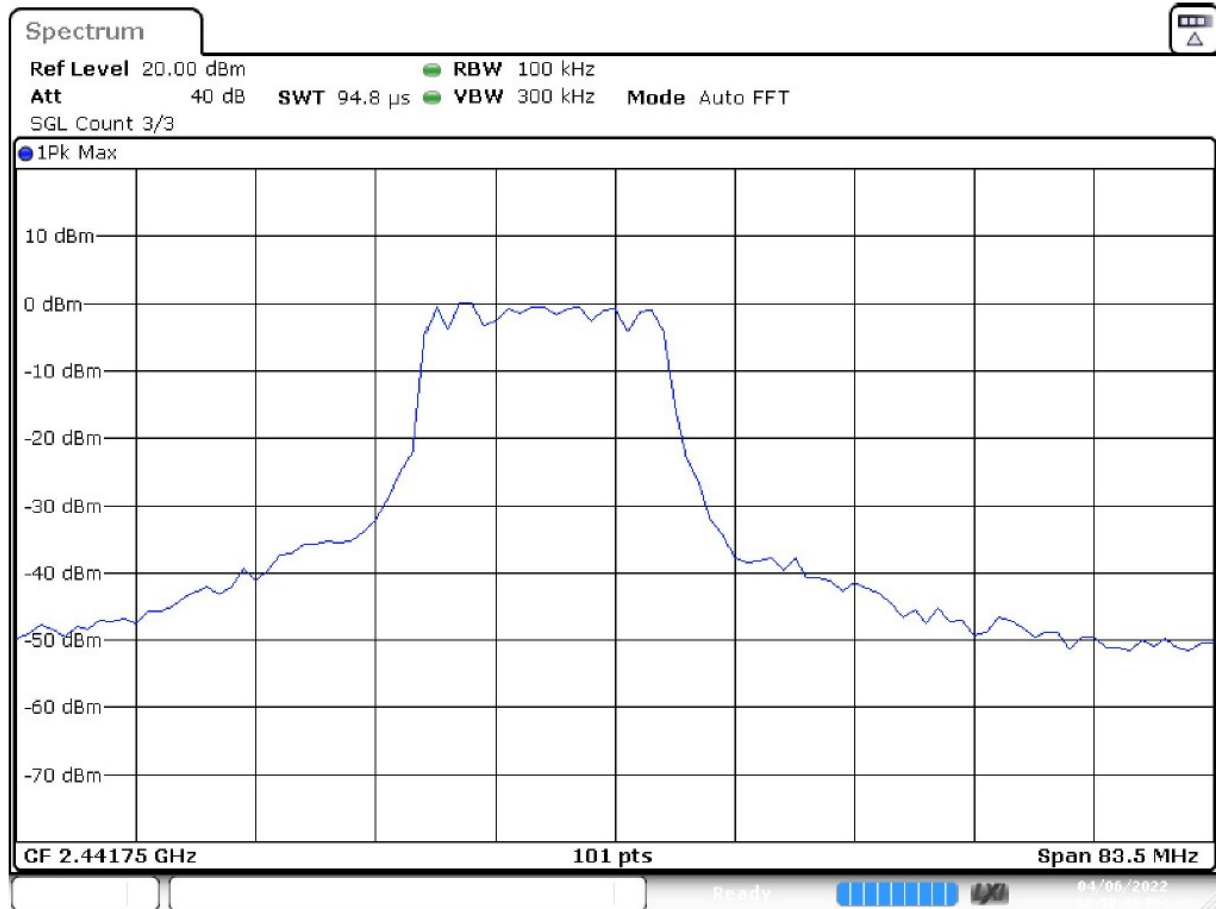


Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
19148.932958	-47.2	26.7	-20.5
19878.514131	-47.3	26.8	-20.5
19598.674777	-47.9	27.3	-20.5
20128.370697	-48.0	27.4	-20.5
16390.516468	-48.1	27.6	-20.5
18869.093604	-48.3	27.8	-20.5
20258.296111	-48.4	27.8	-20.5
16410.504994	-48.4	27.9	-20.5
19518.720676	-48.4	27.9	-20.5
20238.307586	-48.5	28.0	-20.5
15820.843498	-48.5	28.0	-20.5
15730.895134	-48.5	28.0	-20.5
20178.342010	-48.7	28.1	-20.5
20218.319061	-48.7	28.2	-20.5
17050.137803	-48.8	28.2	-20.5

