N° 1-6736
Scope available
on www.cofrac.fr

CERTIFICATE #3478.01

TEST REPORT

EUT Description	**WLAN and BT, 2x2 Wi-Fi and BT, M.2 1216 adapter card**
Brand Name	**Intel® BE211D2W**
Model Name	**BE211D2W, BE211D2W M**
FCC/IC ID	**FCC ID: PD9BE211D2 ; IC ID: 1000M-BE211D2**
Date of Test Start/End	**2025-06-10 / 2025-07-18**
Features	**2x2 Wi-Fi - Bluetooth®** (see section 5)

Applicant	**Intel Corporation S.A.S**
Address	**425 Rue de Goa – Le Cargo B6 – 06600 Antibes, FRANCE**
Contact Person	**Benjamin Lavenant**
Telephone/Fax/ Email	**Benjamin.lavenant@intel.com**

Reference Standards	**FCC CFR Title 47 Part 15 C** **RSS-247 issue 3, RSS-Gen A1 issue 5 - A1** (see section 1)

Test Report identification	**250519-02.TR08**
Revision Control	**Rev. 00** **This test report revision replaces any previous test report revision** (see section 8)

The test results relate only to the samples tested.
Reference to accreditation shall be used only by full reproduction of test report.

Issued by

Digitally signed by Khodor RIDA
Date: 2025.07.25 17:40:38 +02'00'

Khodor RIDA
(Test Engineer Lead)

Reviewed by

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Ines KHARRAT
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Table of Contents

1. Standards, reference documents and applicable test methods

FCC	1. FCC Title 47 CFR part 15 - Subpart C – §15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz. 2024-10-01 Edition 2. FCC Title 47 CFR part 15 - Subpart C – §15.209 Radiated emission limits; general requirements. 2024-10-01 Edition 3. FCC OET KDB 558074 D01 v05r02 - Guidance for compliance measurements on digital transmission system, frequency hopping spread spectrum system, and hybrid system devices operating under section 15.247 of the FCC rules. 4. FCC OET KDB 662911 D01 v02r01 - Emissions Testing of Transmitters with Multiple Outputs in the Same Band. 5. ANSI C63.10-2020 - American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
ISED	1. RSS-247 Issue 3 - Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and License-Exempt Local Area Network (LE-LAN) Devices. 2. RSS-Gen Issue 5 A1- General Requirements for Compliance of Radio Apparatus. 3. FCC OET KDB 558074 D01 v05r02 - Guidance for compliance measurements on digital transmission system, frequency hopping spread spectrum system, and hybrid system devices operating under section 15.247 of the FCC rules. 4. FCC OET KDB 662911 D01 v02r01 - Emissions Testing of Transmitters with Multiple Outputs in the Same Band. 5. ANSI C63.10-2020+Cor 2023+Amd 2024 - American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

2. General conditions, competences and guarantees

- ✓ Tests performed under FCC standards identified in section 1 are covered by A2LA accreditation.
- ✓ Tests performed under ISED standards identified in section 1 are covered by Cofrac accreditation.
- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is an ISO/IEC 17025:2017 laboratory accredited by the American Association for Laboratory Accreditation (A2LA) with the certificate number 3478.01.
- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is an Accredited Test Firm recognized by the FCC, with Designation Number FR0011.
- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is an ISO/IEC 17025:2017 testing laboratory accredited by the French Committee for Accreditation (Cofrac) with the certificate number 1-6736.
- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is a Registered Test Site listed by ISED, with ISED #1000Y and CAB identifier FR0005.
- ✓ Intel WRF Lab only provides testing services and is committed to providing reliable, unbiased test results and interpretations.
- ✓ Intel WRF Lab is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.
- ✓ Intel WRF Lab has developed calibration and proficiency programs for its measurement equipment to ensure correlated and reliable results to its customers.
- ✓ This report is only referred to the item that has undergone the test.
- ✓ This report does not imply an approval of the product by the Certification Bodies or competent Authorities.

3. Environmental Conditions

- ✓ At the site where the measurements were performed the following limits were not exceeded during the tests:

Temperature	Min: 21.21°C Max: 30.63°C AVG: 25.97°C
Humidity	Min: 34.39% Max: 67.06% AVG: 50.72%

4. Test samples

Sample	Control #	Description	Model	Serial #	Date of receipt	Note
#01	250528-01.S07	Module	BE211D2W	289200F96596	2025-05-28	Used for Radiated Spurious Emissions tests
	200803-01.S01	Extender	ADEXELEC	139245	2020-08-31	
	170000-01.S57	Adapter	BNJ C0 V3	ASS00959-00-0C	2025-03-24	
	200611-03.S30	Test PC	Latitude 5401	6DJLK13	2020-08-19	
	230223-02.S48	Triband Antenna	-	006	2023-04-20	
	230526-09.S08	Triband Antenna	-	016	2023-07-06	
#02	250528-01.S07	Module	BE211D2W	289200F96596	2025-05-28	Used for Radiated Spurious Emissions tests
	200904-01.S14	Extender	ADEXELEC	12	2023-06-22	
	170000-01.S56	Adapter	BNJ C0 V3	E1578726888186A	2025-03-24	
	170000-01.S55	Test PC	LATITUDE 5530	004250000000002AA521	2025-03-24	
	230526-09.S06	Triband Antenna	-	014	2023-07-06	
	230526-09.S05	Triband Antenna	-	013	2023-07-06	
#03	250528-01.S29	Module	BE211D2W	C0A810A3BB50	2025-07-16	Used for Radiated Spurious Emissions tests
	180001-01.S21	Socket	1216SD to M.2	-	2021-06-07	
	200904-01.S14	Extender	ADEXELEC	12	2023-06-22	
	170000-01.S56	Adapter	BNJ C0 V3	E1578726888186A	2025-03-24	
	170000-01.S55	Test PC	LATITUDE 5530	004250000000002AA521	2025-03-24	
	230526-09.S06	Triband Antenna	-	014	2023-07-06	
	230526-09.S05	Triband Antenna	-	013	2023-07-06	
#04	250528-01.S09	Module	BE211D2W	FC6D77CAABCA	2025-06-25	Used for Conducted tests
	210916-09.S03	Laptop	HP HSN-I45C	000176090Y	2021-12-10	
	240000-01.S07	Extender Mother Board	PCB00887-00_A	2202130047	2024-12-12	
	240000-01.S08	Extender Daughter Board	PCB00862-00_A	2305108213	2024-12-12	

5. EUT Features

The herein information is provided by the customer

Intel WRF Lab declines any responsibility for the accuracy of the stated customer provided information, especially if it has any impact on the correctness of test results presented in this report

Brand Name	Intel® BE211D2W
Model Name	BE211D2W, BE211D2W M
Software Version	DRTU.08798.99.0.99
Driver Version	99.0.99.2
Prototype / Production	Production
Supported Radios	802.11b/g/n/ac/ax/be 2.4GHz 802.11a/n/ac/ax/be 5.2GHz 5.6GHz 5.8GHz 5.9GHz 802.11ax/be 6.0GHz Bluetooth 2.4GHz

Antenna Information

Transmitter	Chain A(1)	Chain B(2)
Manufacturer	Intel WRF Lab	Intel WRF Lab
Antenna type	PIFA	PIFA
Part number	WRF-Tri Band-Antenna	WRF-Tri Band-Antenna
Declared antenna gain (dBi)	+3.0	+3.0

6. Remarks and comments

1. No deviations were made from the test methods listed in section 1 of this report

7. Test Verdicts summary

The statement of conformity to applicable standards in the table below are based on the measured values, without taking into account the measurement uncertainties.

7.1. 802.11 b/g/n/ax 2.4GHz

FCC part	RSS part	Test name	Verdict
15.247 (a) (2)	RSS-247 Clause 5.2 (a)	6dB Bandwidth	P
15.247 (b) (3)	RSS-247 Clause 5.4 (d)	Maximum output power and E.I.R.P	P
15.247 (e)	RSS-247 Clause 5.2 (b)	Power spectral density	P
15.247 (d) 15.209	RSS-247 Clause 5.5 RSS-Gen A1 Clause 8.9	Out-of-band Emissions (conducted)	P
15.247 (d) 15.209	RSS-247 Clause 5.5 RSS-Gen A1 Clause 8.9	Spurious Emissions (radiated)	P

P: Pass
F: Fail
NM: Not Measured
NA: Not Applicable

8. Document Revision History

Revision #	Modified by	Revision Details
Rev. 00	K. RIDA	First Issue

Annex A. Test & System Description

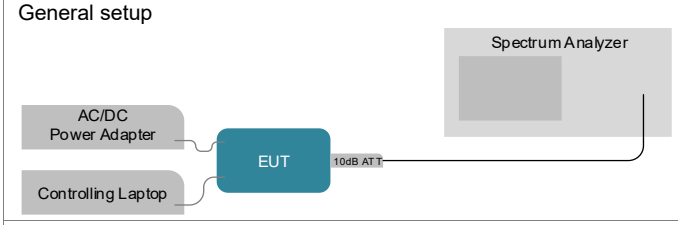
A.1 Measurement System

Measurements were performed using the following setups, made in accordance to the general provisions of FCC OET KDB 558074 D01 DTS Meas Guidance.

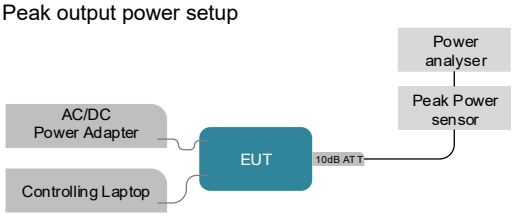
The DUT was installed in a test fixture and this test fixture is connected to a laptop computer and AC/DC power adapter. The laptop computer was used to configure the EUT to continuously transmit at a specified output power using all different modes and modulation schemes, using the Intel proprietary tool DRTU.

