



2.9 Power Spectral Density

2.9.1 Specification Reference

FCC: Section 15.247(e)

2.9.2 Equipment Under Test and Modification State

S/N: ADT-GW-FCC-#02

2.9.3 Date of Test

7/17/2026 to 8/24/2026

2.9.4 Test Method

The power spectral density was measured in accordance with ANSI C63.10 Subclause 11.10.2 Method PKPSD (peak PSD). The RF output port of the EUT was directly connected to the input of the spectrum analyzer. The spectrum analyzer's RBW was set to 3 kHz and VBW to 10 kHz. The Span was adjusted to 1.5 times the DTS bandwidth and the sweep time was set to auto. The measurements were performed using a Peak detector. The amplitude offset of the spectrum analyzer was adjusted to account for cable and attenuator insertion losses.

2.9.5 Environmental Conditions

Ambient Temperature	21.9 to 23.5 °C
Relative Humidity	36 to 30 %
Atmospheric Pressure	978.0 to 984.0 mbar

2.9.6 Test Results

AC Powered, Operating

Limit FCC: Section 15.247(e)

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time of continuous transmission.

Test Summary:

The maximum power density was measured as -5.2 dBm which is smaller than 8 dBm.

Test Result: Pass



Table 2.9.6-1 – Peak Power Spectral Density Results - 802.11b

Configuration	Frequency (MHz)	Peak PSD (dBm)	Limit (dBm)	Margin (dB)	Result
Antenna 1	2412	-6.448	8.00	14.448	Pass
Antenna 1	2437	-5.200	8.00	13.200	Pass
Antenna 1	2462	-6.227	8.00	14.227	Pass
Antenna 2	2412	-5.302	8.00	13.302	Pass
Antenna 2	2437	-5.540	8.00	13.540	Pass
Antenna 2	2462	-5.565	8.00	13.565	Pass

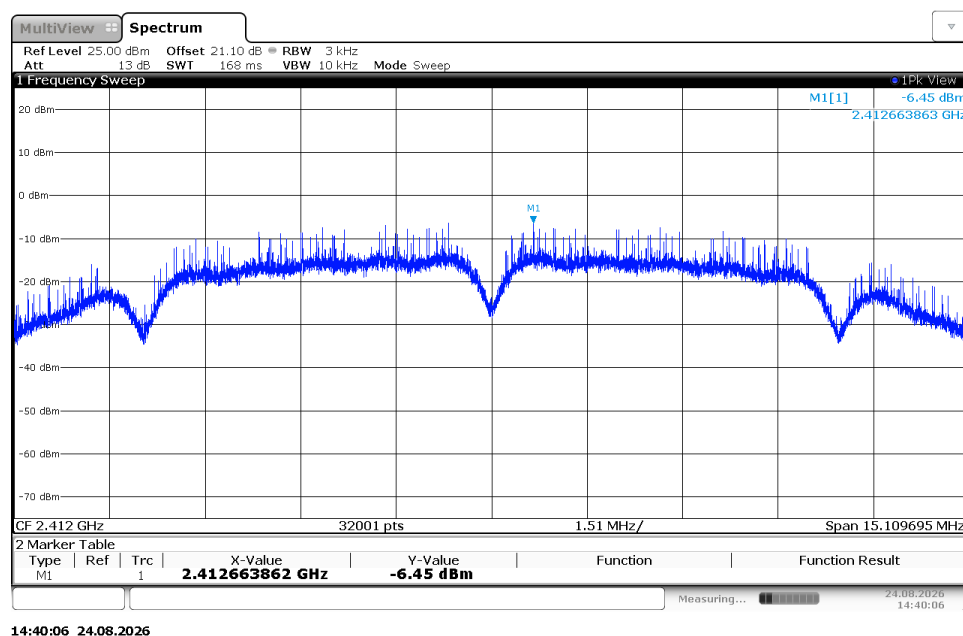


Figure 2.9.6-1 - Peak Power Spectral Density - Antenna 1 - 2412 MHz - 802.11b

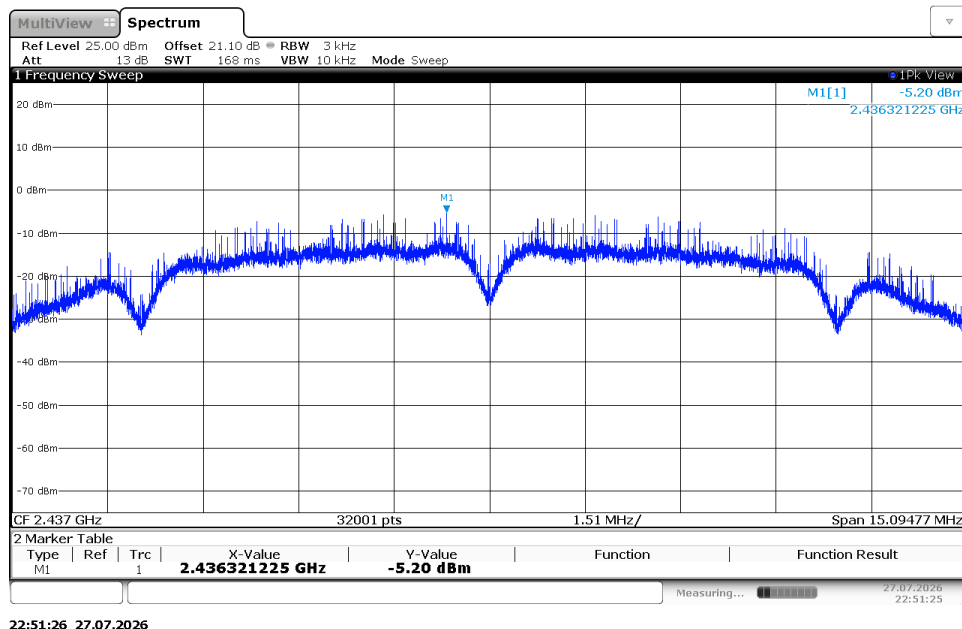


Figure 2.9.6-2 - Peak Power Spectral Density - Antenna 1 - 2437 MHz - 802.11b

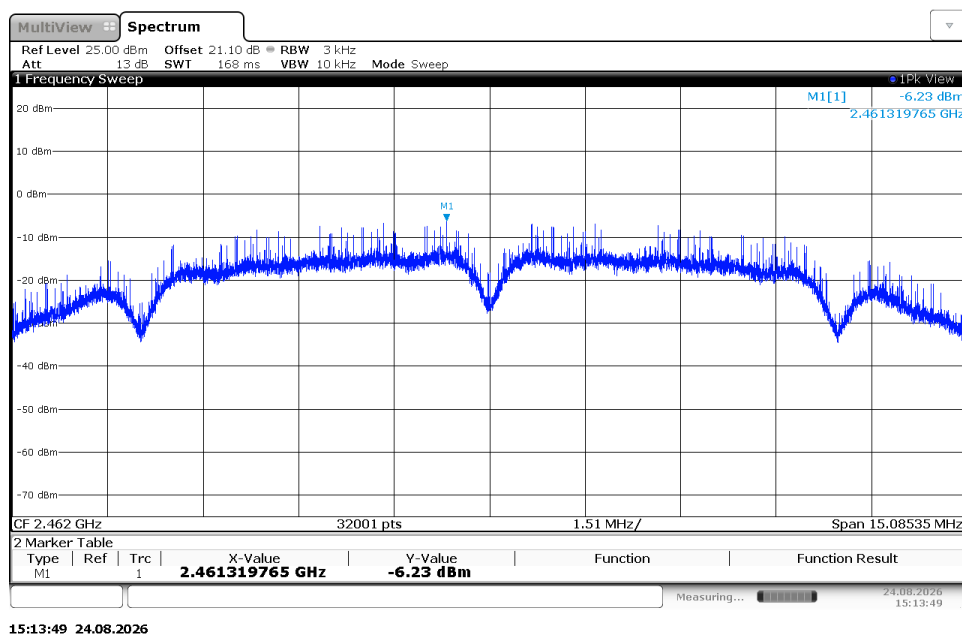


Figure 2.9.6-3 - Peak Power Spectral Density - Antenna 1 - 2462 MHz - 802.11b

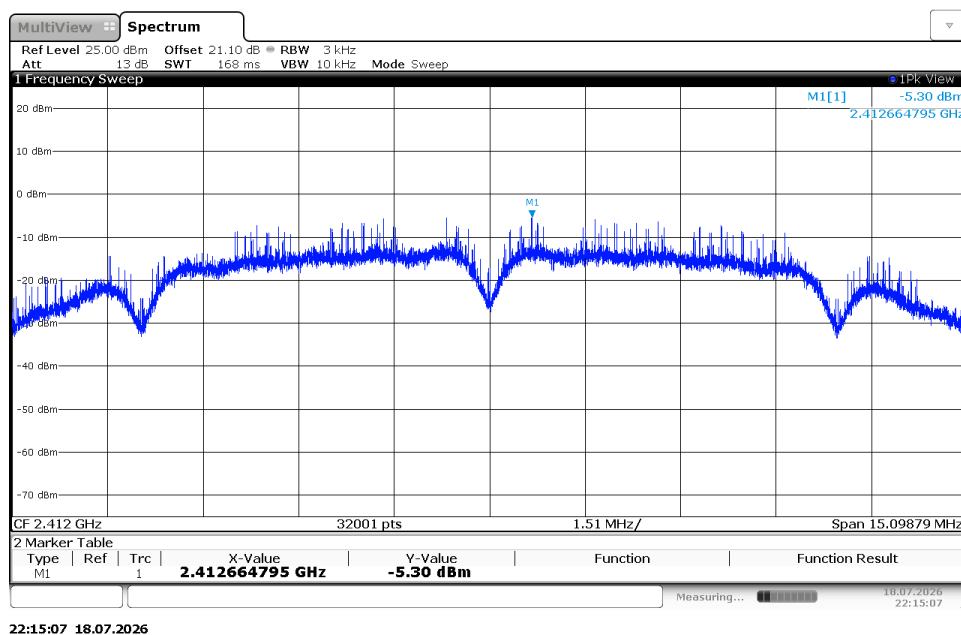


Figure 2.9.6-4 - Peak Power Spectral Density - Antenna 2 - 2412 MHz - 802.11b

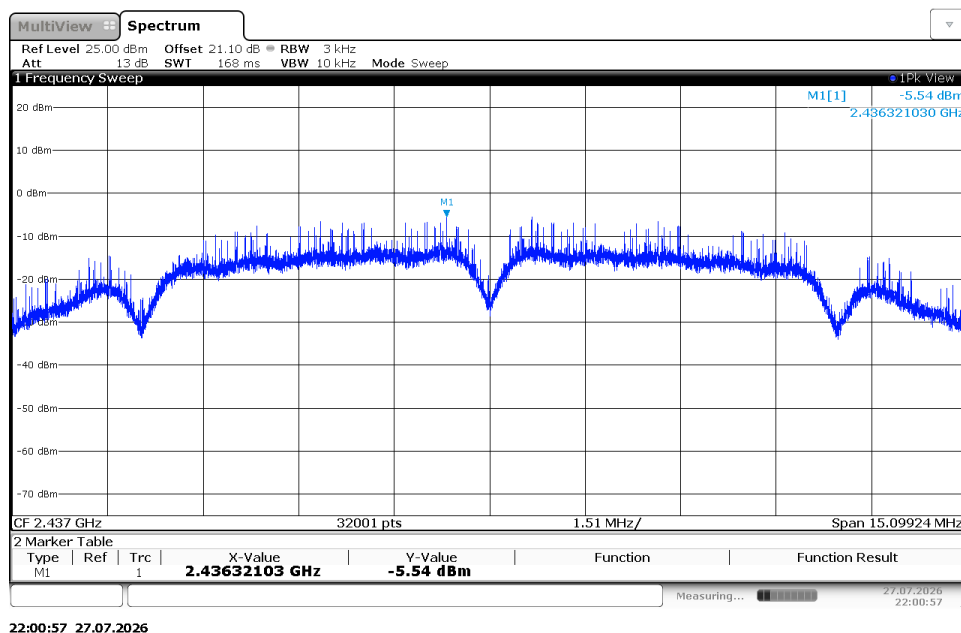


Figure 2.9.6-5 - Peak Power Spectral Density - Antenna 2 - 2437 MHz - 802.11b

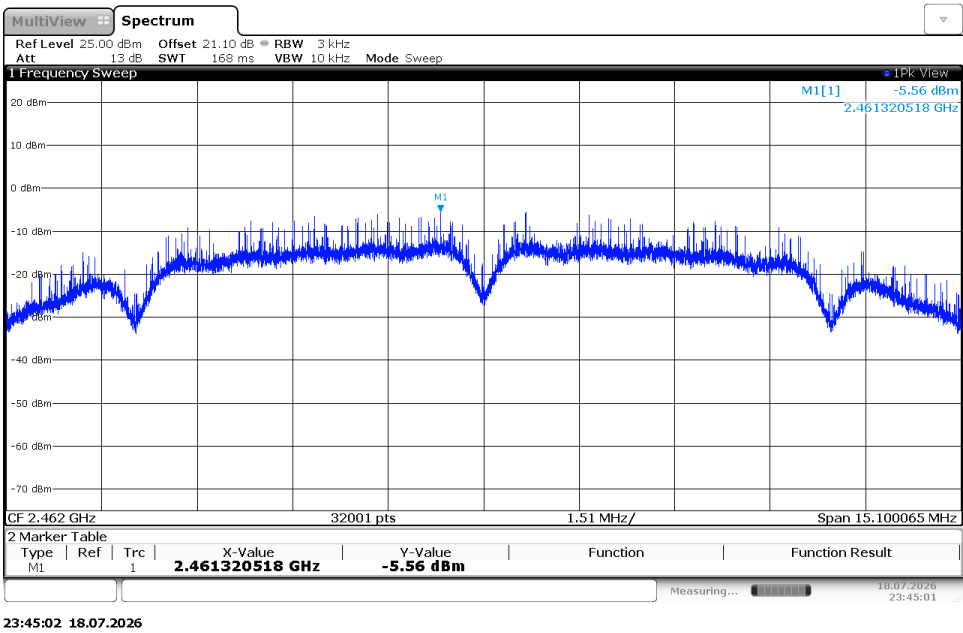


Figure 2.9.6-6 - Peak Power Spectral Density - Antenna 2 - 2462 MHz - 802.11b



Table 2.9.6-2 – Peak Power Spectral Density Results - 802.11g

Configuration	Frequency (MHz)	Peak PSD (dBm)	Limit (dBm)	Margin (dB)	Result
Antenna 1	2412	-17.076	8.00	25.076	Pass
Antenna 1	2437	-10.836	8.00	18.836	Pass
Antenna 1	2462	-18.942	8.00	26.942	Pass
Antenna 2	2412	-15.956	8.00	23.956	Pass
Antenna 2	2437	-10.994	8.00	18.994	Pass
Antenna 2	2462	-19.421	8.00	27.421	Pass