802.11 g Mid Channel Data Rate 48



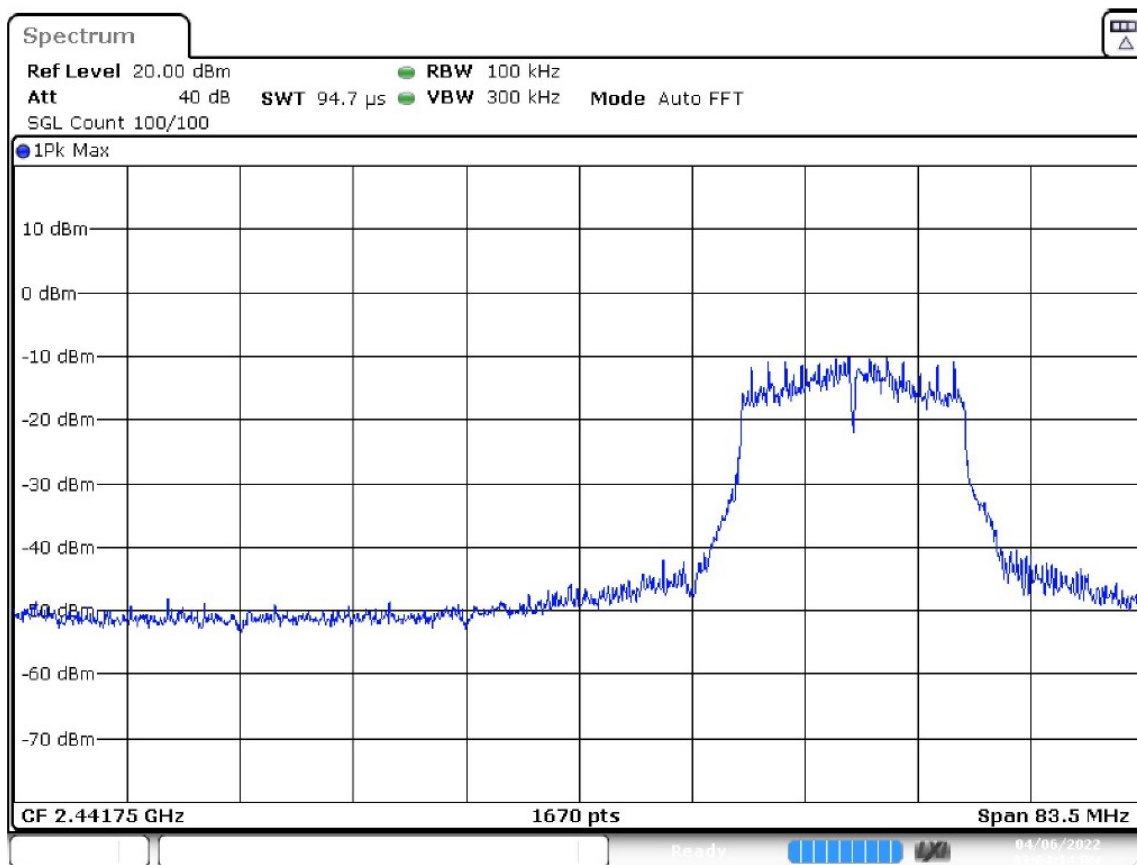
Date: 6.APR.2022 14:58:49

802.11 g Mid Channel Data Rate 48 In band Power Measurement

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2488.497131	-40.4	20.0	-20.4
2498.491394	-48.4	28.0	-20.4
7385.685827	-48.7	28.3	-20.4
7395.680089	-49.9	29.6	-20.4
7375.691564	-50.3	29.9	-20.4
7365.697301	-54.4	34.0	-20.4
7405.674352	-56.2	35.9	-20.4
15720.900871	-56.3	36.0	-20.4
20218.319061	-57.2	36.8	-20.4
2508.485657	-57.4	37.0	-20.4
20078.399384	-57.6	37.3	-20.4
20188.336273	-57.8	37.5	-20.4
4927.097216	-57.9	37.6	-20.4
20238.307586	-58.0	37.6	-20.4
19528.714938	-58.0	37.6	-20.4

802.11 g High Channel Data Rate 48



Date: 6 APR 2022 15:04:15

802.11 g High Channel Data Rate 48 In band Power Measurement



Bureau Veritas Consumer Products Services Inc.
One Distribution Center Circle, #1 • Littleton, MA • TEL (978) 486-8880 • FAX (978) 486-8828

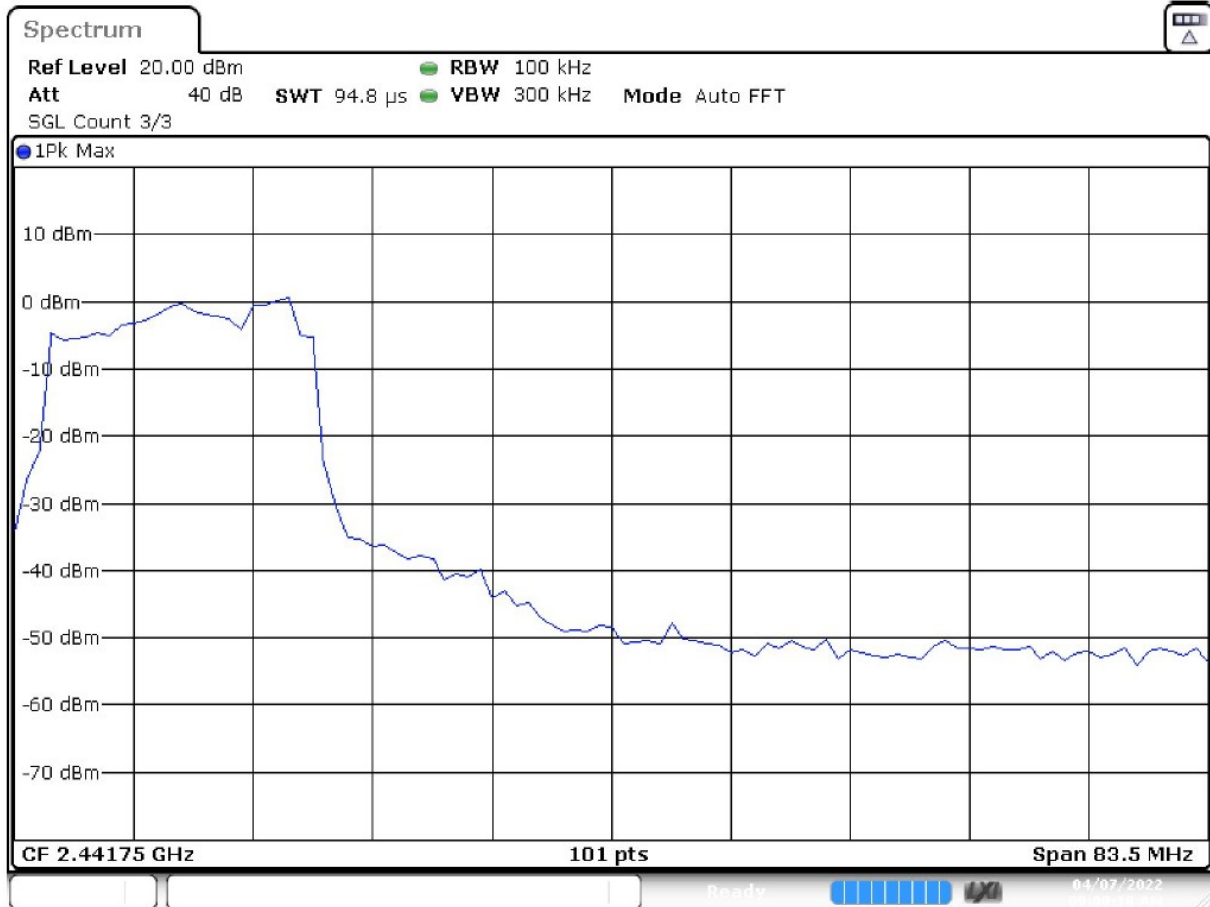


Page 123 of
166

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2395.021008	-33.8	13.7	-20.1
2385.063025	-41.3	21.2	-20.1
2375.105042	-47.4	27.3	-20.1
20238.307586	-47.5	27.4	-20.1
7235.771887	-47.5	27.4	-20.1
20198.330535	-47.7	27.6	-20.1
19478.743625	-47.7	27.6	-20.1
15790.860710	-47.8	27.7	-20.1
14521.589354	-48.0	27.9	-20.1
20188.336273	-48.0	28.0	-20.1
19898.502656	-48.2	28.1	-20.1
15800.854972	-48.2	28.1	-20.1
20218.319061	-48.4	28.3	-20.1
19838.537080	-48.4	28.3	-20.1
16420.499256	-48.5	28.4	-20.1