Conducted test setup

General setup

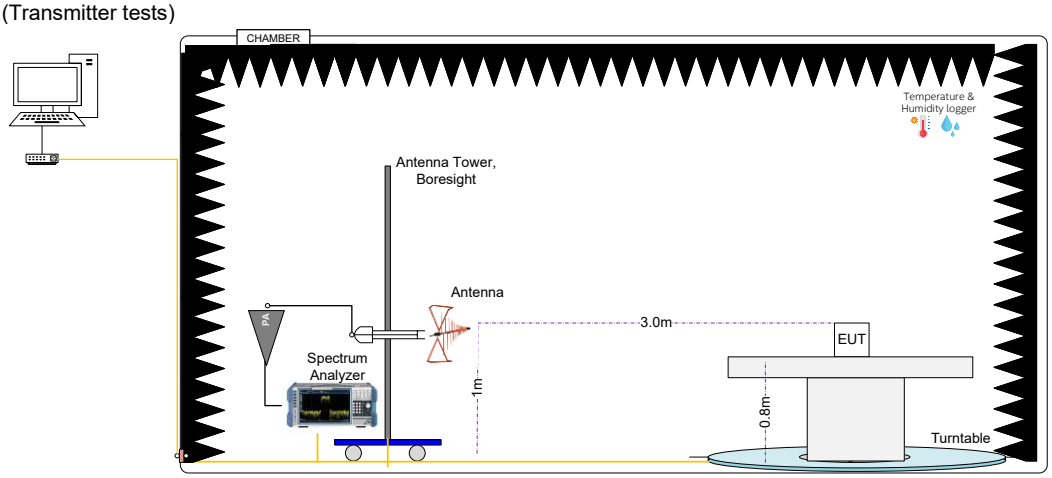


Peak output power setup

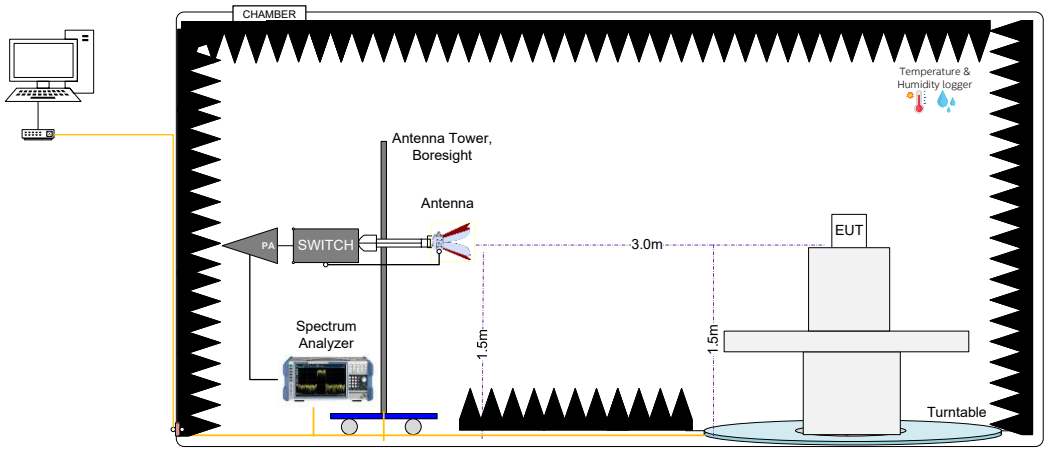


Radiated test setup

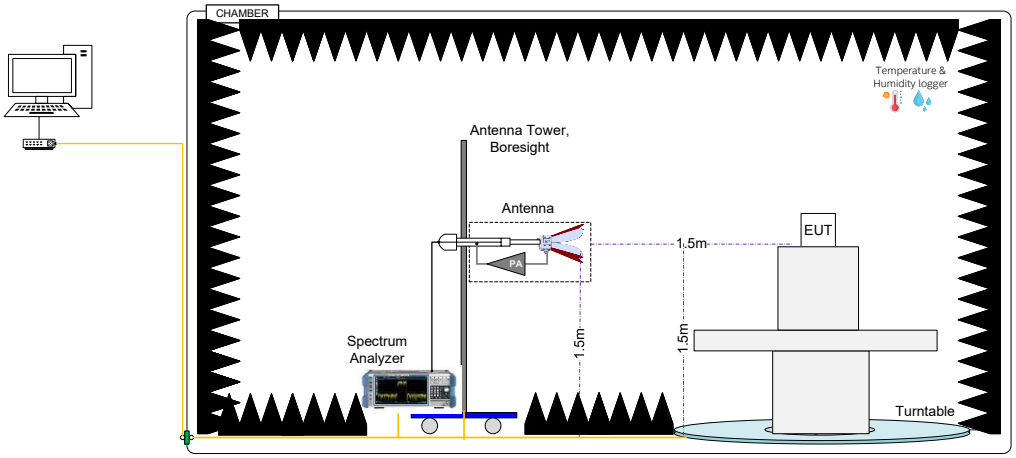
Radiated Setup 30 MHz – 1 GHz (Transmitter tests)



Radiated Setup 1 GHz – 11 GHz (Transmitter tests)



Radiated Setup 11 GHz – 26 GHz (Transmitter tests)



Sample Calculation

The spurious received voltage V(dBµV) in the spectrum Analyzer is converted to Electric field strength using the transducer factor F corresponding to the Rx path Loss:

F (dB/m)= Rx Antenna Factor (dB/m) + Cable losses (dB) – Amplifiers Gain (dBi)
E (dBµV) = V(dBµV) + F (dB/m)

For field strength measurements made at other than the distance at which the applicable limit is specified, the field strength of the emission at the distance specified by the limit is deduced as follows:

$$E_{SpecLimit} = E_{Meas} + 20*\log(D_{Meas}/D_{SpecLimit})$$

where

$E_{SpecLimit}$ is the field strength of the emission at the distance specified by the limit, in dBµV/m
E_{Meas} is the field strength of the emission at the measurement distance, in dBµV/m
D_{Meas} is the measurement distance, in m
$D_{SpecLimit}$ is the distance specified by the limit, in m

A.2 Test Equipment List

Conducted setup

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
159-000	Spectrum Analyzer	FSV40	101072	Rohde & Schwarz	2025-06-16	2027-06-16
019-003	RF cable 50cm	FLC-1M-SMSM	N/A	Mini-circuit	2025-02-20	2026-02-20
019-004	10dB Attenuator + MH4	3M-6	N/A	WEINSCHEL	2025-02-20	2026-02-20
094-006	Temp & Humidity Logger	RMS-HCD-S	24050488	Rotronic	2024-09-02	2026-09-02
413-000	Measurement SW v1.5.4.2	Octopi	N/A	Step AT	N/A	N/A

Radiated Setup #1

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
006-000	Anechoic Chamber	FACT3	5720	ETS-Lindgren	2024-01-17	2026-01-17
006-001	Turn Table	ETS	-	ETS-Lindgren	N/A	N/A
094-002	Thermo-hygrometer sensor	RMS-HCD-S	24050486	Rotronic	2024-09-02	2026-09-02
006-011	Boresight antenna mast	BAM 4.0-P	P/278/2890.01	Maturo	N/A	N/A
006-002	Switch & Positioning systems	EMC Center	00159757	ETS-Lindgren	N/A	N/A
147-000	Spectrum analyzer	FSW43	101847	Rohde & Schwarz	2025-03-07	2027-03-07
006-008	Measurement SW, v11.30.00	EMC32	100623	Rohde & Schwarz	N/A	N/A
301-000	Amplifier 9kHz-1300MHz	8447F	3113A07440	HP	2025-02-11	2026-02-11
006-067	Low Pass Filter 1.6GHz	LPM17671	G002	Micro-Tronics	2025-02-11	2026-02-11
007-034	Broadband RF Power Amplifier 0.5-40.0GHz	DEPA0540-43	2024A02	Diamond Engineering	2025-02-11	2026-02-11
189-000	Double Horn Ridged antenna 10GHz-40GHz	3116C	227716	ETS-Lindgren	2024-05-29	2026-05-29
057-000	Double ridged horn antenna (1GHz to 18GHz)	ETS-Lindgren-3117	167062	ETS-Lindgren	2024-07-23	2026-07-23
006-061	Bi-Log Periodic antenna	CBL6143A	61382	Teseq	2024-11-13	2026-11-13
006-068	RF Switch DC-40GHz	LPM17671	G002	Mini-Circuits	2025-02-11	2026-02-11
261-000	RF Amplifier Used for 1 GHz-11GHz	ETS-Lindgren-3117-PA	00157993	ETS-Lindgren	2025-02-11	2026-02-11
009-007	Filter HPF 11GHz	Mini-Circuits-ZHSS-k11G+	84931831830	Mini-Circuits	2025-02-11	2026-02-11
006-051	RF Cable 1.0m	CBL-1.5M-SMSM+	202879	Mini-Circuits	2025-03-12	2026-03-12
006-066	Cable 7m – 25MHz to 40GHz	R286304174	20.46.370	Radiall	2025-02-10	2026-02-10
006-063	Cable 30cm – 1GHz to 40GHz	PE371-12	-	Pasternack	2025-02-10	2026-02-10
006-064	Cable 30cm – 1GHz to 40GHz	PE371-12	-	Pasternack	2025-02-10	2026-02-10
006-065	Cable 60cm – 25MHz to 1GHz	PE300-24	-	Pasternack	2025-02-10	2026-02-10

N/A: Not Applicable

Radiated Setup #2

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
007-000	Anechoic chamber	RFD-FA-100	5996	ETS Lindgren	2024-01-18	2026-01-18
138-000	Spectrum Analyzer	FSV40**	101556	Rohde & Schwarz	2024-02-27	2026-02-27
137-000	Spectrum Analyzer	FSW67*	103266	Rohde & Schwarz	2025-02-11	2027-02-11
007-007	Double Ridge Horn Antenna (1- 18GHz)	3117	00152266	ETS Lindgren	2024-03-26	2026-03-26
026-008	Low noise amplifier 1-18GHz	LA1018N3209	J10100000407	A-INFO	2025-02-19	2026-02-19
007-004	Switch & Positioner	EMCenter	00162359	ETS Lindgren	N/A	N/A
007-006	EMControl & EMSwitch	EMCenter	00151232	ETS Lindgren	N/A	N/A
007-036	SMA-SMA 6.5m Cable	140-8500-11-51-001	001	Atem	2025-03-12	2026-03-12
007-005	Measurement SW, v11.30.00	EMC32	100401	Rohde & Schwarz	N/A	N/A
007-001	Styrofoam Column, 151mm	-	-	-	N/A	N/A
007-002	Turntable	-	-	ETS Lindgren	N/A	N/A
007-003	Antenna Tower	2171B-3.0M	00150123	ETS Lindgren	N/A	N/A
007-015	N-SMA 1.5m Cable	-	-	Spirent	2025-02-19	2026-02-19
007-018	SMA-SMA 1.2m Cable	0500990991200KE	-	Radiall	2025-02-19	2026-02-19
094-001	Temp & Humidity Logger	RMS-HCD-S	24050487	Rotronic	2024-09-02	2026-09-02

*Used from 12/06/2025 to 16/06/2025
**Used since 17/06/2025

N/A: Not Applicable

Shared Radiated Equipment

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
412-000	DRTU Power finder V2.1	-	-	Intel	N/A	N/A
139-000	Power Sensor	NRP-Z81	104383	Rohde & Schwarz	2025-05-20	2027-05-20
140-000	Power Sensor	NRP-Z81	104382	Rohde & Schwarz	2024-04-04	2026-04-04

N/A: Not Applicable

A.3 Measurement Uncertainty Evaluation

The system uncertainty evaluation is shown in the table below with a coverage factor of k = 2 to indicate a 95% level of confidence:

Measurement type	Uncertainty	Unit
Timing	±0.12	%
Power Spectral density	±1.47	dB
Occupied bandwidth	±2.07	%
Conducted Power	±1.03	dB
Conducted Spurious Emission <26.5 GHz	±2.93	dB
Radiated tests <1GHz	±6.33	dB
Radiated tests 1GHz – 26.5 GHz	±5.87	dB

Annex B. Test Results DTS

The herein test results were performed by:

Test case measurement	Test Peronnel
6dB Bandwidth	Zayd Ouachicha
Maximum output power and E.I.R.P	Zayd Ouachicha
Power spectral density	Zayd Ouachicha
Out-of-band Emissions (conducted)	Zayd Ouachicha
Spuirous Emissions (radiated)	K. RIDA

B.1 Test Conditions

For 802.11b/g modes the EUT can transmit at both CHAIN A and CHAIN B RF outputs individually, but not simultaneously.

For 802.11n20 & 802.11ax/be20 (20 MHz channel bandwidth), 802.11n40 & 802.11ax/be40 (40MHz channel bandwidth) modes the EUT can transmit at both CHAIN A and CHAIN B RF outputs individually, and also simultaneously.