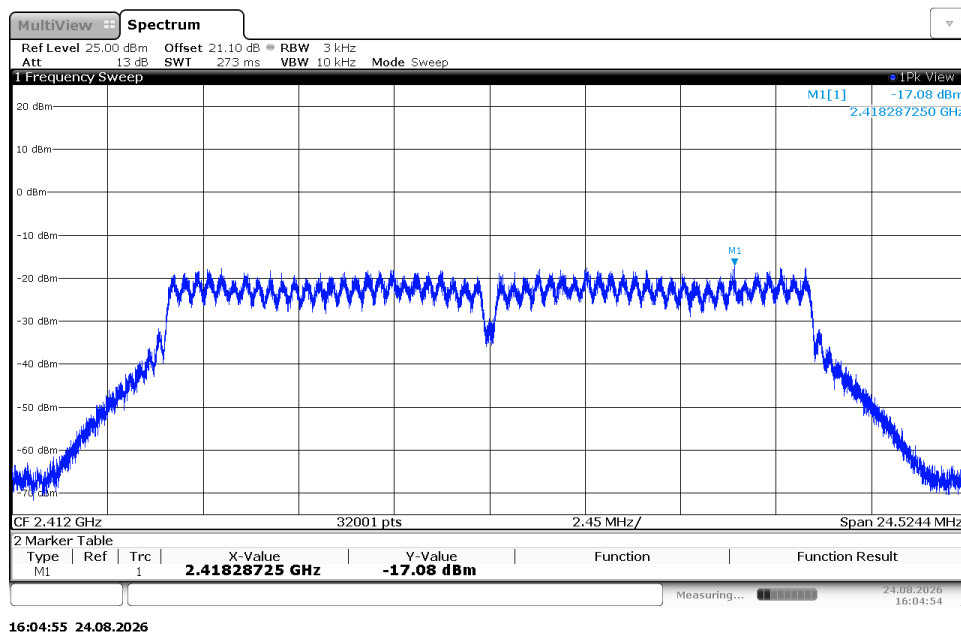


Figure 2.9.6-7 - Peak Power Spectral Density - Antenna 1 - 2412 MHz - 802.11g

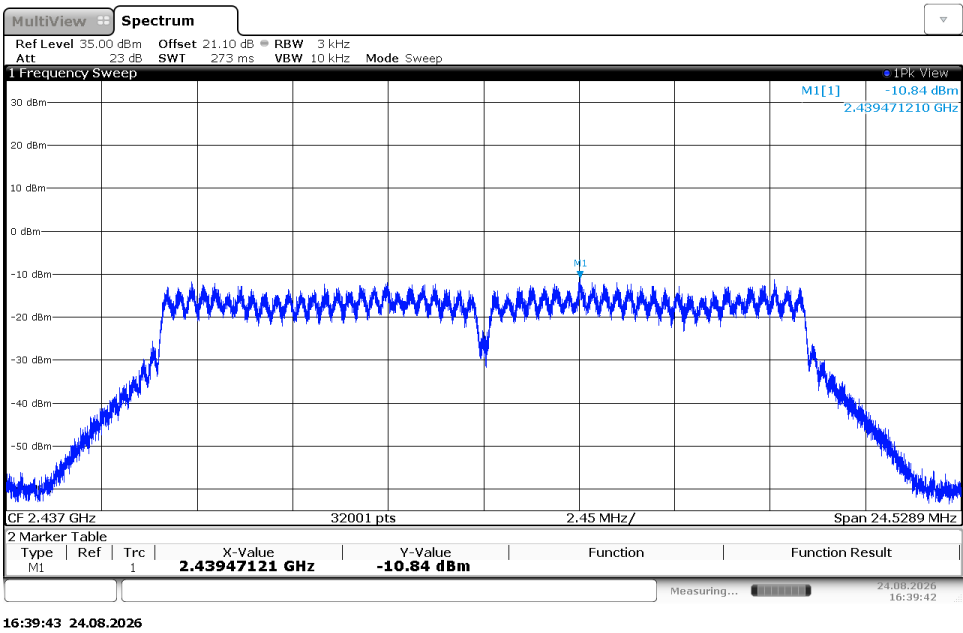


Figure 2.9.6-8 - Peak Power Spectral Density - Antenna 1 - 2437 MHz - 802.11g

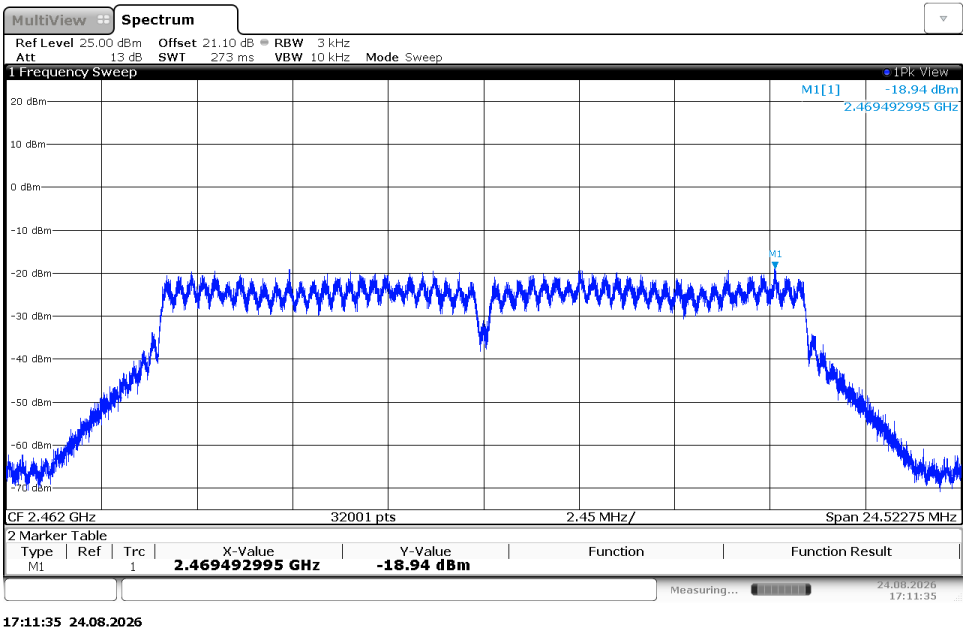


Figure 2.9.6-9 - Peak Power Spectral Density - Antenna 1 - 2462 MHz - 802.11g

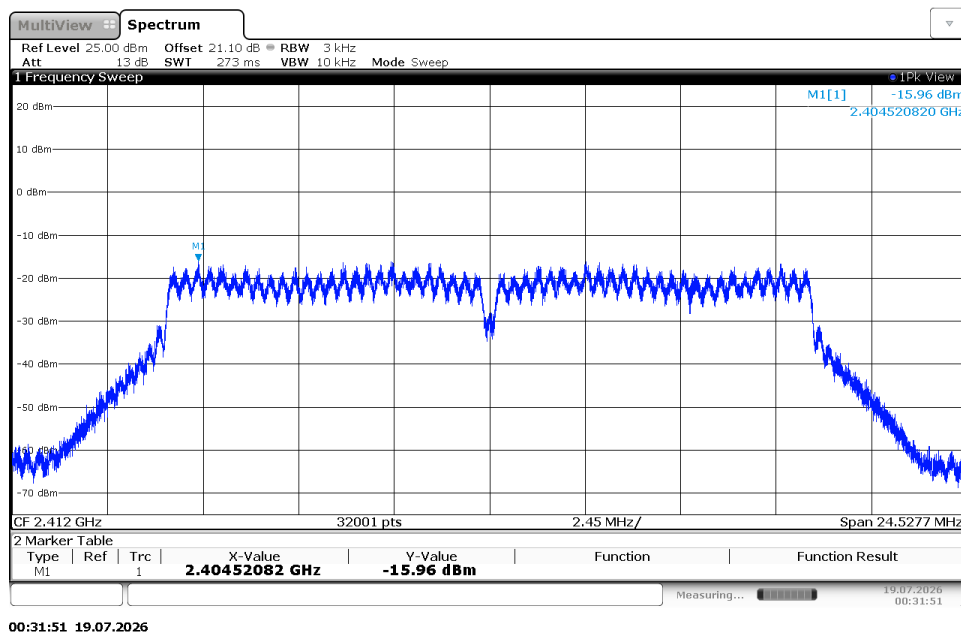


Figure 2.9.6-10 - Peak Power Spectral Density - Antenna 2 - 2412 MHz - 802.11g

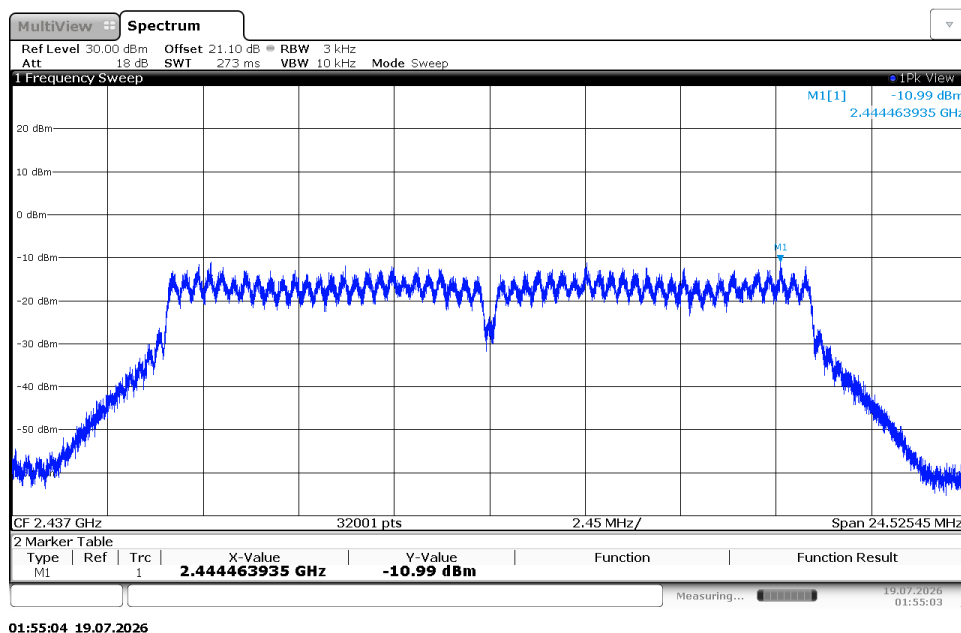


Figure 2.9.6-11 - Peak Power Spectral Density - Antenna 2 - 2437 MHz - 802.11g

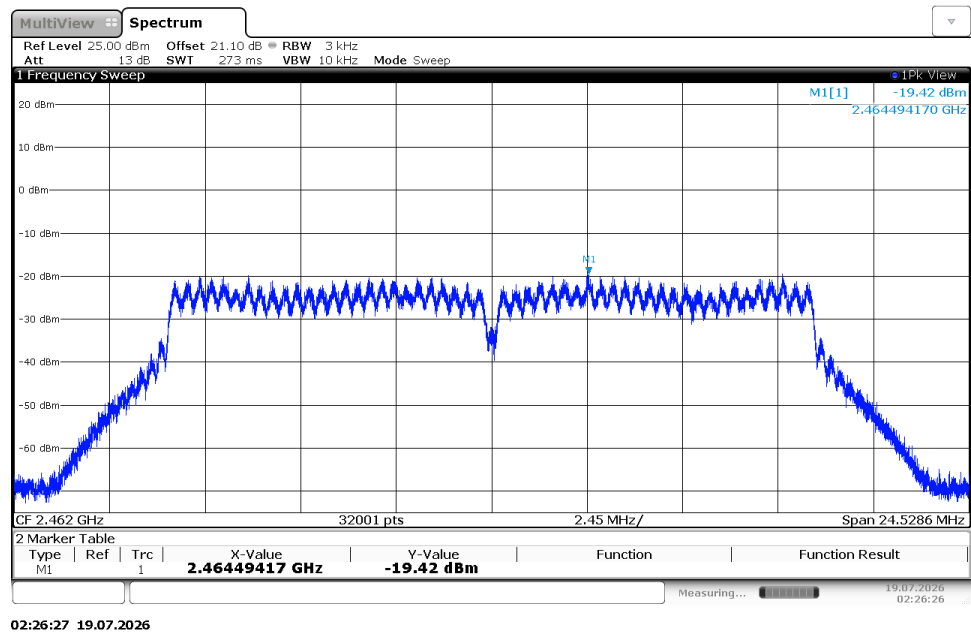


Figure 2.9.6-12 - Peak Power Spectral Density - Antenna 2 - 2462 MHz - 802.11g



Table 2.9.6-3 – Peak Power Spectral Density Results – 802.11n 20 MHz

Configuration	Frequency (MHz)	Peak PSD (dBm)	Limit (dBm)	Margin (dB)	Result
Antenna 1	2412	-18.140	8.00	26.140	Pass
Antenna 1	2437	-9.244	8.00	17.244	Pass
Antenna 1	2462	-19.506	8.00	27.506	Pass
Antenna 2	2412	-16.960	8.00	24.960	Pass
Antenna 2	2437	-9.001	8.00	17.001	Pass
Antenna 2	2462	-19.701	8.00	27.701	Pass

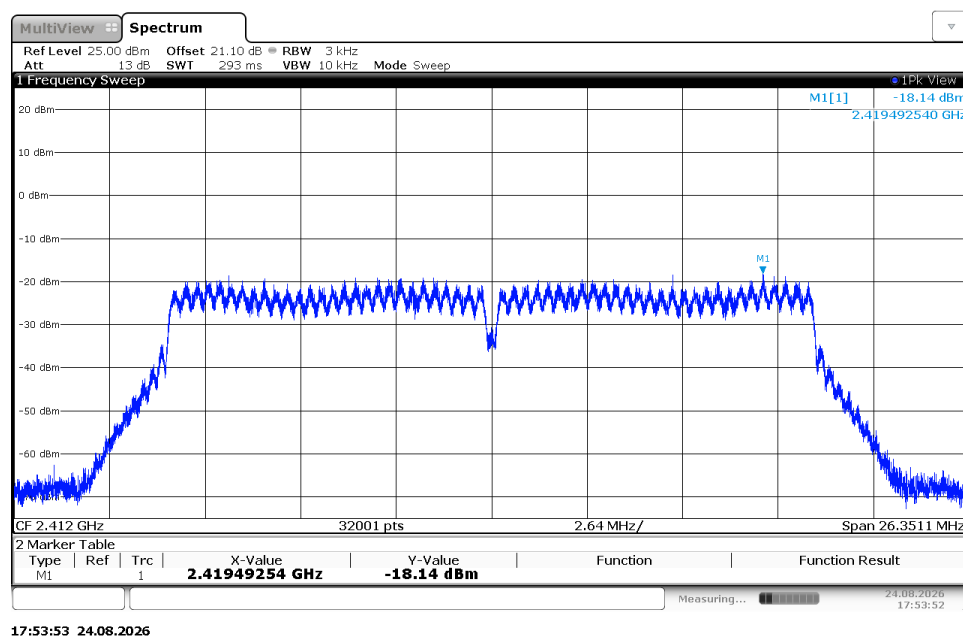


Figure 2.9.6-13 - Peak Power Spectral Density - Antenna 1 - 2412 MHz – 802.11n 20 MHz

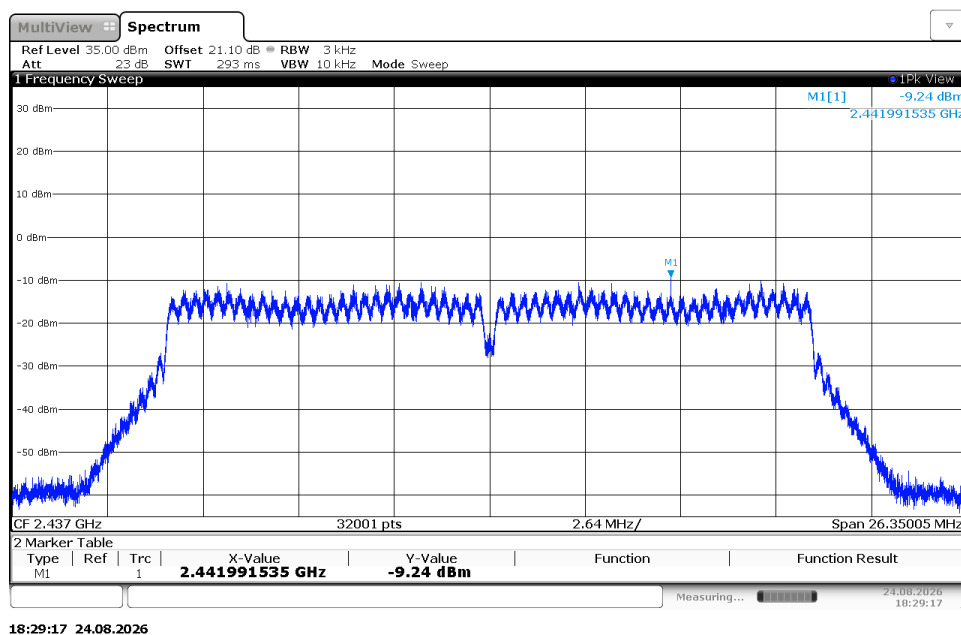


Figure 2.9.6-14 - Peak Power Spectral Density - Antenna 1 - 2437 MHz – 802.11n 20 MHz

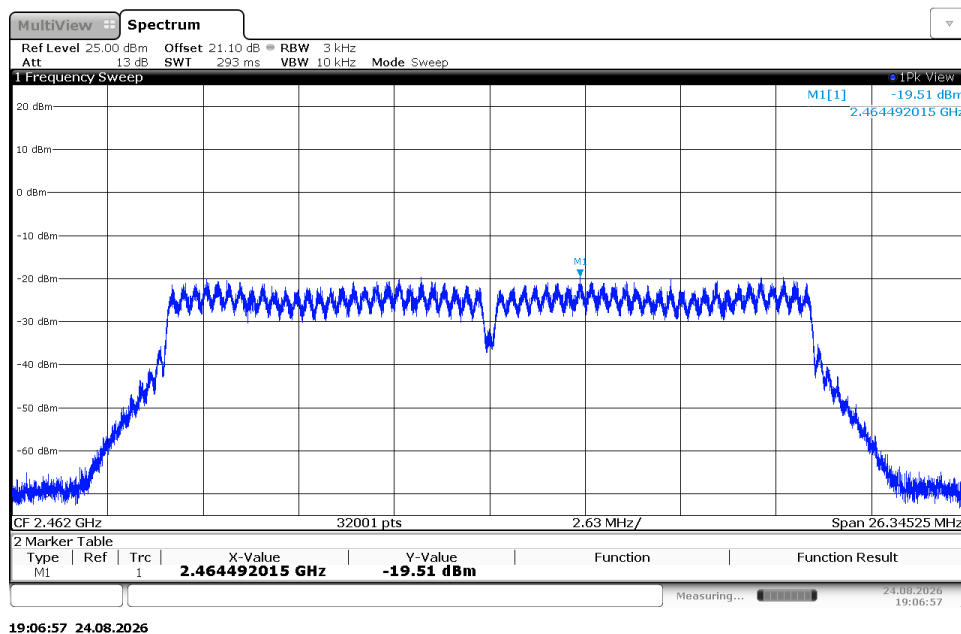


Figure 2.9.6-15 - Peak Power Spectral Density - Antenna 1 - 2462 MHz – 802.11n 20 MHz

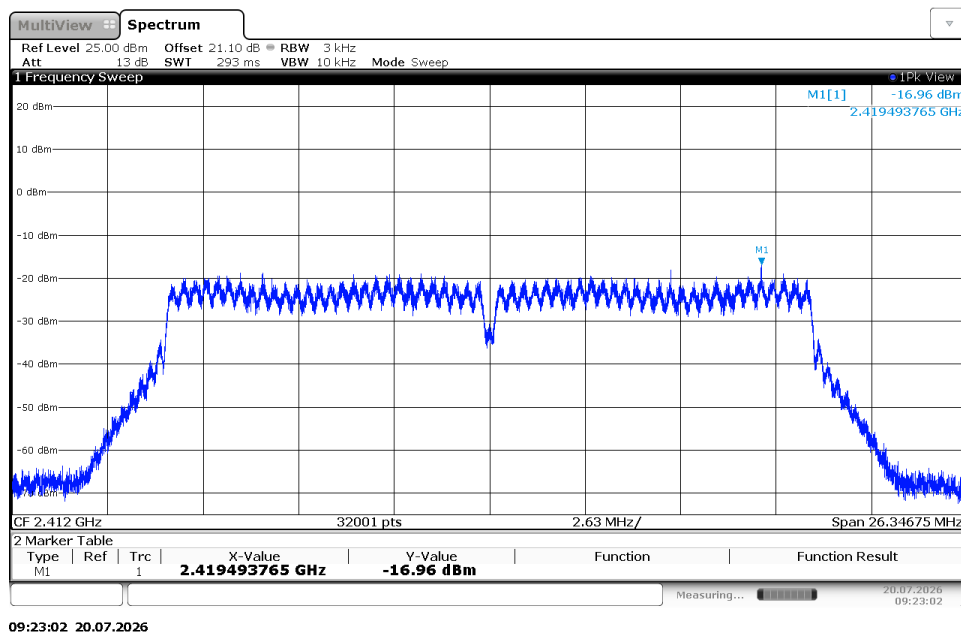


Figure 2.9.6-16 - Peak Power Spectral Density - Antenna 2 - 2412 MHz – 802.11n 20 MHz