802.11n Low Channel Data Rate MCS 2



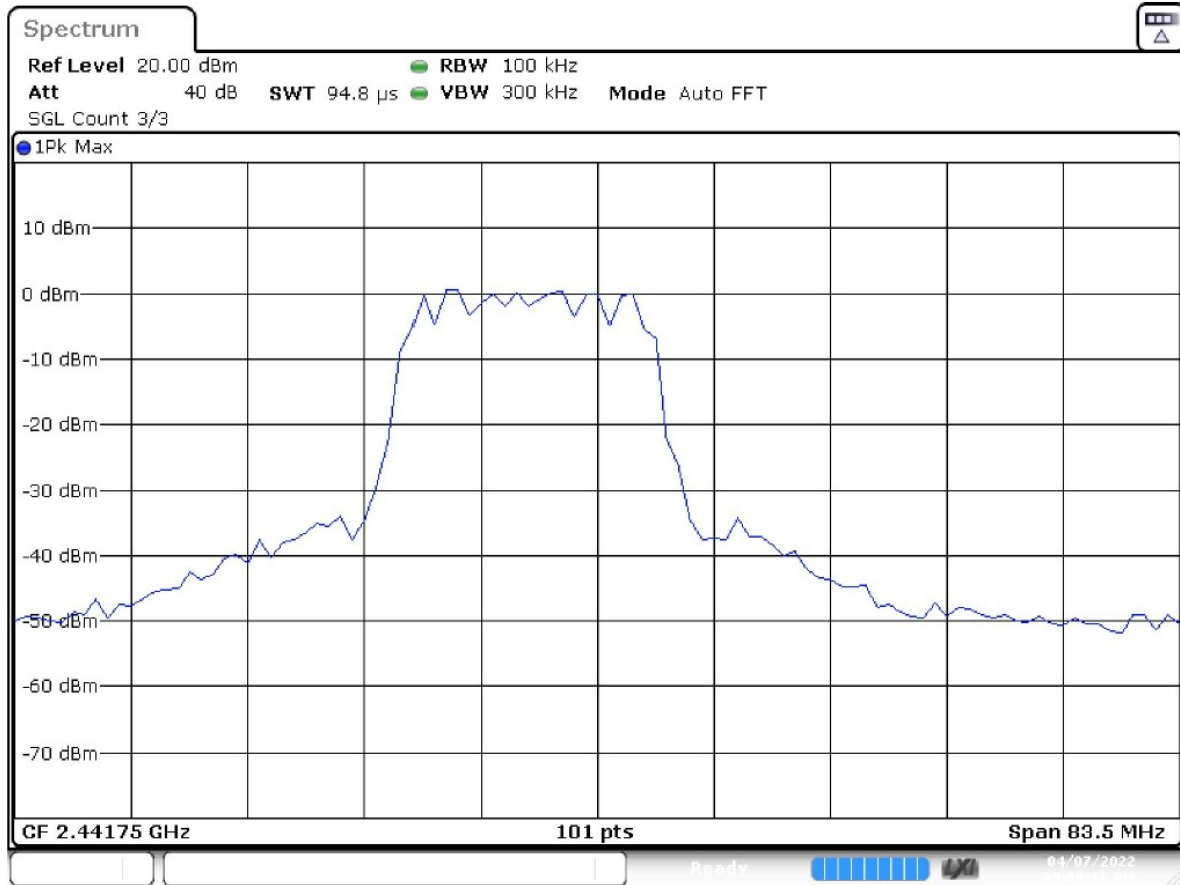
Date: 7.APR.2022 09:00:19

802.11 n Low Channel Data Rate MCS 2 In band Power Measurement

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
20278.284637	-47.5	27.2	-20.2
7305.731725	-47.7	27.4	-20.2
20228.313323	-47.9	27.7	-20.2
15730.895134	-48.0	27.8	-20.2
7315.725988	-48.1	27.9	-20.2
19458.755100	-48.2	27.9	-20.2
16410.504994	-48.2	28.0	-20.2
16720.327136	-48.2	28.0	-20.2
20298.273162	-48.2	28.0	-20.2
20258.296111	-48.3	28.0	-20.2
20118.376434	-48.3	28.1	-20.2
19768.577242	-48.3	28.1	-20.2
20188.336273	-48.4	28.2	-20.2
20268.290374	-48.4	28.2	-20.2
20148.359222	-48.4	28.2	-20.2

802.11n Mid Channel Data Rate MCS 2



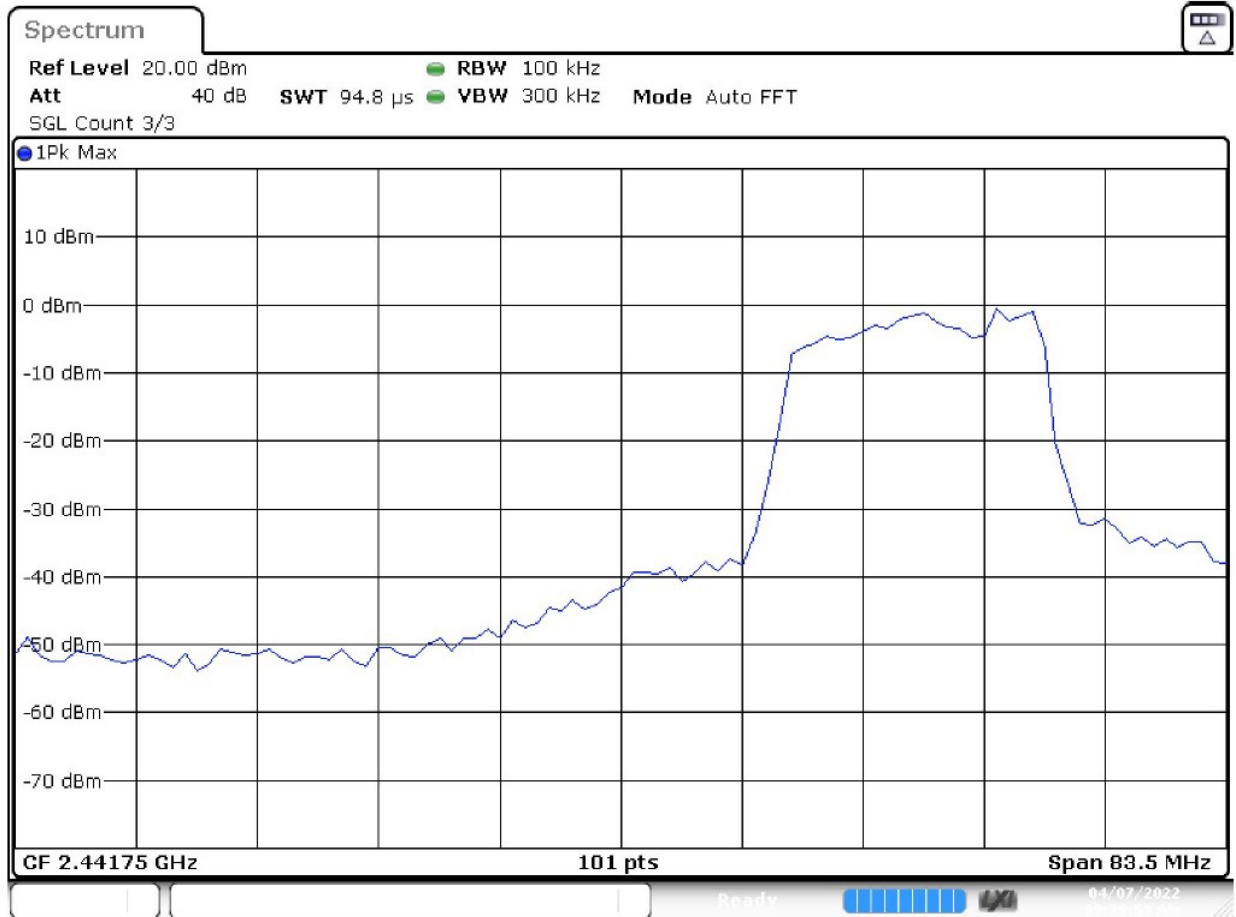
Date: 7.APR.2022 09:09:12

802.11 n Mid Channel Data Rate MCS 2 In band Power Measurement

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2488.497131	-38.9	17.5	-21.3
7385.685827	-45.2	23.9	-21.3
7395.680089	-50.9	29.6	-21.3
2498.491394	-51.1	29.7	-21.3
7375.691564	-51.9	30.6	-21.3
7365.697301	-55.0	33.6	-21.3
2508.485657	-56.3	35.0	-21.3
7405.674352	-57.8	36.5	-21.3
16390.516468	-57.9	36.6	-21.3
20208.324798	-57.9	36.6	-21.3
20158.353485	-57.9	36.6	-21.3
15840.832023	-58.0	36.6	-21.3
20138.364960	-58.0	36.6	-21.3
15800.854972	-58.0	36.7	-21.3
16700.338610	-58.0	36.7	-21.3

