



Test Report No.: W7L-P21080006RF13

2SECEND-BT-LE (1MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
0	2402	3.68	2.33	1	PASS
19	2440	4.51	2.82	1	PASS
39	2480	5.11	3.24	1	PASS

2SECEND-BT-LE (2MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
0	2402	3.66	2.32	1	PASS
19	2440	4.53	2.84	1	PASS
39	2480	5.15	3.27	1	PASS

2SECEND-BT-LE (S2)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
0	2402	3.67	2.33	1	PASS
19	2440	4.53	2.84	1	PASS
39	2480	5.12	3.25	1	PASS

2SECEND-BT-LE (S8)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	PEAK POWER LIMIT(W)	PASS/FAIL
0	2402	3.68	2.33	1	PASS
19	2440	4.50	2.82	1	PASS
39	2480	5.13	3.26	1	PASS

**3.4.7.2 AVERAGE OUTPUT POWER (FOR REFERENCE)**

The average power sensor was used on the output port of the EUT. A power meter was used to read the response of the power sensor. Record the power level.

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	12.90	N/A
6	2437	14.14	N/A
11	2462	15.18	N/A

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	14.30	N/A
6	2437	14.92	N/A
11	2462	14.35	N/A

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
1	2412	14.08	N/A
6	2437	14.70	N/A
11	2462	14.10	N/A

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
3	2422	14.20	N/A
6	2437	16.22	N/A
9	2452	13.74	N/A



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Test Report No.: W7L-P21080006RF13

BT-LE (1MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	2.51	N/A
19	2440	2.54	N/A
39	2480	4.38	N/A

BT-LE (2MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	-0.32	N/A
19	2440	0.12	N/A
39	2480	1.60	N/A

BT-LE (S2)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	2.11	N/A
19	2440	2.36	N/A
39	2480	3.88	N/A

BT-LE (S8)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	3.75	N/A
19	2440	4.07	N/A
39	2480	5.56	N/A

**2SECEND-BT-LE (1MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	3.08	N/A
19	2440	3.81	N/A
39	2480	4.51	N/A

2SECEND-BT-LE (2MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	1.62	N/A
19	2440	2.55	N/A
39	2480	3.11	N/A

2SECEND-BT-LE (S2)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	3.38	N/A
19	2440	3.94	N/A
39	2480	4.51	N/A

2SECEND-BT-LE (S8)

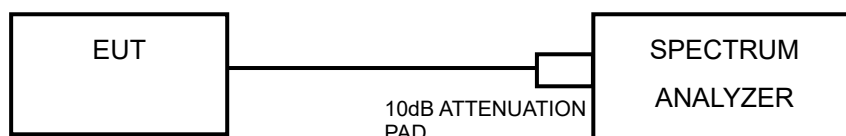
CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	PASS/FAIL
0	2402	3.47	N/A
19	2440	4.37	N/A
39	2480	4.94	N/A

3.5 POWER SPECTRAL DENSITY MEASUREMENT

3.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm/3KHz.

3.5.2 TEST SETUP



3.5.3 TEST INSTRUMENTS

Refer to section 3.3.2 to get information of above instrument.

3.5.4 TEST PROCEDURE

1. Set the span to 1.5 times the DTS bandwidth
2. Set the RBW = 3 kHz, VBW $\geq 3 \times$ RBW, Detector = peak.
3. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
4. Use the peak marker function to determine the maximum amplitude level.

3.5.5 DEVIATION FROM TEST STANDARD

No deviation.

3.5.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



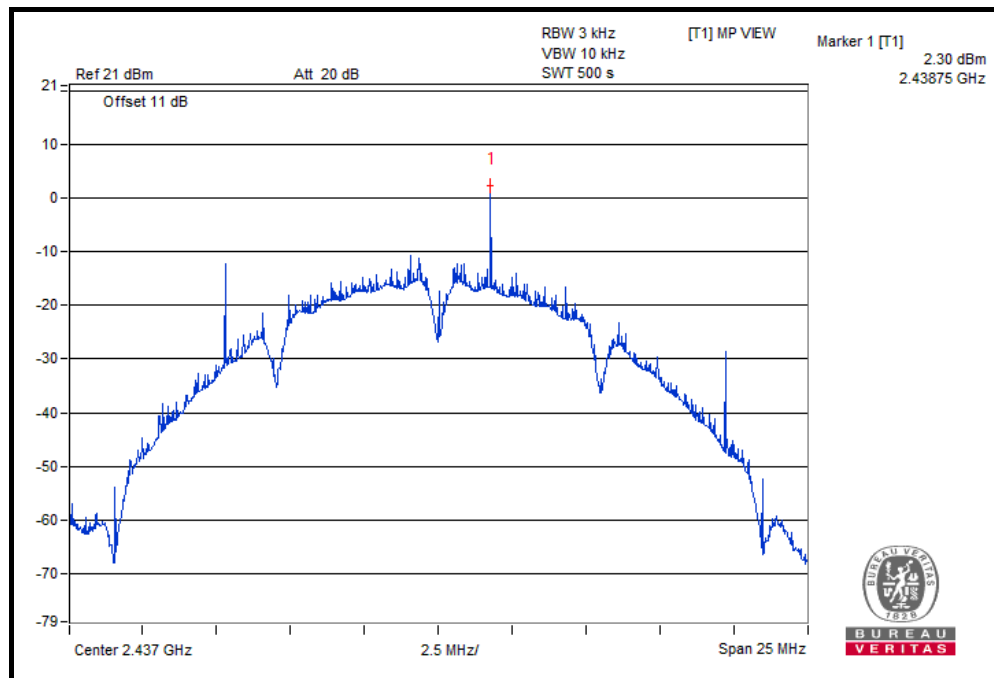
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Test Report No.: W7L-P21080006RF13

3.5.7 TEST RESULTS

802.11b

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-2.53	8	PASS
6	2437	2.30	8	PASS
11	2462	-9.48	8	PASS



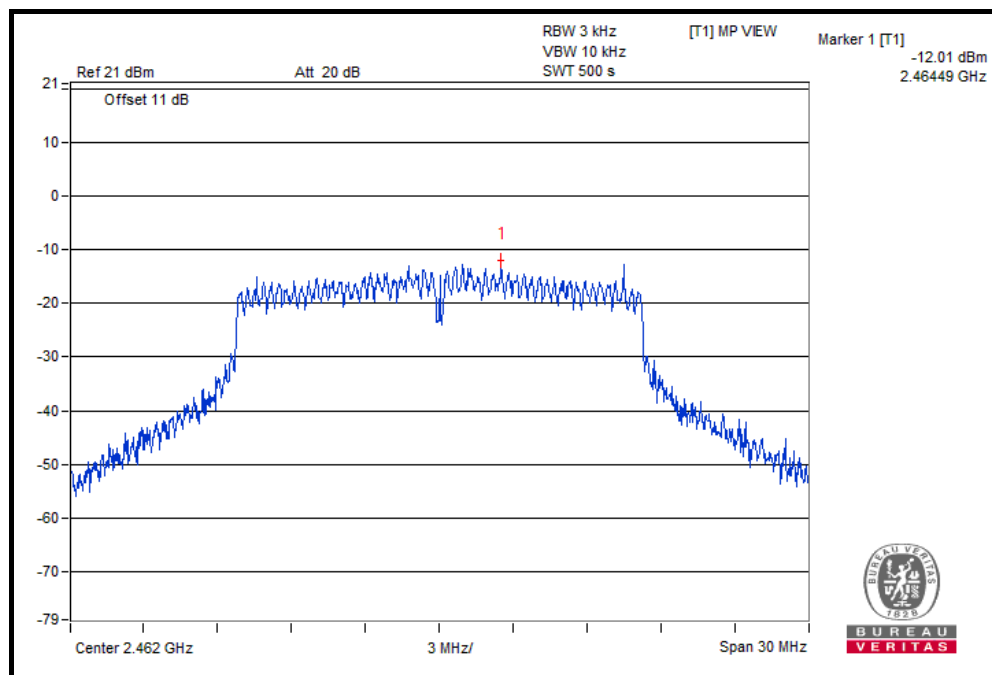


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802.11g

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-13.71	8	PASS
6	2437	-13.09	8	PASS
11	2462	-12.01	8	PASS



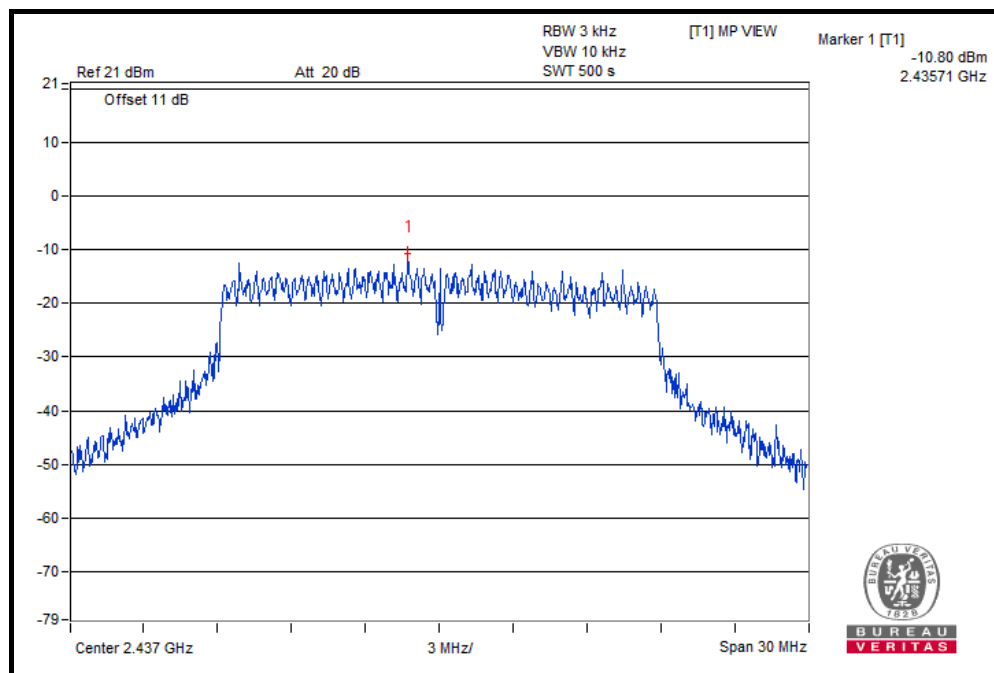


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Test Report No.: W7L-P21080006RF13

802.11n (20MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-13.66	8	PASS
6	2437	-10.80	8	PASS
11	2462	-11.93	8	PASS



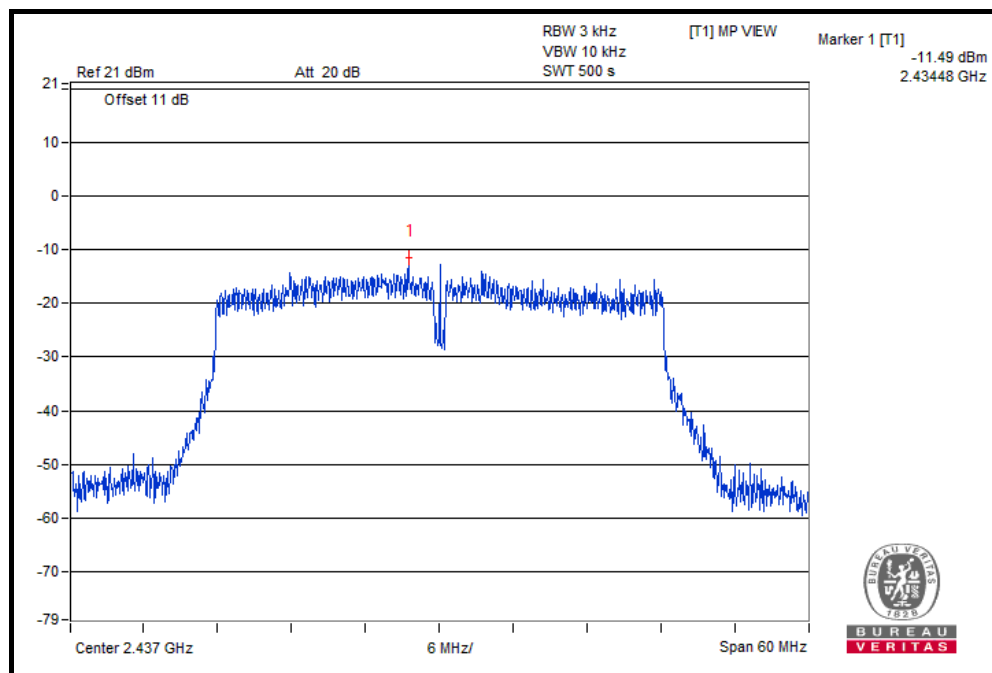


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802.11n (40MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
3	2422	-11.72	8	PASS
6	2437	-11.49	8	PASS
9	2452	-13.95	8	PASS



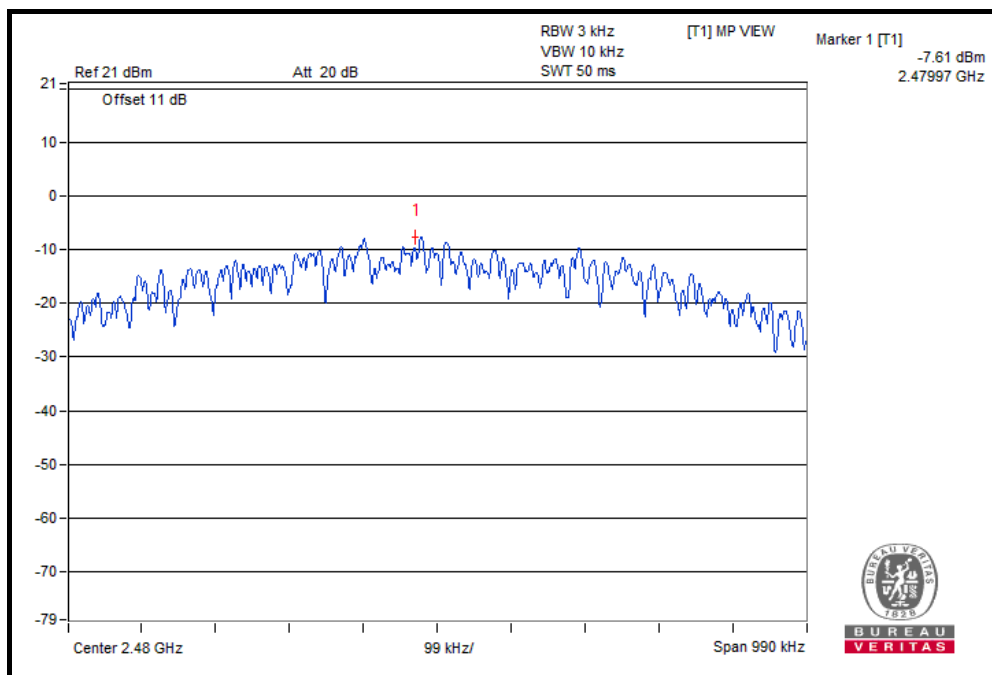


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BT-LE (1MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-9.48	8	PASS
19	2440	-9.39	8	PASS
39	2480	-7.61	8	PASS