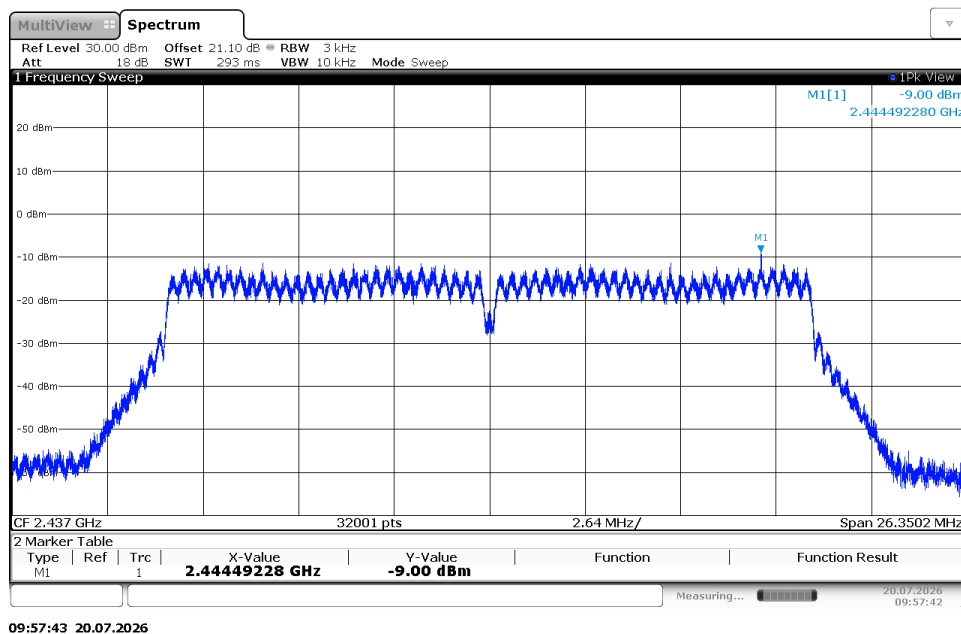


Figure 2.9.6-17 - Peak Power Spectral Density - Antenna 2 - 2437 MHz – 802.11n 20 MHz

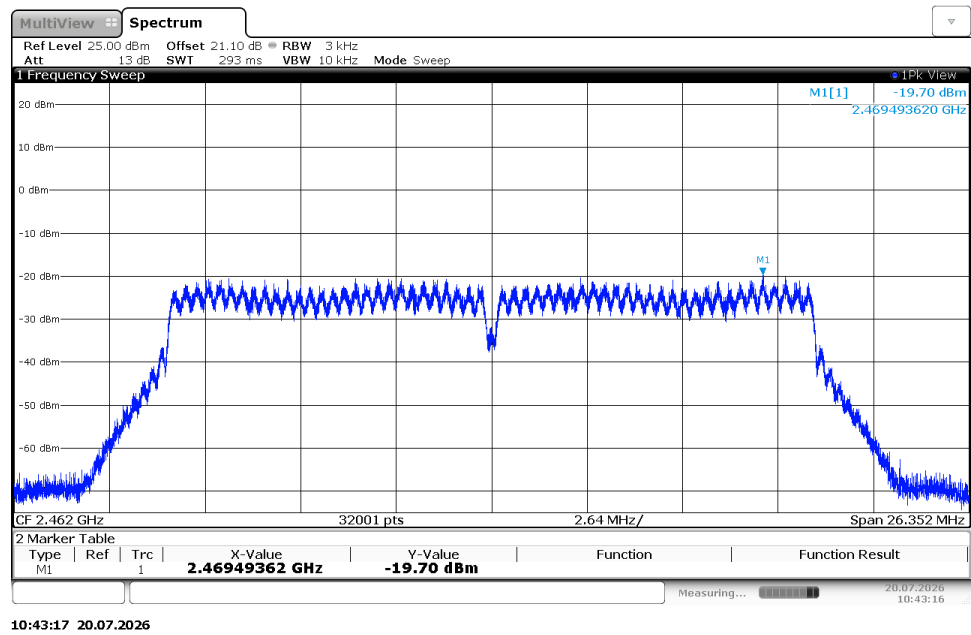


Figure 2.9.6-18 - Peak Power Spectral Density - Antenna 2 - 2462 MHz – 802.11n 20 MHz



Table 2.9.6-4 – Peak Power Spectral Density Results – 802.11n 40 MHz

Configuration	Frequency (MHz)	Peak PSD (dBm)	Limit (dBm)	Margin (dB)	Result
Antenna 1	2422	-23.407	8.00	31.407	Pass
Antenna 1	2437	-19.156	8.00	27.156	Pass
Antenna 1	2452	-23.248	8.00	31.248	Pass
Antenna 2	2422	-23.761	8.00	31.761	Pass
Antenna 2	2437	-19.750	8.00	27.750	Pass
Antenna 2	2452	-24.981	8.00	32.981	Pass

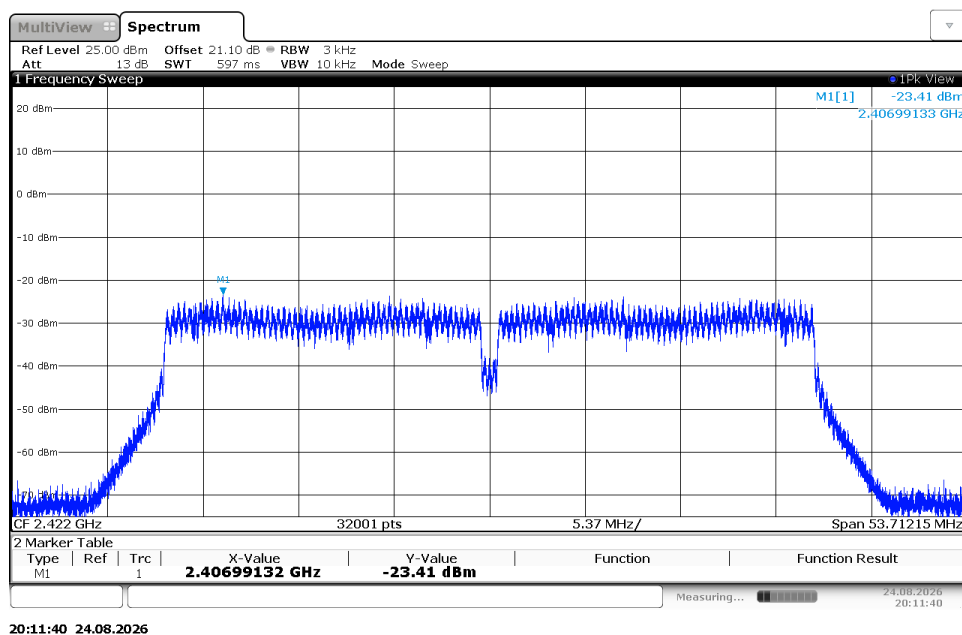


Figure 2.9.6-19 - Peak Power Spectral Density - Antenna 1 - 2422 MHz – 802.11n 40 MHz

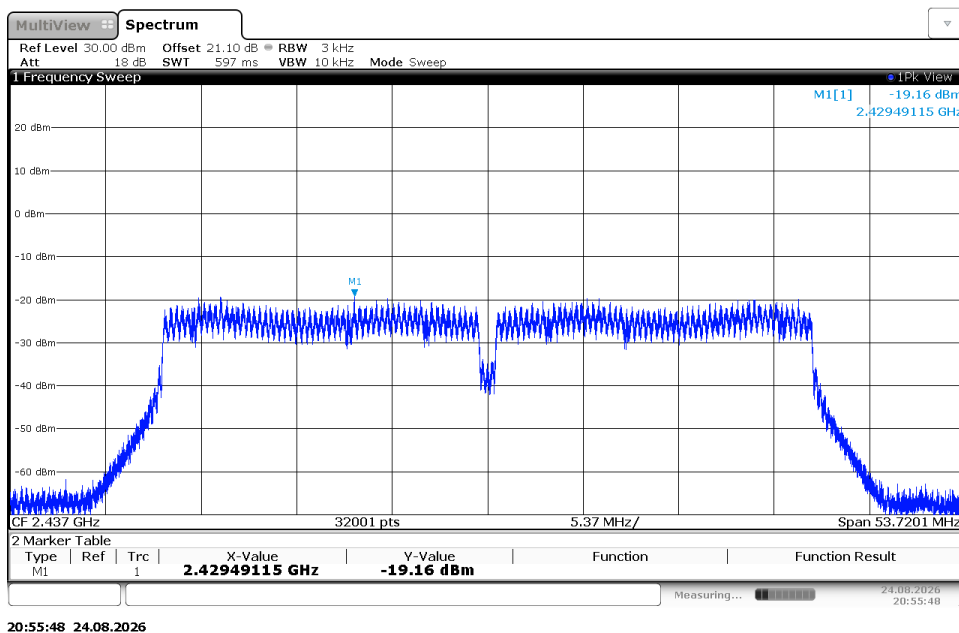


Figure 2.9.6-20 - Peak Power Spectral Density - Antenna 1 - 2437 MHz – 802.11n 40 MHz

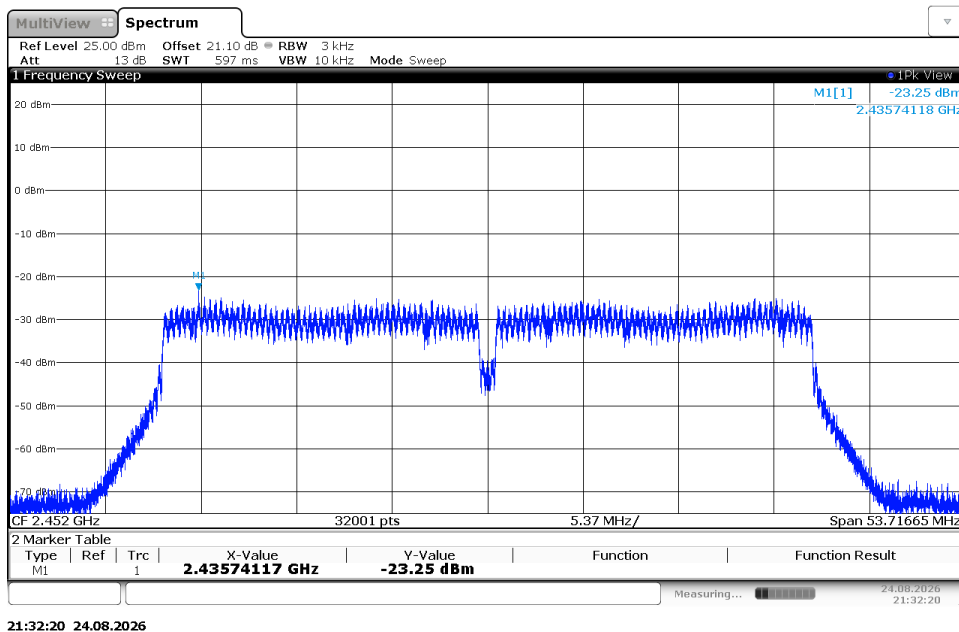


Figure 2.9.6-21 - Peak Power Spectral Density - Antenna 1 - 2452 MHz – 802.11n 40 MHz

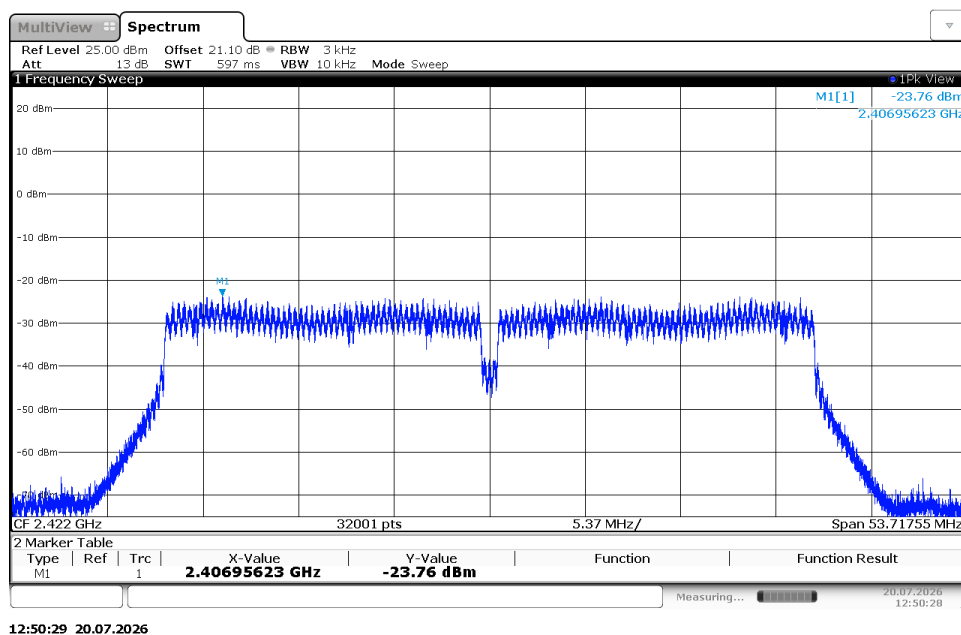


Figure 2.9.6-22 - Peak Power Spectral Density - Antenna 2 - 2422 MHz – 802.11n 40 MHz

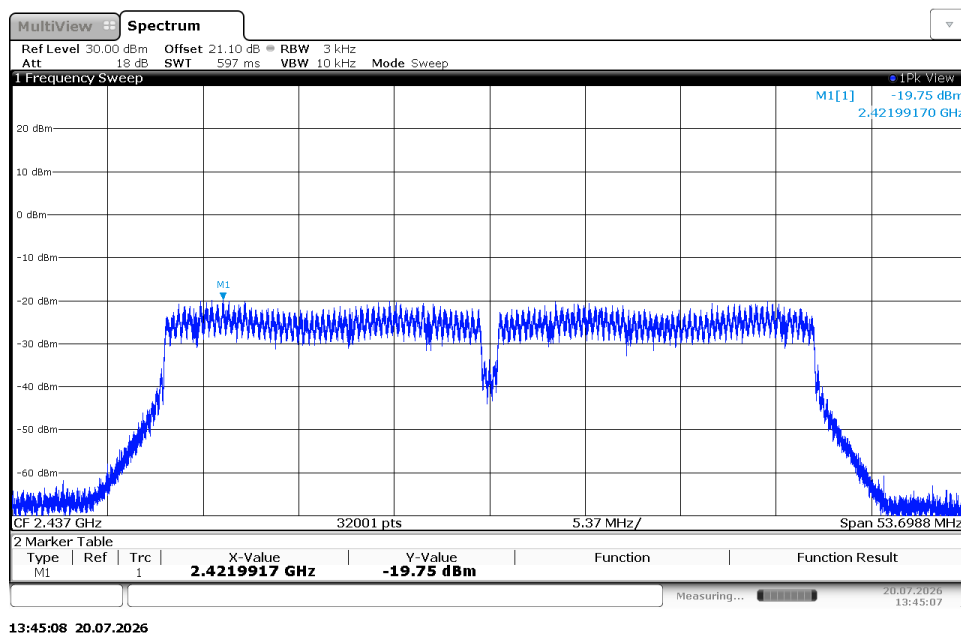


Figure 2.9.6-23 - Peak Power Spectral Density - Antenna 2 - 2437 MHz – 802.11n 40 MHz

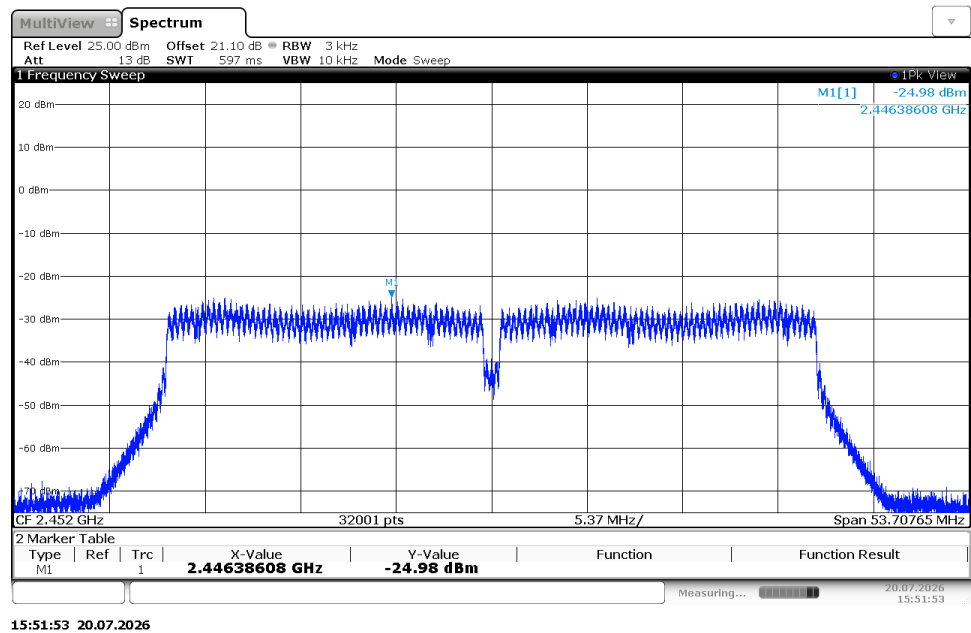
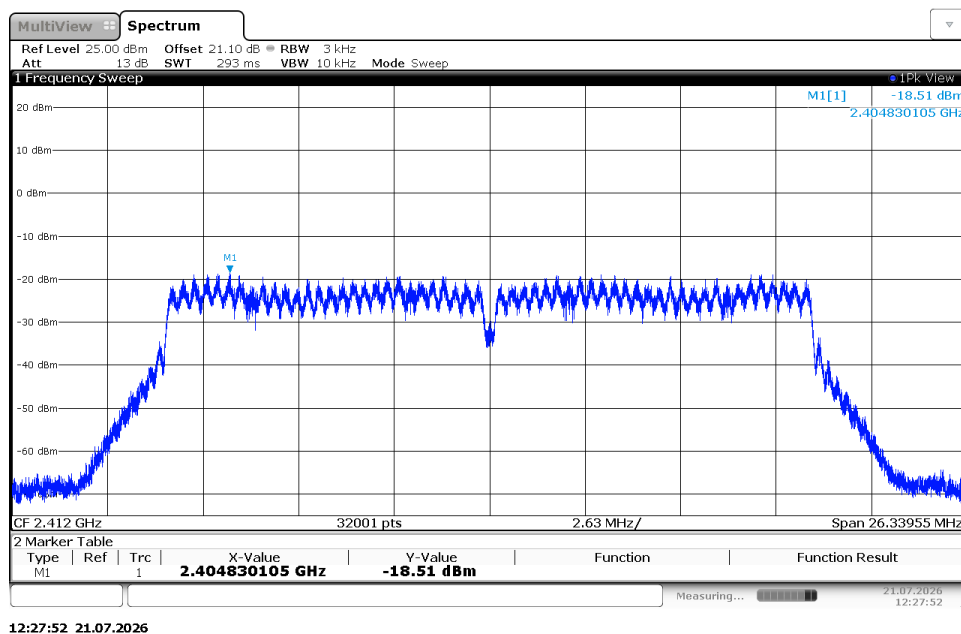


