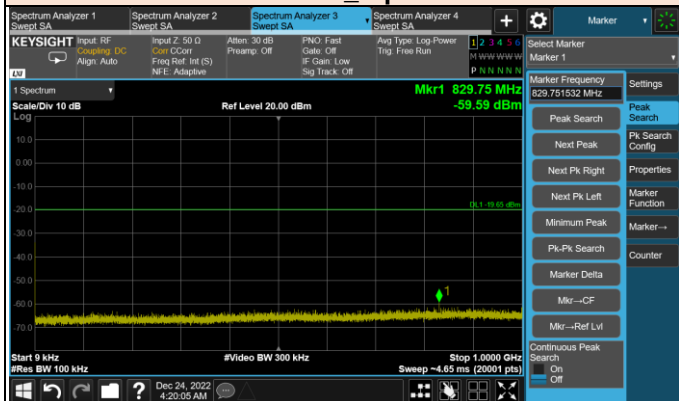
2 437 MHz _ Ref



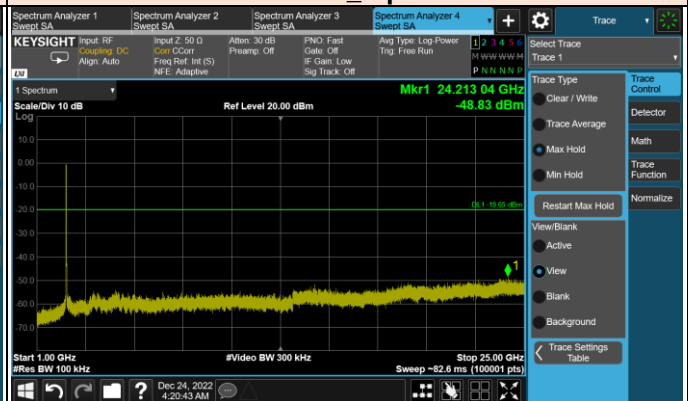
2 437 MHz _ Spurious



2 437 MHz _ Spurious



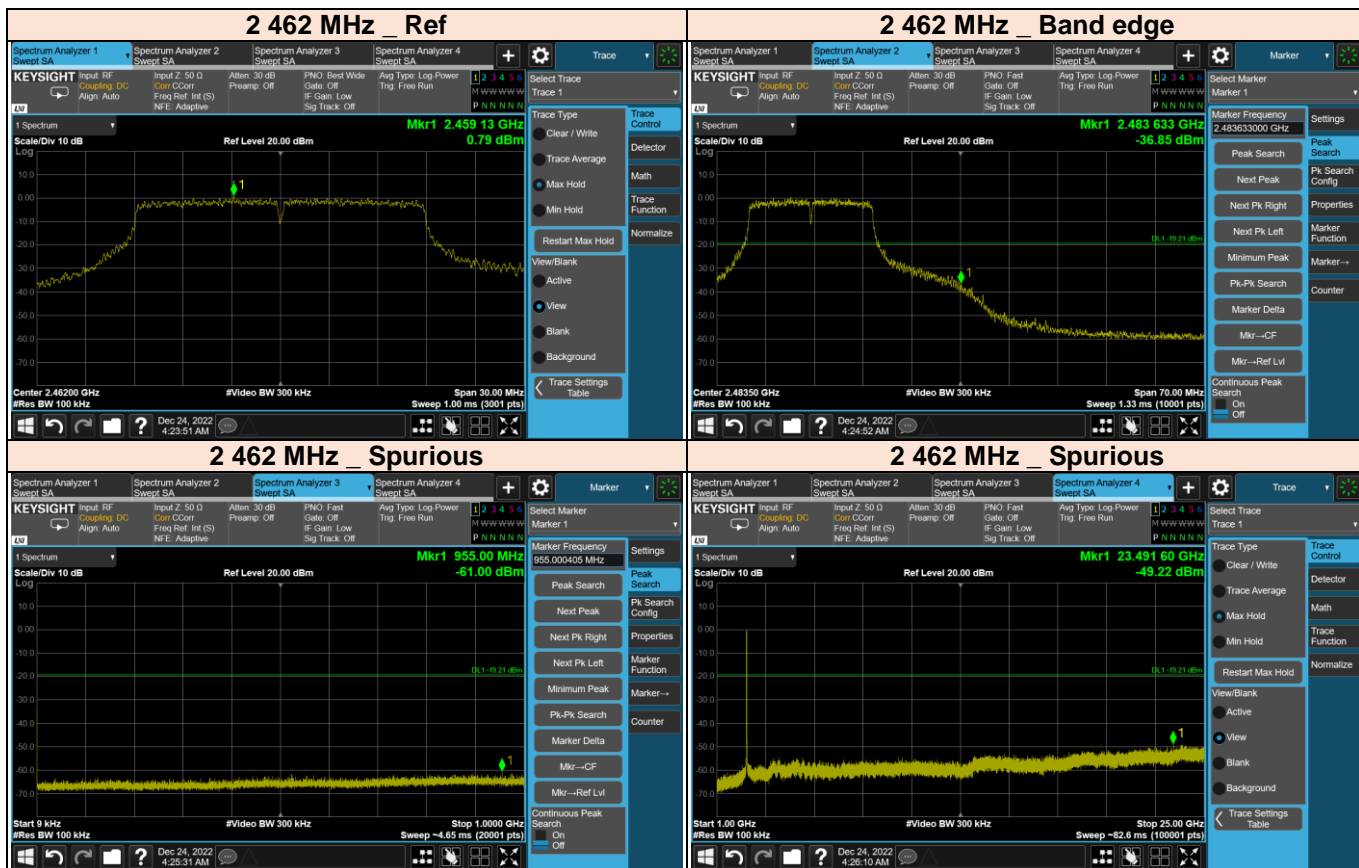