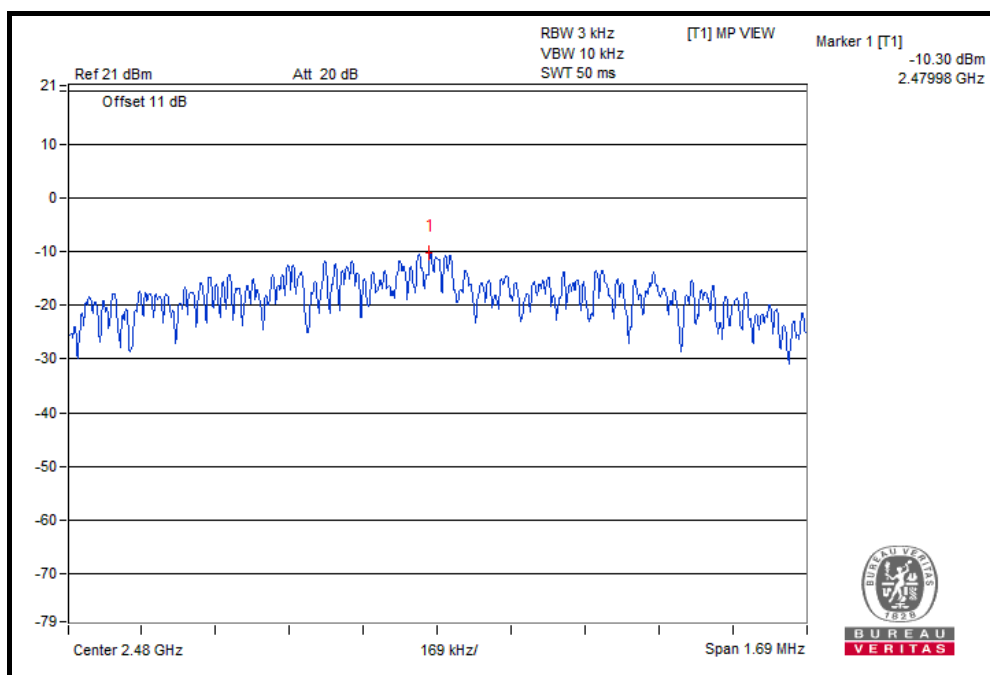


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BT-LE (2MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-12.26	8	PASS
19	2440	-12.17	8	PASS
39	2480	-10.30	8	PASS



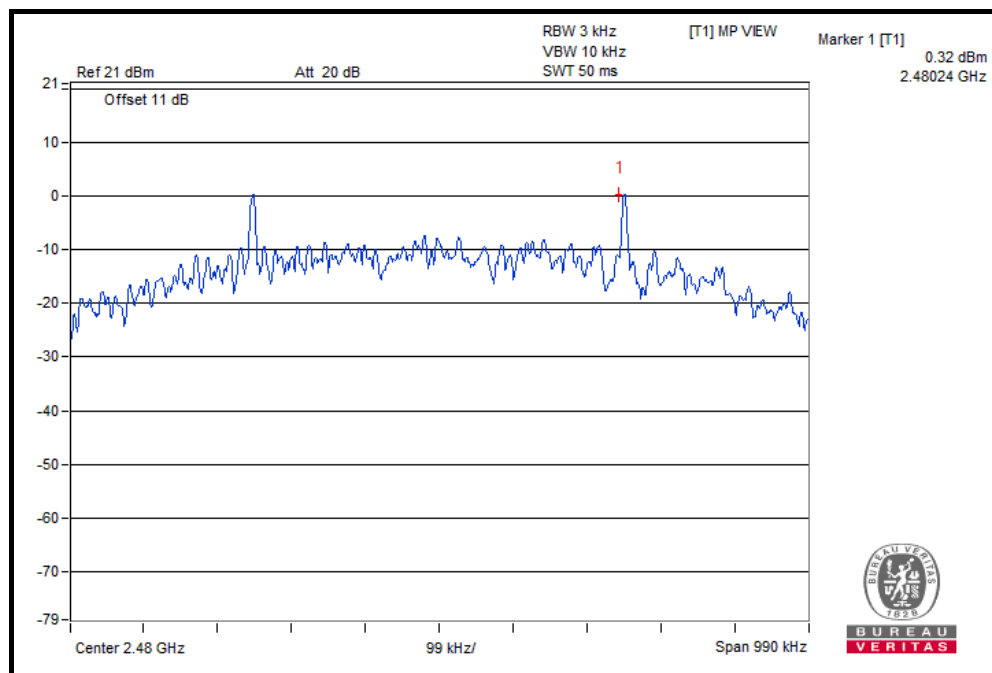


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Test Report No.: W7L-P21080006RF13

BT-LE (S2)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-1.70	8	PASS
19	2440	-1.55	8	PASS
39	2480	0.32	8	PASS



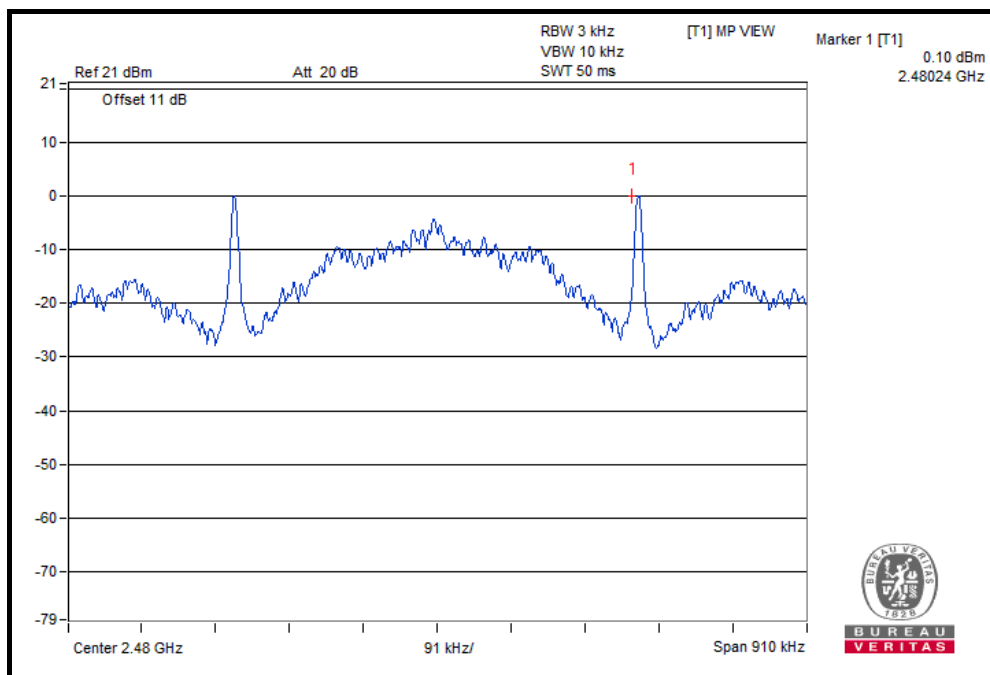


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Test Report No.: W7L-P21080006RF13

BT-LE (S8)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-1.73	8	PASS
19	2440	-1.75	8	PASS
39	2480	0.10	8	PASS



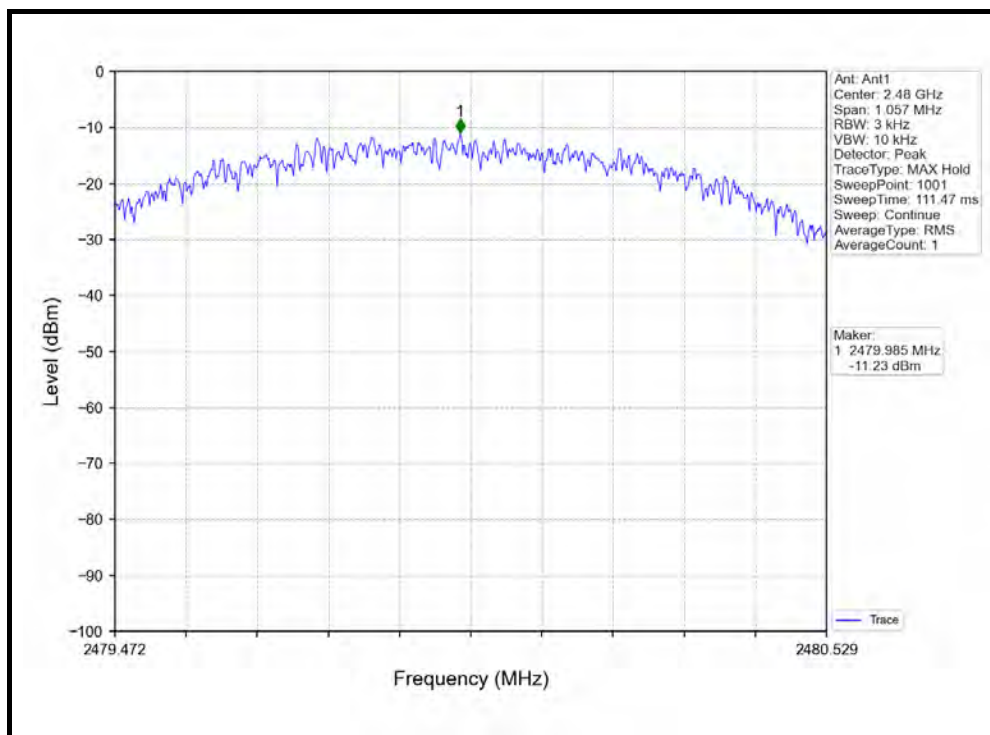


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Test Report No.: W7L-P21080006RF13

2SECEND-BT-LE (1MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-13.14	8	PASS
19	2440	-12.31	8	PASS
39	2480	-11.23	8	PASS



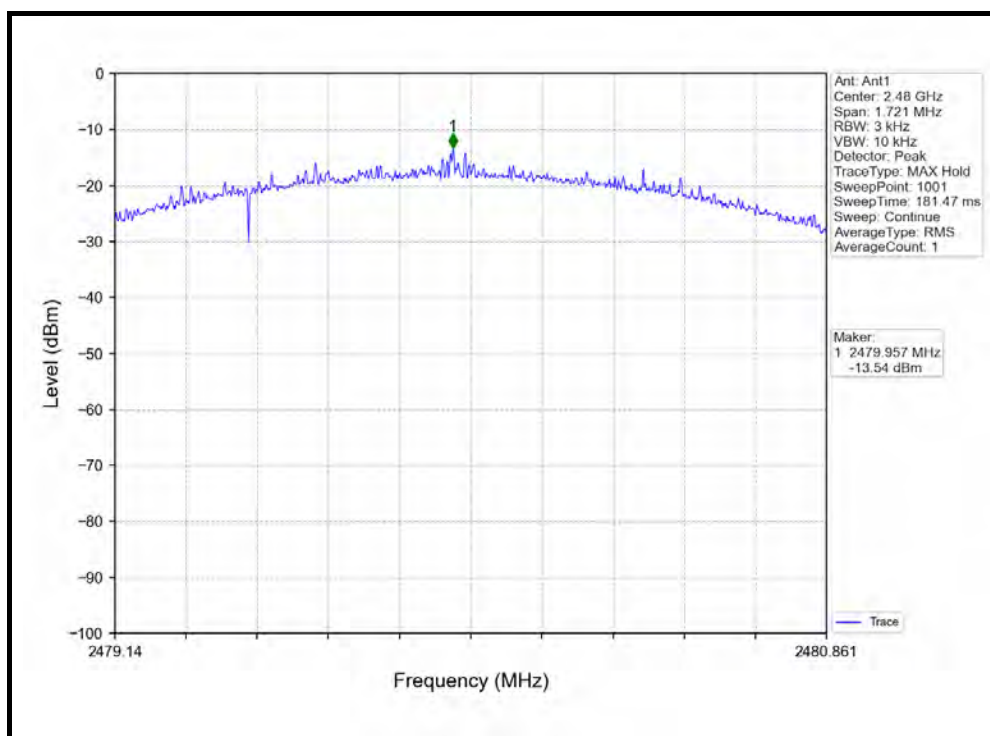


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Test Report No.: W7L-P21080006RF13

2SECEND-BT-LE (2MHz)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-14.83	8	PASS
19	2440	-14.11	8	PASS
39	2480	-13.54	8	PASS