Figure 2.9.6-24 - Peak Power Spectral Density - Antenna 2 - 2452 MHz – 802.11n 40 MHz

**Table 2.9.6-5 – Peak Power Spectral Density Results – 802.11n 20 MHz - MIMO**

Frequency (MHz)	Antenna 1	Antenna 2	Peak PSD (mW)	Total Peak PSD (dBm)	Limit(dBm)	Margin (dB)	Result
2412	-18.513	-18.438	0.028412	-15.465	8	23.465	Pass
2437	-10.687	-10.507	0.174351	-7.586	8	15.586	Pass
2462	-19.516	-18.473	0.025392	-15.953	8	23.953	Pass

**Figure 2.9.6-25 - Peak Power Spectral Density - MIMO Antenna 1 - 2412 MHz - 802.11n 20 MHz**

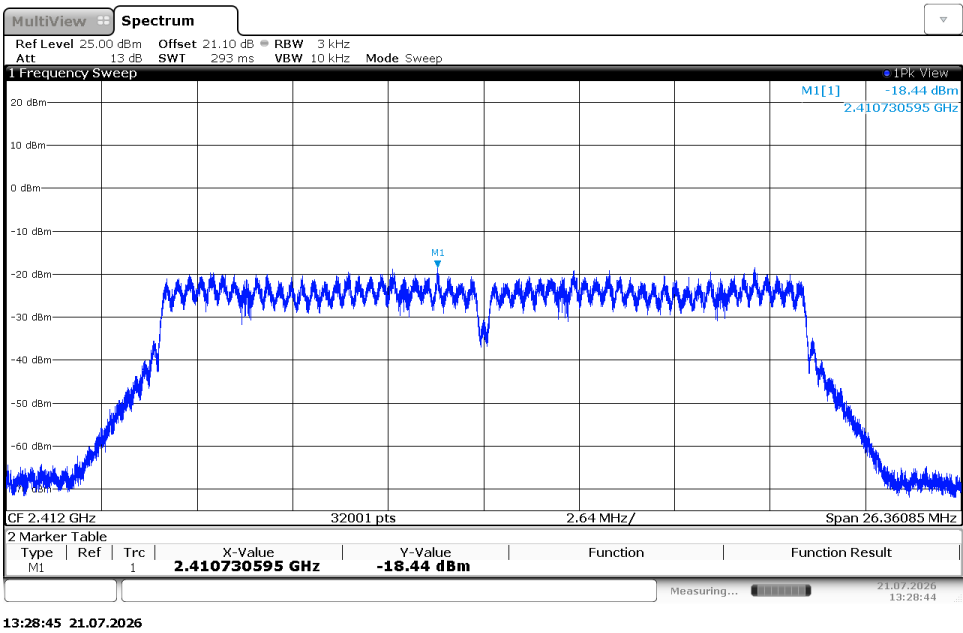


Figure 2.9.6-26 - Peak Power Spectral Density - MIMO Antenna 2 - 2412 MHz - 802.11n 20 MHz

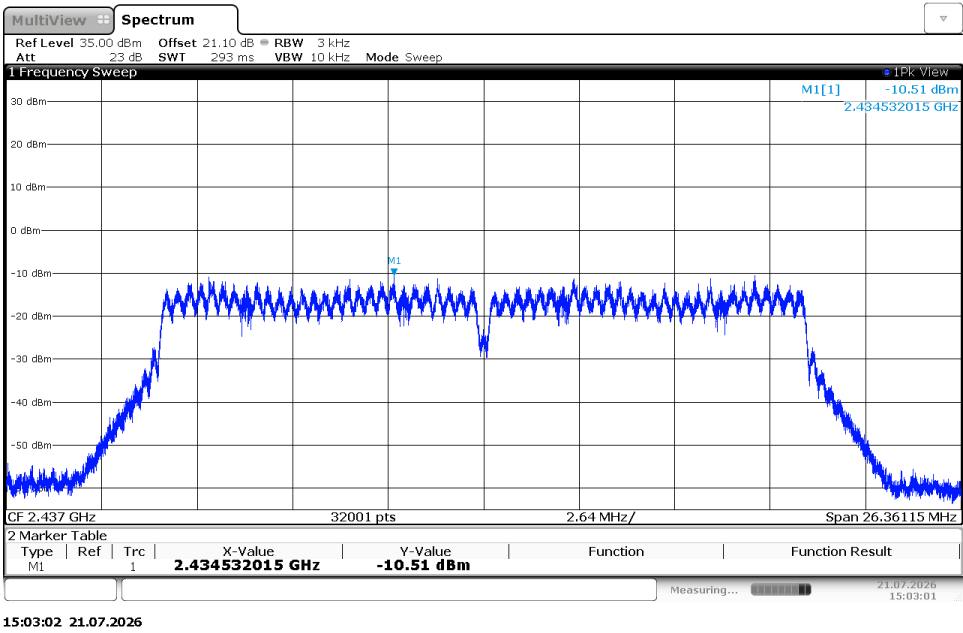


Figure 2.9.6-27 - Peak Power Spectral Density - MIMO Antenna 2 - 2437 MHz - 802.11n 20 MHz

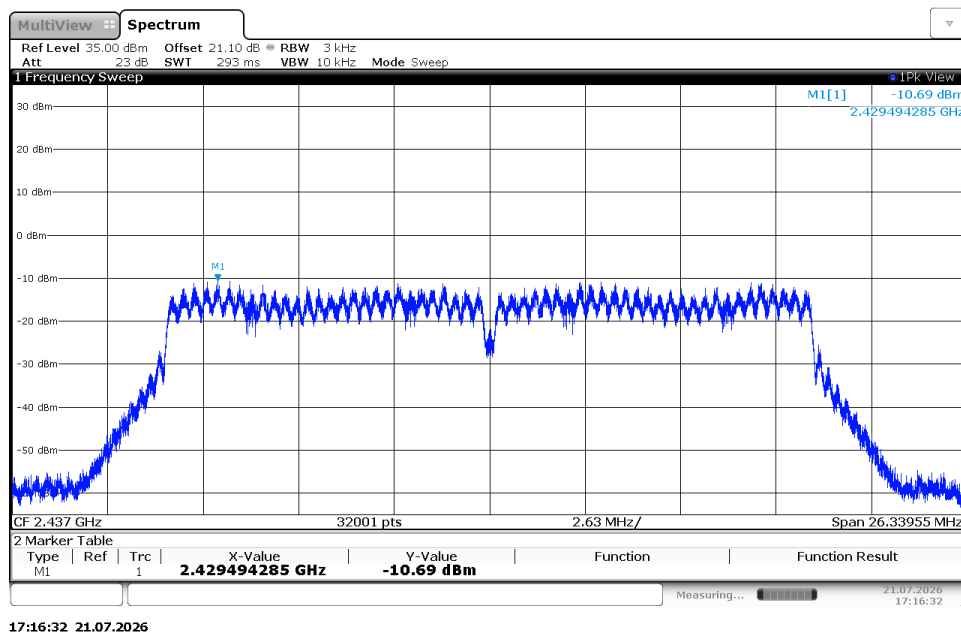


Figure 2.9.6-28 - Peak Power Spectral Density - MIMO Antenna 1 - 2437 MHz - .11n 20 MHz

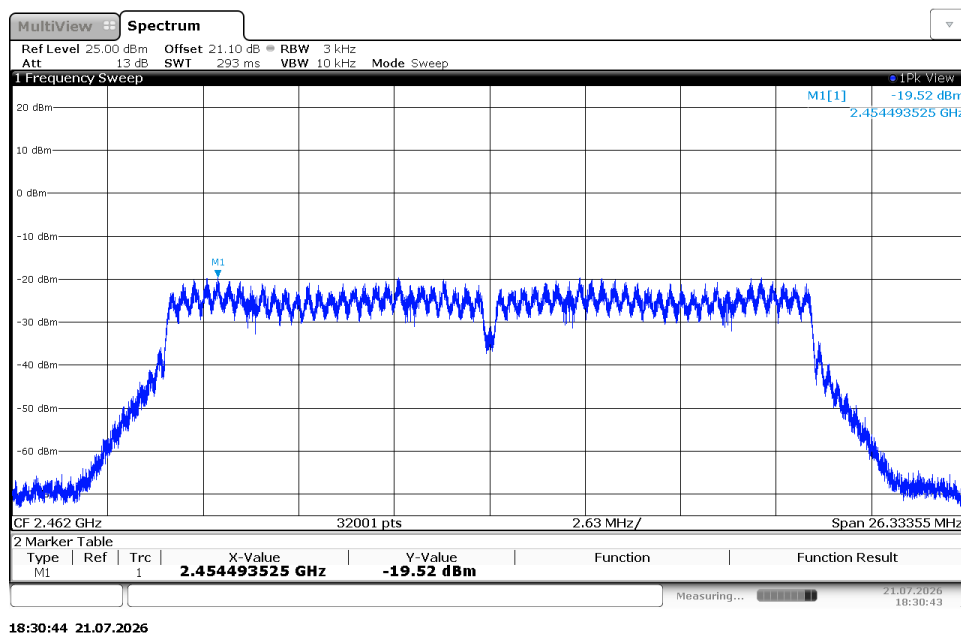


Figure 2.9.6-29 - Peak Power Spectral Density - MIMO Antenna 1 - 2462 MHz - 802.11n 20 MHz

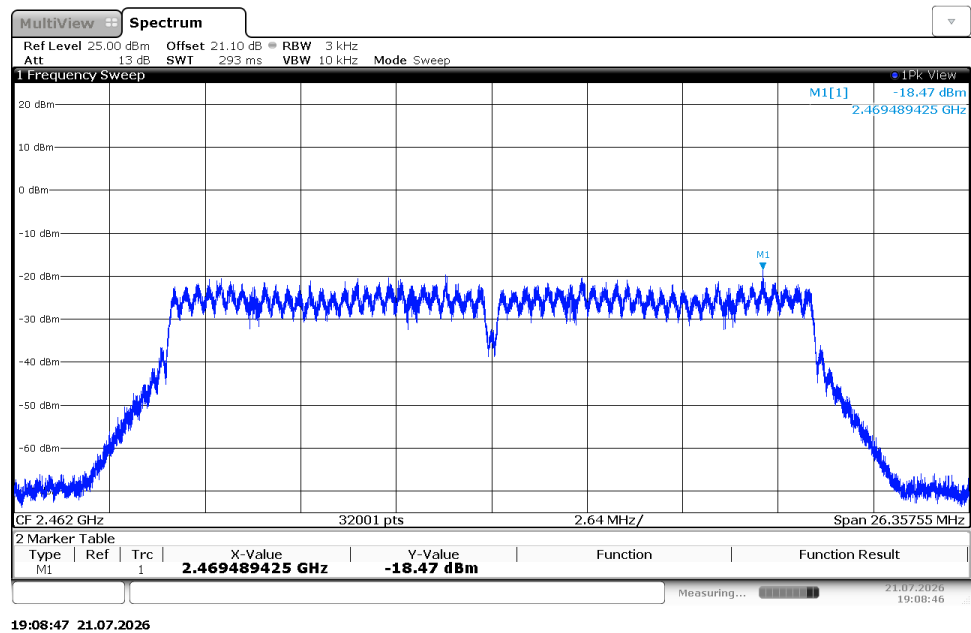
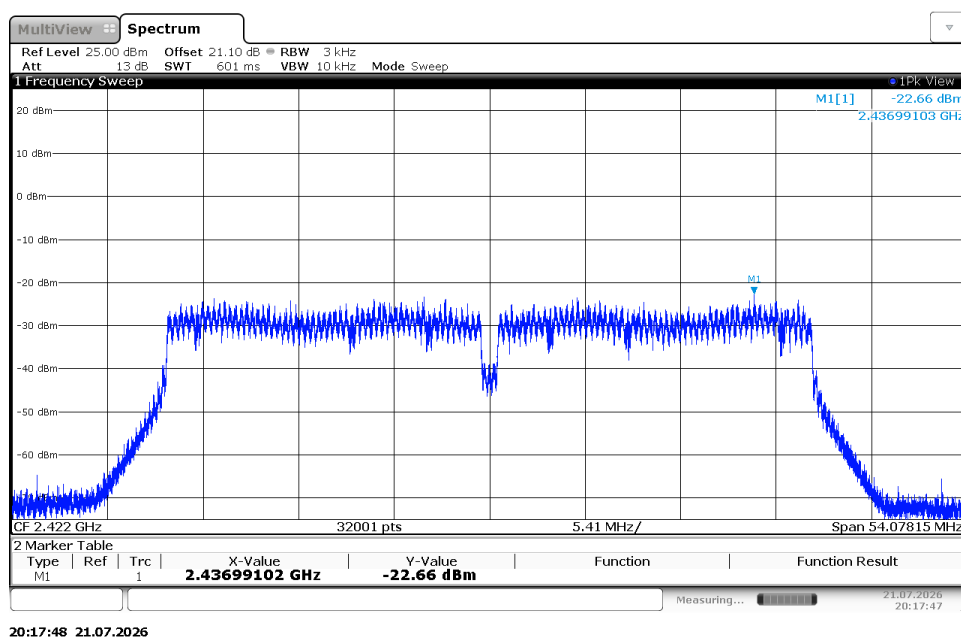


Figure 2.9.6-30 - Peak Power Spectral Density - MIMO Antenna 2 - 2462 MHz - 802.11n 20 MHz

**Table 2.9.6-6 – Peak Power Spectral Density Results – 802.11n 40 MHz - MIMO**

Frequency (MHz)	Antenna 2	Antenna 1	Peak PSD (mW)	Total Peak PSD (dBm)	Limit (dBm)	Margin (dB)	Result
2422	-22.663	-23.021	0.010404	-19.828	8	27.828	Pass
2437	-19.703	-18.949	0.023446	-16.299	8	24.299	Pass
2452	-24.237	-23.869	0.007873	-21.039	8	29.039	Pass

**Figure 2.9.6-31 - Peak Power Spectral Density - MIMO Antenna 2 - 2422 MHz - 802.11n 40 MHz**

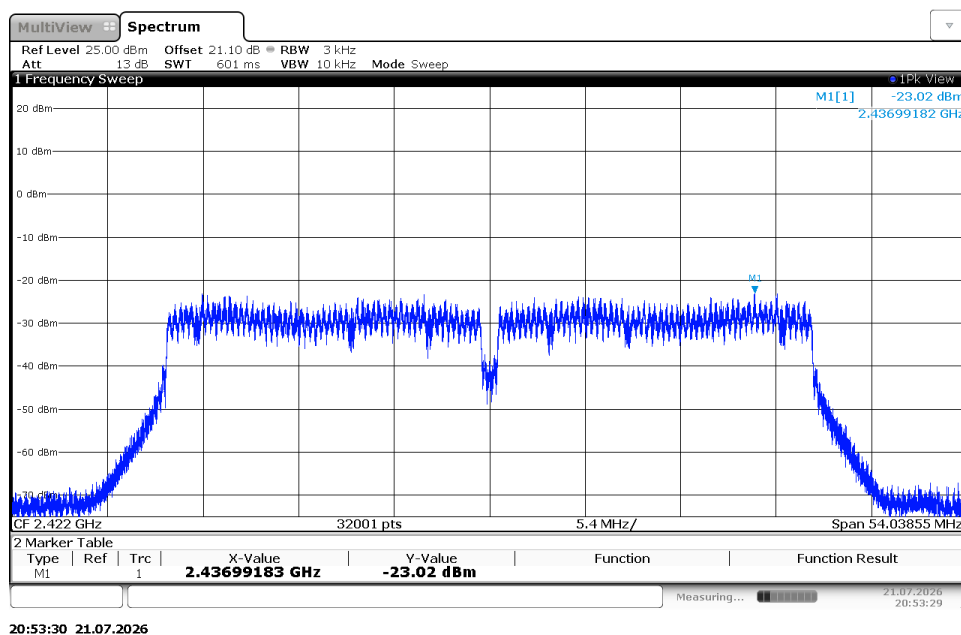


Figure 2.9.6-32 - Peak Power Spectral Density - MIMO Antenna 1 - 2422 MHz - 802.11n 40 MHz

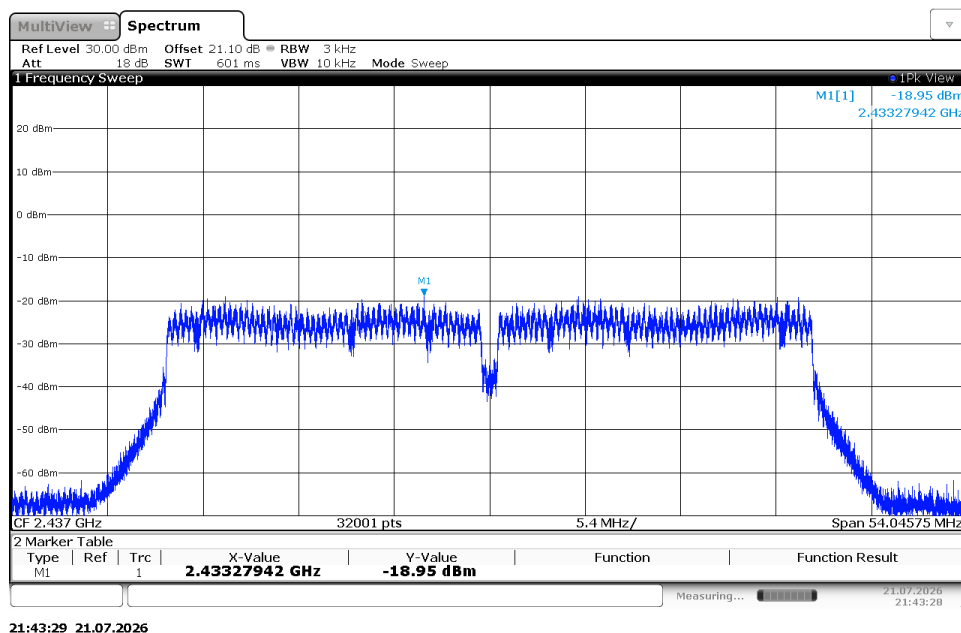


Figure 2.9.6-33 - Peak Power Spectral Density - MIMO Antenna 1 - 2437 MHz - 802.11n 40 MHz