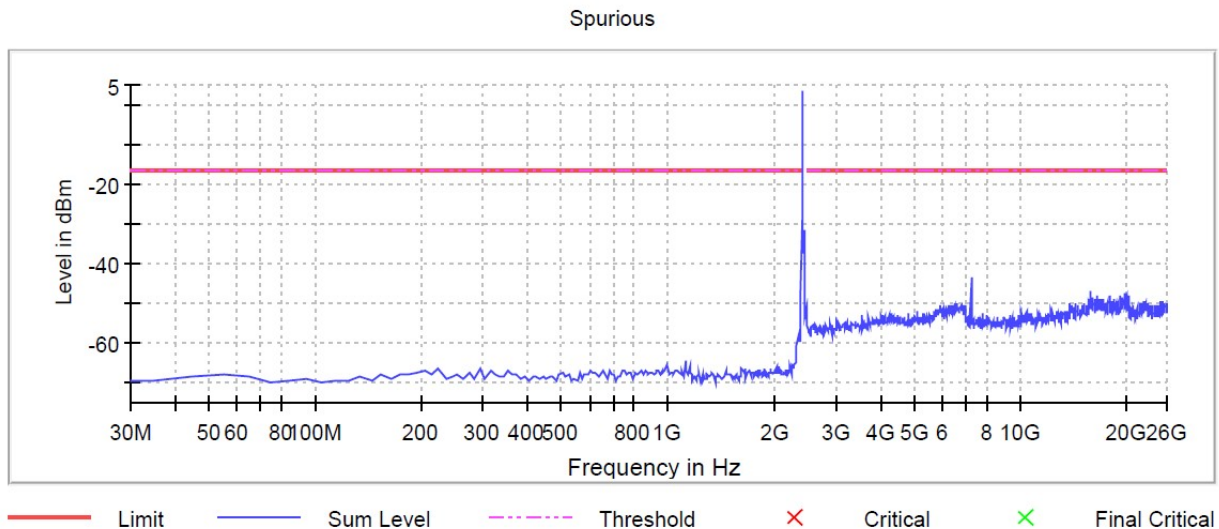
802.11n High Channel Data Rate MCS 2



Date: 7.APR.2022 09:25:54

802.11 n High Channel Data Rate MCS 2 In band Power Measurement

Plots

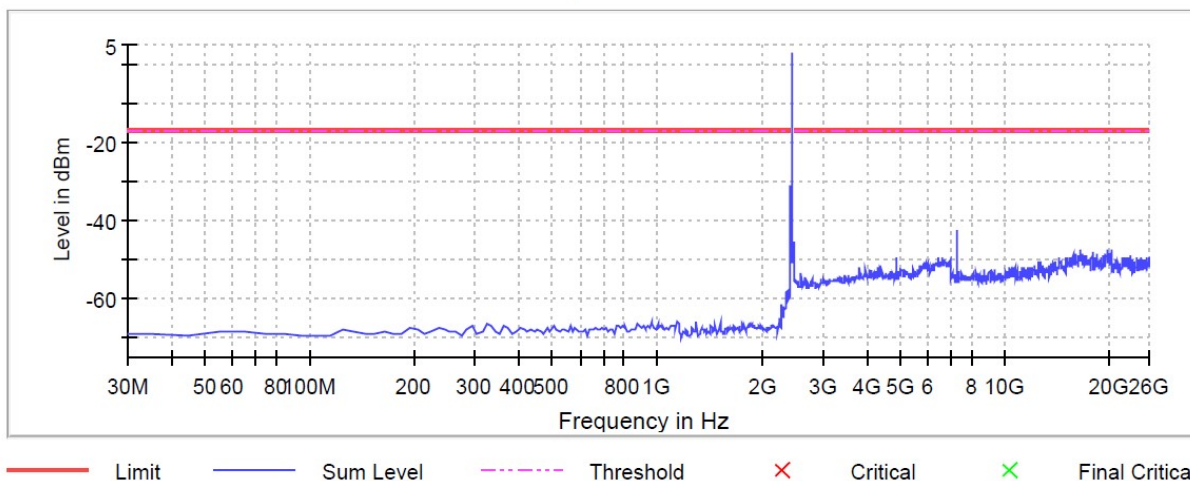


Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	238	~ 238
Sweptime	23.700 ms	AUTO
Reference Level	-10.000 dBm	-30.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 40	max. 40
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

802.11 b Low Channel Data Rate 2

Spurious

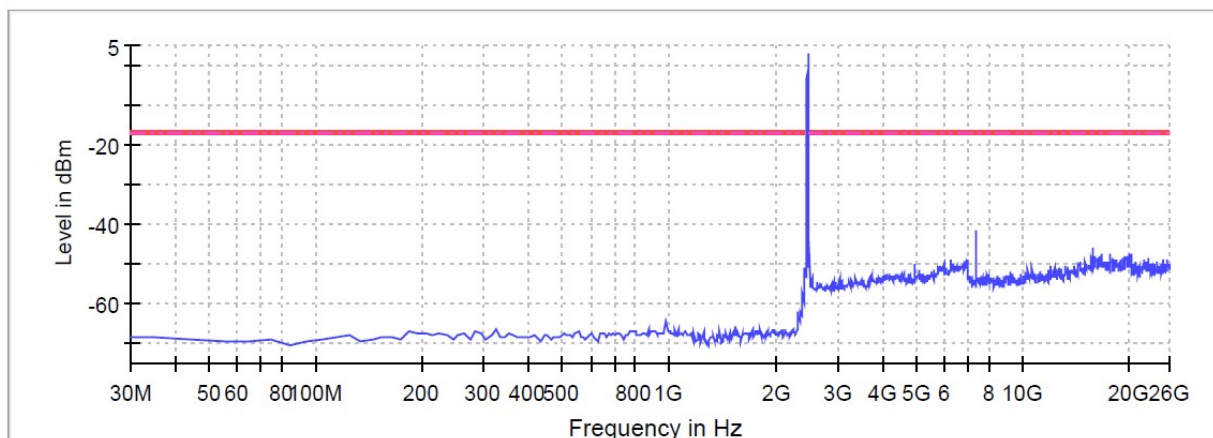


Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	238	~ 238
Sweptime	23.700 ms	AUTO
Reference Level	-10.000 dBm	-30.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 40	max. 40
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