The following data rates were selected based on preliminary testing that identified those rates as the worst cases for output power and spurious levels at the band edges:

Transmission	Mode	Bandwidth (MHz)	Worst Case Data Rate
SISO	802.11b	20	1Mbps
	802.11g	20	6Mbps
	802.11n	20	HT0
		40	HT0
	802.11ax/be	20	MCS0
		40	MCS0
MIMO	802.11n	20/40	HT8
	802.11ax/be	20/40	MCS0

B.2 Test Results Tables

B.2.1 6dB & 99% Bandwidth

Test limits

FCC part	RSS part	Limits
15.247 (a) (2)	RSS-247 Clause 5.2 (a)	Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Test procedure

The conducted setup shown in section *Test & System Description* was used to measure the 6dB & 99% Bandwidth. The antenna terminal of the EUT is connected to the spectrum through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.

Results tables

Mode	Rate	Antenna	Channel	Freq [MHz]	6dB BW [MHz]	99% BW [MHz]
802.11b	1Mbps	SISO A	1	2412	9.02	13.50
			7	2442	8.57	13.49
			11	2462	8.57	13.51
			12	2467	8.56	13.50
			13	2472	8.58	13.52
		SISO B	1	2412	8.09	13.51
			7	2442	9.04	13.51
			11	2462	8.55	13.51
			12	2467	9.02	13.49
			13	2472	9.05	13.48
802.11g	6Mbps	SISO A	1	2412	15.73	16.67
			7	2442	15.05	16.65
			11	2462	15.31	16.67
			12	2467	15.01	16.70
			13	2472	15.65	16.73
		SISO B	1	2412	15.11	16.68
			7	2442	15.29	16.69
			11	2462	15.01	16.71
			12	2467	16.34	16.41
			13	2472	16.34	16.41
802.11n20	HT0	SISO A	1	2412	13.80	17.77
			7	2442	14.91	17.78
			11	2462	14.99	17.80
			12	2467	14.03	17.78
			13	2472	15.65	17.80
		SISO B	1	2412	15.08	17.77
			7	2442	15.12	17.76
			11	2462	13.82	17.78
			12	2467	17.59	17.59
			13	2472	17.59	17.60
	HT8	MIMO A	1	2412	15.07	17.77
			7	2442	16.27	17.76
			11	2462	16.25	17.81
			12	2467	17.18	17.77
			13	2472	16.03	17.81
		MIMO B	1	2412	17.14	17.77
			7	2442	15.32	17.80
			11	2462	15.02	17.75
			12	2467	17.59	17.59
			13	2472	17.60	17.60
802.11n40	HT0	SISO A	3	2422	35.04	36.13
			7	2442	33.77	36.09
			9	2452	35.06	**43.34**
			10	2457	32.46	36.10
			11	2462	30.45	36.12
		SISO B	3	2422	34.97	36.12
			7	2442	32.92	36.05
			9	2452	35.10	36.03
			10	2457	36.34	36.26
			11	2462	36.34	36.25
	HT8	MIMO A	3	2422	35.06	36.12
			7	2442	35.04	36.03
			9	2452	35.39	36.10
			10	2457	32.52	36.02
			11	2462	33.77	36.11
		MIMO B	3	2422	34.38	36.04
			7	2442	33.87	36.04
			9	2452	33.79	35.94
			10	2457	36.36	36.25
			11	2462	36.36	36.21

Max Value

Mode	Rate	Antenna	Channel	Freq [MHz]	RU config.	6dB BW [MHz]	99% BW [MHz]
802.11ax/be20	MCS0	SISO A	1	2412	Full	16.43	18.91
					26/0	2.02	17.89
					52/37	16.93	17.71
					106/53	17.15	17.29
			7	2442	Full	15.09	18.90
			11	2462	Full	2.07	18.40
			12	2467	Full	16.94	17.67
			13	2472	Full	17.12	17.76
					26/8	15.10	18.93
					52/40	2.00	18.42
					106/54	16.98	17.57
		SISO B	1	2412	Full	17.01	17.53
					26/0	15.14	18.92
					52/37	2.07	17.91
					106/53	16.93	17.45
			7	2442	Full	17.04	17.89
			11	2462	Full	16.91	18.92
			12	2467	Full	17.59	18.92
			13	2472	Full	18.28	18.91
					26/8	15.77	**18.93**
					52/40	17.02	18.92
					106/54	17.71	18.91
		MIMO A	1	2412	Full	17.92	**18.93**
					26/0	15.37	**18.93**
					52/37	17.77	**18.93**
					106/53	15.07	18.91
			7	2442	Full	18.04	18.91
			11	2462	Full	15.62	18.93
			12	2467	Full	18.46	18.75
			13	2472	Full	1.94	17.64
					26/8	15.61	17.29
					52/40	16.99	17.43
					106/54	18.61	18.76
		MIMO B	1	2412	Full	1.96	17.62
					26/0	16.92	17.32
					52/37	16.95	17.26
					106/53	**18.63**	18.74
			7	2442	Full	1.93	17.52
			11	2462	Full	16.92	17.48
			12	2467	Full	15.63	17.57
			13	2472	Full	18.32	18.76
					26/8	1.99	17.75
					52/40	13.18	17.93
					106/54	16.97	17.43
802.11ax/be40	MCS0	SISO A	3	2422	Full	34.62	37.53
					242/61	15.57	18.86
			7	2442	Full	34.96	37.53
			9	2452	Full	15.86	18.86
			10	2457	Full	35.05	37.55
			11	2462	Full	16.15	18.87
					242/62	35.01	37.54
		SISO B	3	2422	Full	16.35	18.87
					242/61	35.40	37.55
			7	2442	Full	37.34	37.53
			9	2452	Full	35.14	37.54
			10	2457	Full	34.34	37.55
			11	2462	Full	32.60	37.55
					242/62	33.84	37.50
		MIMO A	3	2422	Full	36.23	37.55
					242/61	35.61	37.53
			7	2442	Full	36.74	37.52
			9	2452	Full	34.85	37.46
			10	2457	Full	34.97	37.54
			11	2462	Full	33.15	37.52
					242/62	37.60	37.62
		MIMO B	3	2422	Full	18.16	18.65
					242/61	37.68	37.62
			7	2442	Full	18.64	18.66
			9	2452	Full	**37.80**	37.61
			10	2457	Full	18.15	18.64
			11	2462	Full	37.52	37.63
					242/62	18.36	18.65

Max Value

B.2.2 Maximum Output Power and antenna gain

Test limits

	Limits
FCC Part 15.247 (b) (3)	(b) The maximum peak conducted output power of the intentional radiator shall not exceed the following: (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. (4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi.
RSS-247 Clause 5.4 (d)	For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1W. The e.i.r.p. shall not exceed 4 W, except as provided in section 5.4(e). As an alternative to a peak power measurement, compliance can be based on a measurement of the maximum conducted output power. The maximum conducted output power is the total transmit power delivered to all antennas and antenna elements, averaged across all symbols in the signalling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or transmitting at a reduced power level. If multiple modes of operation are implemented, the maximum conducted output power is the highest total transmit power occurring in any mode.

Test procedure

The Maximum Peak Conducted Output Power was measured using a broadband peak power meter methods for 20MHz and 40MHz channel bandwidth as authorized in chapter 2.0 "*Power limits, definitions and device configuration"* of FCC OET KDB 558074 D01

For MIMO mode, according to the measure-and-sum approach defined in FCC OET KDB 662911 D01 - Guidance for Emission Testing of Transmitters with Multiple Outputs in the Same Band, the conducted emission level (e.g., transmit power or power in specified bandwidth) is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically in linear power units to determine the total emission level from the device.

The EIRP power (dBm) is calculated by adding the declared maximum antenna gain to the measured conducted power.

The conducted setup shown in section *Test & System Description* was used to measure the maximum conducted output power. The antenna terminal of the EUT is connected to the spectrum through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.

Results tables:

Maximum peak power are shown in table below with min and max values highlighted. Maximum average output power are shown for indicative purpose only.

Duty Cycle

Mode	Rate	Antenna	Duty Cycle [%]
802.11b	1Mbps	SISO A	99.4
		SISO B	99.4
802.11g	6Mbps	SISO A	97.8
		SISO B	97.8
802.11n20	HT0	SISO A	98.9
		SISO B	98.9
	HT8	MIMO A	98.9
		MIMO B	98.9
802.11ax/be20	HE0	SISO A	98.8
		SISO B	98.8
		MIMO A	98.8
		MIMO B	98.8
802.11n40	HT0	SISO A	98.8
		SISO B	98.8
	HT8	MIMO A	98.8
		MIMO B	98.8
802.11ax/be40	HE0	SISO A	98.8
		SISO B	98.8
		MIMO A	98.8
		MIMO B	98.8

Mode	Rate	# Ch	Freq [MHz]	Ant	Meas Peak Cond.Power [dBm]	Peak Cond.Power [mW]	Meas. Avg Cond.Power [dBm]	Max. Avg Cond.Power* [dBm]	Avg Cond.Power [mW]
802.11b	1Mbps	1	2412	SISO A	24.43	277.33	21.45	21.45	139.64
				SISO B	24.36	272.90	21.75	21.75	149.62
		7	2442	SISO A	25.17	328.85	22.10	22.10	162.18
				SISO B	25.22	332.66	21.94	21.94	156.31
		11	2462	SISO A	25.02	317.69	21.89	21.89	154.53
				SISO B	24.94	311.89	21.77	21.77	150.31
		12	2467	SISO A	23.86	243.22	20.84	20.84	121.34
				SISO B	23.92	246.60	20.87	20.87	122.18
		13	2472	SISO A	21.64	145.88	18.68	18.68	73.79
				SISO B	21.72	148.59	18.75	18.75	74.99
802.11g	6Mbps	1	2412	SISO A	26.07	404.58	20.46	20.56	113.67
				SISO B	26.11	408.32	20.26	20.36	108.56
		7	2442	SISO A	26.14	411.15	21.03	21.13	129.62
				SISO B	26.20	416.87	20.52	20.62	115.26
		11	2462	SISO A	26.09	406.44	20.74	20.84	121.24
				SISO B	26.14	411.15	20.92	21.02	126.37
		12	2467	SISO A	23.20	208.93	16.92	17.02	50.31
				SISO B	23.28	212.81	16.49	16.59	45.57
		13	2472	SISO A	26.08	405.51	13.55	13.65	23.16
				SISO B	26.12	409.26	13.74	13.84	24.19
802.11n20	HT0	1	2412	SISO A	26.05	402.72	20.45	20.45	110.92
				SISO B	26.11	408.32	20.25	20.25	105.93
		7	2442	SISO A	26.14	411.15	20.75	20.75	118.85
				SISO B	26.20	416.87	20.67	20.67	116.68
		11	2462	SISO A	26.09	406.44	20.49	20.49	111.94
				SISO B	26.13	410.20	20.75	20.75	118.85
		12	2467	SISO A	22.41	174.18	15.92	15.92	39.08
				SISO B	22.38	172.98	16.46	16.46	44.26
		13	2472	SISO A	26.09	406.44	13.55	13.55	22.65
				SISO B	26.09	406.44	13.81	13.81	24.04
	HT8	1	2412	MIMO A	24.57	286.42	18.04	18.04	63.68
				MIMO B	24.82	303.39	18.15	18.15	65.31
				Combined A+B	27.71	589.81	21.11	21.11	128.99
		7	2442	MIMO A	25.97	395.37	19.54	19.54	89.95
				MIMO B	26.10	407.38	19.77	19.77	94.84
				Combined A+B	29.05	**802.75**	22.67	22.67	184.79
		11	2462	MIMO A	24.89	308.32	18.98	18.98	79.07
				MIMO B	25.06	320.63	19.11	19.11	81.47
				Combined A+B	27.99	628.95	22.06	22.06	160.54
		12	2467	MIMO A	20.15	103.51	13.75	13.75	23.71
				MIMO B	20.41	109.90	14.00	14.00	25.12
				Combined A+B	23.29	213.41	16.89	16.89	48.83
		13	2472	MIMO A	25.17	328.85	12.83	12.83	19.19
				MIMO B	25.34	341.98	13.12	13.12	20.51
				Combined A+B	28.27	670.83	15.99	15.99	39.70
802.11n40	HT0	3	2422	SISO A	26.11	408.32	19.51	19.51	89.33
				SISO B	26.14	411.15	19.71	19.71	93.54
		7	2442	SISO A	26.15	412.10	20.66	20.66	116.41
				SISO B	26.20	416.87	19.95	19.95	98.86
		9	2452	SISO A	26.12	409.26	19.78	19.78	95.06
				SISO B	26.17	414.00	18.96	18.96	78.70
		10	2457	SISO A	24.44	277.97	15.86	15.86	38.55
				SISO B	24.43	277.33	15.29	15.29	33.81
		11	2462	SISO A	26.08	405.51	14.38	14.38	27.42
				SISO B	26.19	415.91	14.79	14.79	30.13
	HT8	3	2422	MIMO A	23.88	244.34	18.08	18.08	64.27
				MIMO B	23.99	250.61	18.23	18.23	66.53
				Combined A+B	26.95	494.95	21.17	21.17	130.80
		7	2442	MIMO A	26.02	399.94	18.71	18.71	74.30
				MIMO B	26.11	408.32	18.93	18.93	78.16
				Combined A+B	29.08	**808.26**	21.83	21.83	152.46
		9	2452	MIMO A	24.96	313.33	18.08	18.08	64.27
				MIMO B	24.86	306.20	18.20	18.20	66.07
				Combined A+B	27.92	619.52	21.15	21.15	130.34
		10	2457	MIMO A	20.55	113.50	12.22	12.22	16.67
				MIMO B	20.41	109.90	12.36	12.36	17.22
				Combined A+B	23.49	223.40	15.30	15.30	33.89
		11	2462	MIMO A	25.55	358.92	13.25	13.25	21.13
				MIMO B	25.57	360.58	13.33	13.33	21.53
				Combined A+B	28.57	719.50	16.30	16.30	42.66