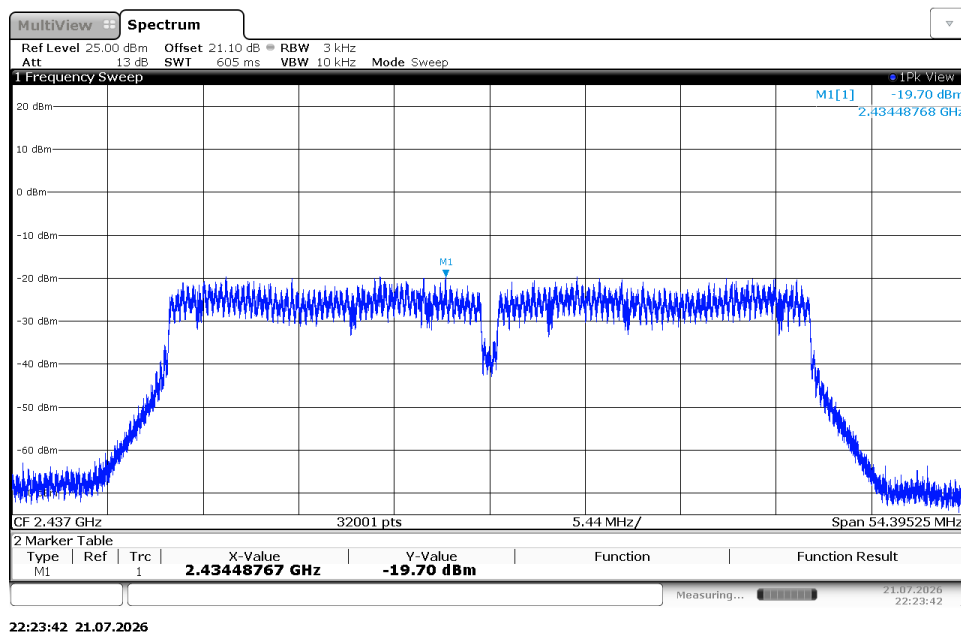


Figure 2.9.6-34 - Peak Power Spectral Density - MIMO Antenna 2 - 2437 MHz - 802.11n 40 MHz

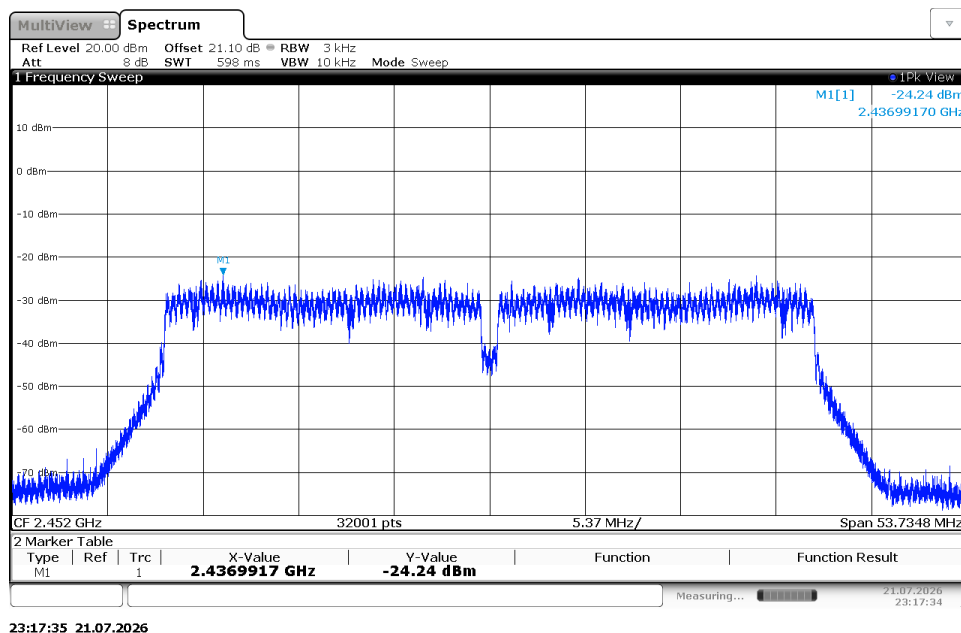


Figure 2.9.6-35 - Peak Power Spectral Density - MIMO Antenna 2 - 2452 MHz - 802.11n 40 MHz

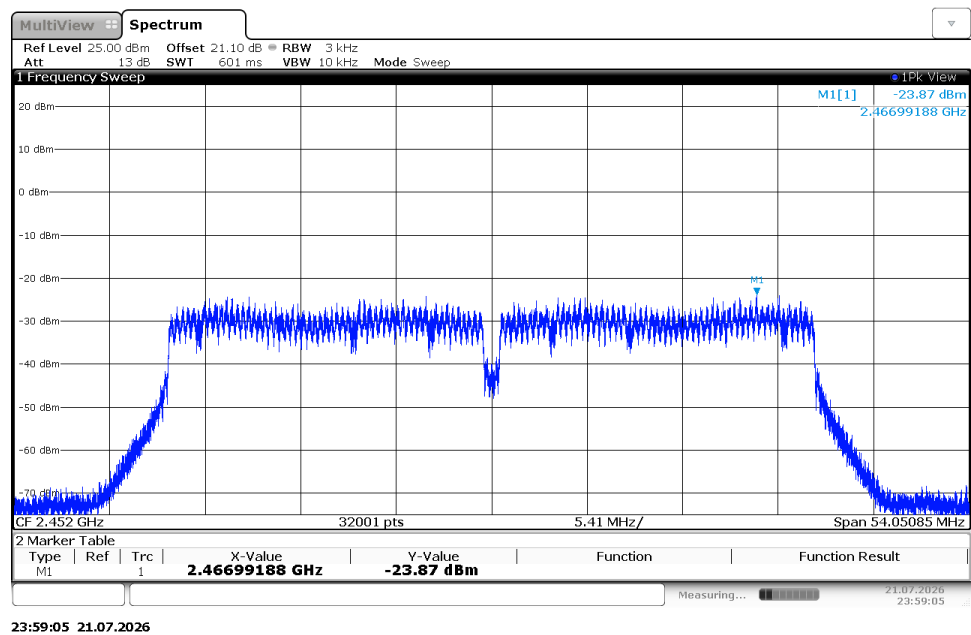


Figure 2.9.6-36 - Peak Power Spectral Density - MIMO Antenna 1 - 2452 MHz - 802.11n 40 MHz

2.9.7 Test Location and Test Equipment Used

This test was carried out in TÜV SÜD America, Inc., 141 14th Street NW, New Brighton, MN 55112, USA.

Device #	Manufacturer	Description	Model	Serial #	Cal Code	Cal Date	Cal Due
DEMC3049	Aeroflex Inmet	Atten 20dB 2.9mm-M/F, DC-26.5GH, 2W	26AH-20	1443	B	05/27/2025	05/27/2026
						06/12/2026	06/12/2027
DEMC3085	Rohde & Schwarz	Signal & Spectrum Analyzer	FSW43	103997	G	08/29/2025	08/29/2026
BEMC02112	Teledyne Storm Products	Duratest 175 Cable 26.5GHz	921-0101-036	12-06-698	B	01/12/2026	01/12/2027

Cal Code G = Calibration performed by an accredited outside source.
Cal Code B = Calibration verification performed internally.
Cal Code Y = Passive Device, or Calibration not required when used with other calibrated equipment.
The test equipment was used only during the active cycle of the calibration period.



2.10 Duty Cycle

2.10.1 Specification Reference

None

2.10.2 Equipment Under Test and Modification State

S/N: ADT-GW-FCC-#02

2.10.3 Date of Test

7/16/2026 to 7/21/2026

2.10.4 Test Method

The duty cycle was measured in accordance with ANSI C63.10 Section 11.6 Duty cycle (D), transmission duration (T), and maximum power control level. The unit was connected directly to the input of the spectrum analyzer via suitable attenuation. The RBW and VBW were set to 10 MHz and the number of sweep points across duration T was set to exceed 100. The amplitude offset of the spectrum analyzer was adjusted to account for cable and attenuator insertion losses.

2.10.5 Environmental Conditions

Ambient Temperature 22.0 to 23.0 °C
Relative Humidity 40.0 to 41.0 %
Atmospheric Pressure 983.0 to 985.0 mbar

2.10.6 Test Results

AC Powered, Operating

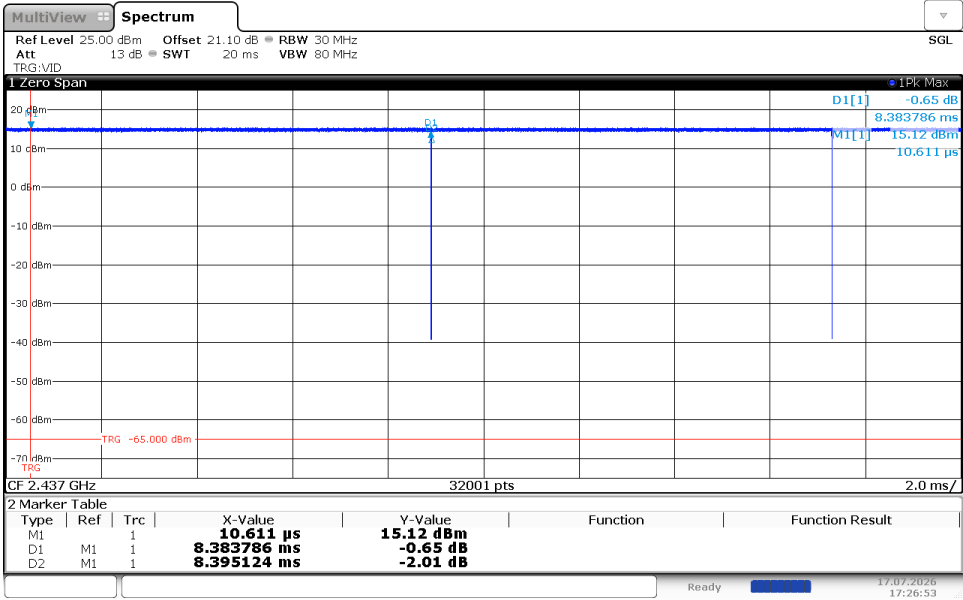
Test Summary:

The test mode duty cycle is provided for informational purposes as required per ANSI C63.10. Where the test mode duty cycle was measured to be greater than 98%, a duty cycle correction factor corresponding to $10 \cdot \log(1/(\text{duty cycle}))$ was calculated to be applied to the corrected RMS average levels..

Test Result: N/A

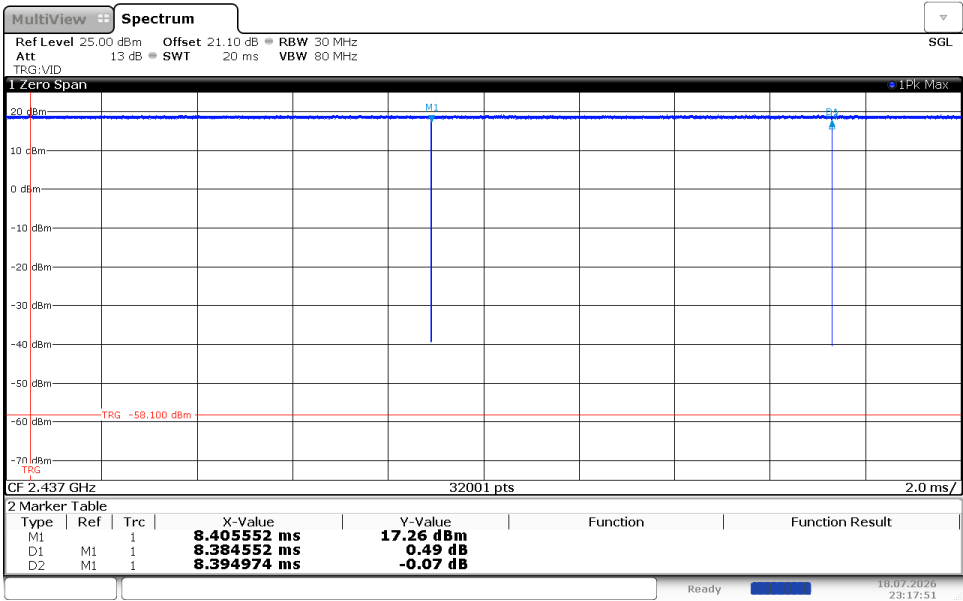
Table 2.10.6-1 – Duty Cycle Results – 802.11b

Configuration	Frequency (MHz)	Transmission On-Time (ms)	Repetition Period (ms)	Duty Cycle (%)
Antenna 1	2437	8.3838	8.3951	99.865
Antenna 2	2437	8.3846	8.3950	99.876



17:26:54 17.07.2026

Figure 2.10.6-1 - Duty Cycle - Antenna 1 - 2437 MHz – 802.11b



23:17:52 18.07.2026

Figure 2.10.6-2 - Duty Cycle - Antenna 2 - 2437 MHz – 802.11b



Table 2.10.6-2 – Duty Cycle Results - 802.11g

Configuration	Fundamental Frequency (MHz)	Transmission On-Time (ms)	Repetition Period (ms)	Duty Cycle (%)
Antenna 1	2437	1.3593	1.3758	98.803
Antenna 2	2437	1.3594	1.3759	98.799

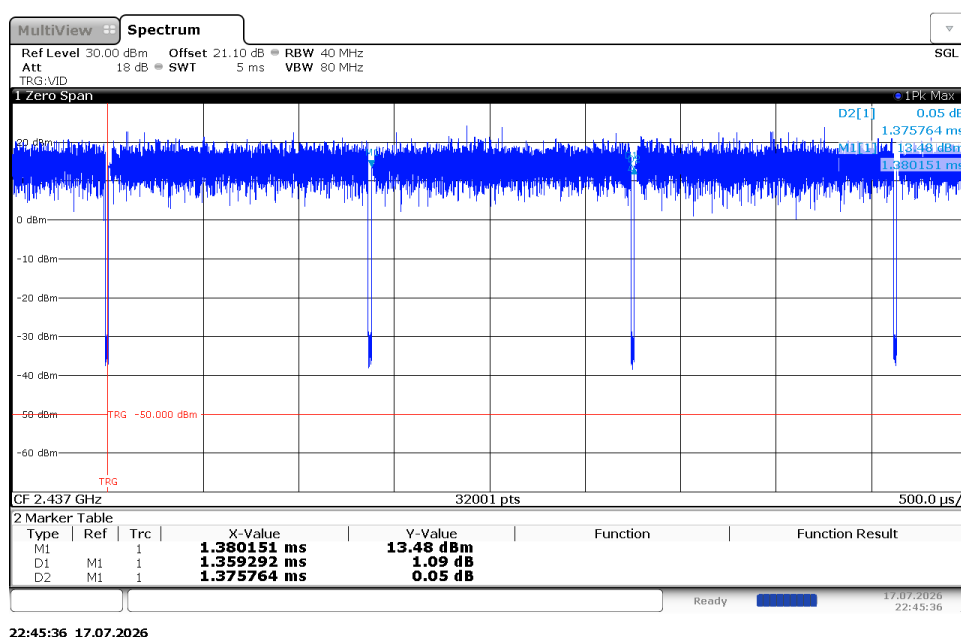


Figure 2.10.6-3 - Duty Cycle - Antenna 1 - 2437 MHz - 802.11g

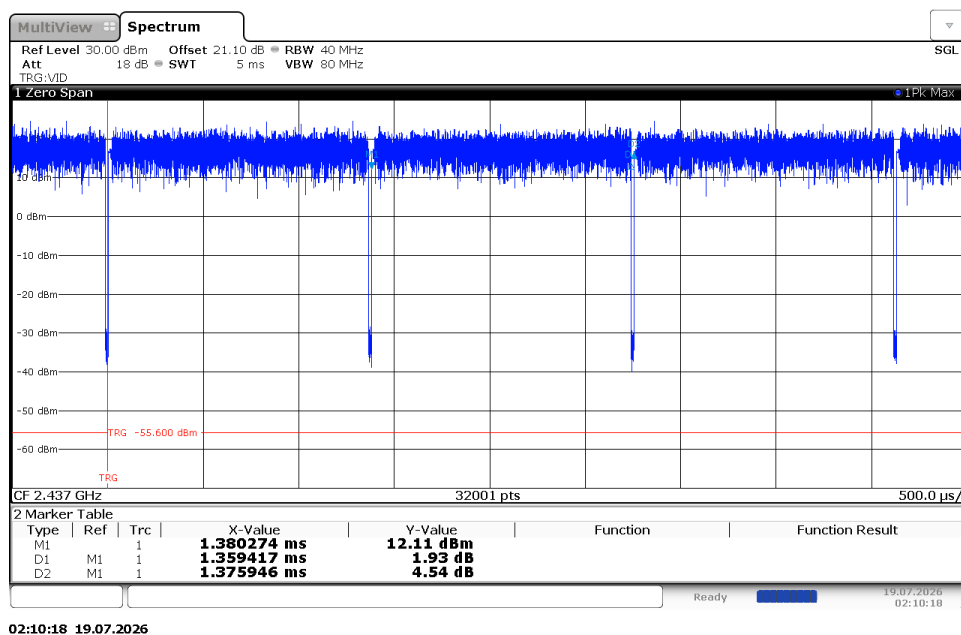


Figure 2.10.6-4 - Duty Cycle - Antenna 2 - 2437 MHz - 802.11g

Table 2.10.6-3 – Duty Cycle Results – 802.11n 20 MHz

Configuration	Frequency (MHz)	Transmission On-Time (ms)	Period (ms)	Duty Cycle (%)
Antenna 1	2437	1.2694	1.2859	98.713
Antenna 2	2437	1.2696	1.2861	98.719