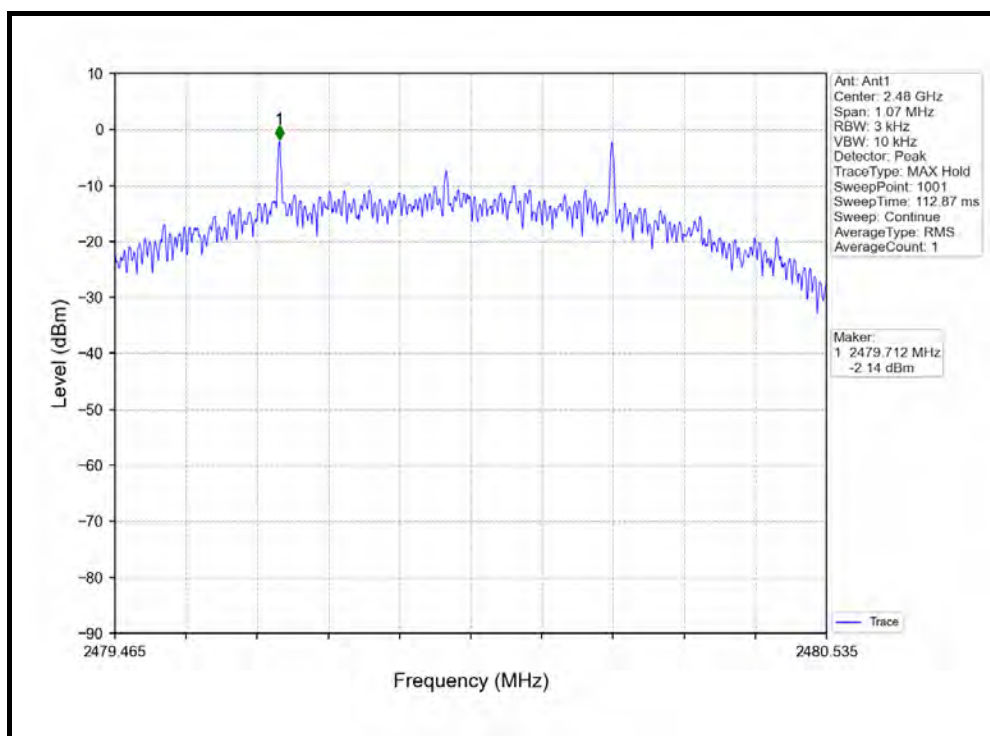


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Test Report No.: W7L-P21080006RF13

2SECEND-BT-LE (S2)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-3.40	8	PASS
19	2440	-2.73	8	PASS
39	2480	-2.14	8	PASS



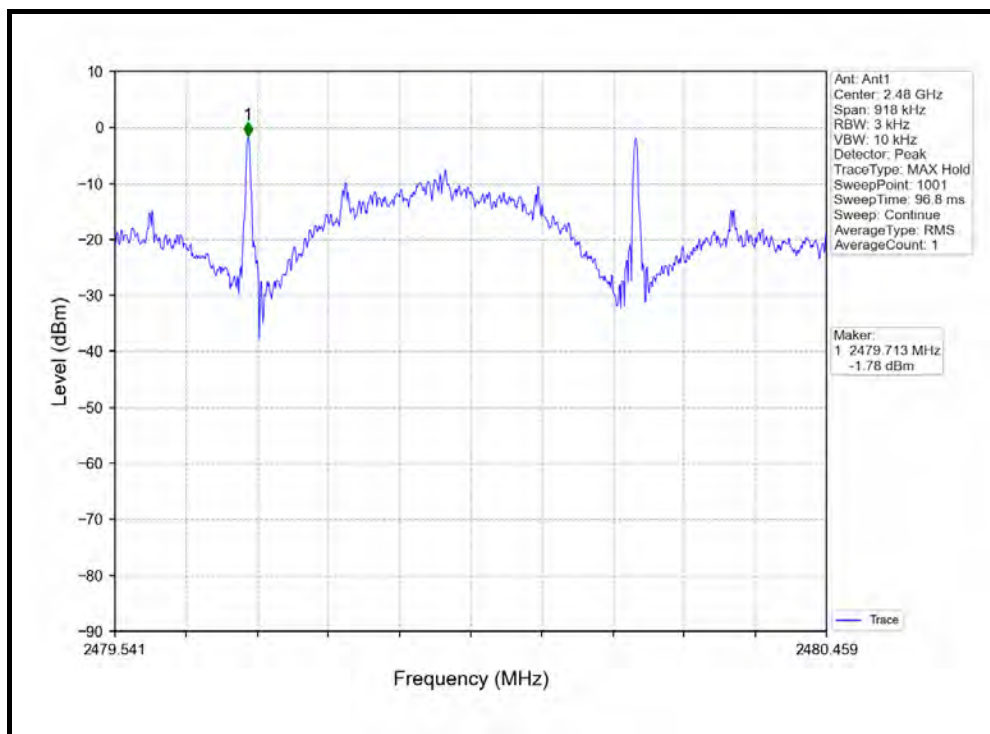


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Test Report No.: W7L-P21080006RF13

2SECEND-BT-LE (S8)

Channel	FREQ. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-3.13	8	PASS
19	2440	-2.47	8	PASS
39	2480	-1.78	8	PASS



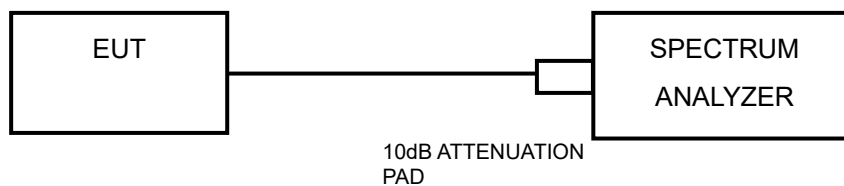


3.6 OUT OF BAND EMISSION MEASUREMENT

3.6.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

3.6.2 TEST SETUP



3.6.3 TEST INSTRUMENTS

Refer to section 3.3.2 to get information of above instrument.

3.6.4 TEST PROCEDURE

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW $\geq$ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.



MEASUREMENT PROCEDURE OOB

1. Set RBW = 100 kHz.
2. Set VBW $\geq$ 300 kHz.
3. Set span to encompass the spectrum to be examined
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.

3.6.5 DEVIATION FROM TEST STANDARD

No deviation.

3.6.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

3.6.7 TEST RESULTS

The spectrum plots are attached on the following images. D1 line indicates the highest level. D2 line indicates the 20dB offset below D1. It shows compliance to the requirement.

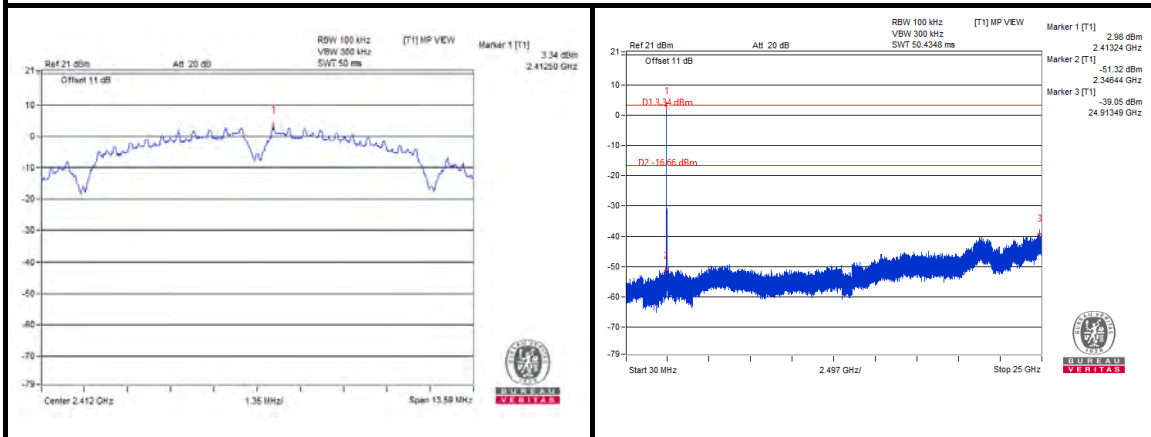


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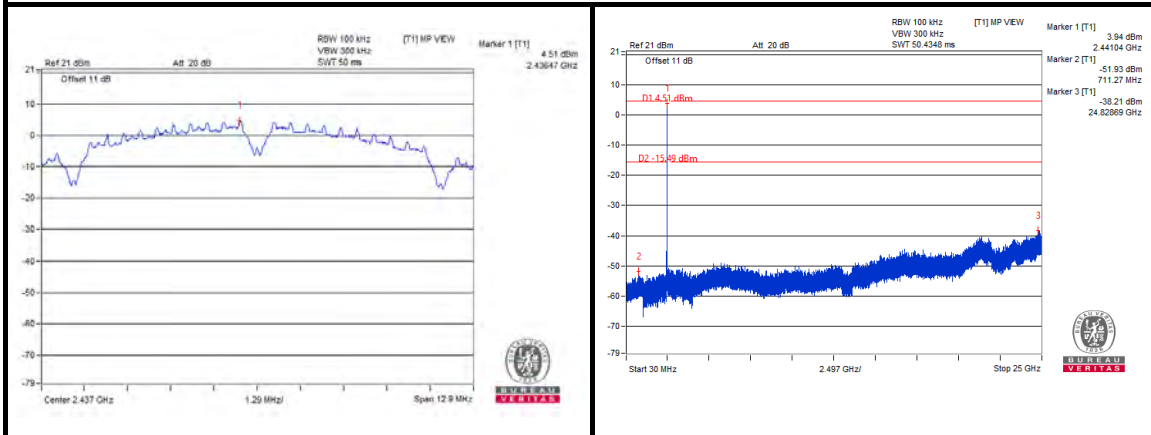
Test Report No.: W7L-P21080006RF13

802.11b

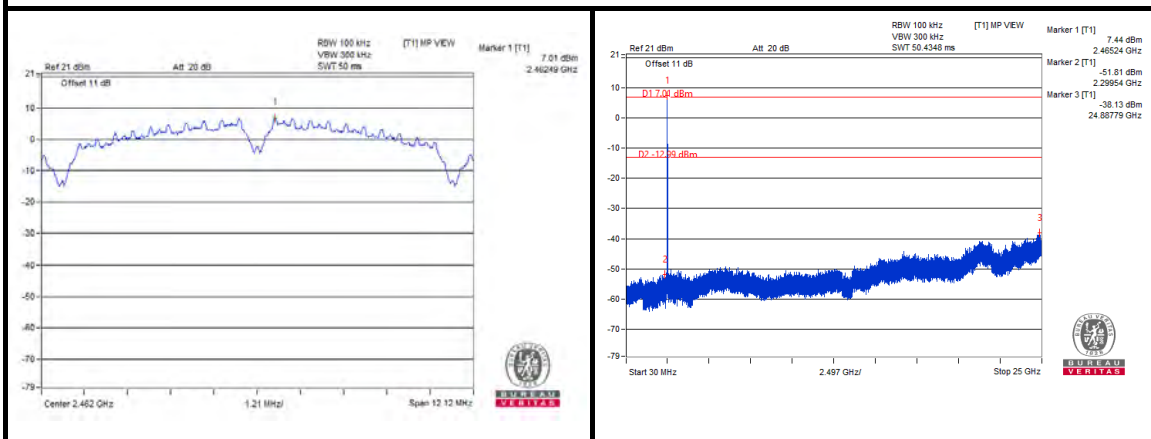
CH 1



CH 6



CH 11

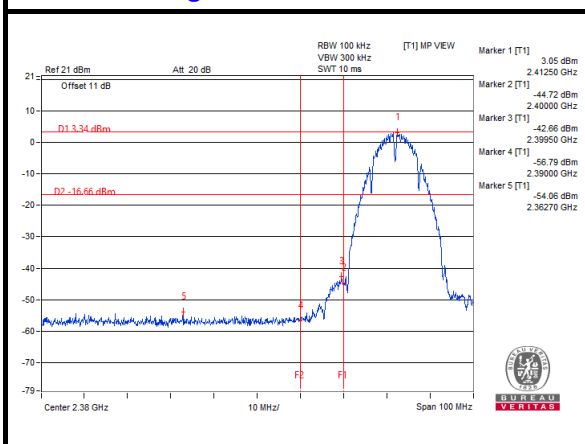




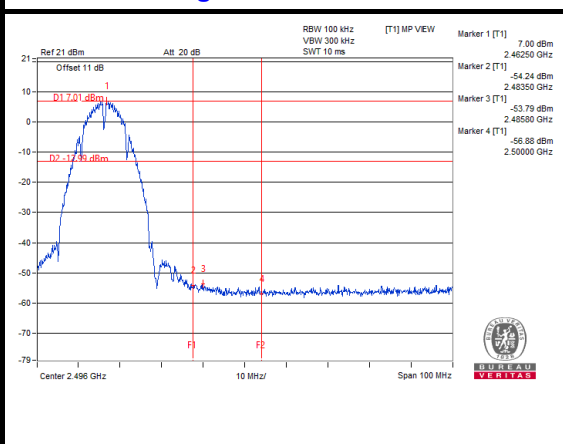
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CH 1 Band Edge