* Duty cycle compensated

Mode	Rate	# Ch	Freq [MHz]	Antenna	RU config	Meas Peak Cond.Power [dBm]	Peak Cond.Power [mW]	Meas. Avg Cond.Power [dBm]	Max. Avg Cond.Power* [dBm]	Avg Cond.Power [mW]
802.11ax/be20	MCS0	1	2412	SISO A	Full	26.01	399.02	19.85	19.85	96.61
					26/0	26.11	408.32	21.30	21.30	134.90
					52/37	26.07	404.58	21.42	21.42	138.68
					106/53	26.06	403.65	21.40	21.40	138.04
				SISO B	Full	26.05	402.72	20.15	20.15	103.51
					26/0	26.16	413.05	21.44	21.44	139.32
					52/37	26.17	414.00	21.46	21.46	139.96
					106/53	26.14	411.15	21.63	21.63	145.55
				MIMO A	Full	23.72	235.50	17.93	17.93	62.09
					26/0	25.92	390.84	20.77	20.77	119.40
					52/37	26.02	399.94	18.30	18.30	67.61
					106/53	25.96	394.46	20.65	20.65	116.14
				MIMO B	Full	23.62	230.14	17.96	17.96	62.52
					26/0	25.99	397.19	20.64	20.64	115.88
					52/37	25.99	397.19	18.75	18.75	74.99
					106/53	25.97	395.37	20.66	20.66	116.41
				Combined A+B	Full	26.68	465.65	20.96	20.96	124.60
					26/0	28.97	788.03	23.72	23.72	235.28
					52/37	29.02	797.14	21.54	21.54	142.60
					106/53	28.98	789.82	23.67	23.67	232.56
		7	2442	SISO A	Full	26.14	411.15	20.87	20.87	122.18
				SISO B	Full	26.21	417.83	20.38	20.38	109.14
				MIMO A	Full	25.99	397.19	19.61	19.61	91.41
				MIMO B	Full	26.06	403.65	19.63	19.63	91.83
				Combined A+B	Full	29.04	800.84	22.63	22.63	183.24
		11	2462	SISO A	Full	26.13	410.20	20.34	20.34	108.14
				SISO B	Full	26.10	407.38	20.63	20.63	115.61
				MIMO A	Full	24.93	311.17	18.86	18.86	76.91
				MIMO B	Full	24.70	295.12	18.98	18.98	79.07
				Combined A+B	Full	27.83	606.29	21.93	21.93	155.98
		12	2467	SISO A	Full	22.31	170.22	15.82	15.82	38.19
				SISO B	Full	22.36	172.19	16.34	16.34	43.05
				MIMO A	Full	19.66	92.47	13.64	13.64	23.12
				MIMO B	Full	19.52	**89.54**	13.88	13.88	24.43
				Combined A+B	Full	22.60	182.01	16.77	16.77	47.55
		13	2472	SISO A	Full	26.03	400.87	13.66	13.66	23.23
					26/8	26.10	407.38	11.98	11.98	15.78
					52/40	26.14	411.15	12.33	12.33	17.10
					106/54	26.14	411.15	12.51	12.51	17.82
				SISO B	Full	26.11	408.32	13.83	13.83	24.15
					26/8	25.93	391.74	12.24	12.24	16.75
					52/40	25.94	392.64	12.63	12.63	18.32
					106/54	25.89	388.15	12.67	12.67	18.49
				MIMO A	Full	25.52	356.45	12.52	12.52	17.86
					26/8	23.30	213.80	11.85	11.85	15.31
					52/40	20.06	101.39	11.52	11.52	14.19
					106/54	20.06	101.39	9.72	9.72	9.38
				MIMO B	Full	25.46	351.56	13.03	13.03	20.09
					26/8	23.34	215.77	11.72	11.72	14.86
					52/40	20.09	102.09	11.82	11.82	15.21
					106/54	20.10	102.33	10.01	10.01	10.02
				Combined A+B	Full	28.50	708.01	15.79	15.79	37.96
					26/8	26.33	429.57	14.80	14.80	30.17
					52/40	23.09	203.49	14.68	14.68	29.40
					106/54	23.09	203.72	12.88	12.88	19.40

* Duty cycle compensated

Mode	Rate	# Ch	Freq [MHz]	Antenna	RU config	Meas Peak Cond.Power [dBm]	Peak Cond.Power [mW]	Meas. Avg Cond.Power [dBm]	Max. Avg Cond.Power* [dBm]	Avg Cond.Power [mW]
802.11ax/be40	MCS0	3	2422	SISO A	Full	26.12	409.26	19.88	19.88	97.27
					242/61	26.01	399.02	19.99	19.99	99.77
				SISO B	Full	26.19	415.91	19.60	19.60	91.20
					242/61	26.16	413.05	20.34	20.34	108.14
				MIMO A	Full	23.51	224.39	17.95	17.95	62.37
					242/61	26.08	405.51	18.07	18.07	64.12
				MIMO B	Full	23.60	229.09	18.13	18.13	65.01
					242/61	26.04	401.79	18.36	18.36	68.55
				Combined A+B	Full	26.57	453.47	21.05	21.05	127.39
					242/61	29.07	807.30	21.23	21.23	132.67
		7	2442	SISO A	Full	26.13	410.20	20.29	20.29	106.91
				SISO B	Full	26.20	416.87	19.86	19.86	96.83
				MIMO A	Full	25.87	386.37	17.91	17.91	61.80
				MIMO B	Full	25.97	395.37	18.76	18.76	75.16
				Combined A+B	Full	28.93	781.73	21.37	21.37	136.96
		9	2452	SISO A	Full	26.10	407.38	19.71	19.71	93.54
				SISO B	Full	26.15	412.10	18.86	18.86	76.91
				MIMO A	Full	24.10	257.04	18.71	18.71	74.30
				MIMO B	Full	24.06	254.68	18.82	18.82	76.21
				Combined A+B	Full	27.09	511.72	21.78	21.78	150.51
		10	2457	SISO A	Full	24.42	276.69	15.56	15.56	35.97
				SISO B	Full	24.34	271.64	15.22	15.22	33.27
				MIMO A	Full	20.26	106.17	14.78	14.78	30.06
				MIMO B	Full	20.04	**100.93**	12.27	12.27	16.87
				Combined A+B	Full	23.16	207.09	16.71	16.71	46.93
		11	2462	SISO A	Full	26.11	408.32	14.36	14.36	27.29
					242/62	26.12	409.26	12.58	12.58	18.11
				SISO B	Full	26.13	410.20	14.73	14.73	29.72
					242/62	25.70	371.54	12.74	12.74	18.79
				MIMO A	Full	25.89	388.15	11.91	11.91	15.52
					242/62	25.16	328.10	12.59	12.59	18.16
				MIMO B	Full	25.96	394.46	13.03	13.03	20.09
					242/62	25.21	331.89	12.11	12.11	16.26
				Combined A+B	Full	28.94	782.61	15.52	15.52	35.61
					242/62	28.20	659.99	15.37	15.37	34.41

* Duty cycle compensated

Max / **Min** Value

B.2.3 Power Spectral Density

Test limits

FCC part	RSS part	Limits
15.247 (e)	RSS-247 Clause 5.2 (b)	For digitally modulated systems, 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 interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test procedure

The peak power spectral density level in the fundamental emission was measured using the *Method PKPSD (peak PSD)* according to section 11.10.2 of ANSI C63.10-2020.

For MIMO mode, the *Measure and add 10 log(N_{ANT}) dB*, (where N_{ANT} is the number of outputs) technique was used according to the Guidance for Emission Testing of Transmitters with Multiple Outputs in the Same Band FCC OET KDB 662911 D01 Multiple Transmitter Output.
With this technique, spectrum measurements are performed at each output of the device, and the quantity 10 log(N_{ANT}) dB is added to each spectrum value before comparing to the emission limit. Number of outputs = 2.

The conducted setup shown in section *Test & System Description* was used to measure the power spectral density. The antenna terminal of the EUT is connected to the spectrum through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.