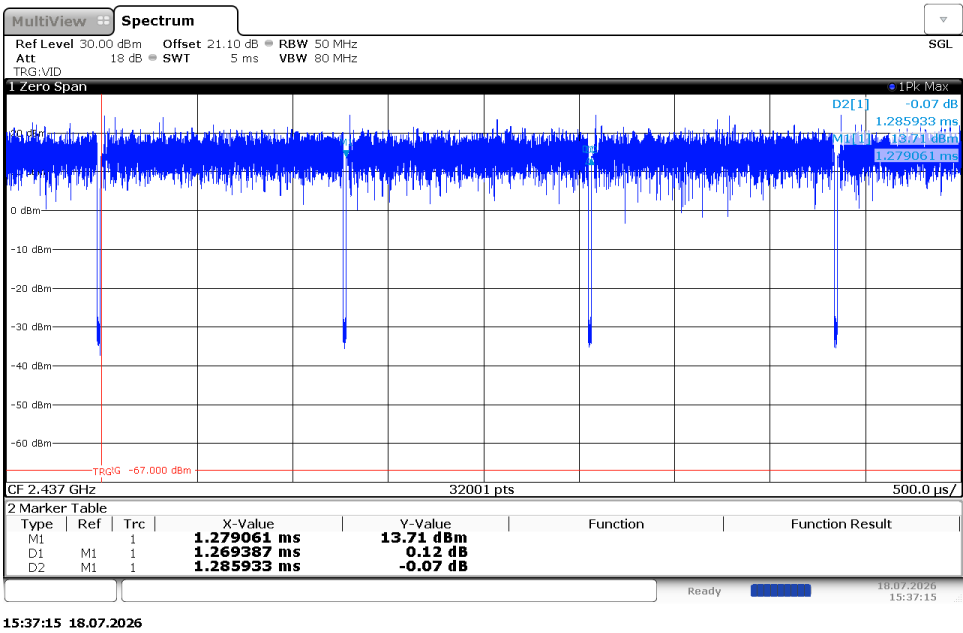


Figure 2.10.6-5 - Duty Cycle - Antenna 1 - 2437 MHz - 802.11n 20 MHz

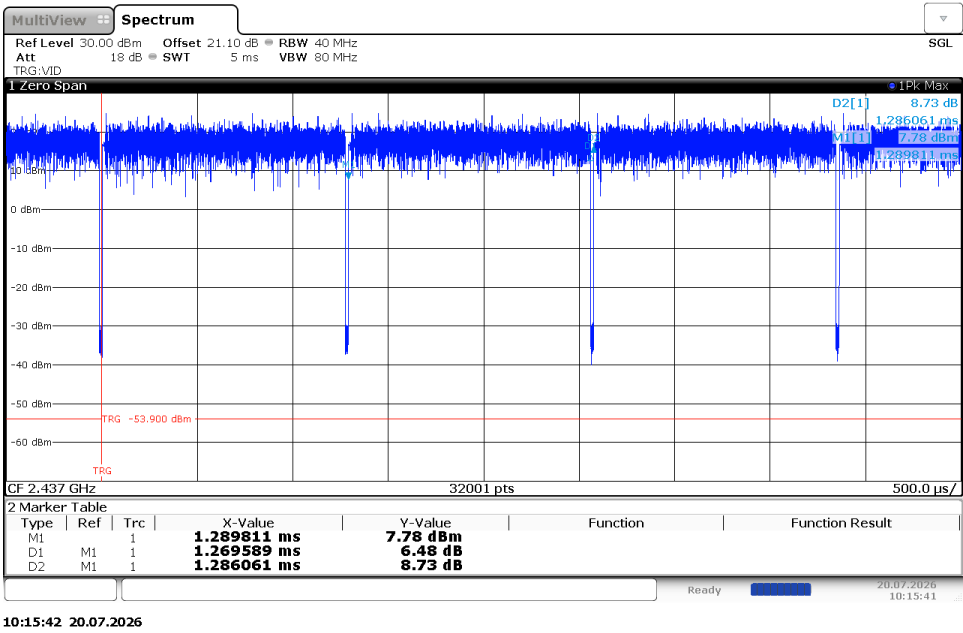


Figure 2.10.6-6 - Duty Cycle - Antenna 2 - 2437 MHz - 802.11n 20 MHz



Table 2.10.6-4 – Duty Cycle Results - 802.11n 40 MHz

Configuration	Frequency (MHz)	Transmission On-Time (ms)	Period (ms)	Duty Cycle (%)	Correction Factor (dB)
Antenna 1	2437	0.648	0.6649	97.463	0.11
Antenna 2	2437	0.6481	0.6649	97.473	0.11

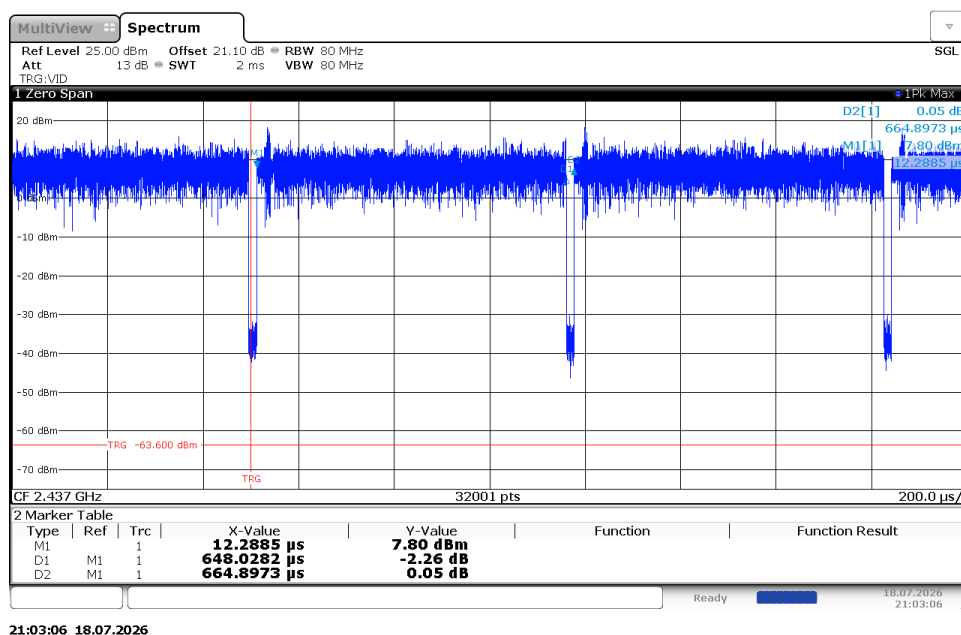
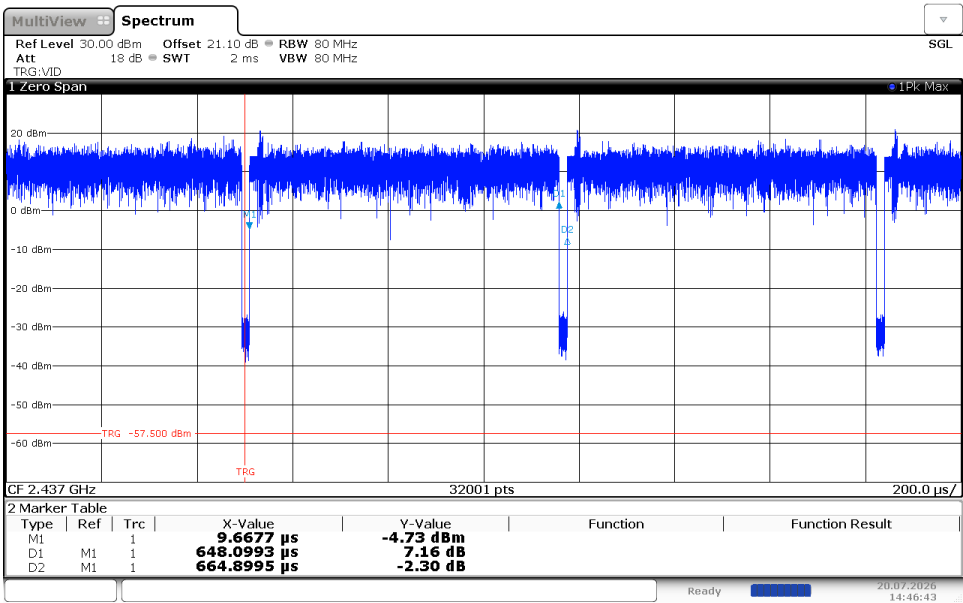


Figure 2.10.6-7 - Duty Cycle - Antenna 1 - 2437 MHz - 802.11n 40 MHz



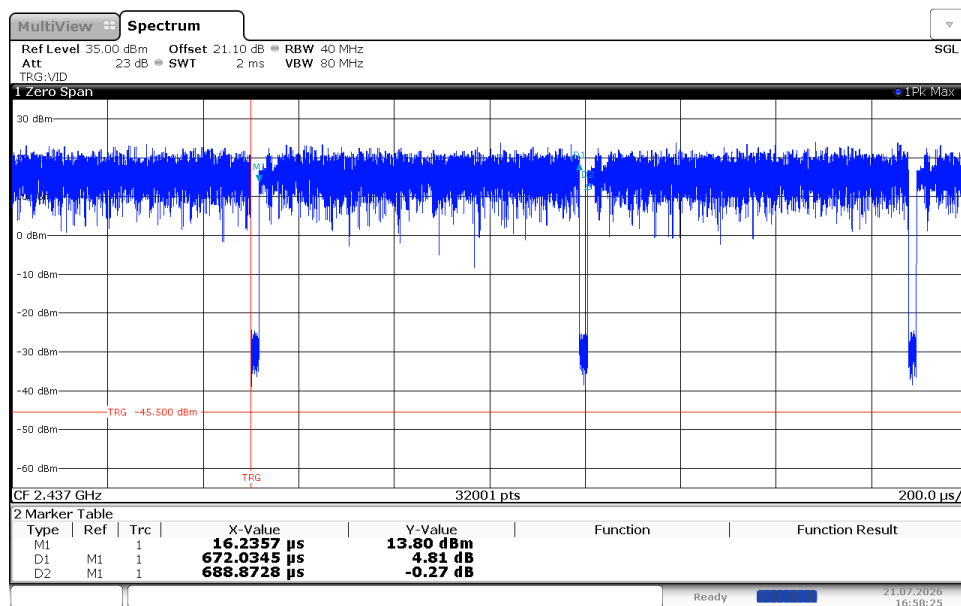
14:46:44 20.07.2026

Figure 2.10.6-8 - Duty Cycle - Antenna 2 - 2437 MHz - 802.11n 40 MHz



Table 2.10.6-5 – Duty Cycle Results - 802.11n 20 MHz - MIMO

Configuration	Frequency (MHz)	Transmission On-Time (ms)	Period (ms)	Duty Cycle (%)	Correction Factor (dB)
MIMO Antenna 2	2437	0.6720	0.6889	97.556	0.11
MIMO Antenna 1	2437	0.6720	0.6889	97.555	0.11



16:58:25 21.07.2026

Figure 2.10.6-9 - Duty Cycle - MIMO Antenna 2 - 2437 MHz - 802.11n 20 MHz

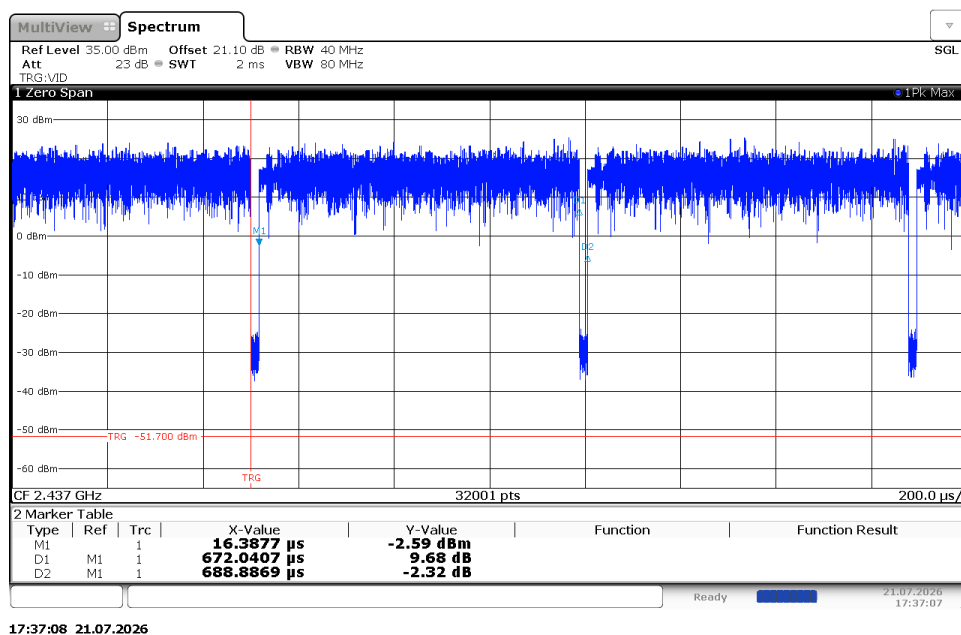


Figure 2.10.6-10 - Duty Cycle - MIMO Antenna 1 - 2437 MHz - 802.11n 20 MHz

Table 2.10.6-6 – Table 1 - Duty Cycle Results – 802.11n 40 MHz - MIMO

Configuration	Frequency (MHz)	Transmission On-Time (ms)	Period (ms)	Duty Cycle (%)	Correction Factor (dB)
MIMO Antenna 1	2437	0.3480	0.3649	95.384	0.21
MIMO Antenna 2	2437	0.3480	0.3649	95.384	0.21

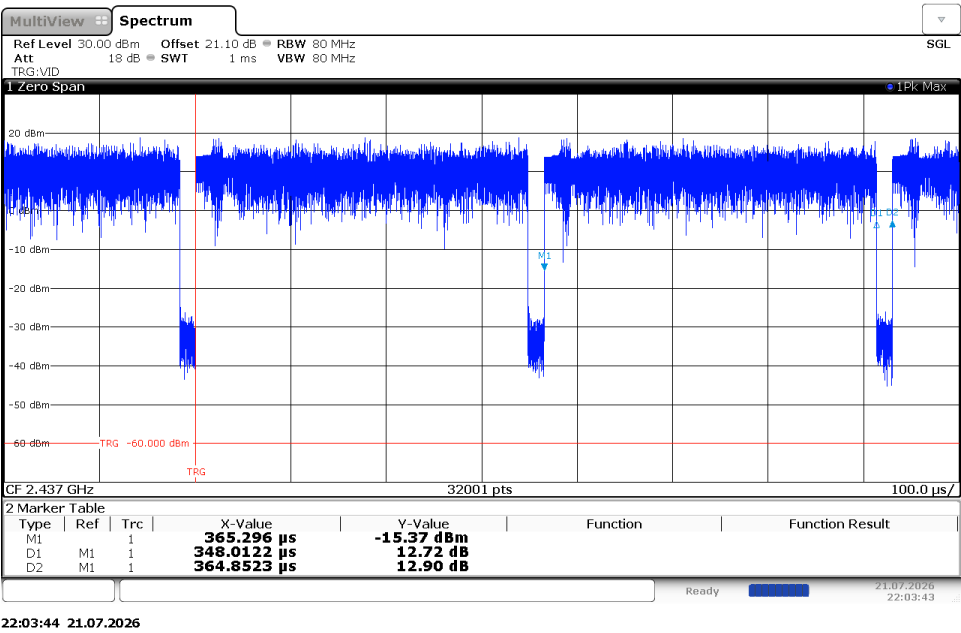


Figure 2.10.6-11 - Duty Cycle - MIMO Antenna 1 - 2437 MHz - 802.11n 40 MHz

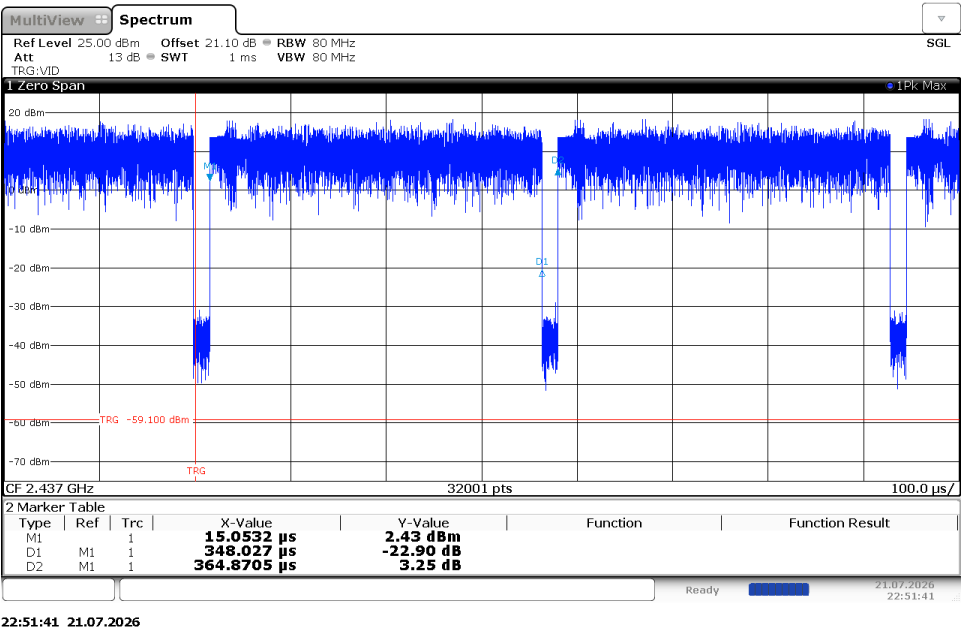


Figure 2.10.6-12 - Duty Cycle - MIMO Antenna 2 - 2437 MHz - 802.11n 40 MHz



2.10.7 Test Location and Test Equipment Used

This test was carried out in TÜV SÜD America, Inc., 141 14th Street NW, New Brighton, MN 55112, USA.

Device #	Manufacturer	Description	Model	Serial #	Cal Code	Cal Date	Cal Due
DEMC3049	Aeroflex Inmet	Atten 20dB 2.9mm-M/F, DC-26.5GH, 2W	26AH-20	1443	B	05/27/2025	05/27/2026
						06/12/2026	06/12/2027
DEMC3085	Rohde & Schwarz	Signal & Spectrum Analyzer	FSW43	103997	G	08/29/2025	08/29/2026
BEMC02112	Teledyne Storm Products	Duratest 175 Cable 26.5GHz	921-0101-036	12-06-698	B	01/12/2026	01/12/2027

Cal Code G = Calibration performed by an accredited outside source.

Cal Code B = Calibration verification performed internally.

Cal Code Y = Passive Device, or Calibration not required when used with other calibrated equipment.

The test equipment was used only during the active cycle of the calibration period.



2.11 Power Line Conducted Emissions

2.11.1 Specification Reference

FCC: Section 15.207

2.11.2 Equipment Under Test and Modification State

As shown in §1.5 with modification state “0”, as noted in §1.7.

2.11.3 Date of Test

7/18/2026

2.11.4 Test Method

ANSI C63.10 section 6.2 was the guiding document for this evaluation. Conducted emissions were performed from 150 kHz to 30 MHz with the spectrum analyzer’s resolution bandwidth set to 9 kHz and the video bandwidth set to 30 kHz. The calculation for the conducted emissions is as follows:

$$\text{Corrected Reading} = \text{Analyzer Reading} + \text{LISN Loss} + \text{Cable Loss}$$

$$\text{Margin} = \text{Applicable Limit} - \text{Corrected Reading}$$

2.11.5 Environmental Conditions

Ambient Temperature	23 °C
Relative Humidity	35 %
Atmospheric Pressure	985 mBar

2.11.6 Additional Observations

Measurements were made using BAT-EMC (2024.0.9.5) automated software. The reported level is the actual level with all the correction factors factored in. Correction Factor column is for informational purposes only.