CH 11 Band Edge



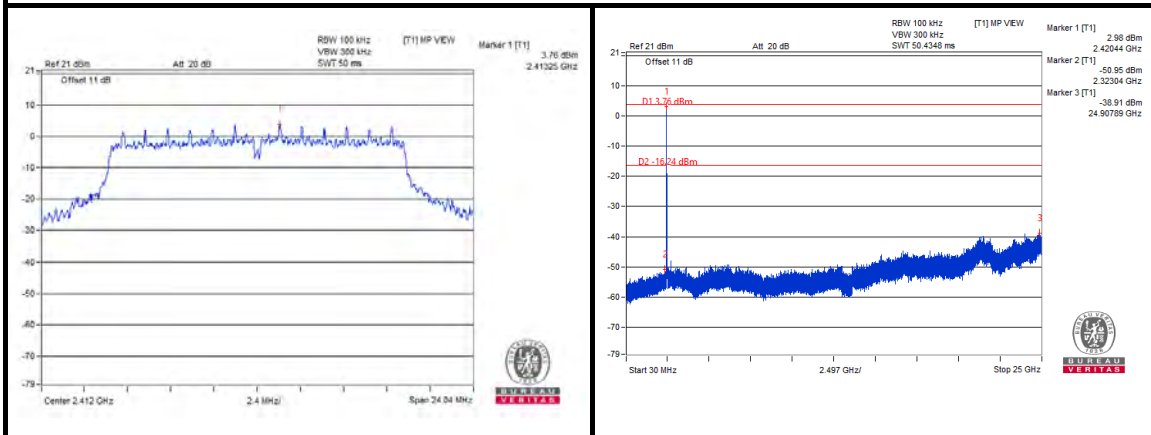


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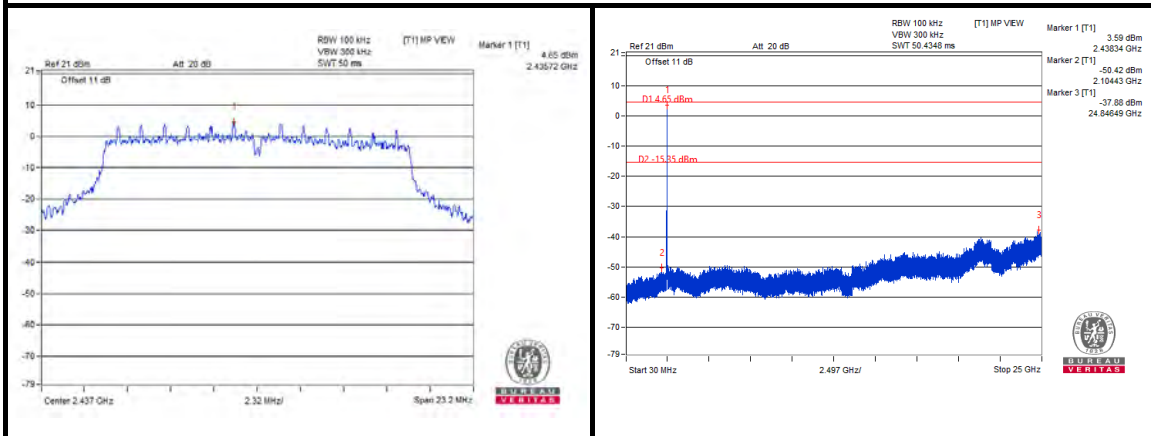
Test Report No.: W7L-P21080006RF13

802.11g

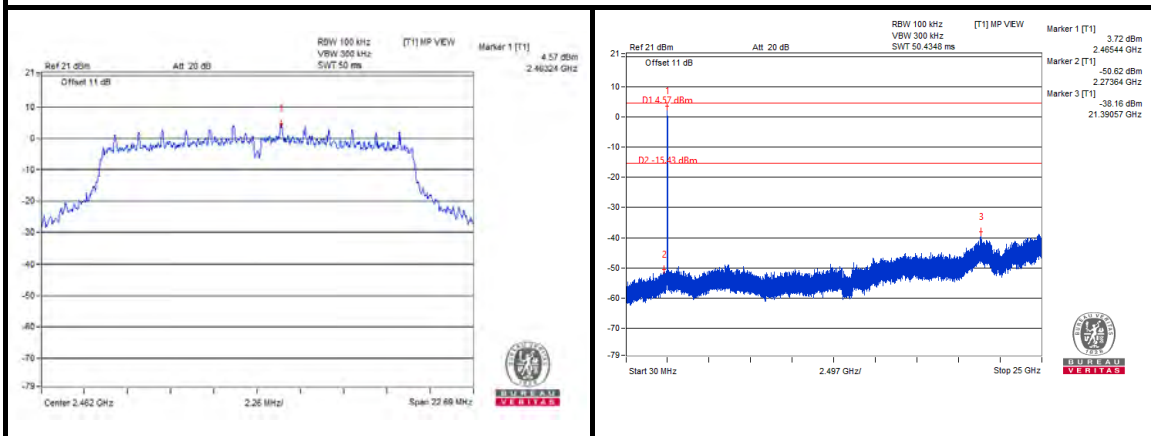
CH 1



CH 6



CH 11

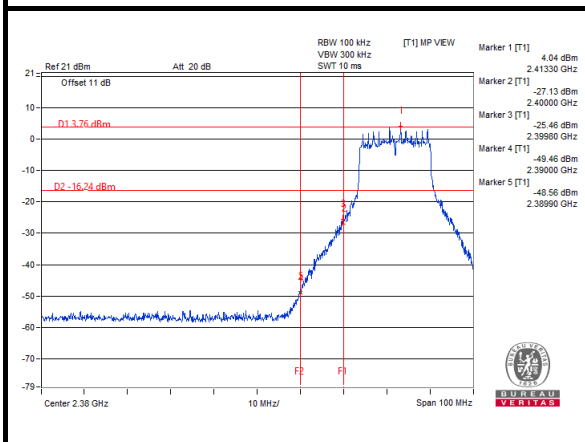




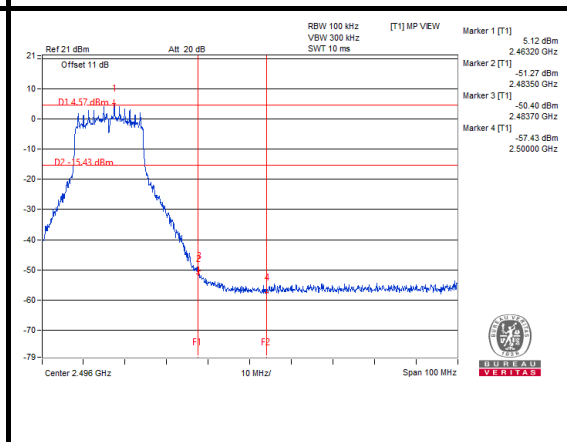
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CH 1 Band Edge



CH 11 Band Edge



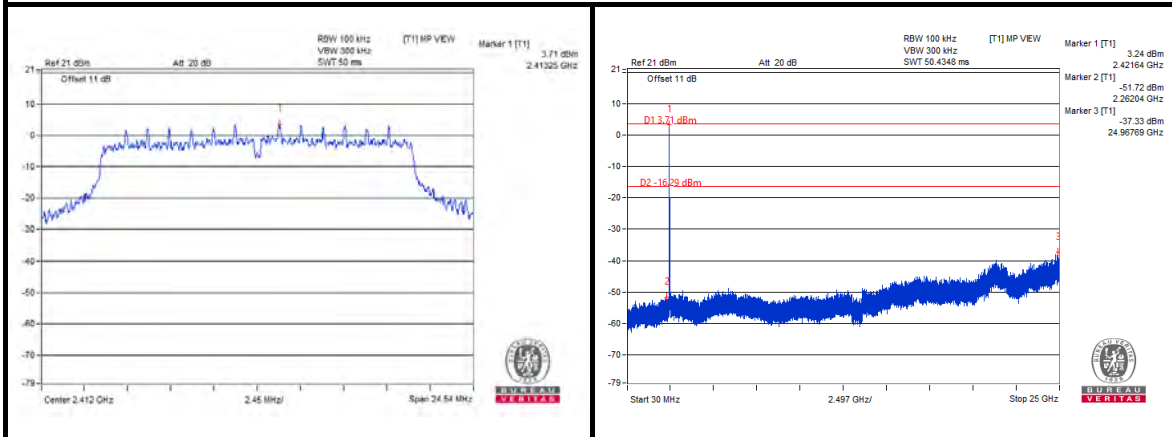


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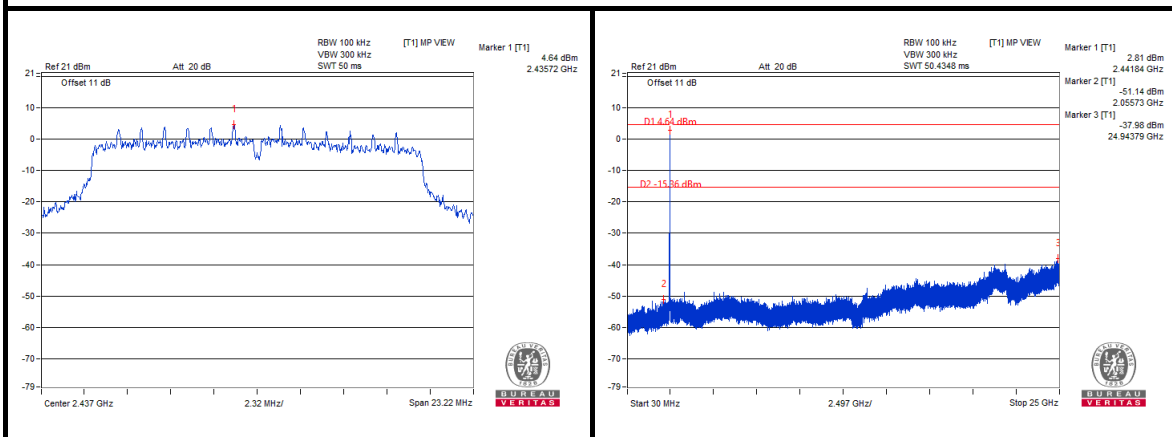
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802.11n (20MHz)

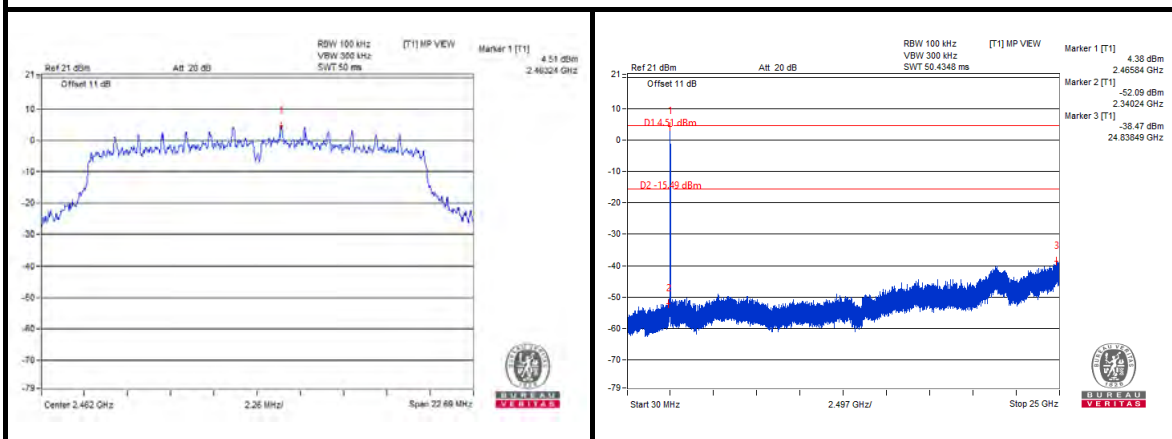
CH 1



CH 6



CH 11

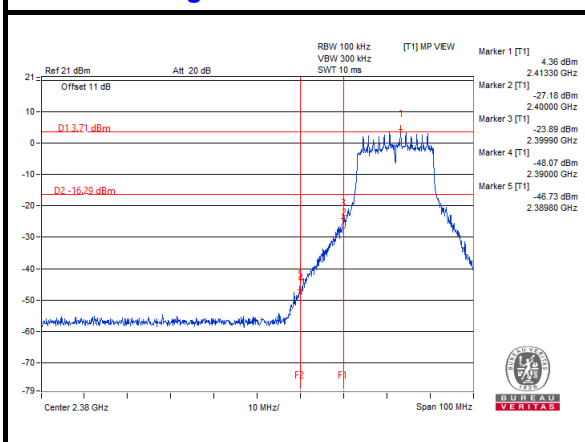




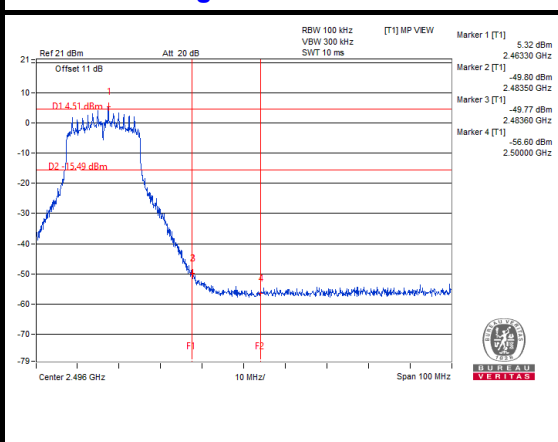
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CH 1 Band Edge



CH 11 Band Edge



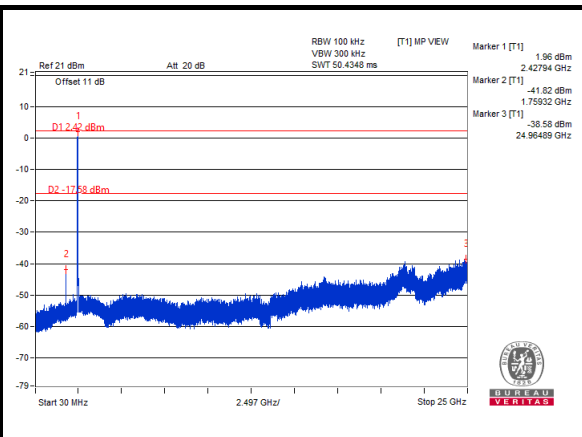
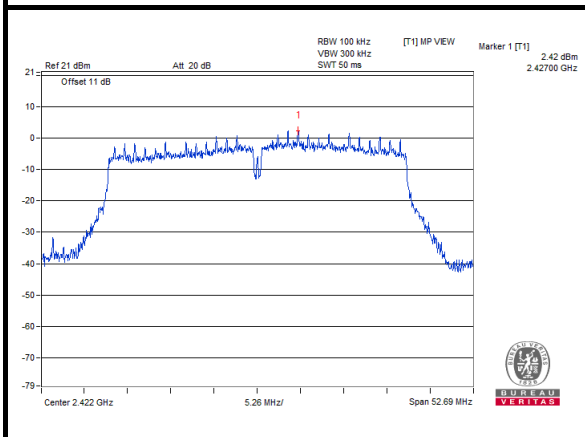