802.11 b Mid Channel Data Rate 2

Spurious



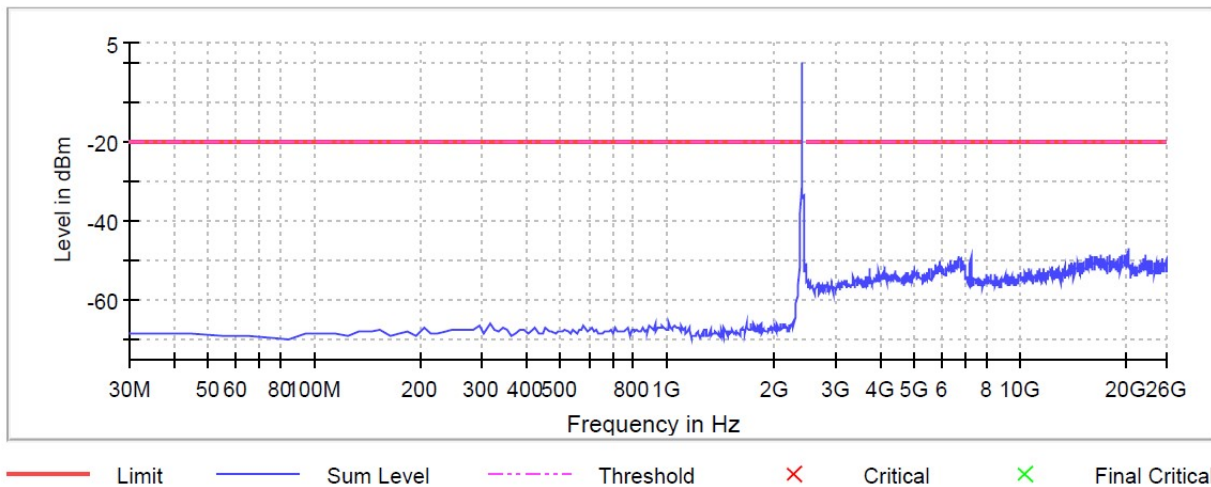
— Limit — Sum Level - - - Threshold × Critical × Final Critical

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	238	~ 238
Sweeptime	23.700 ms	AUTO
Reference Level	-10.000 dBm	-30.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 40	max. 40
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

802.11 b High Channel Data Rate 2

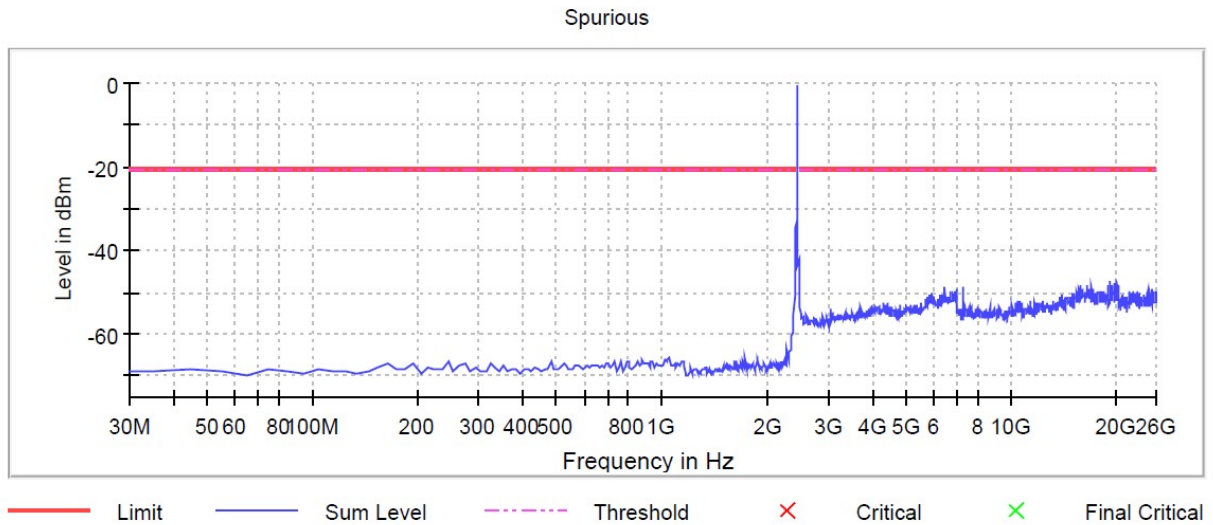
Spurious



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	238	~ 238
Sweptime	23.700 ms	AUTO
Reference Level	-10.000 dBm	-30.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	7 / max. 40	max. 40
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

802.11 g Low Channel Data Rate 48

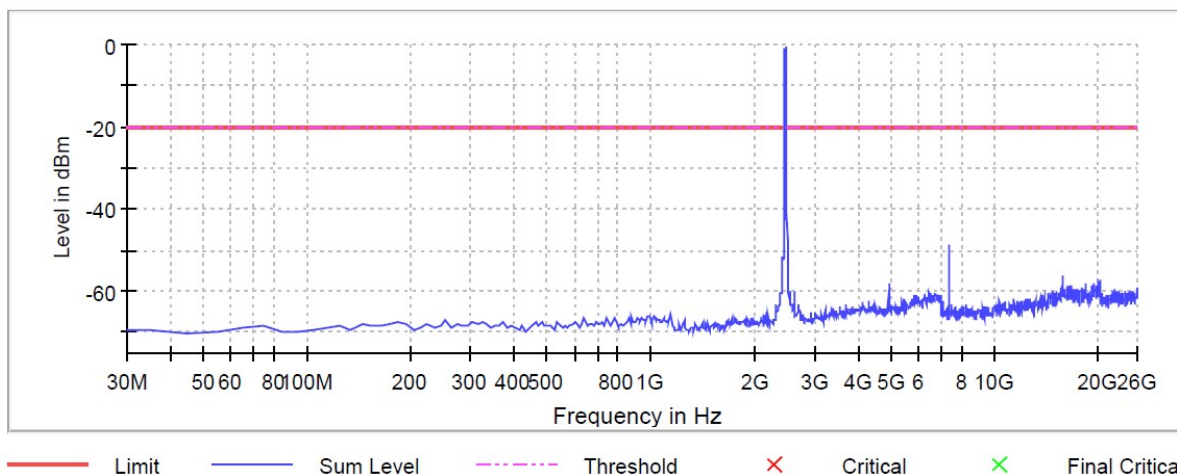


Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	238	~ 238
Sweptime	23.700 ms	AUTO
Reference Level	-10.000 dBm	-30.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	5 / max. 40	max. 40
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