2.11.7 Test Results

Table 2.11.7-1: Conducted Emissions Limits

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-Peak	Average
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.



Test Summary: EUT operated as intended before, during, and after testing.

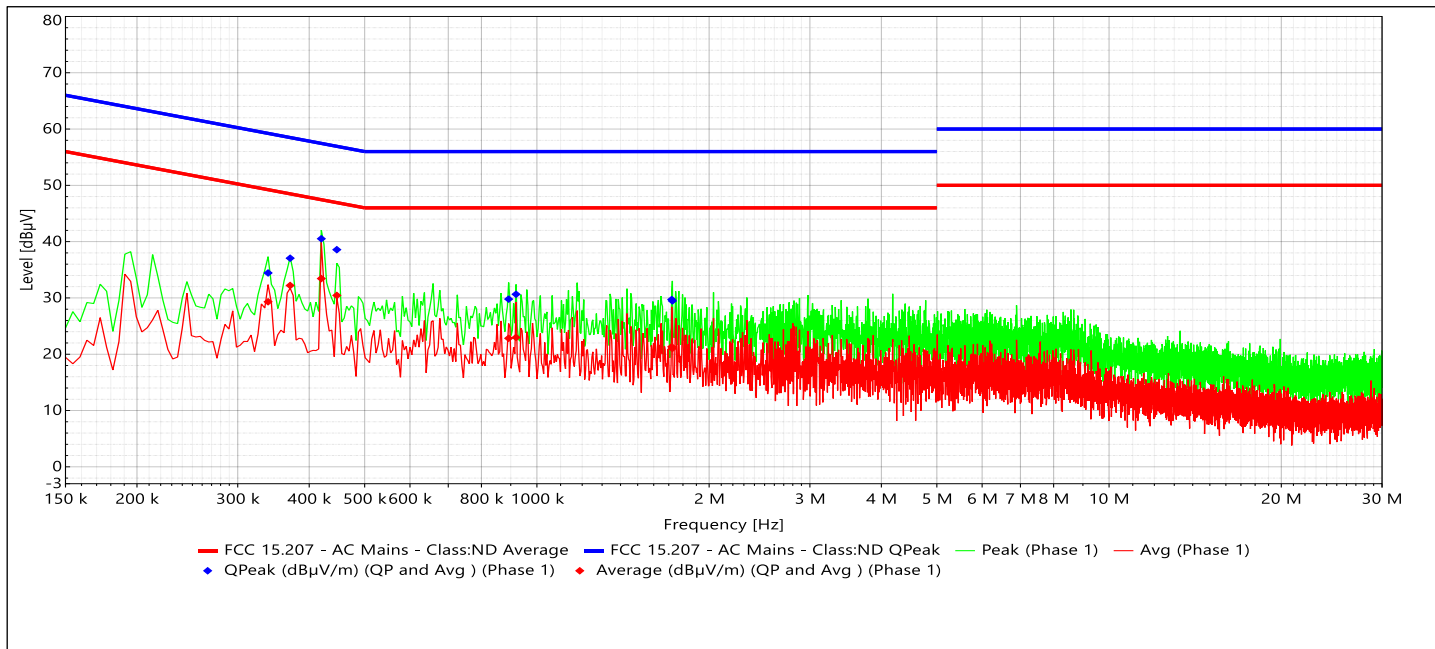
Test Result: Pass

See data below for detailed results.



L1 [120VAC, 60Hz - 802.11b - Antenna 2]

Frequency Range	Line Tested	RBW	Step Size	Sweep Time
150 kHz - 30 MHz	L1	9 kHz	4.5 kHz	Auto



Limit:

FCC Part 15/FCC 15.207 - AC Mains

Test Date:

7/18/2026

Test Results:

Pass

Figure 2.11.7-1 – Power Line Conducted Emissions – L1 - 802.11b -Antenna 2

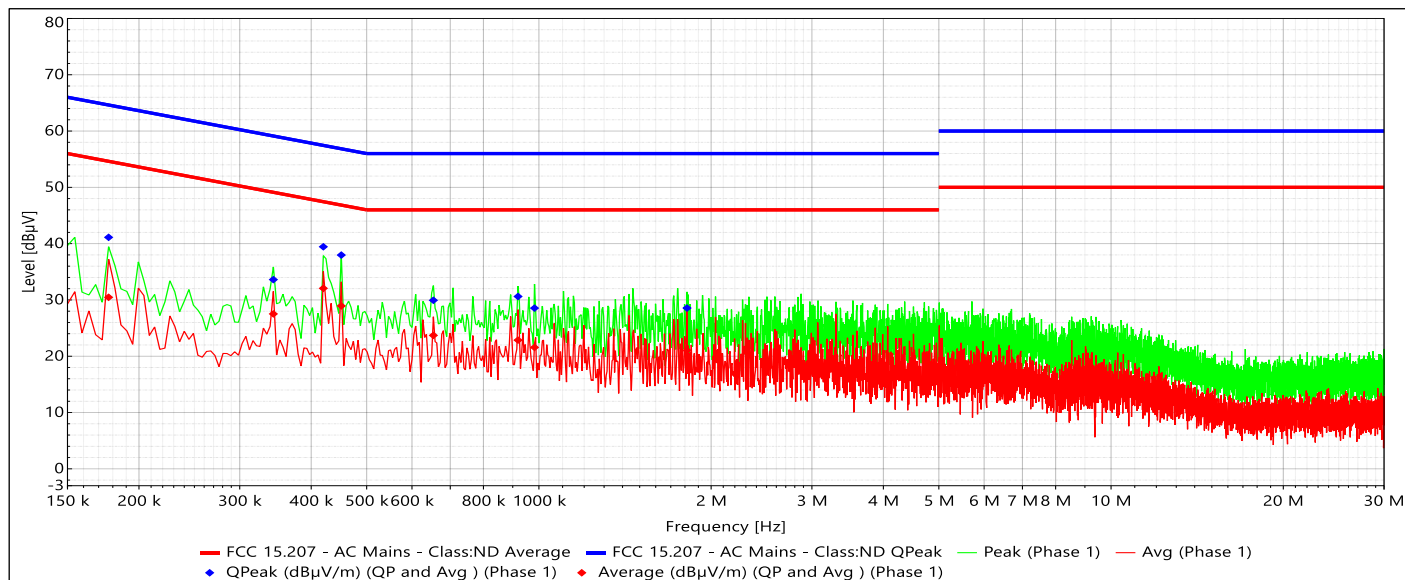
Table 2.11.7-2 – Power Line Conducted Emissions – L1

Frequency (MHz)	Average (dBuV)	Average Limit (dBuV)	Average Margin (dB)	QPeak (dBuV)	QPeak Limit (dBuV)	QPeak Margin (dB)	Result
0.339	29.32	49.23	-19.91	34.44	59.23	-24.79	Pass
0.371	32.21	48.49	-16.28	37.06	58.49	-21.43	Pass
0.420	33.44	47.45	-14.01	40.52	57.45	-16.93	Pass
0.447	30.45	46.93	-16.48	38.57	56.93	-18.36	Pass
0.893	22.83	46.00	-23.17	29.79	56.00	-26.21	Pass
0.920	22.98	46.00	-23.02	30.65	56.00	-25.35	Pass
1.721	21.32	46.00	-24.68	29.72	56.00	-26.28	Pass
1.725	21.03	46.00	-24.97	29.47	56.00	-26.53	Pass



L2 [120VAC, 60Hz] - 802.11b - Antenna 2

Frequency Range	Line Tested	RBW	Step Size	Sweep Time
150 kHz - 30 MHz	L2	9 kHz	4.5 kHz	Auto



Limit: FCC Part 15/FCC 15.207 - AC Mains **Test Date:** 7/18/2026 **Test Results:** Pass
Figure 2.11.7-2 – Power Line Conducted Emissions – L2 - 802.11b -Antenna 2

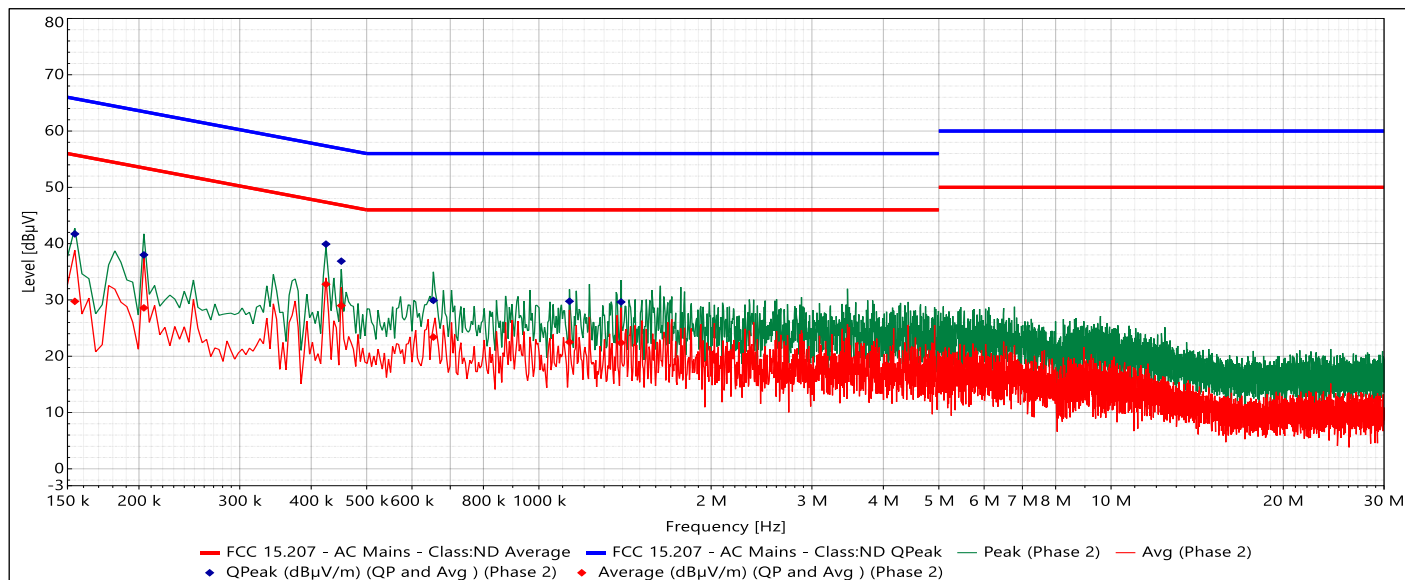
Table 2.11.7-3 – Power Line Conducted Emissions – L2

Frequency (MHz)	Average (dBuV)	Average Limit (dBuV)	Average Margin (dB)	QPeak (dBuV)	QPeak Limit (dBuV)	QPeak Margin (dB)	Result
0.177	30.47	54.63	-24.16	41.12	64.63	-23.51	Pass
0.344	27.52	49.12	-21.60	33.61	59.12	-25.51	Pass
0.420	32.06	47.45	-15.39	39.44	57.45	-18.01	Pass
0.452	28.94	46.85	-17.91	37.97	56.85	-18.88	Pass
0.654	23.70	46.00	-22.30	29.94	56.00	-26.06	Pass
0.920	22.86	46.00	-23.14	30.61	56.00	-25.39	Pass
0.983	21.57	46.00	-24.43	28.55	56.00	-27.45	Pass
1.815	21.04	46.00	-24.96	28.56	56.00	-27.44	Pass



L2 [120VAC, 60Hz] - 802.11b - Antenna 1

Frequency Range	Line Tested	RBW	Step Size	Sweep Time
150 kHz - 30 MHz	L2	9 kHz	4.5 kHz	Auto



Limit: FCC Part 15/FCC 15.207 - AC Mains **Test Date:** 7/18/2026 **Test Results:** Pass
Figure 2.11.7-3 – Power Line Conducted Emissions – L2 - 802.11b -Antenna 1

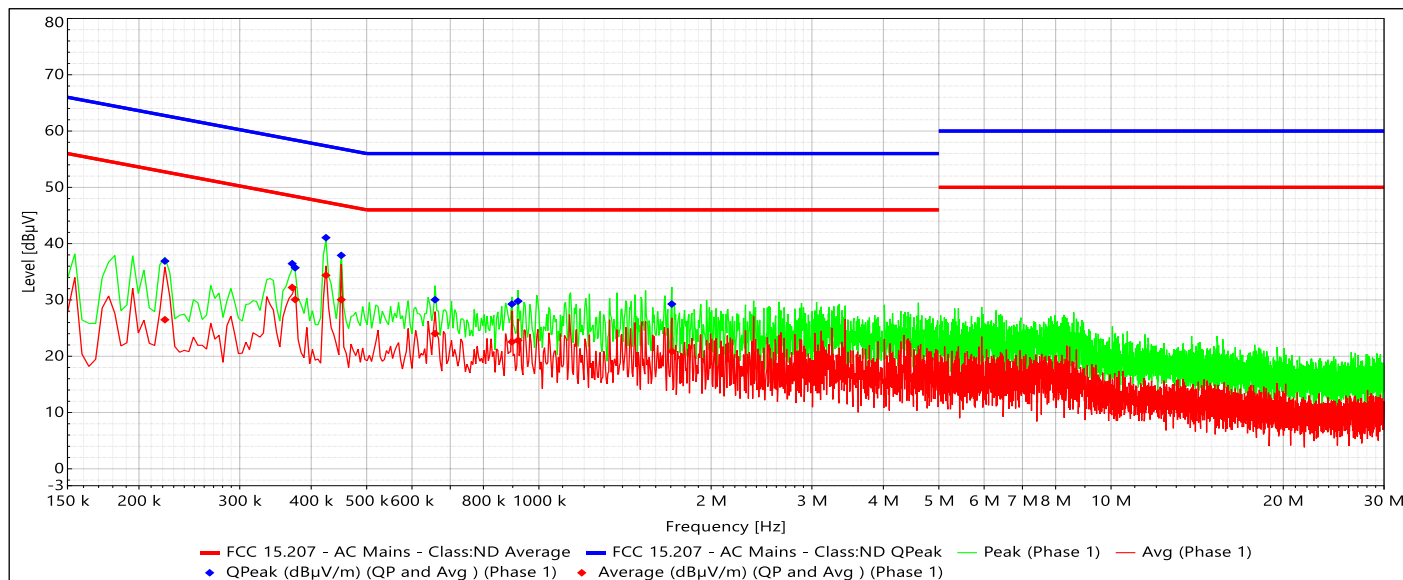
Table 2.11.7-4 – Power Line Conducted Emissions – L2

Frequency (MHz)	Average (dBuV)	Average Limit (dBuV)	Average Margin (dB)	QPeak (dBuV)	QPeak Limit (dBuV)	QPeak Margin (dB)	Result
0.155	29.75	55.75	-26.01	41.73	65.75	-24.03	Pass
0.204	28.59	53.45	-24.86	38.00	63.45	-25.44	Pass
0.425	32.79	47.36	-14.56	39.92	57.36	-17.44	Pass
0.452	28.99	46.85	-17.86	36.89	56.85	-19.96	Pass
0.654	23.40	46.00	-22.60	29.92	56.00	-26.08	Pass
1.131	22.50	46.00	-23.50	29.76	56.00	-26.24	Pass
1.392	22.38	46.00	-23.62	29.64	56.00	-26.36	Pass



L1 [120VAC, 60Hz - 802.11b - Antenna 1

Frequency Range	Line Tested	RBW	Step Size	Sweep Time
150 kHz - 30 MHz	L1	9 kHz	4.5 kHz	Auto



Limit:

Test Date: 7/18/2026

Test Results: Pass

FCC Part 15/FCC 15.207 - AC Mains

Figure 2.11.7-4 – Power Line Conducted Emissions – L1 - Test Notes: 802.11b -Antenna 1

Table 2.11.7-5 – Power Line Conducted Emissions – L1

Frequency (MHz)	Average (dBuV)	Average Limit (dBuV)	Average Margin (dB)	QPeak (dBuV)	QPeak Limit (dBuV)	QPeak Margin (dB)	Result
0.222	26.49	52.74	-26.26	36.90	62.74	-25.84	Pass
0.371	32.21	48.49	-16.28	36.45	58.49	-22.04	Pass
0.375	30.06	48.39	-18.33	35.72	58.39	-22.67	Pass
0.425	34.39	47.36	-12.97	41.06	57.36	-16.30	Pass
0.452	30.04	46.85	-16.80	37.91	56.85	-18.94	Pass
0.659	24.01	46.00	-21.99	30.03	56.00	-25.97	Pass
0.897	22.55	46.00	-23.45	29.26	56.00	-26.74	Pass
0.920	22.82	46.00	-23.18	29.78	56.00	-26.22	Pass
1.707	20.88	46.00	-25.12	29.27	56.00	-26.73	Pass



2.11.8 Test Location and Test Equipment Used

The tests were carried out in New Brighton, MN.
Test Area: GRP2

Table 2.11.8-1 – Conducted Emissions Test Equipment List

Device #	Manufacturer	Description	Model	Serial #	Cal Code	Cal Date	Cal Due
NBLE10459	Weinschel	Attenuator, 20 dB	34-20-34	BP1557	B	03/26/2026	03/25/2027
NBLE10572	Huber + Suhner	Cable, BNC 3M	EF142	10572	B	08/07/2025	08/07/2026
WRLE10944	Fischer Custom Comm.	LISN	FCC-LISN-50-25-2-10	120308	G	07/09/2025	07/09/2027
WRLE10998	Rohde & Schwarz	Receiver, 20 Hz-26.5 GHz	ESU 26	100379	G	09/02/2025	09/02/2026

Cal Code G = Calibration performed by an accredited outside source.

Cal Code B = Calibration verification performed internally.

Cal Code Y = Passive Device, or Calibration not required when used with other calibrated equipment.