Results tables

Mode	Rate	# Ch	Freq [MHz]	Ant	PSD Peak [dBm/3kHz]
802.11b	1Mbps	1	2412	SISO A	-0.84
				SISO B	-0.51
		7	2442	SISO A	-0.37
				SISO B	-0.37
		11	2462	SISO A	-0.41
				SISO B	-0.52
		12	2467	SISO A	-1.45
				SISO B	-1.45
		13	2472	SISO A	-3.68
				SISO B	-3.55
802.11g	6Mbps	1	2412	SISO A	-2.60
				SISO B	-3.14
		7	2442	SISO A	-2.23
				SISO B	-3.11
		11	2462	SISO A	-2.91
				SISO B	-2.15
		12	2467	SISO A	-5.54
				SISO B	-6.67
		13	2472	SISO A	-10.72
				SISO B	-10.74
802.11n20	HT0	1	2412	SISO A	-3.55
				SISO B	-2.59
		7	2442	SISO A	-3.61
				SISO B	-3.10
		11	2462	SISO A	-3.49
				SISO B	-2.92
		12	2467	SISO A	-7.60
				SISO B	-7.48
		13	2472	SISO A	-10.97
				SISO B	-11.06
	HT8	1	2412	MIMO A	-5.97
				MIMO B	-5.60
				Combined A+B	-2.77
		7	2442	MIMO A	-4.83
				MIMO B	-3.20
				Combined A+B	-0.93
		11	2462	MIMO A	-4.28
				MIMO B	-4.23
				Combined A+B	-1.24
		12	2467	MIMO A	-9.71
				MIMO B	-10.15
				Combined A+B	-6.91
		13	2472	MIMO A	-10.46
				MIMO B	-11.16
				Combined A+B	-7.79
802.11n40	HT0	3	2422	SISO A	-7.78
				SISO B	-6.47
		7	2442	SISO A	-4.13
				SISO B	-7.22
		9	2452	SISO A	-12.80
				SISO B	-12.79
		10	2457	SISO A	-6.64
				SISO B	-8.91
		11	2462	SISO A	-10.18
				SISO B	-11.20
	HT8	3	2422	MIMO A	-8.26
				MIMO B	-7.79
				Combined A+B	-5.01
		7	2442	MIMO A	-8.14
				MIMO B	-7.73
				Combined A+B	-4.92
		9	2452	MIMO A	-14.47
				MIMO B	-13.48
				Combined A+B	-10.94
		10	2457	MIMO A	-9.55
				MIMO B	-9.14
				Combined A+B	-6.33
		11	2462	MIMO A	-14.71
				MIMO B	-15.05
				Combined A+B	-11.87

Mode	Rate	# Ch	Freq [MHz]	Antenna	RU config	PSD Peak [dBm/3kHz]
802.11ax/be20	MCS0	1	2412	SISO A	Full	-5.04
					26/0	5.32
					52/37	2.48
					106/53	-0.91
				SISO B	Full	-4.11
					26/0	4.80
					52/37	2.35
					106/53	-0.54
				MIMO A	Full	-6.51
					26/0	4.22
					52/37	-0.36
					106/53	-0.81
				MIMO B	Full	-5.85
					26/0	4.10
					52/37	-0.38
					106/53	-1.18
				Combined A+B	Full	-3.16
					26/0	**7.17**
					52/37	2.64
					106/53	2.02
		7	2442	SISO A	Full	-3.92
				SISO B	Full	-3.63
				MIMO A	Full	-4.69
				MIMO B	Full	-4.42
				Combined A+B	Full	-1.54
		11	2462	SISO A	Full	-4.56
				SISO B	Full	-3.90
				MIMO A	Full	-5.51
				MIMO B	Full	-5.30
				Combined A+B	Full	-2.39
		12	2467	SISO A	Full	-9.07
				SISO B	Full	-8.24
				MIMO A	Full	-11.13
				MIMO B	Full	-10.08
				Combined A+B	Full	-7.56
		13	2472	SISO A	Full	-11.25
					26/8	-4.67
					52/40	-6.48
					106/54	-9.73
				SISO B	Full	-11.75
					26/8	-4.51
					52/40	-6.75
					106/54	-10.07
				MIMO A	Full	-12.04
					26/8	-4.23
					52/40	-7.65
					106/54	-12.49
				MIMO B	Full	-11.63
					26/8	-3.23
					52/40	-6.98
					106/54	-11.68
				Combined A+B	Full	-8.82
					26/8	-0.69
					52/40	-4.29
					106/54	-9.06

Mode	Rate	# Ch	Freq [MHz]	Antenna	RU config	PSD Peak [dBm/3kHz]
802.11ax/be40	MCS0	3	2422	SISO A	Full	-8.63
					242/61	-5.15
				SISO B	Full	-7.74
					242/61	-3.81
				MIMO A	Full	-9.31
					242/61	-6.81
				MIMO B	Full	-10.41
					242/61	-5.74
				Combined A+B	Full	-6.81
					242/61	**-3.23**
		7	2442	SISO A	Full	-7.19
				SISO B	Full	-7.91
				MIMO A	Full	-10.17
				MIMO B	Full	-8.76
				Combined A+B	Full	-6.40
		9	2452	SISO A	Full	-13.92
				SISO B	Full	-12.86
				MIMO A	Full	-13.66
				MIMO B	Full	-13.16
				Combined A+B	Full	-16.26
		10	2457	SISO A	Full	-12.94
				SISO B	Full	-15.31
				MIMO A	Full	-13.60
				MIMO B	Full	-12.75
				Combined A+B	Full	-10.25
		11	2462	SISO A	Full	-8.53
					242/62	-8.84
				SISO B	Full	-8.91
					242/62	-8.40
				MIMO A	Full	-5.64
					242/62	-12.56
				MIMO B	Full	-12.55
					242/62	-10.53
				Combined A+B	Full	-15.34
					242/62	-9.29

Max Value

B.2.4 Out-of-band emission (conducted)

Test Limits

<table>
<tr><th>FCC part</th><th>RSS part</th><th>Limits</th></tr>
<tr><td>15.247 (d)</td><td>RSS-247
Clause 5.5</td><td>In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.</td></tr>
<tr><td>15.209</td><td>RSS-Gen A1
Clause 8.9</td><td>Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a):
<table>
<tr><th>Freq Range (MHz)</th><th>Field Stregth (µV/m)</th><th>Field Stregth (dBµV/m)</th><th>Meas. Distance (m)</th></tr>
<tr><td>30-88</td><td>100</td><td>40</td><td>3</td></tr>
<tr><td>88-216</td><td>150</td><td>43.5</td><td>3</td></tr>
<tr><td>216-960</td><td>200</td><td>46</td><td>3</td></tr>
<tr><td>Above 960</td><td>500</td><td>54</td><td>3</td></tr>
</table>
The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
For average radiated emission measurements above 1000 MHz, there is also a limit specified when measuring with peak detector function, corresponding to 20 dB above the indicated values in the table.</td></tr>
</table>

Test procedure

The lower band edge falling in restricted bands was measured using the primary method according to section 11.12.2.5.2 & 11.12.2.4 of ANSI C63.10-2020

The upper band edge was measured using the following methods:

- Integration Method according to 11.12.3.2 of ANSI C63.10-2020
- Primary Method according 11.12.2.5.2 & 11.12.2.4 of ANSI C63.10-2020.

In case of band edge measurements falling in restricted bands, the declared antenna gain is also compensated in the graph.

For band edge measurements falling in restricted bands, the following limits in dBm were applied for the average detector after the conversion from the limits detailed above in dBµV/m, according to FCC 47 CFR part 15 - Subpart C – §15.209(a). The limits in dBm for peak detector are 20dB above the indicated values in the table.

§15.209(a)			Converted values	
Freq Range (MHz)	Distance (m)	Field strength (microvolts/meter)	Field strength (dB microvolts/meter)	Power (dBm)
Above 960	3	500	54.0	-41.2

The conducted setup shown in section *Test & System Description* was used to measure the out-of-band emissions. The antenna terminal of the EUT is connected to the spectrum through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.

See Section B.2.6. for the screenshot results.

B.2.5 Radiated spurious emission

Standard references

<table>
<tr><th>FCC part</th><th>RSS part</th><th>Limits</th></tr>
<tr><td>15.247 (d)
15.209</td><td>RSS-247
Clause 5.5
RSS-Gen A1
Clause 8.9</td><td>Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a):

<table>
<tr><th>Freq Range (MHz)</th><th>Field Stregth (µV/m)</th><th>Field Stregth (dBµV/m)</th><th>Meas. Distance (m)</th></tr>
<tr><td>30-88</td><td>100</td><td>40</td><td>3</td></tr>
<tr><td>88-216</td><td>150</td><td>43.5</td><td>3</td></tr>
<tr><td>216-960</td><td>200</td><td>46</td><td>3</td></tr>
<tr><td>Above 960</td><td>500</td><td>54</td><td>3</td></tr>
</table>

The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz. 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
For average radiated emission measurements above 1000 MHz. there is also a limit specified when measuring with peak detector function corresponding to 20 dB above the indicated values in the table.</td></tr>
</table>

Test procedure

The radiated setups shown in section *Test & System Description* were used to measure the radiated spurious emissions. Depending of the frequency range and bands being tested, different antennas and filters were used.
The final measurement is done by varying the antenna height from 1 to 4 meters, the EUT azimuth over 360º and for both Vertical and Horizontal polarizations.

According to KDB 558074 D01, it might be possible to identify one or more specific operational modes that produce the “worst-case” test results with respect to all of the required technical limits (e.g., output power, power spectral density, unwanted emission power at the band edge and in all spurious emissions, and for each possible output data stream), and then reduce the testing to just these modes on each of the frequencies/channels required per Section 15.31(m).

In order to determine the worst case, a comprehensive evaluation was performed by varying all available bandwidths and operational modes. The results indicated that the narrowest bandwidth (20 MHz) represents the worst case, as it resulted in the lowest margins to the applicable spurious emission limits. Radiated spurious emissions were measured on the lowest, middle and highest channels.

For the 20 MHz bandwidth, only the operational modes identified as worst-case were retained and reported in this test report.

Test Results

Radiated spurious - 30 MHz – 1 GHz

Radiated Spurious – All modes

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
104.7	35.5	Quasi-Peak	43.5	8.1	V
415.2	21.6	Quasi-Peak	46.0	24.4	V

Note 1: The spurious signals detected do not depend on either the operating channel or the modulation mode.

1 GHz – 26.5 GHz, 802.11b, 1Mbps, Chain A

Radiated Spurious – CH11

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
4924.1	49.1	Peak	74.0	24.9	V
4924.1	42.2	Average	54.0	11.8	H
9848.2	56.5	Peak	74.0	17.5	H
9848.2	50.0	Average	54.0	4.0	H
14772.0	43.9	Peak	74.0	30.1	V
14772.0	40.1	Average	54.0	13.9	V
19696.0	46.4	Peak	74.0	27.6	V
19696.0	41.2	Average	54.0	12.8	V
24620.0	47.7	Peak	74.0	26.3	V
24620.0	42.5	Average	54.0	11.5	V

1 GHz – 26.5 GHz, 802.11b, 1Mbps, Chain B

Radiated Spurious – CH1

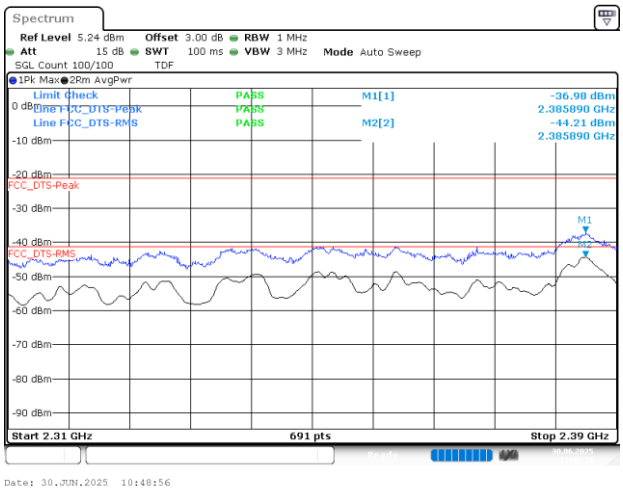
Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
4824.0	49.5	Peak	74.0	24.4	H
4824.0	42.7	Average	54.0	11.3	H
5313.9	51.4	Peak	74.0	22.6	H
5313.9	42.1	Average	54.0	11.9	H
6391.5	55.6	Peak	74.0	18.4	H
6391.5	44.1	Average	54.0	9.9	H
9648.1	56.0	Peak	74.0	18.0	H
9648.1	48.3	Average	54.0	5.7	H
24120.0	49.2	Peak	74.0	24.8	H
24120.0	46.3	Average	54.0	7.7	H