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VERITAS

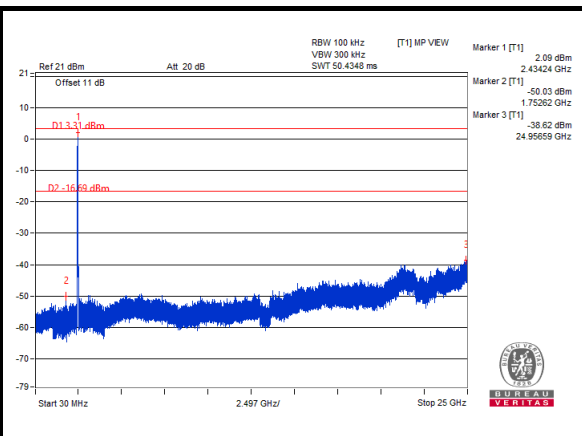
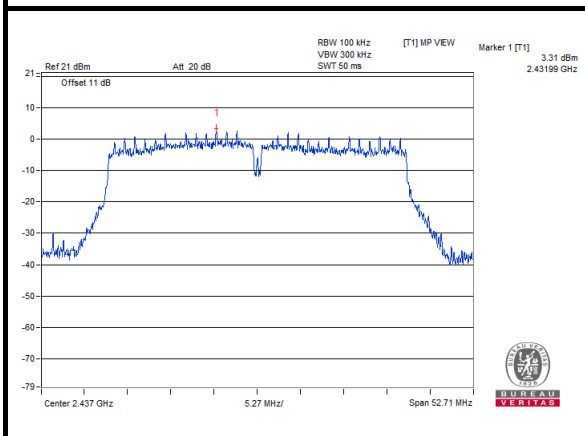
Test Report No.: W7L-P21080006RF13

802.11n (40MHz)

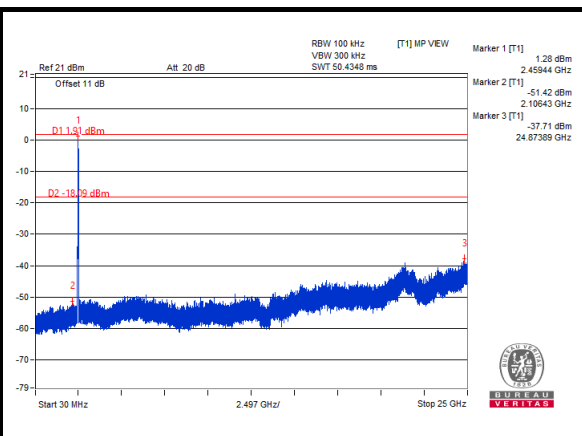
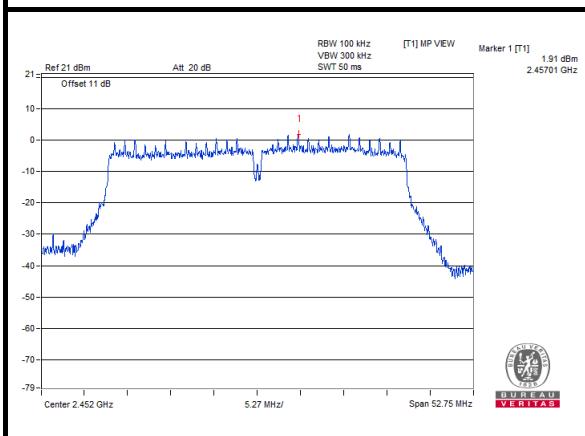
CH 3



CH 6



CH 9

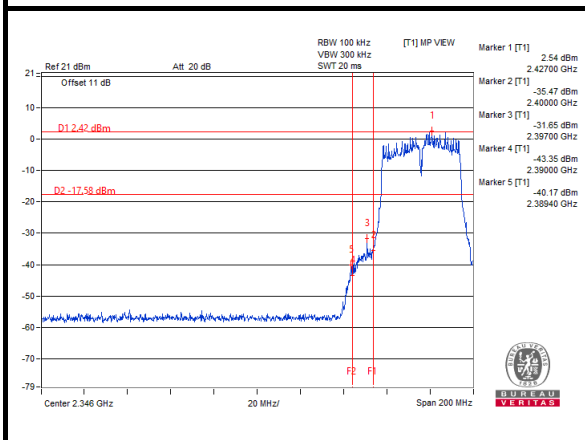




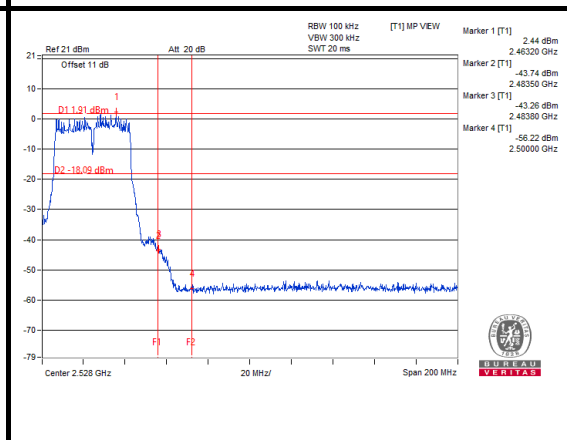
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CH 3 Band Edge



CH 9 Band Edge



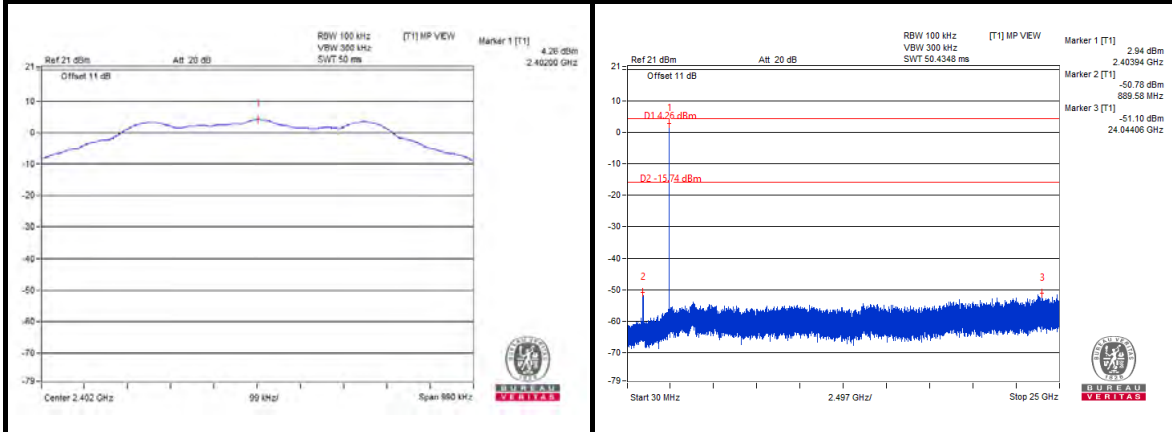


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VERITAS

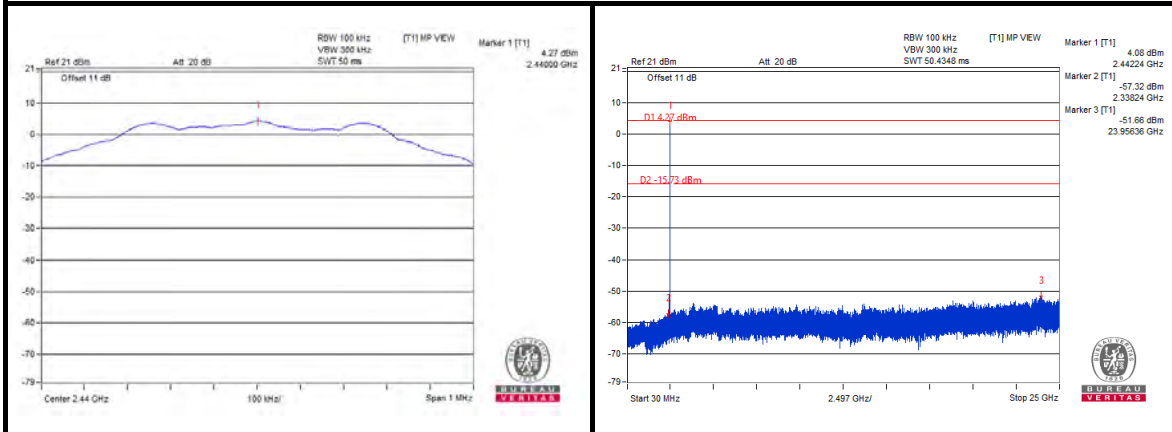
Test Report No.: W7L-P21080006RF13

BT-LE (1MHz)

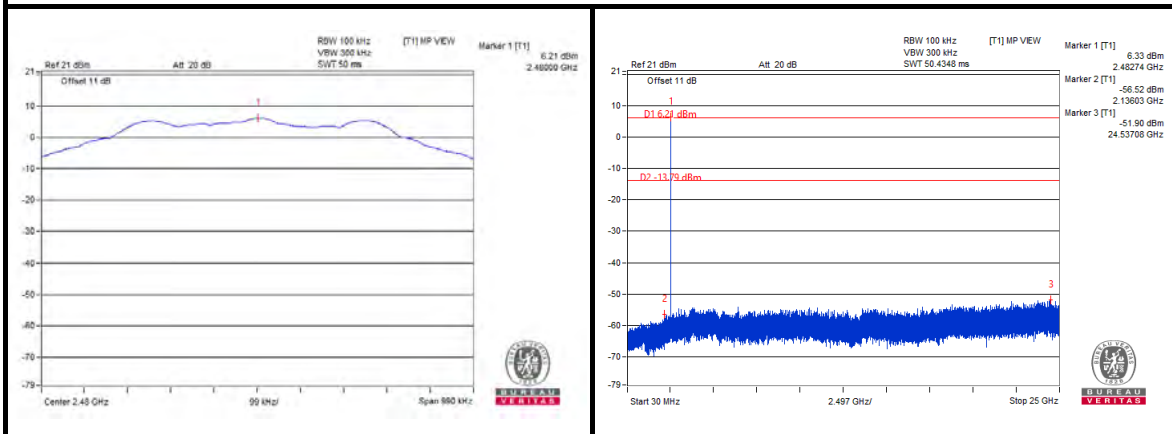
CH 0



CH 19



CH 39

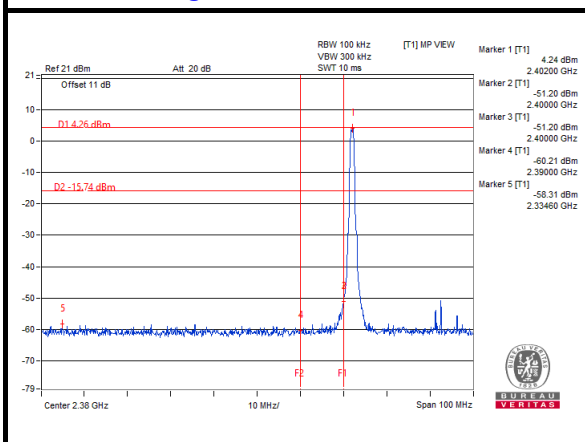




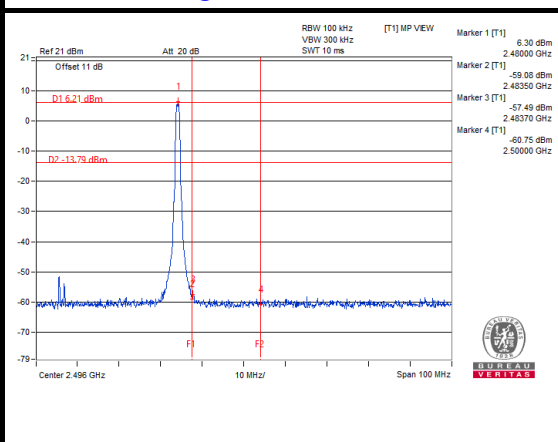
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CH 0 Band Edge



CH 39 Band Edge



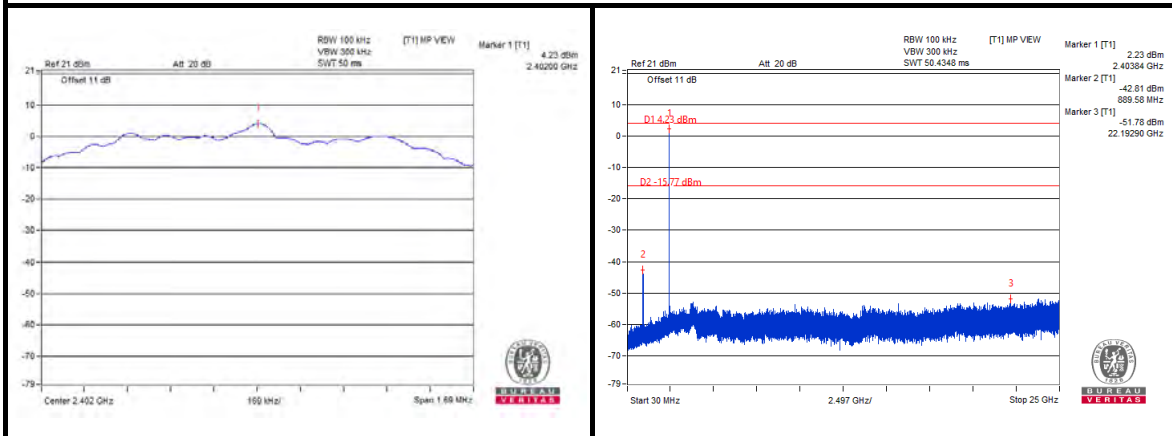


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VERITAS

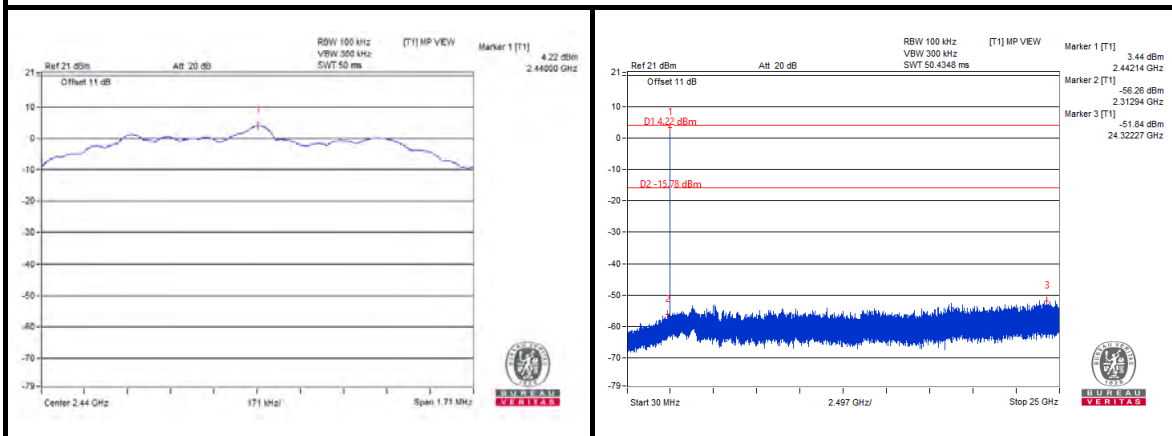
Test Report No.: W7L-P21080006RF13

BT-LE (2MHz)