3 Diagram of Test Set-ups

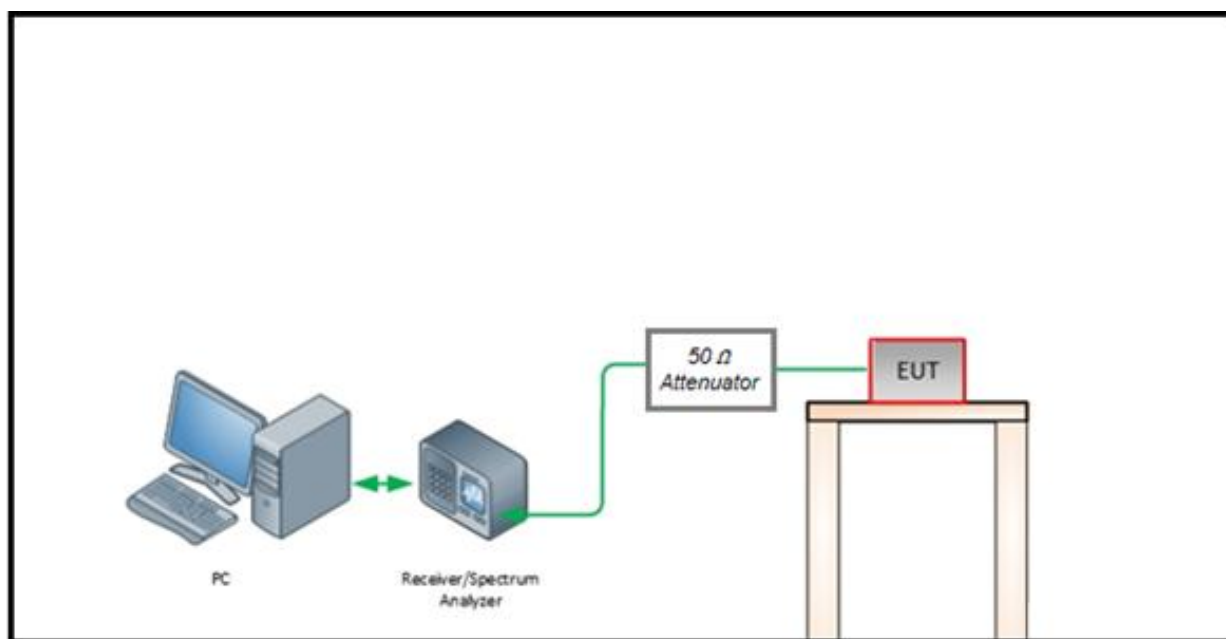


Figure 3-1 – RF Conducted Measurements Test Setup

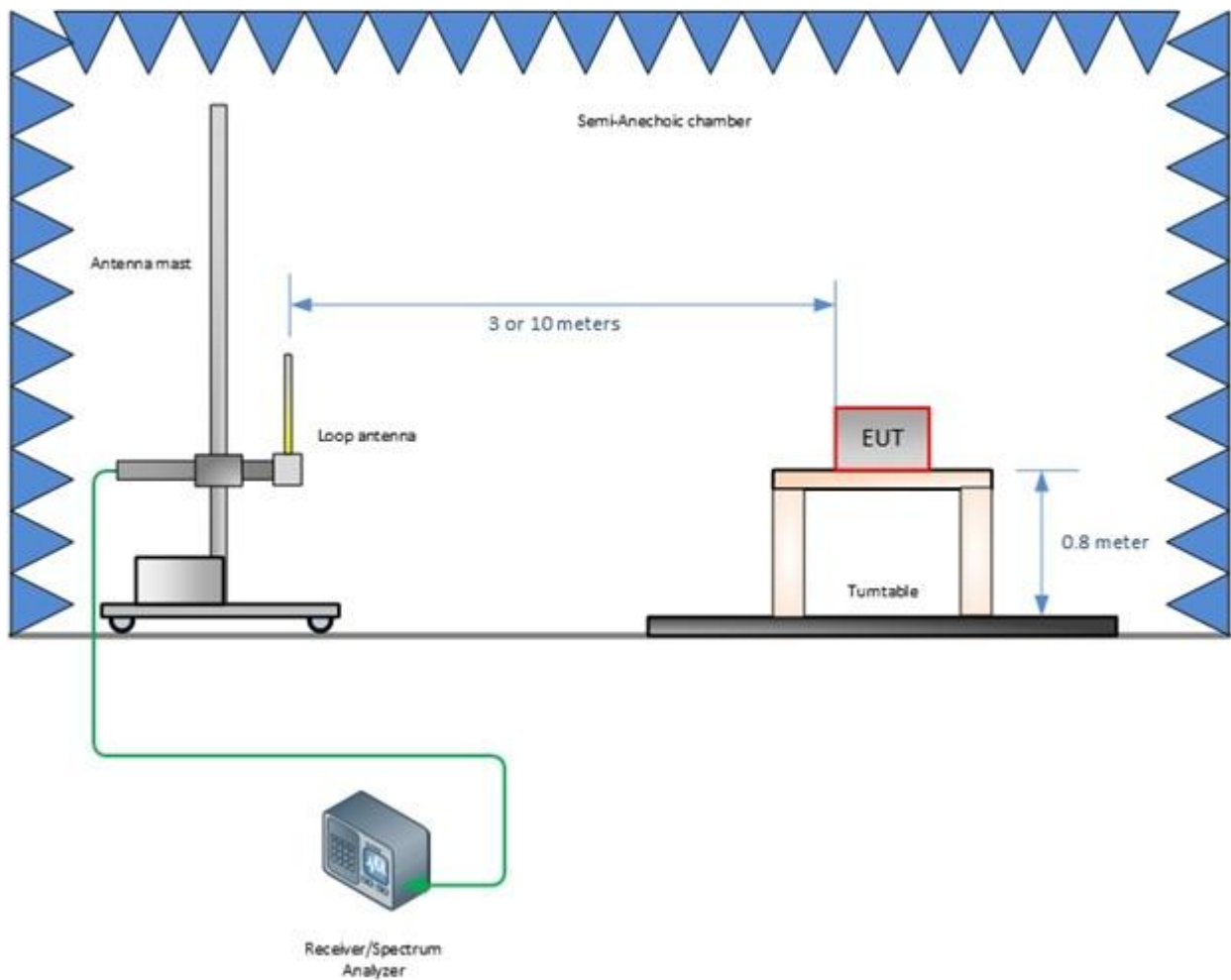


Figure 3-2 – Radiated Emissions Test Setup below 30 MHz

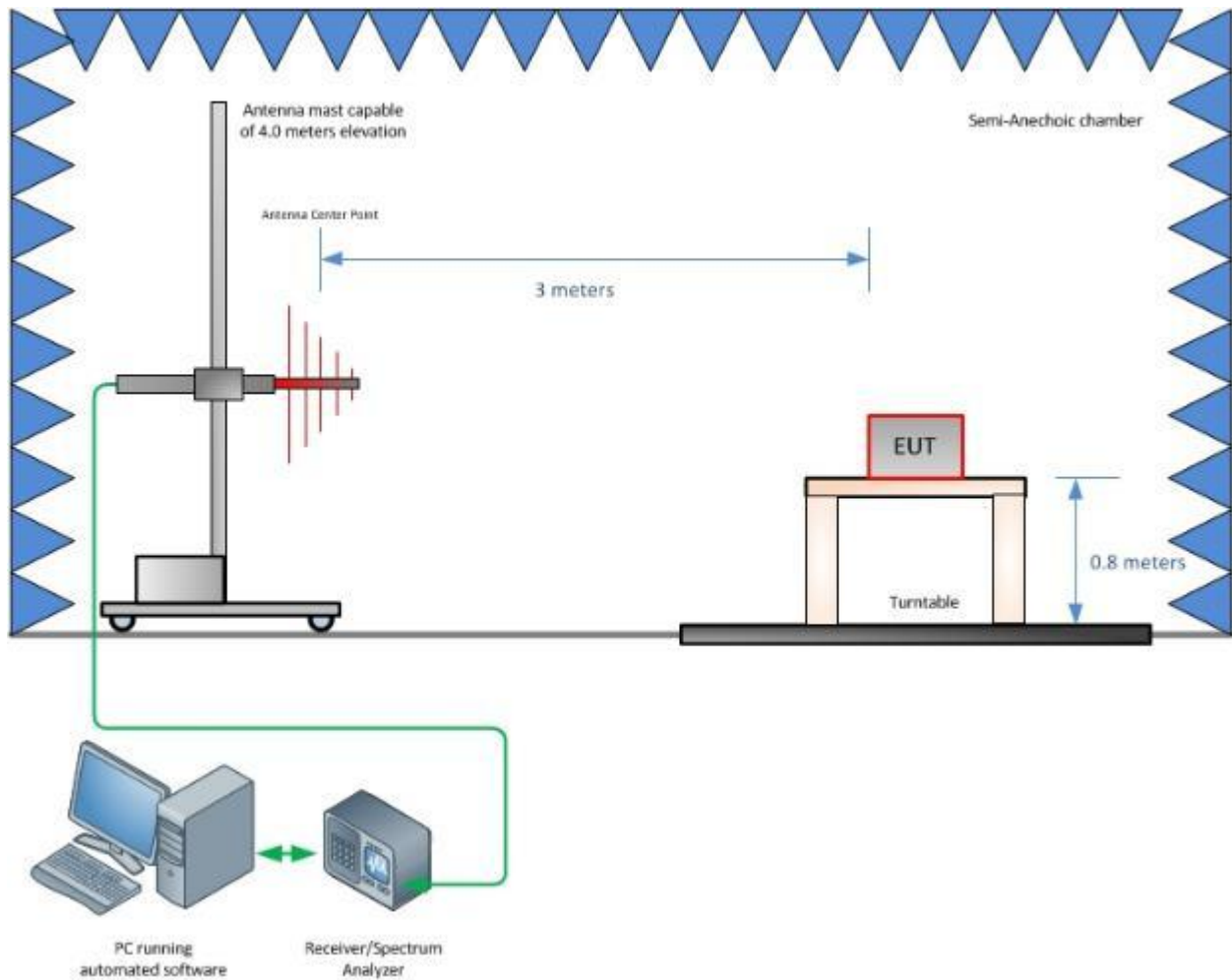


Figure 3-3 – Radiated Emissions Test Setup up to 1 GHz

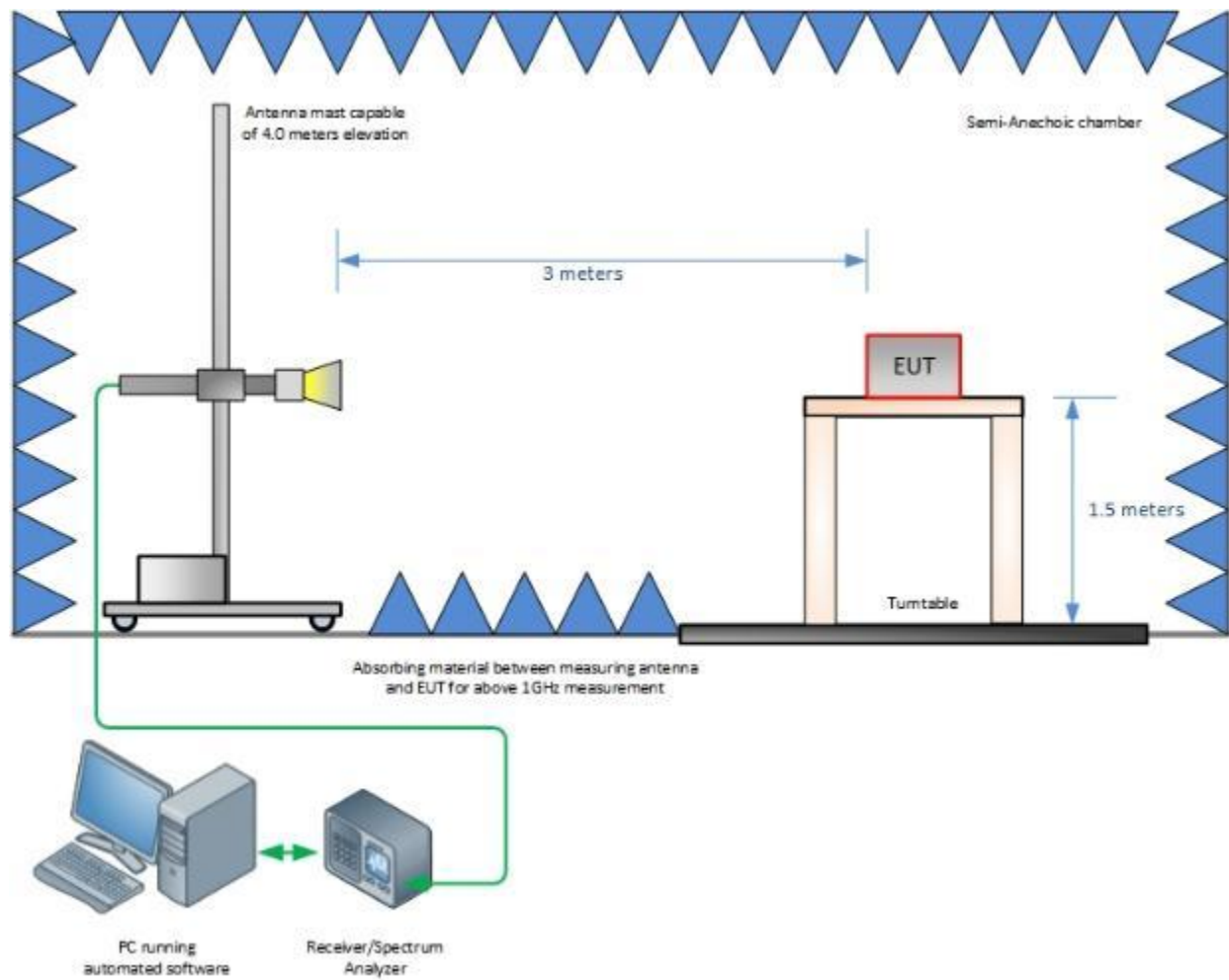


Figure 3-4 – Radiated Emissions Test Setup above 1 GHz

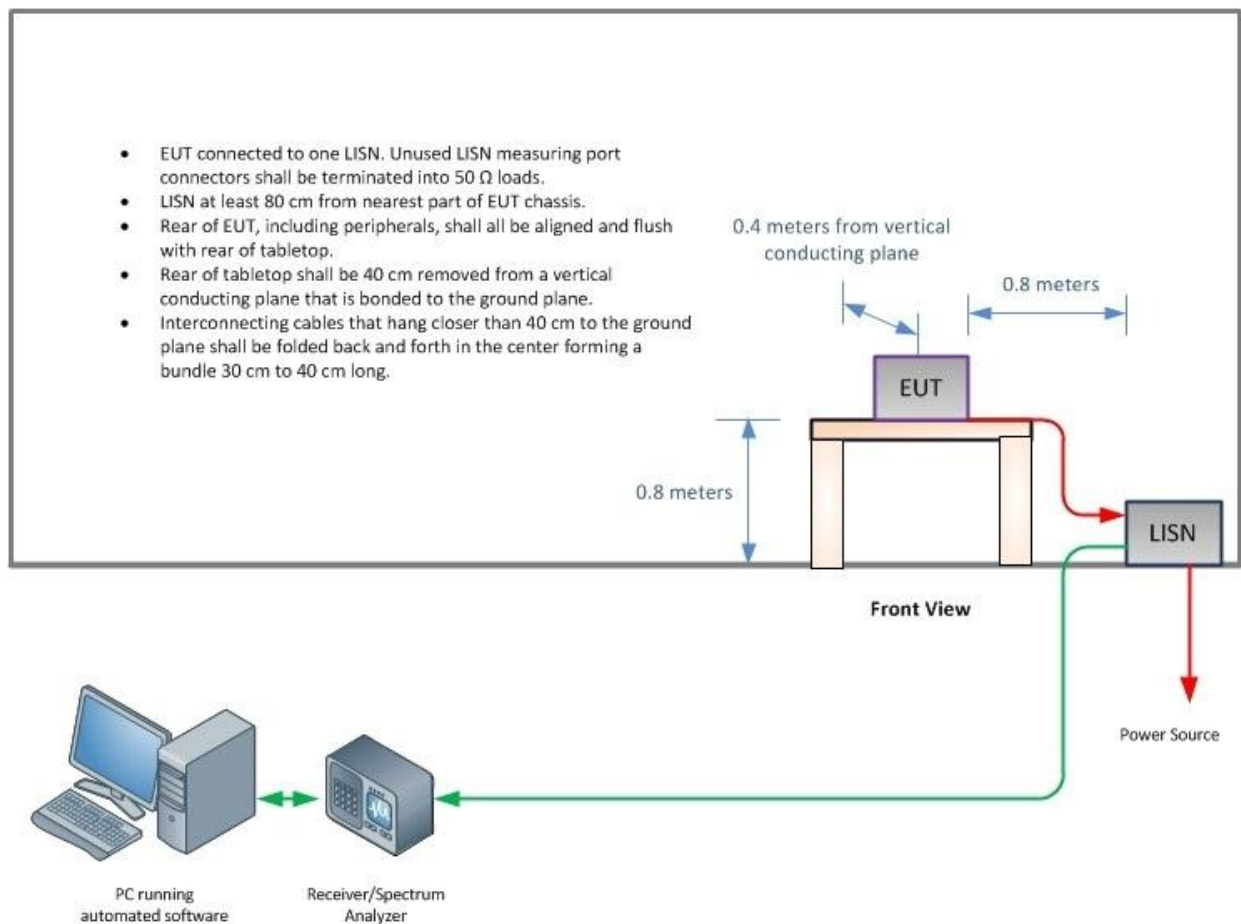


Figure 3-5 – Power Line Conducted Emissions Test Setup



4 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

Table 4-1- Values of U_{CISPR} and U_{Lab}

Measurement	U_{CISPR}	U_{Lab}
Radiated disturbance (electric field strength on an open area test site or alternative test site) (30 MHz – 1 000 MHz) (1 – 6 GHz) (6-18 GHz)	6.3 dB 5.2 dB 5.5 dB	5.88 dB 4.47 dB 4.478 dB
Power Line Conducted Emissions 150 kHz – 30 MHz	3.4 dB	3.30 dB
Occupied Channel Bandwidth	-----	±2.83 %
RF output power, conducted	-----	±0.61 dB
Power Spectral Density, conducted	-----	±1.13 dB
Unwanted Emissions, conducted	-----	±2.64 dB

Notes:

U_{CISPR} resembles a value of measurement uncertainty for a specific test, which was determined by considering uncertainties associated with the quantities listed in CISPR 16-4-2:2011.

The test system for conducted emissions is defined as the LISN, tuned receiver or spectrum analyzer, and coaxial cable. This test system has a measurement uncertainty of ±3.30 dB. The test system for radiated emissions is defined as the antenna, the pre-amplifier, the spectrum analyzer and the coaxial cable. This test system for 30 MHz-1000 MHz has a measurement uncertainty of ±5.88 dB and above 1 GHz a measurement uncertainty of ±4.47 dB. The measurement uncertainty values for conducted and radiated emissions meet the requirements as expressed in CISPR 16-4-2. The equipment comprising the test systems is calibrated on an annual basis.



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