1 GHz – 26.5 GHz, 802.11ax/be20, HE0, Chain A+B

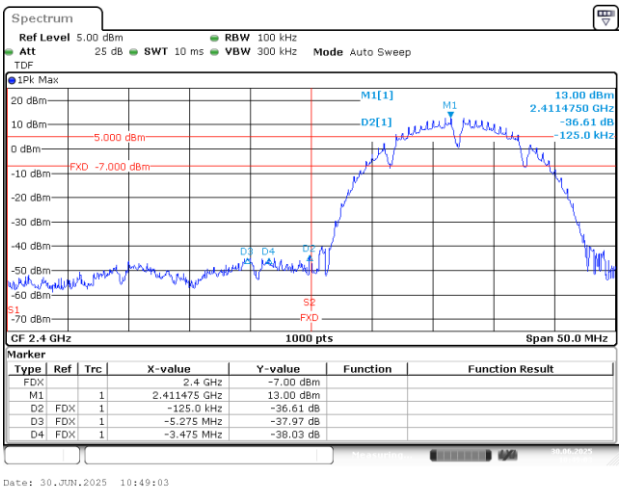
Radiated Spurious – CH11

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
10440.1	61.5	Peak	74.0	12.5	V
10440.1	50.5	Average	54.0	3.5	V
12266.0	39.7	Average	54.0	14.3	H
12266.0	49.5	Peak	74.0	24.5	H

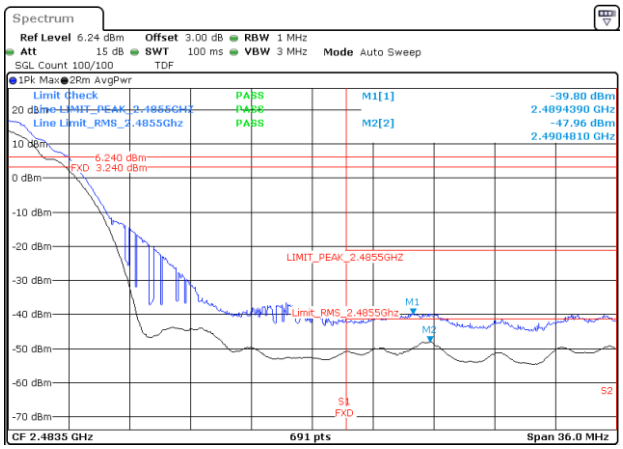
B.2.6 Out of band emissions - band-edge (conducted)



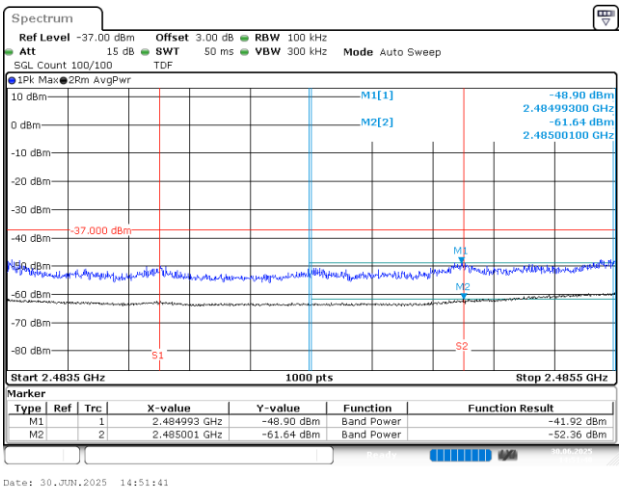
BE-R-LOW, SISO-A, 802.11b-1Mbps, Ch1



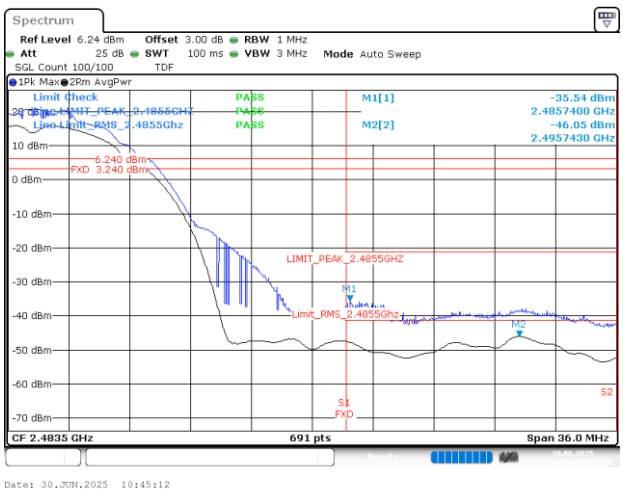
BE-NR, SISO-A, 802.11b-1Mbps, Ch1



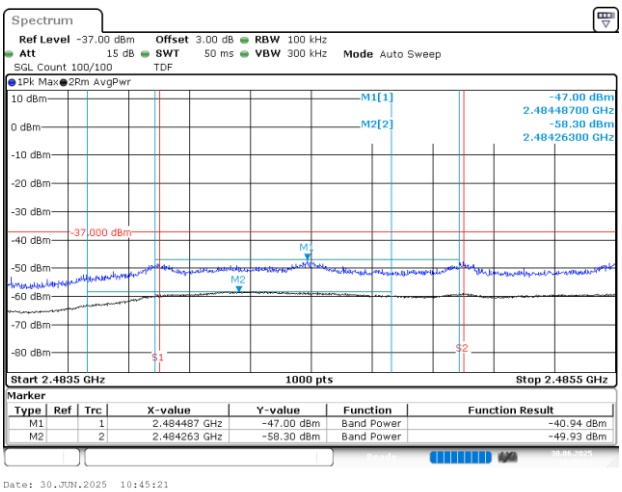
BE-R-HIGH, SISO-A, 802.11b-1Mbps, Ch11



BE-R-HIGH-2MHz, SISO-A, 802.11b-1Mbps, Ch11



BE-R-HIGH, SISO-A, 802.11b-1Mbps, Ch12



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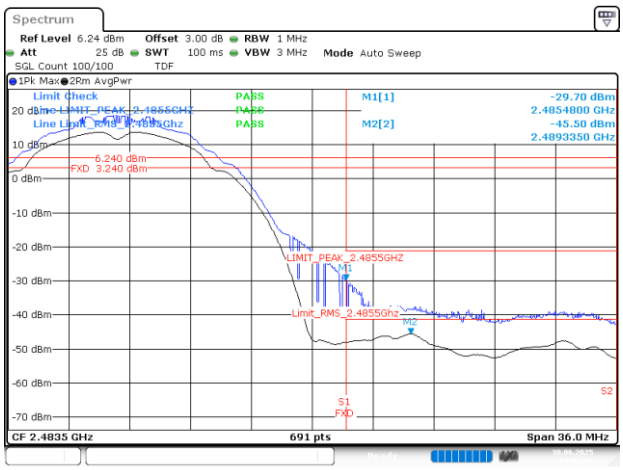
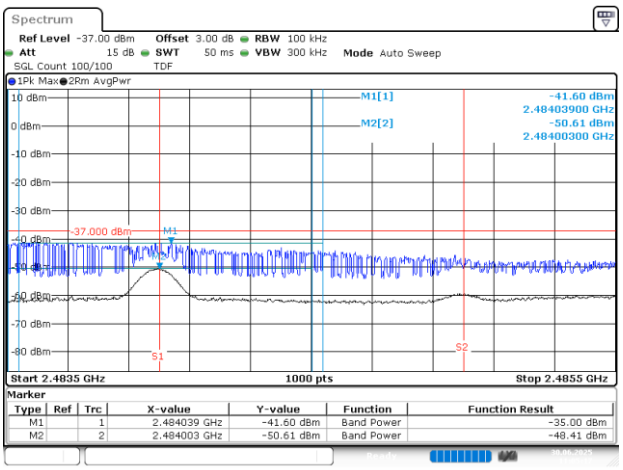
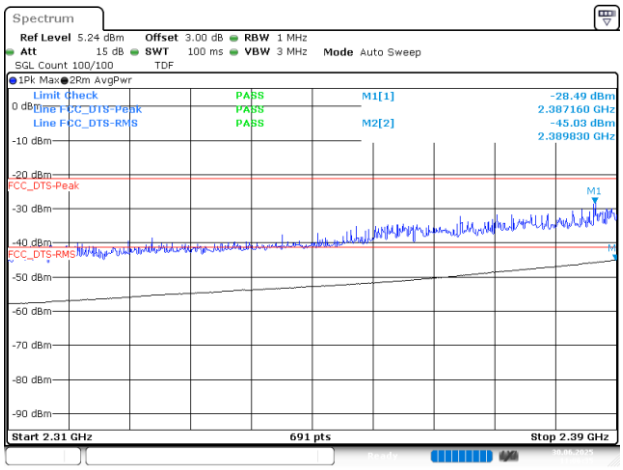


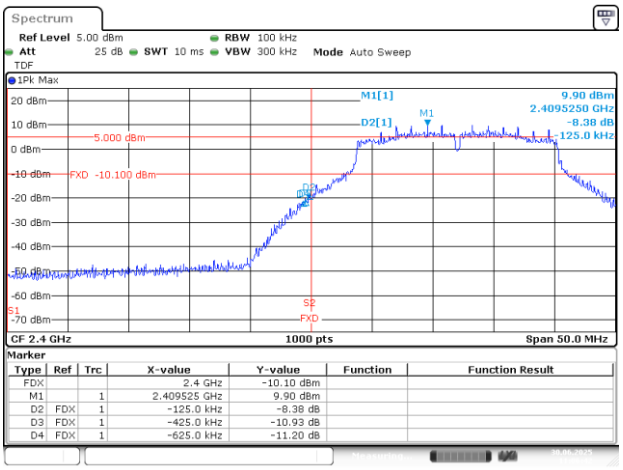
BE-R-HIGH, SISO-A, 802.11b-1Mbps, Ch13



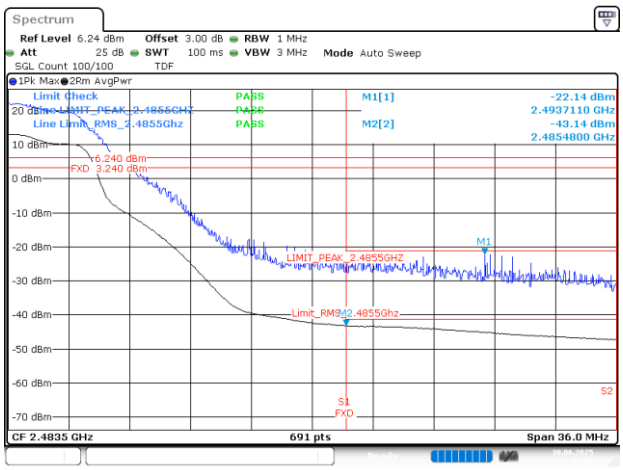
BE-R-HIGH-2MHz, SISO-A, 802.11b-1Mbps, Ch13