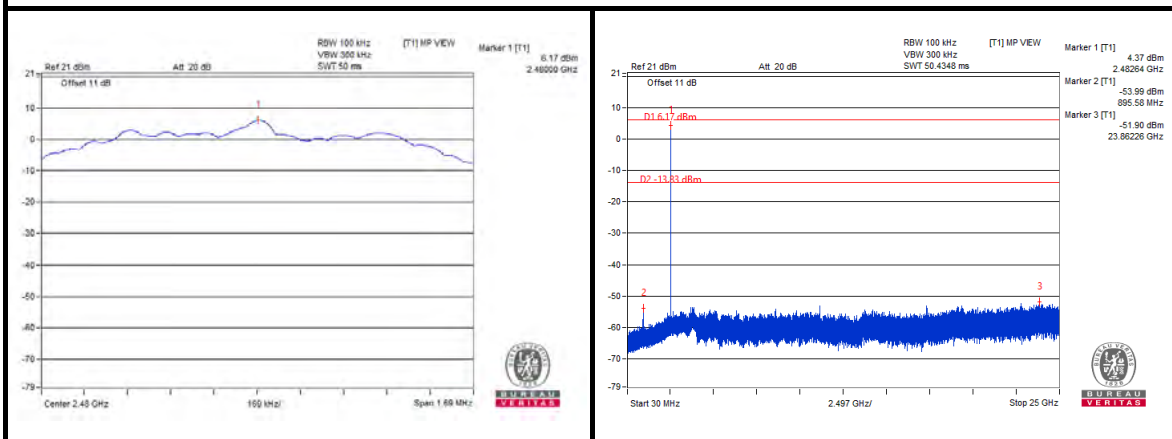
CH 0



CH 19



CH 39

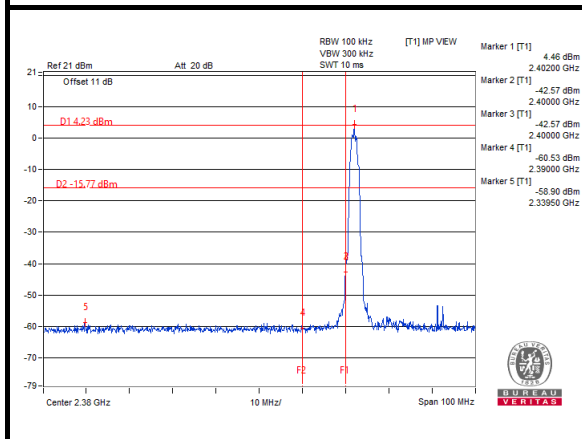




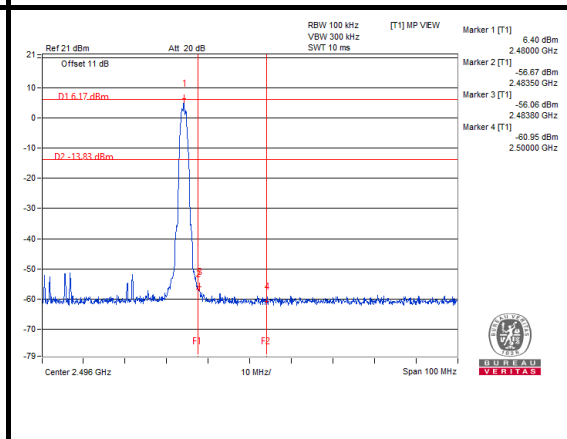
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CH 0 Band Edge



CH 39 Band Edge



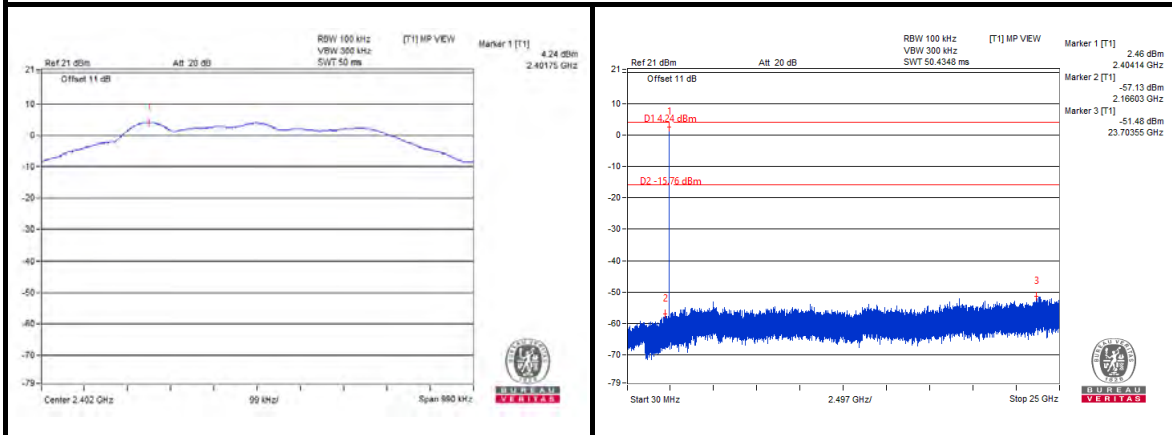


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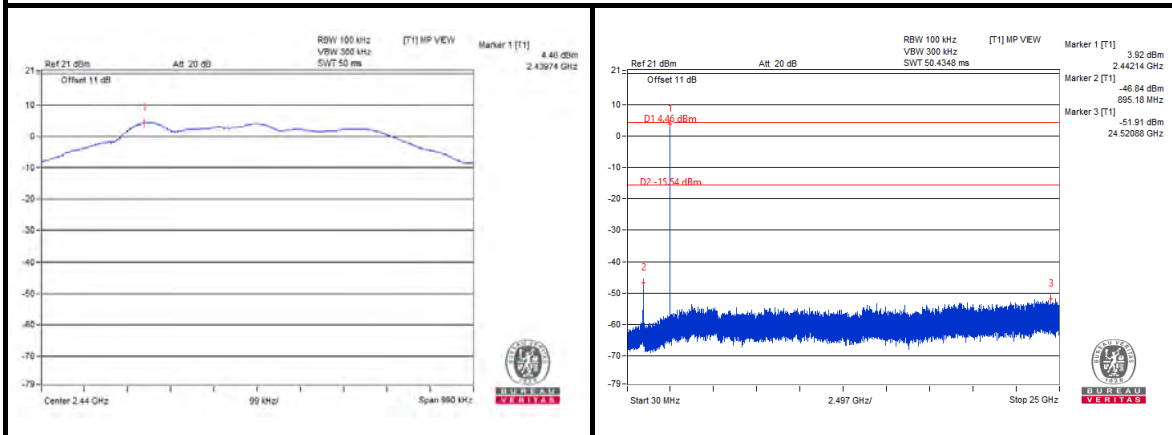
Test Report No.: W7L-P21080006RF13

BT-LE (S2)

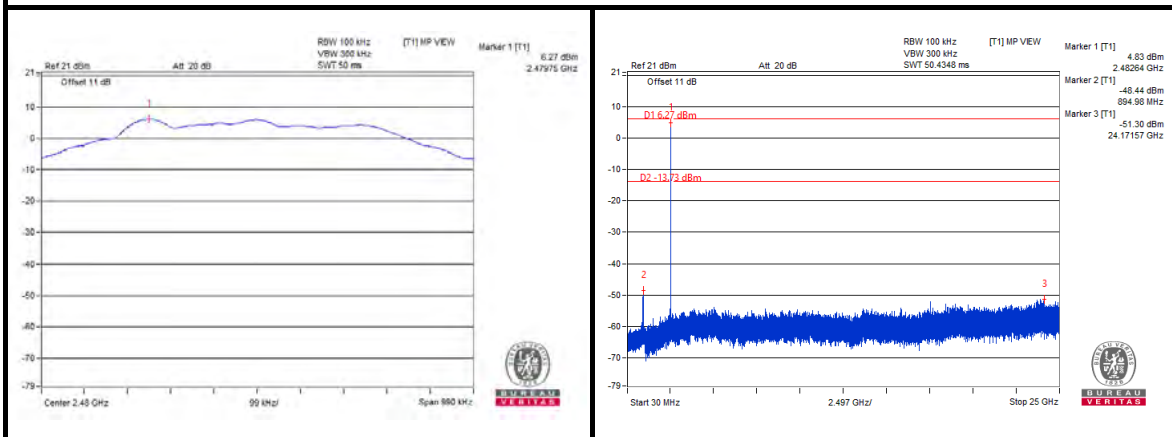
CH 0



CH 19



CH 39

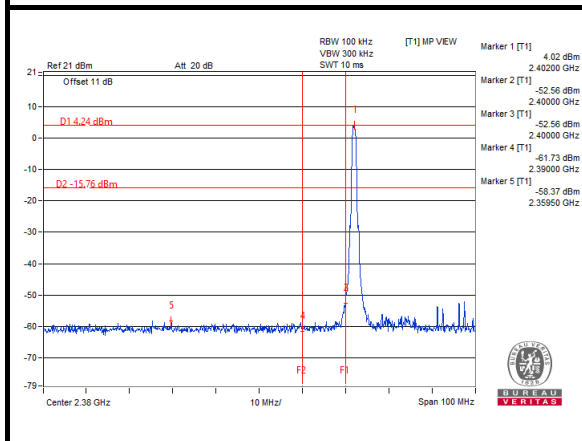




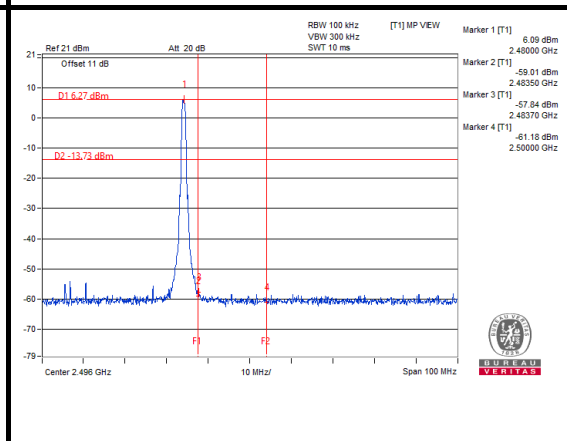
BUREAU
VERITAS

Test Report No.: W7L-P21080006RF13

CH 0 Band Edge



CH 39 Band Edge



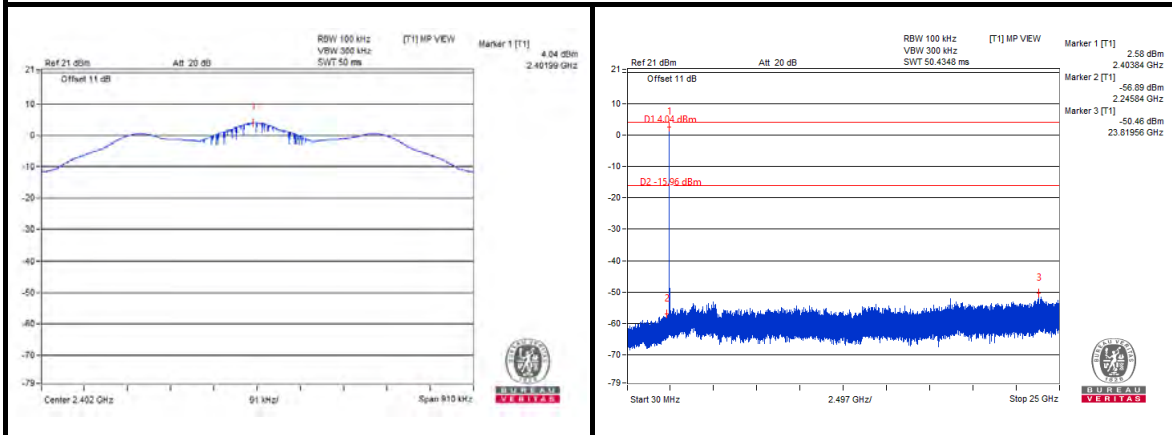


BUREAU
VERITAS

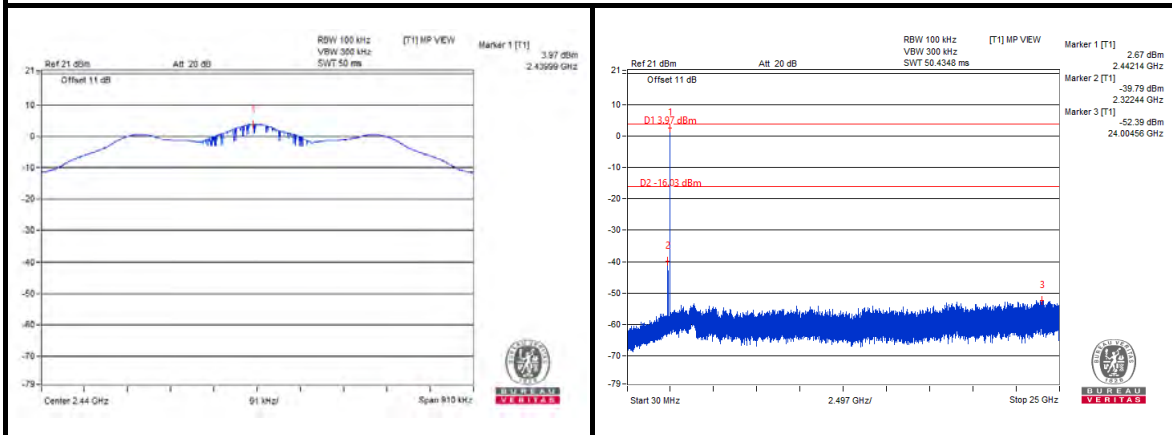
Test Report No.: W7L-P21080006RF13

BT-LE (S8)