2 437 MHz _ Spurious



802.11n(HT20)



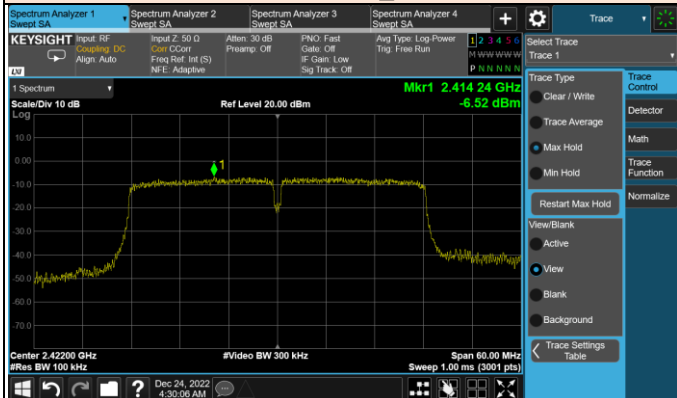
BUREAU VERITAS



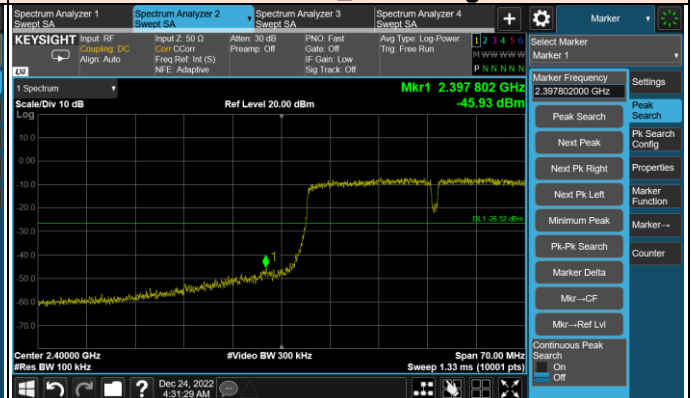


802.11n(HT40)