802.11 g Mid Channel Data Rate 48

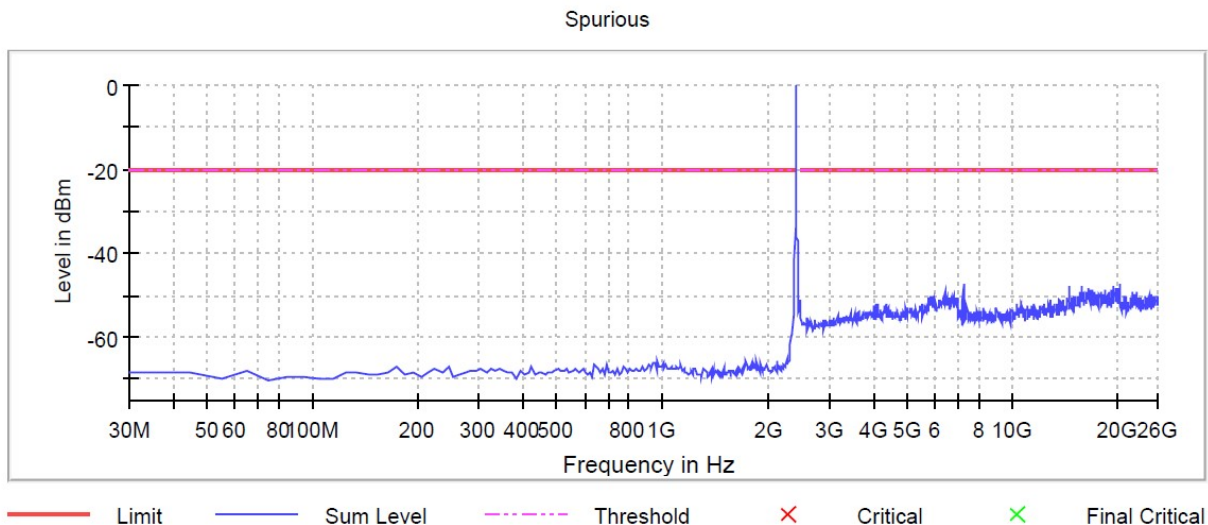
Spurious



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	238	~ 238
Sweeptime	23.700 ms	AUTO
Reference Level	-10.000 dBm	-30.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 40	max. 40
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

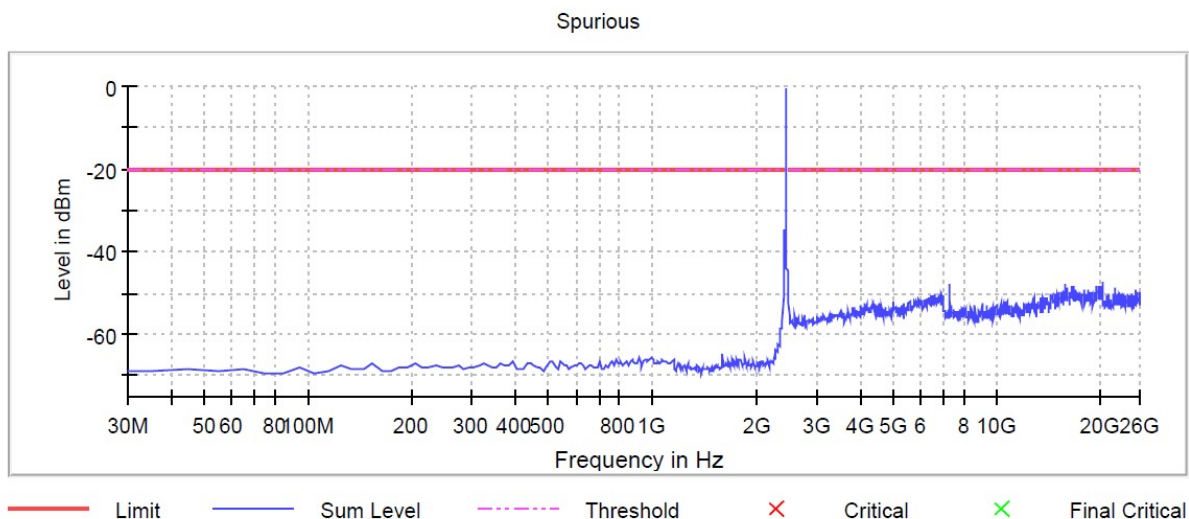
802.11 g High Channel Data Rate 48



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	238	~ 238
Sweeptime	23.700 ms	AUTO
Reference Level	-10.000 dBm	-30.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	5 / max. 40	max. 40
Stable	3 / 3	3
Max Stable Difference	0.31 dB	0.50 dB

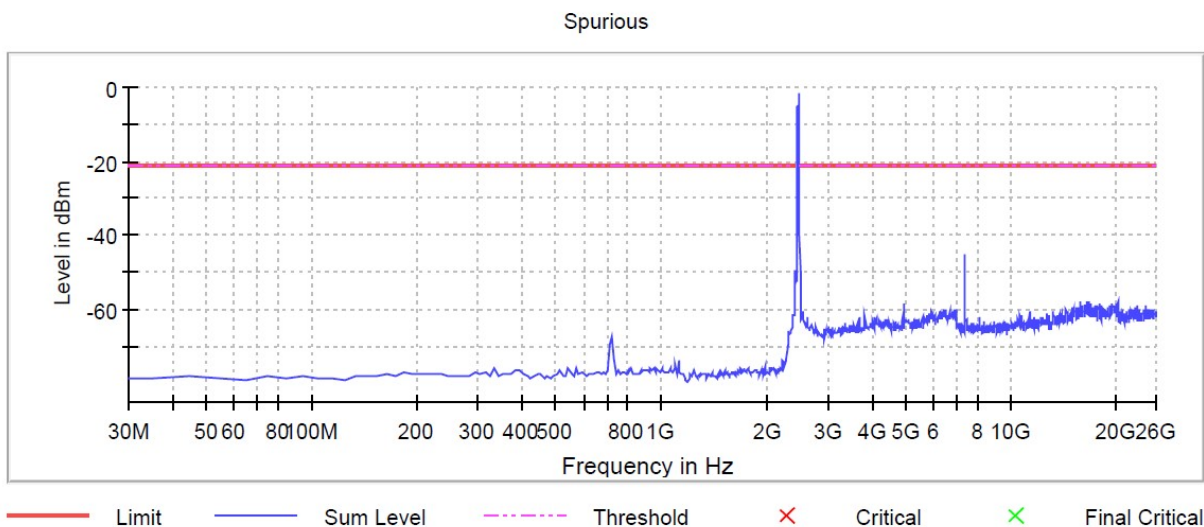
802.11n Low Channel Data Rate MCS 2



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	238	~ 238
SweepTime	23.700 ms	AUTO
Reference Level	-10.000 dBm	-30.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	12 / max. 40	max. 40
Stable	3 / 3	3
Max Stable Difference	0.07 dB	0.50 dB

802.11n Mid Channel Data Rate MCS 2



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	238	~ 238
Sweptime	23.700 ms	AUTO
Reference Level	-20.000 dBm	-30.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	9 / max. 40	max. 40
Stable	3 / 3	3
Max Stable Difference	0.42 dB	0.50 dB