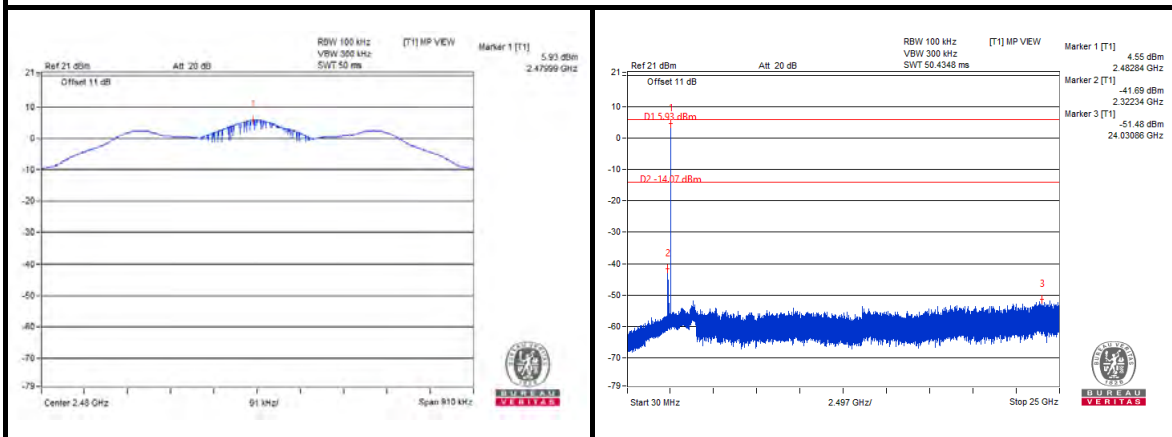
CH 0



CH 19



CH 39

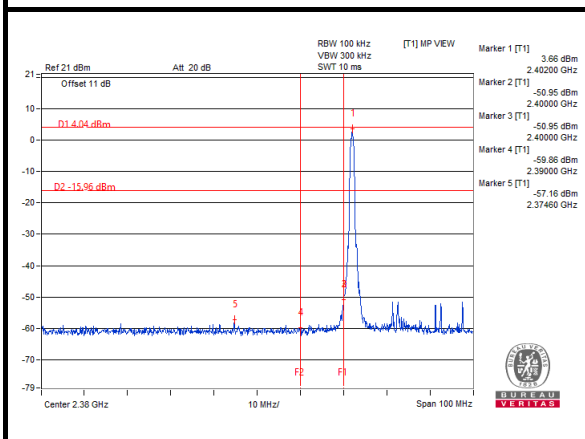




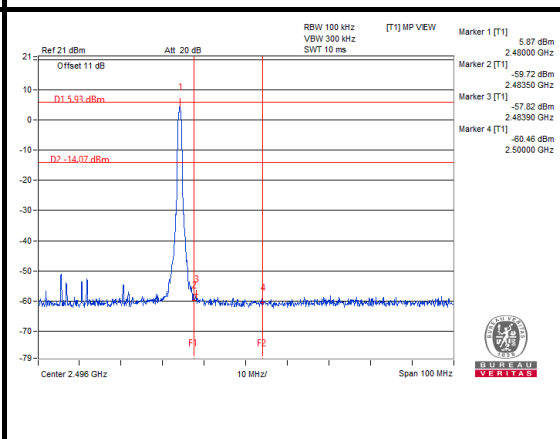
BUREAU
VERITAS

Test Report No.: W7L-P21080006RF13

CH 0 Band Edge



CH 39 Band Edge



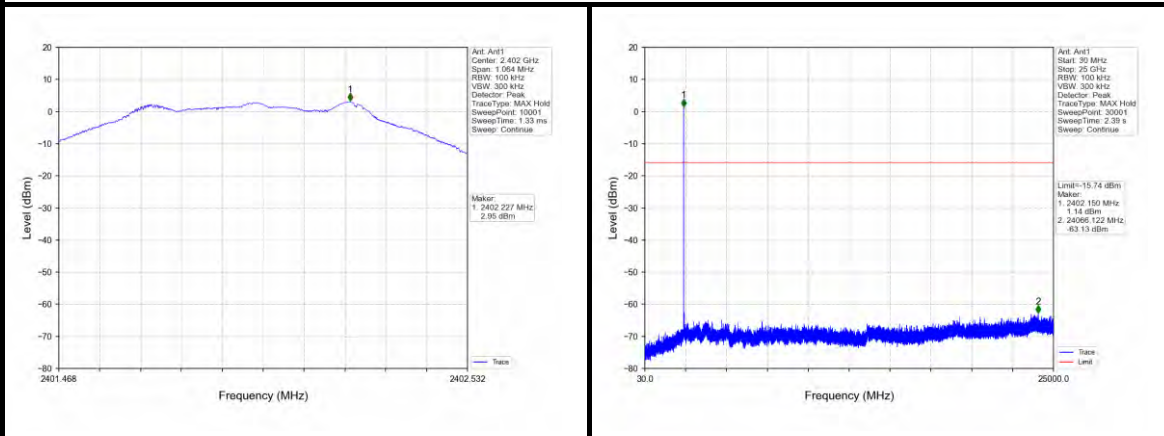


BUREAU
VERITAS

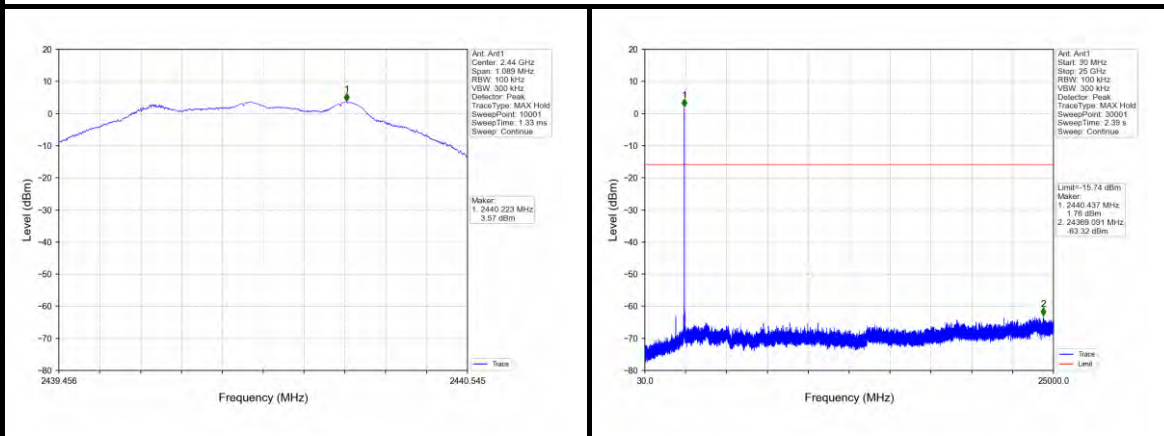
Test Report No.: W7L-P21080006RF13

2SECEND-BT-LE (1MHz)

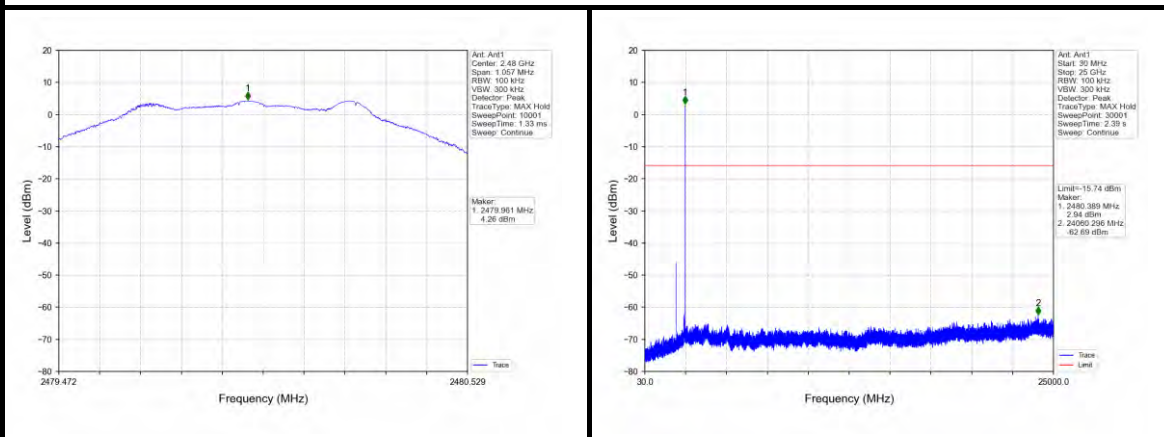
CH 0



CH 19



CH 39

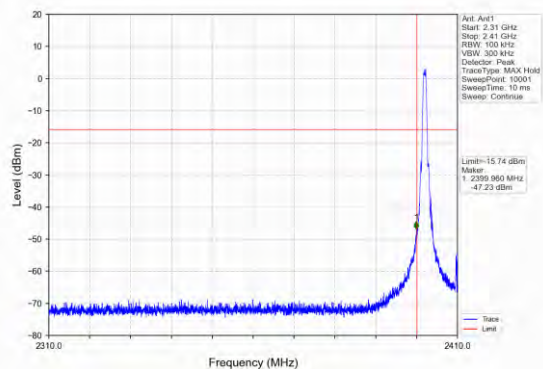




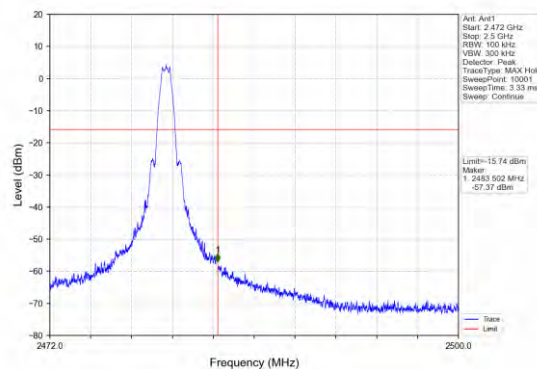
BUREAU
VERITAS

Test Report No.: W7L-P21080006RF13

CH 0 Band Edge



CH 39 Band Edge



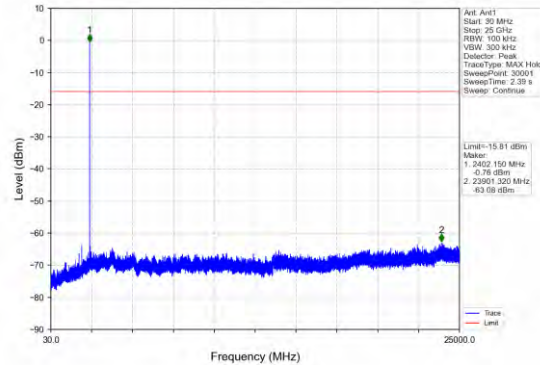
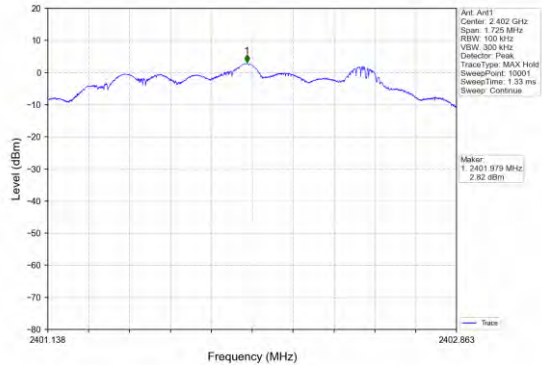


BUREAU
VERITAS

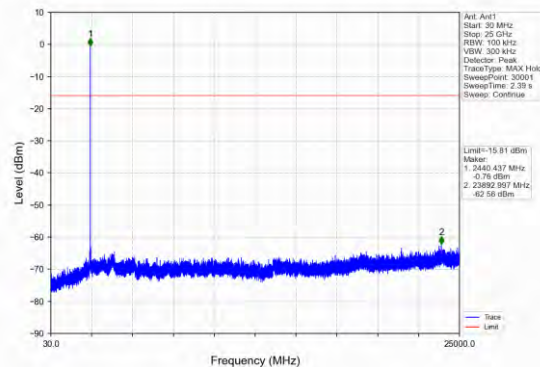
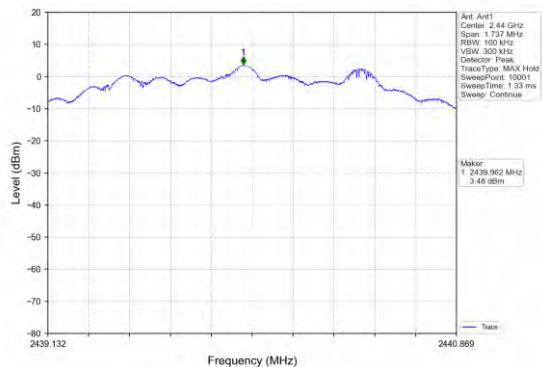
Test Report No.: W7L-P21080006RF13

2SECEND-BT-LE (2MHz)

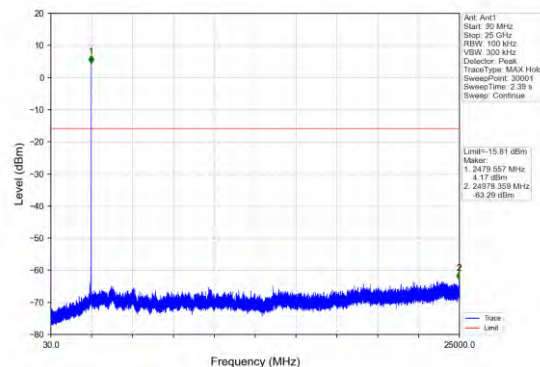
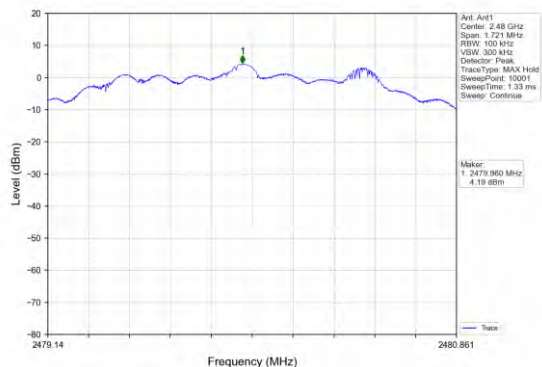
CH 0