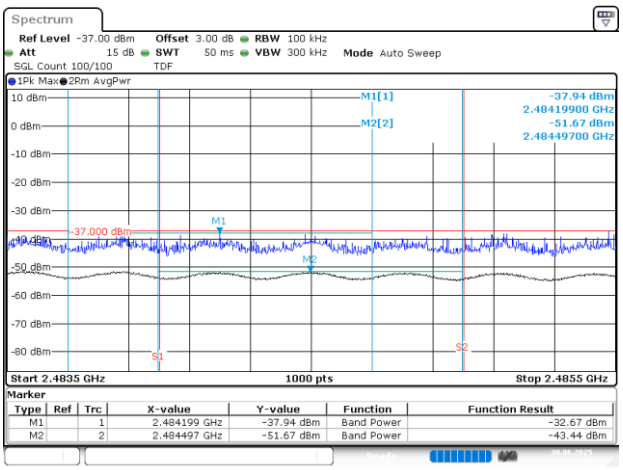
BE-R-LOW, SISO-A, 802.11g-6Mbps, Ch1



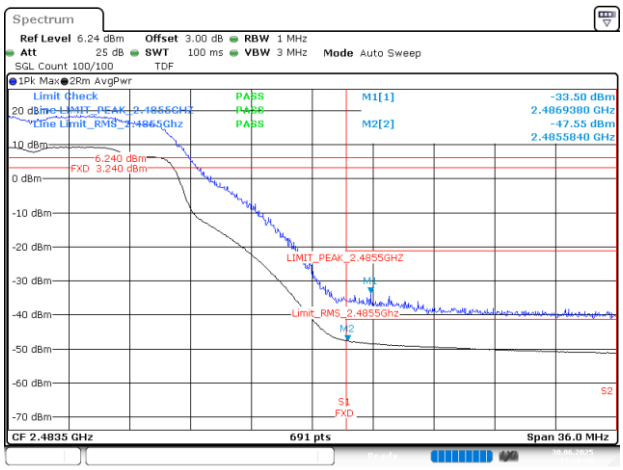
BE-NR, SISO-A, 802.11g-6Mbps, Ch1



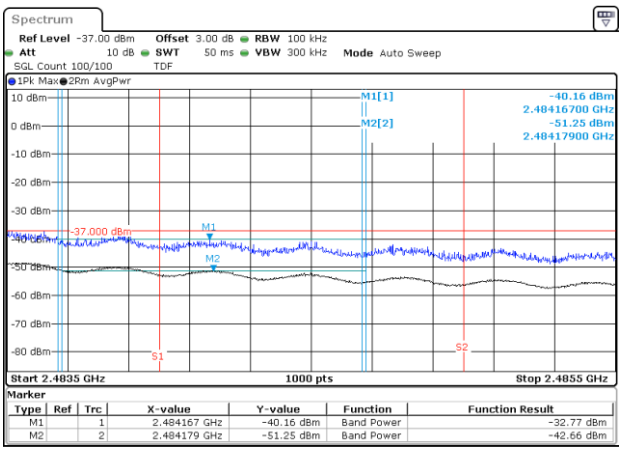
BE-R-HIGH, SISO-A, 802.11g-6Mbps, Ch11



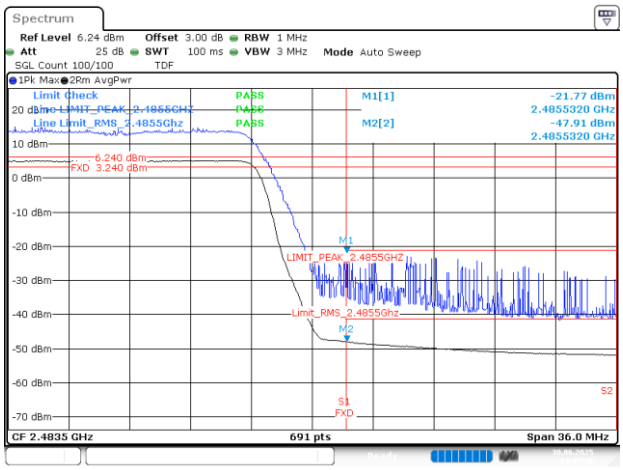
BE-R-HIGH-2MHz, SISO-A, 802.11g-6Mbps, Ch11



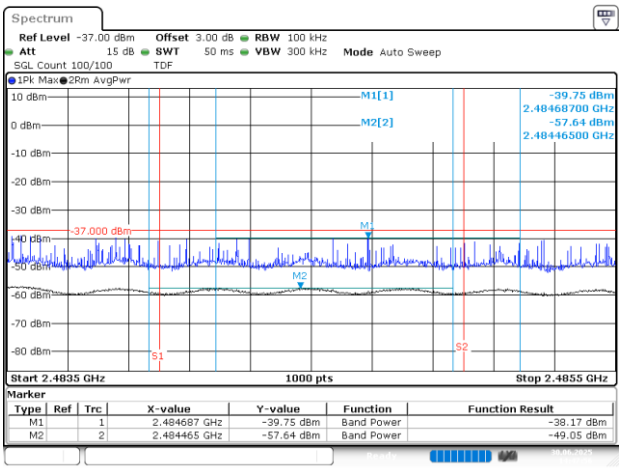
BE-R-HIGH, SISO-A, 802.11g-6Mbps, Ch12



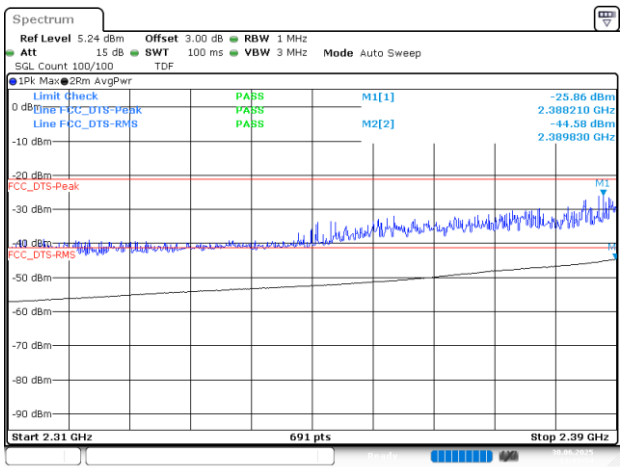
BE-R-HIGH-2MHz, SISO-A, 802.11g-6Mbps, Ch12



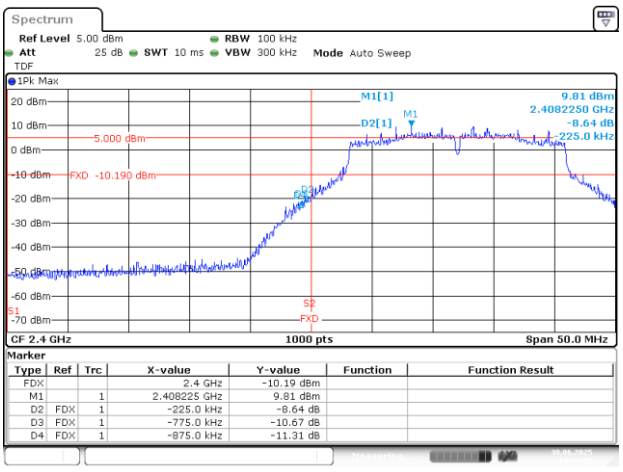
BE-R-HIGH, SISO-A, 802.11g-6Mbps, Ch13



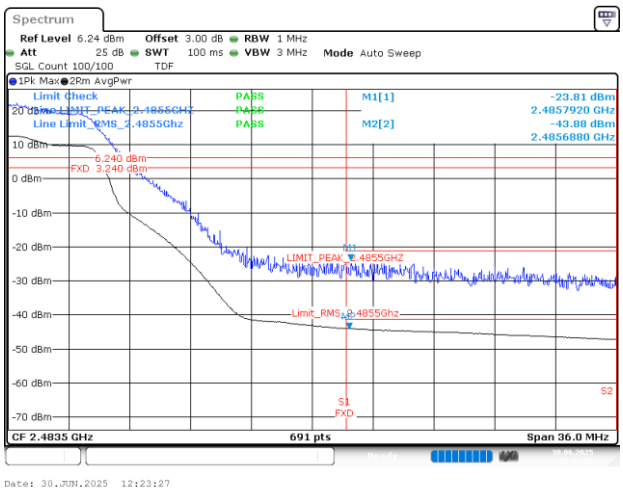
BE-R-HIGH-2MHz, SISO-A, 802.11g-6Mbps, Ch13