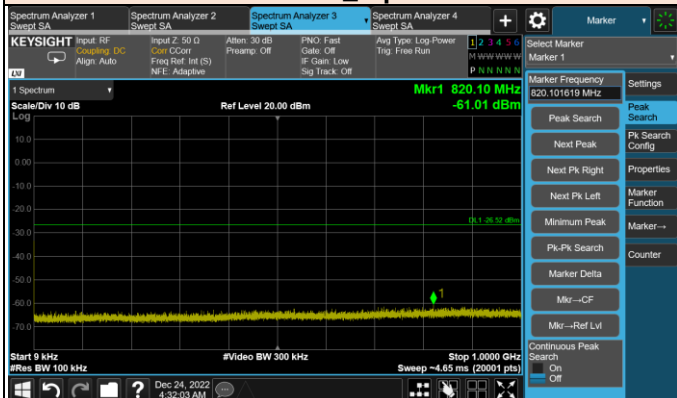
2 422 MHz _ Ref



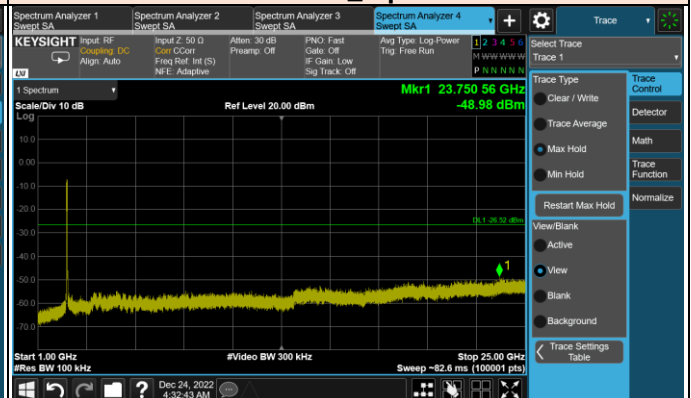
2 422 MHz _ Band edge



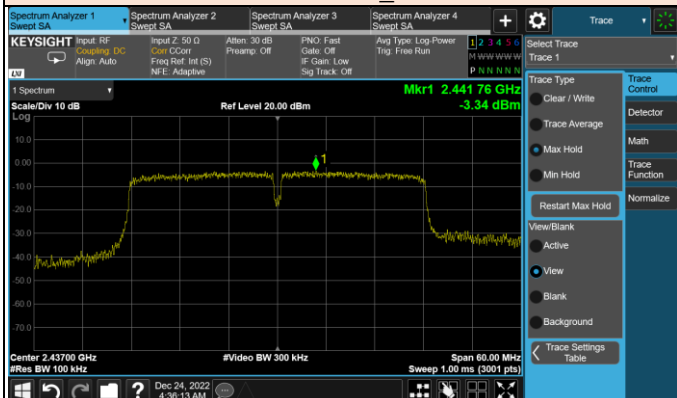
2 422 MHz _ Spurious



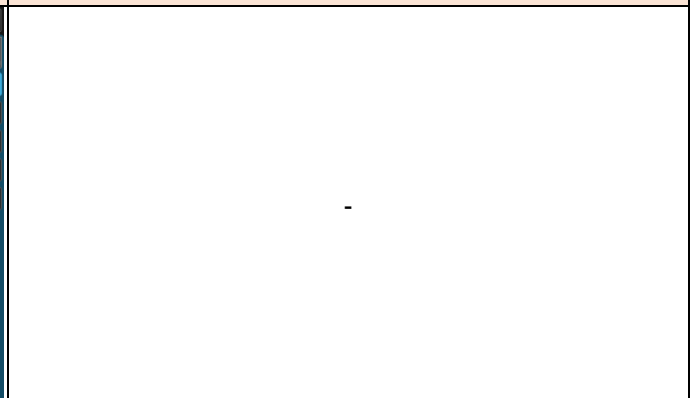
2 422 MHz _ Spurious



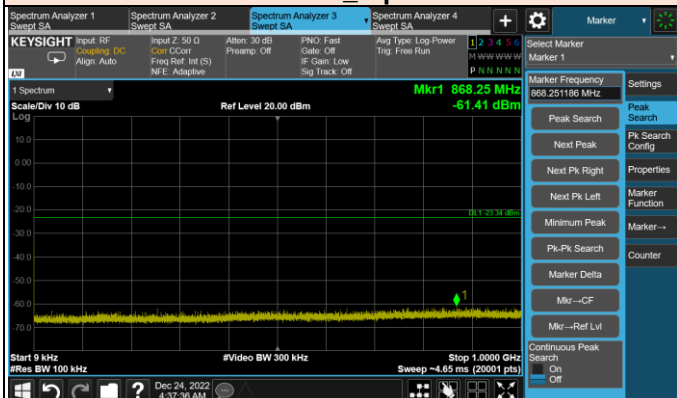
2 437 MHz _ Ref



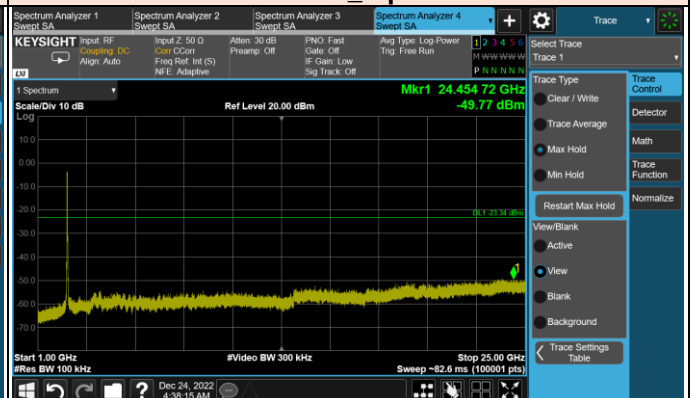
2 437 MHz _ Spurious



2 437 MHz _ Spurious



2 437 MHz _ Spurious



802.11n(HT40)