CH 19



CH 39

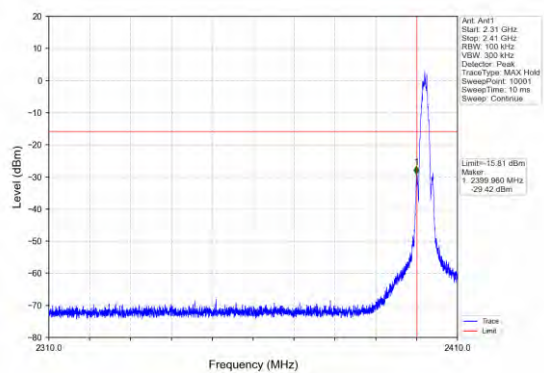




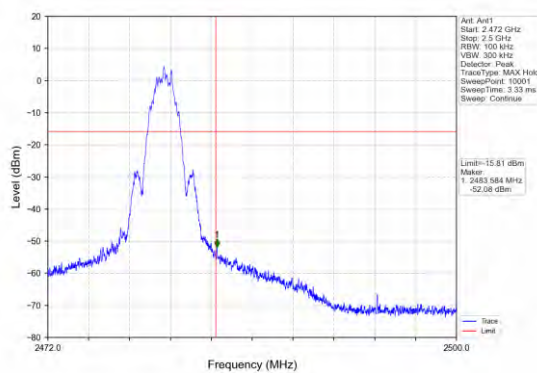
BUREAU
VERITAS

Test Report No.: W7L-P21080006RF13

CH 0 Band Edge



CH 39 Band Edge



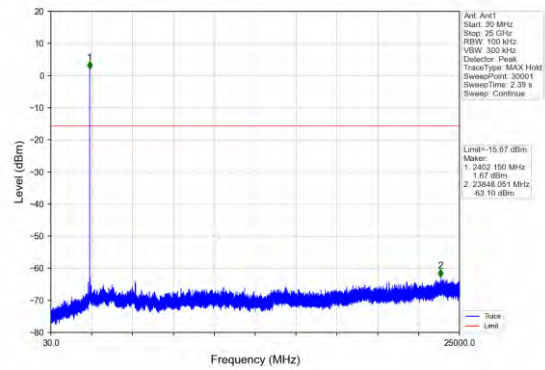
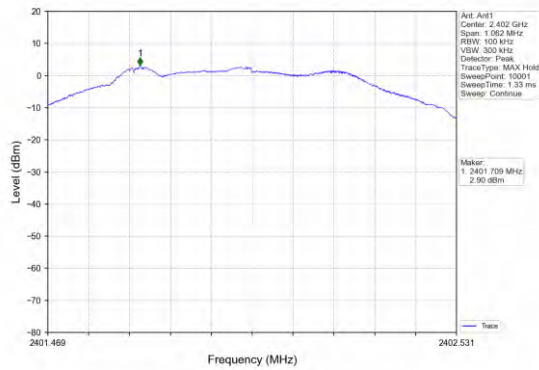


BUREAU
VERITAS

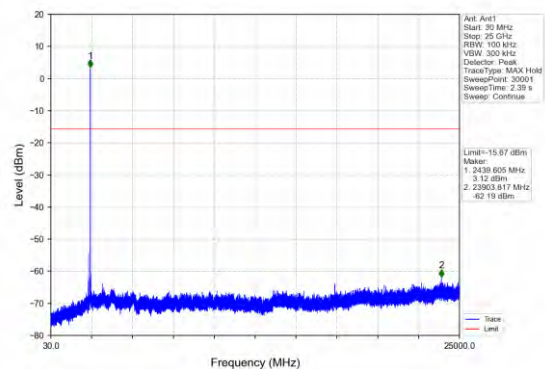
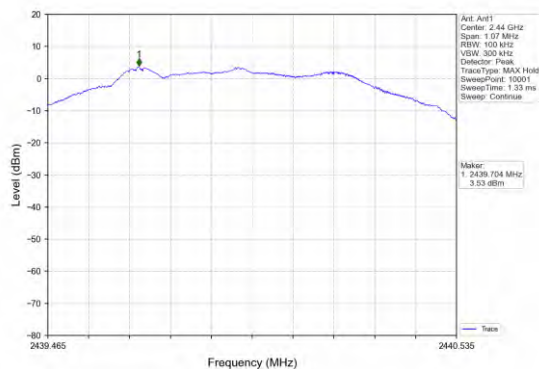
Test Report No.: W7L-P21080006RF13

2SECEND-BT-LE (S2)

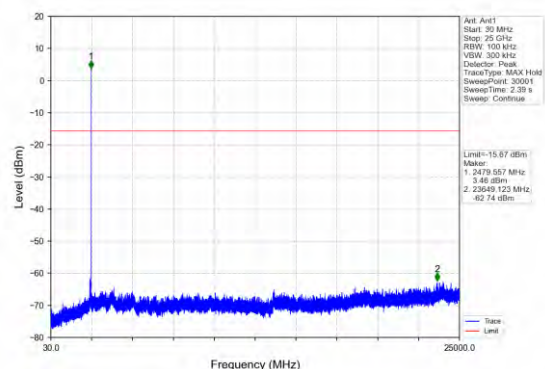
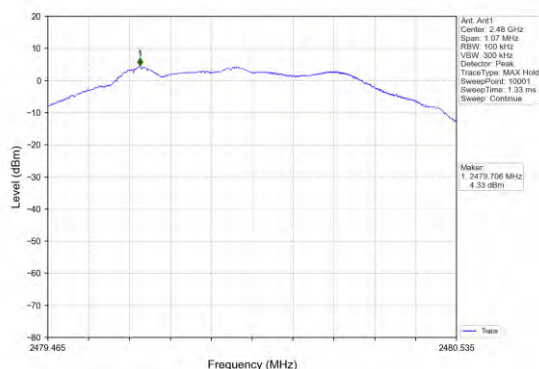
CH 0



CH 19



CH 39

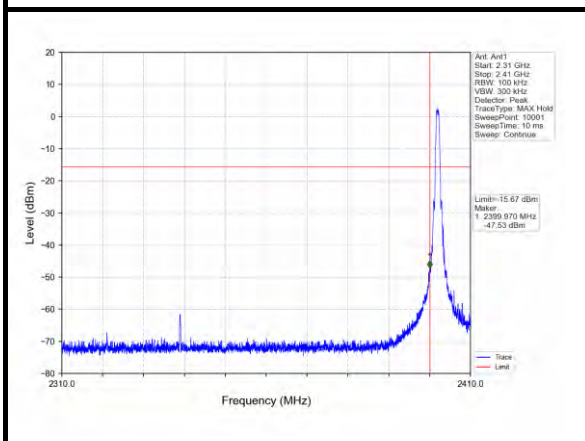




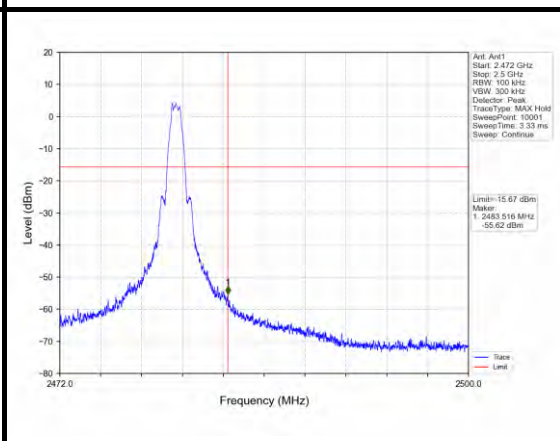
BUREAU
VERITAS

Test Report No.: W7L-P21080006RF13

CH 0 Band Edge



CH 39 Band Edge



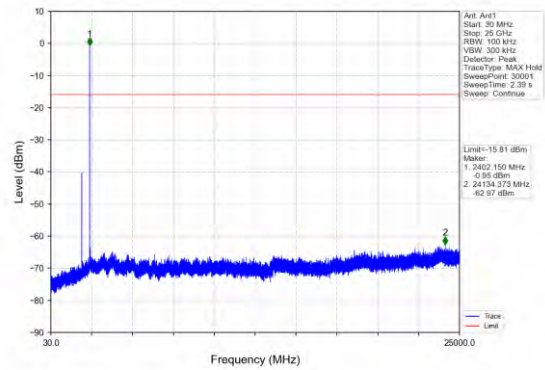
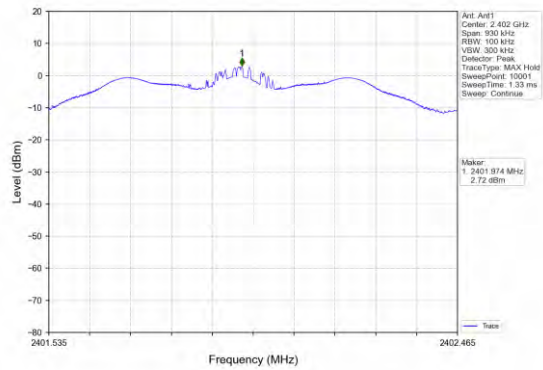


BUREAU
VERITAS

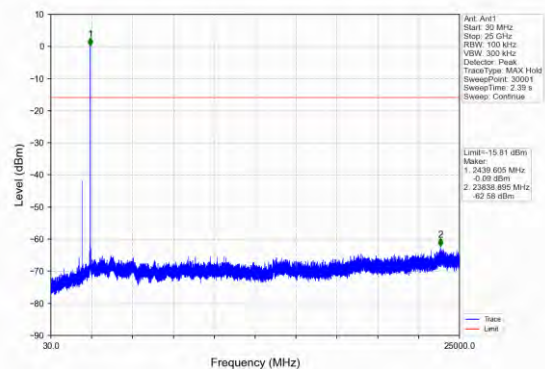
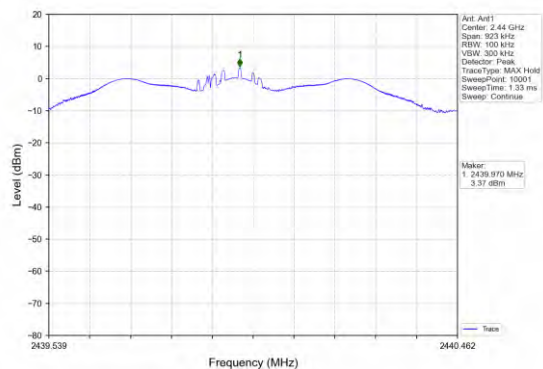
Test Report No.: W7L-P21080006RF13

2SECEND-BT-LE (S8)

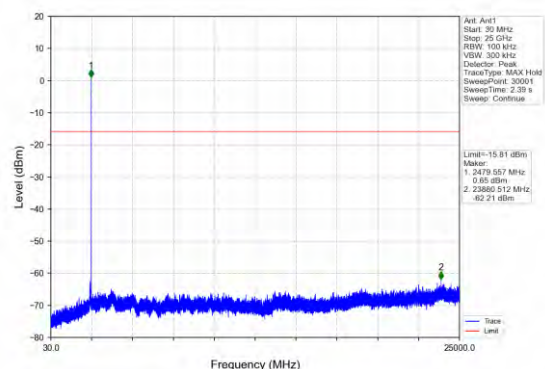
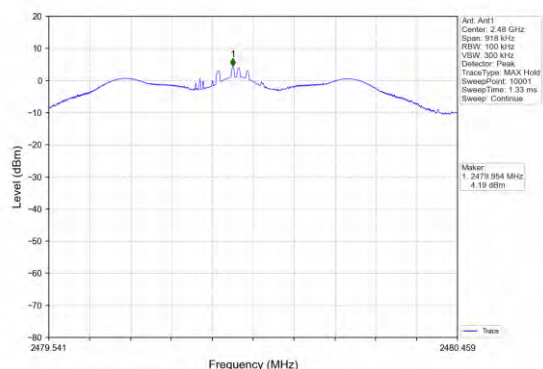
CH 0



CH 19



CH 39

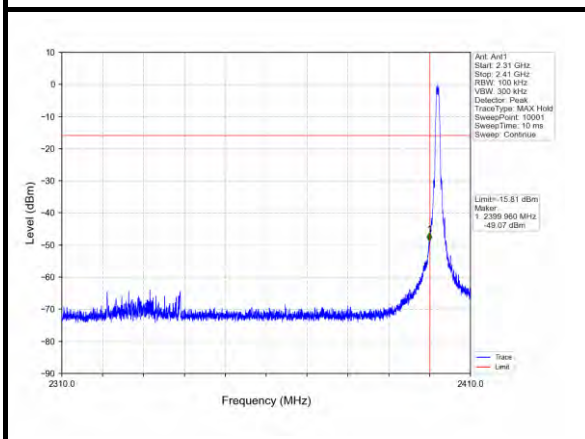




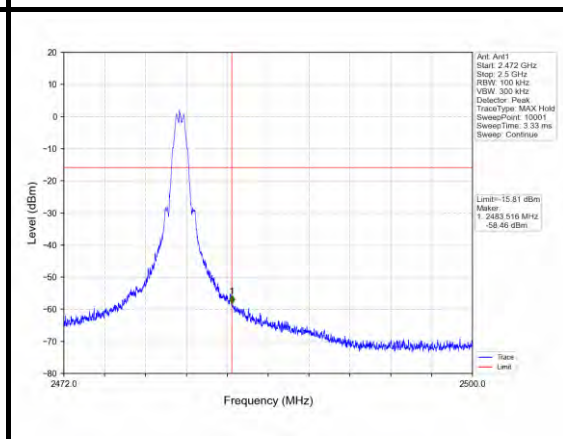
BUREAU
VERITAS

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CH 0 Band Edge



CH 39 Band Edge





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4 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



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5 APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

---END---