802.11n High Channel Data Rate MCS 2

Test Equipment Used

Rev. 7/5/2022

Spectrum Analyzers / Receivers /Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
FSV40 Spectrum Analyzer		10Hz-40GHz	FSV40	ROHDE & SCHWARZ	101551	2200	I	10/26/2022	10/26/2021
Signal Generators/Comparison Noise Emitter		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SMBV100A Vector Signal Generator		9KHz-6GHz	SMBV100A	ROHDE & SCHWARZ	261919	2201	I	10/26/2022	10/26/2021
SMB100A Signal Generator		100kHz-40GHz	SMB100A	ROHDE & SCHWARZ	179884	2557	I	10/26/2022	10/26/2021
OSP-B157W8			OSP-B157W8	ROHDE & SCHWARZ	100955	2558	I	8/26/2022	8/26/2021
Meteorological Meters/Chambers			MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Weather Clock (Pressure Only)			BA928	Oregon Scientific	C3166-1	831	I	11/23/2022	11/23/2020
Asset #2657			1235C97	Control Company	200435369	2657	I	7/23/2022	7/23/2020
Cables		Range		Mfr			Cat	Calibration Due	Calibrated on
Asset #2595		9KHz-40GHz		Carlisle			II	1/21/2023	1/21/2022

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.



Power Spectral Density

Test according to FCC title 47 part 15 §15.247(a),(e), KDB 558074 D01 DTS Meas Guidance v05r02 F and ANSI C63.10-2013

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1.

Expanded Uncertainty (K=2) < 1.3 dB

LIMIT

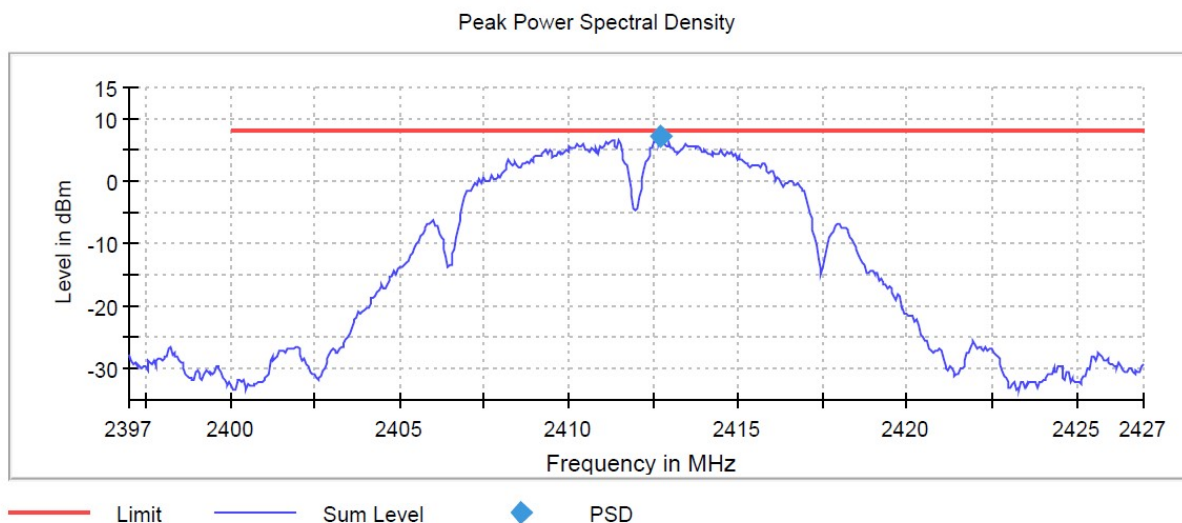
...the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.
[15.247(e)]

MEASUREMENTS / RESULTS

Data Table

Data Rate	Low Channel PSD (dBm)	Middle Channel PSD (dBm)	High Channel PSD (dBm)	Limit (dBm)	Result
802.11 b					
1	6.873	6.516	6.235	8	PASS
2	7.337	6.012	6.126	8	PASS
5.5	7.127	6.622	6.003	8	PASS
11	5.553	6.488	6.168	8	PASS
802.11 g					
6	3.214	2.844	2.975	8	PASS
9	3.224	2.929	2.923	8	PASS
12	3.326	2.862	3.061	8	PASS
18	3.277	2.606	2.813	8	PASS
24	2.481	2.064	2.417	8	PASS
36	2.125	1.462	1.623	8	PASS
48	2.259	1.630	1.741	8	PASS
54	2.735	2.434	2.618	8	PASS
802.11 n					
MCS 0	2.143	1.490	1.919	8	PASS
MCS 1	2.010	1.700	1.966	8	PASS
MCS 2	2.713	1.818	1.906	8	PASS
MCS 3	2.551	2.265	2.551	8	PASS
MCS 4	1.855	0.775	1.990	8	PASS
MCS 5	2.137	1.704	1.399	8	PASS
MCS 6	2.441	2.236	2.631	8	PASS
MCS 7	1.963	1.749	1.889	8	PASS

Plots

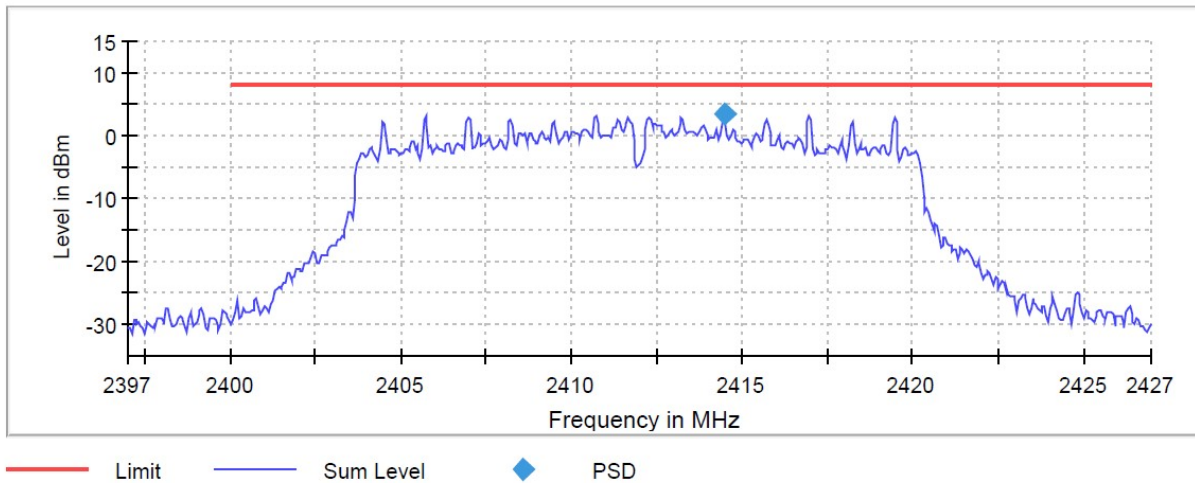


Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.39700 GHz	2.39700 GHz
Stop Frequency	2.42700 GHz	2.42700 GHz
Span	30.000 MHz	30.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	600	~ 600
Sweeptime	1.040 ms	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	Sweep
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	30 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.26 dB	0.50 dB

802.11 b Low Channel Data Rate 2

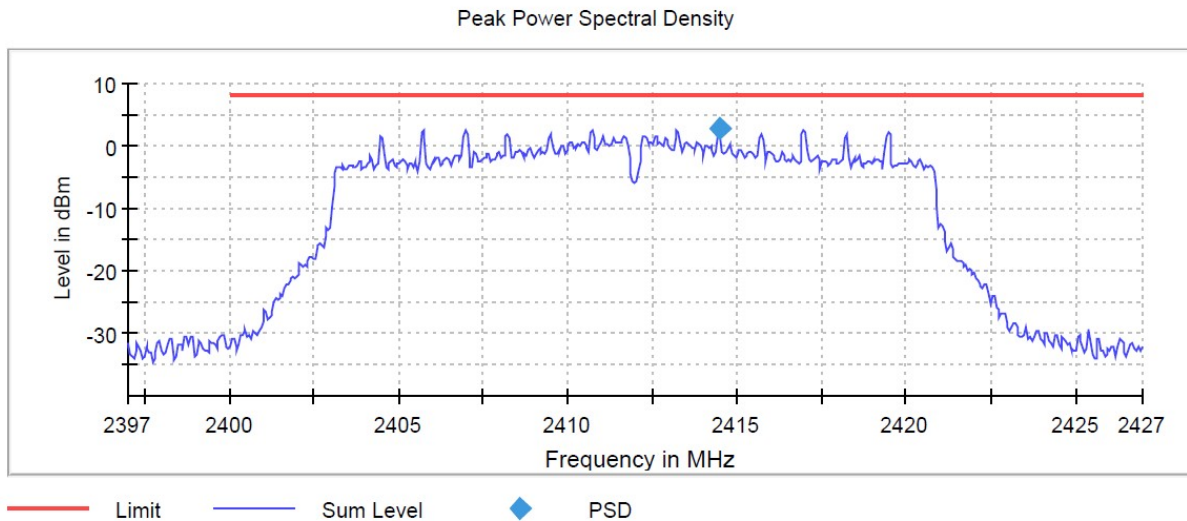
Peak Power Spectral Density



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.39700 GHz	2.39700 GHz
Stop Frequency	2.42700 GHz	2.42700 GHz
Span	30.000 MHz	30.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	600	~ 600
Sweptime	1.040 ms	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweeptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	10 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.23 dB	0.50 dB

802.11 g Low Channel Data Rate 12



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.39700 GHz	2.39700 GHz
Stop Frequency	2.42700 GHz	2.42700 GHz
Span	30.000 MHz	30.000 MHz
RBW	100.000 kHz	≤ 100.000 kHz
VBW	300.000 kHz	≥ 300.000 kHz
SweepPoints	600	~ 600
Sweptime	1.040 ms	AUTO
Reference Level	20.000 dBm	20.000 dBm
Attenuation	40.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
Sweptype	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	27 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.44 dB	0.50 dB

802.11 n Low Channel Data Rate MCS 2

Test Equipment Used

Rev. 7/5/2022

Spectrum Analyzers / Receivers /Preselectors		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
FSV40 Spectrum Analyzer		10Hz-40GHz	FSV40	ROHDE & SCHWARZ	101551	2200	I	10/26/2022	10/26/2021
Signal Generators/Comparison Noise Emitter		Range	MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
SMBV100A Vector Signal Generator		9KHz-6GHz	SMBV100A	ROHDE & SCHWARZ	261919	2201	I	10/26/2022	10/26/2021
SMB100A Signal Generator		100kHz-40GHz	SMB100A	ROHDE & SCHWARZ	179884	2557	I	10/26/2022	10/26/2021
OSP-B157W8			OSP-B157W8	ROHDE & SCHWARZ	100955	2558	I	8/26/2022	8/26/2021
Meteorological Meters/Chambers			MN	Mfr	SN	Asset	Cat	Calibration Due	Calibrated on
Weather Clock (Pressure Only)			BA928	Oregon Scientific	C3166-1	831	I	11/23/2022	11/23/2020
Asset #2657			1235C97	Control Company	200435369	2657	I	7/23/2022	7/23/2020
Cables		Range		Mfr			Cat	Calibration Due	Calibrated on
Asset #2595		9KHz-40GHz		Carlisle			II	1/21/2023	1/21/2022

All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.



AC Line Conducted Emissions

Test according to CFR Title 47 FCC Part 15.247, ISED Canada RSS-247 Issue 2, ISED Canada RSS-Gen Issue 5, FCC KDB 558074 D01 15.247 Measurement Guidance v05r02 and ANSI C63.10-2013 section 6.2.4 & 6.2.5

LIMITS

Frequency of emission (MHz)	Quasi-peak limit (dBμV)	Average limit (dBμV)
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

[47 CFR 15.207(a)]

Description of Calculations:

Adjusted Reading(dBμV) = Raw Reading(dBμV) + Correction Factor(dB)
 Correction Factor(dB) = LISN Factor(dB) + Cable Factor(dB) + Attenuator Factor(dB)
 Margin(dB) = Adjusted Reading(dBμV) - Limit(dBμV)

Measurement Software Used:

ETS-LINDGREN TILE!™ 7.4.4.12

MEASUREMENTS / RESULTS

Data Tables

Bureau Veritas Consumer Product Services Inc.
 Conducted Emissions per CISPR 16-2-1
 Quasi-peak Detector Data
 Notes:
 EUT Line tested: 120VAC/60Hz; Line Phase
 EUT Mode of Operation: 802.11b Data Rate:2 low CH

Work Order # - W0071
 EUT Power Input - 120VAC/60 Hz
 Test Site - CEMI-3
 Conditions: - 23.0°C;50.5%RH;1014 mBar
 Test Engineer - Ryan M. Brown
 Date of Test - 5/23/2022

Frequency (MHz)	Raw QP Reading (dBμV)	Correction Factor (dB)	Adjusted QP Amplitude (dBμV)	QP Lim: Mains_FCC&CISPR_QP_Class_B (dBμV)	Margin to QP Limit (dB)	QP Limit Results (Pass/Fail)	Worst Margin (QP Limit) (dB)	Av Lim: Mains_FCC&CISPR_Avg_Class_B (dBμV)	Margin to Avg Limit (dB)	Avg Limit Results (Pass/Fail)	Worst Margin (Avg Limit) (dB)
0.149	5.287										
0.15	27.442	20.3	47.7	66	-18.3	PASS		56	-8.3	PASS	
0.159	26.773	20.3	47	65.5	-18.5	PASS		55.5	-8.5	PASS	
0.206	22.307	20.2	42.5	63.4	-20.9	PASS		53.4	-10.9	PASS	
12.463	24.166	20.4	44.6	60	-15.4	PASS		50	-5.4	PASS	
13.502	24.274	20.4	44.7	60	-15.3	PASS	-15.3	50	-5.3	PASS	-5.3
13.508	24.219	20.4	44.6	60	-15.4	PASS		50	-5.4	PASS	

802.11b Low CH Data Rate 2 0.15 – 30 MHz Line