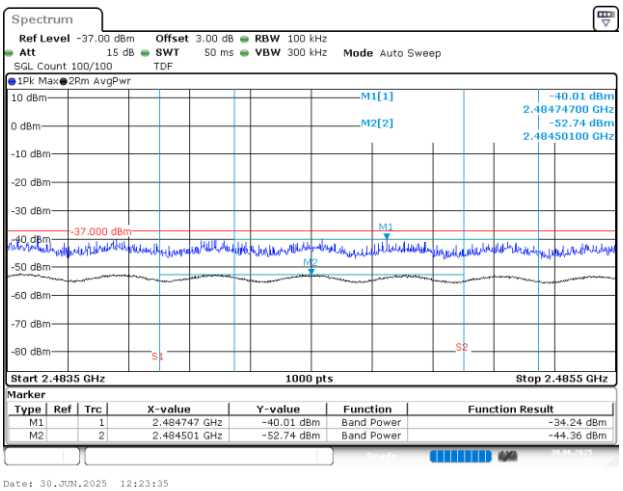
BE-R-LOW, SISO-A, 802.11n20-HT0, Ch1



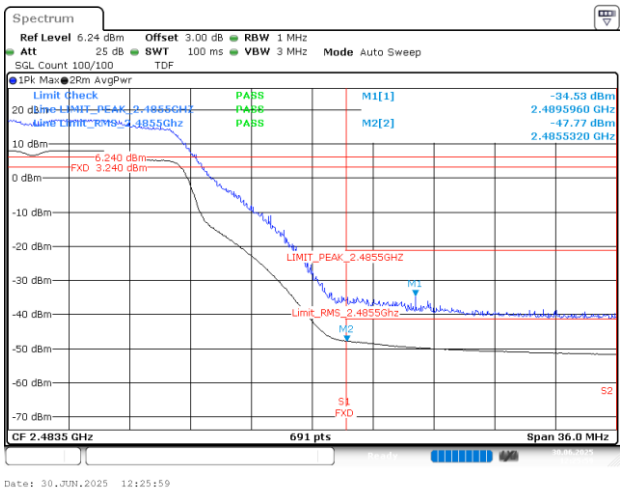
BE-NR, SISO-A, 802.11n20-HT0, Ch1



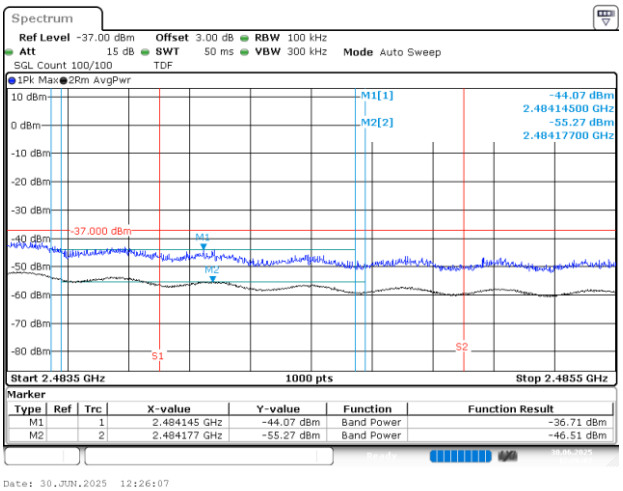
BE-R-HIGH, SISO-A, 802.11n20-HT0, Ch11



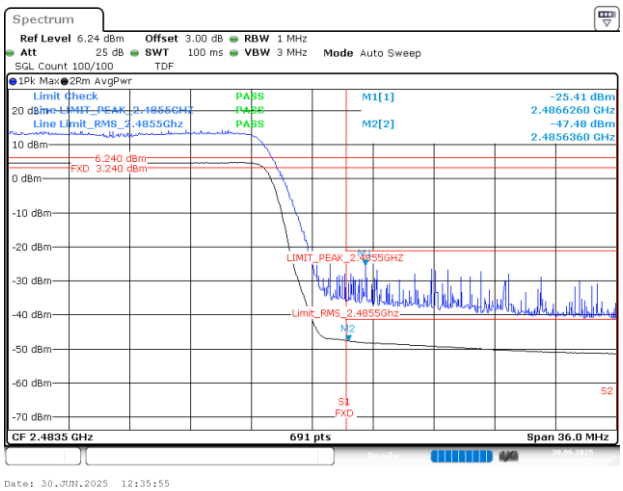
BE-R-HIGH-2MHz, SISO-A, 802.11n20-HT0, Ch11



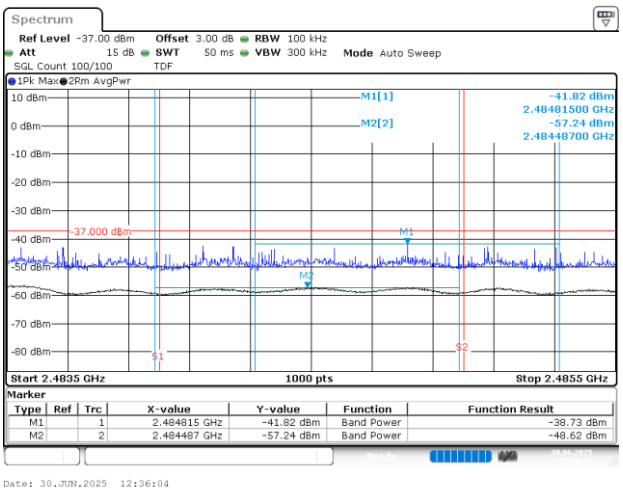
BE-R-HIGH, SISO-A, 802.11n20-HT0, Ch12



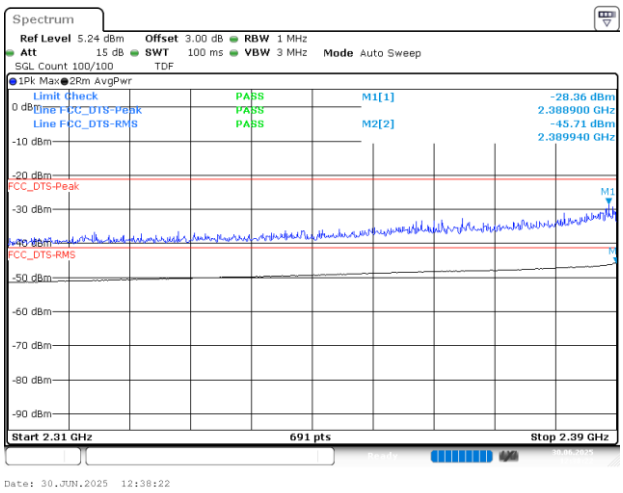
BE-R-HIGH-2MHz, SISO-A, 802.11n20-HT0, Ch12



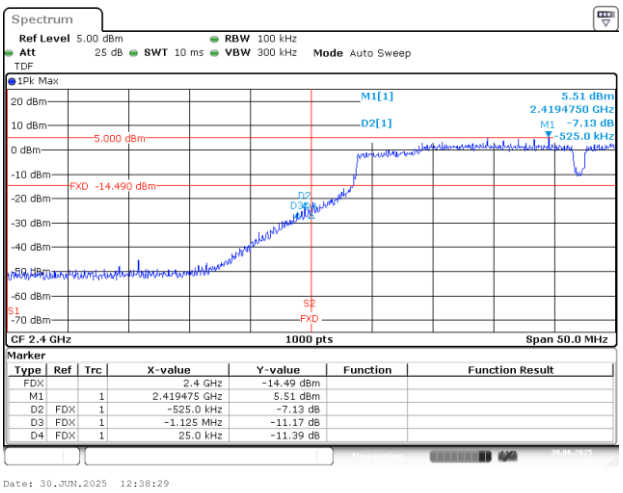
BE-R-HIGH, SISO-A, 802.11n20-HT0, Ch13



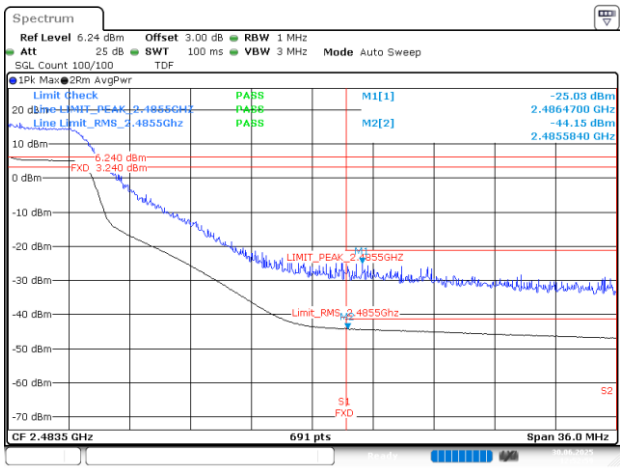
BE-R-HIGH-2MHz, SISO-A, 802.11n20-HT0, Ch13



BE-R-LOW, SISO-A, 802.11n40-HT0, Ch3



BE-NR, SISO-A, 802.11n40-HT0, Ch3



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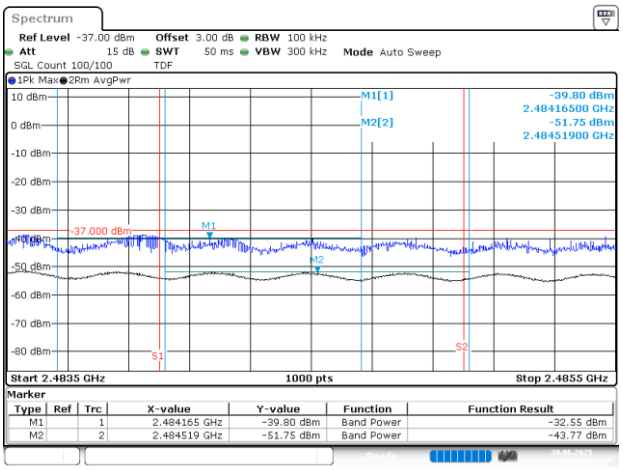
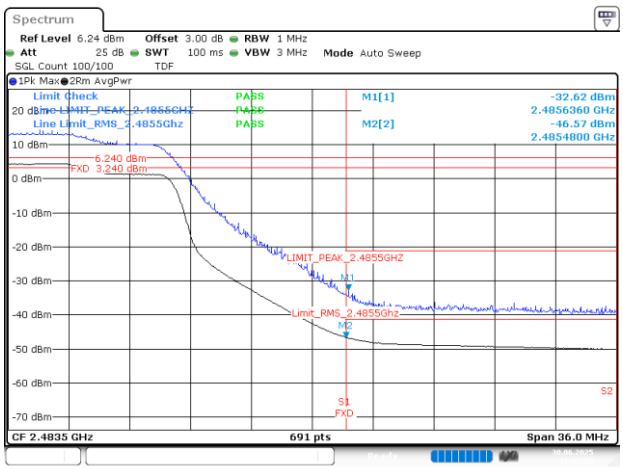
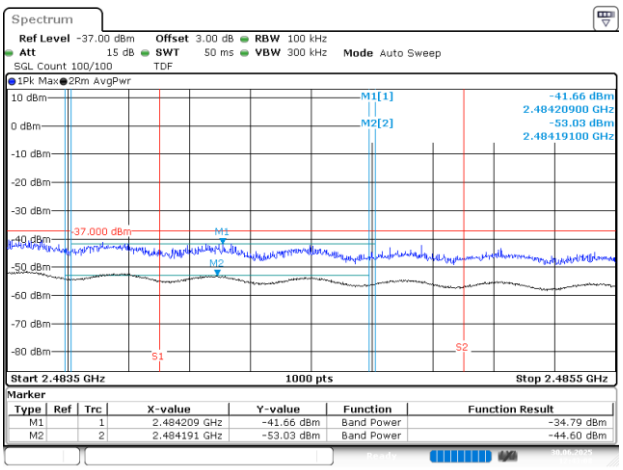


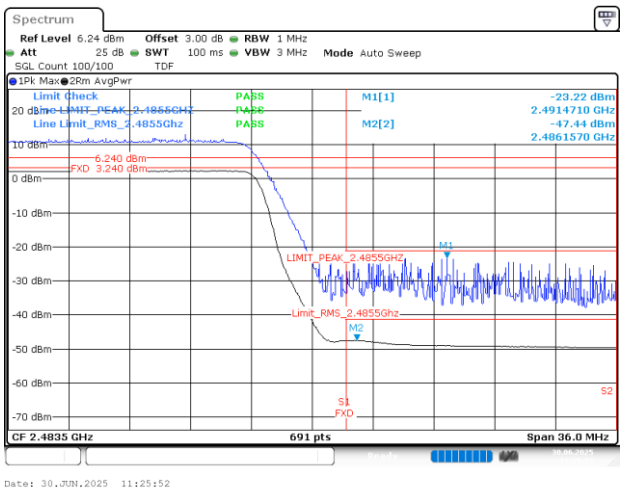
BE-R-HIGH-2MHz, SISO-A, 802.11n40-HT0, Ch9



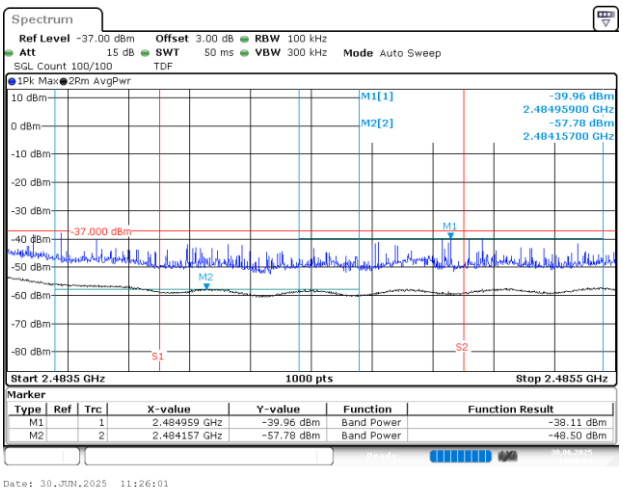
BE-R-HIGH, SISO-A, 802.11n40-HT0, Ch10



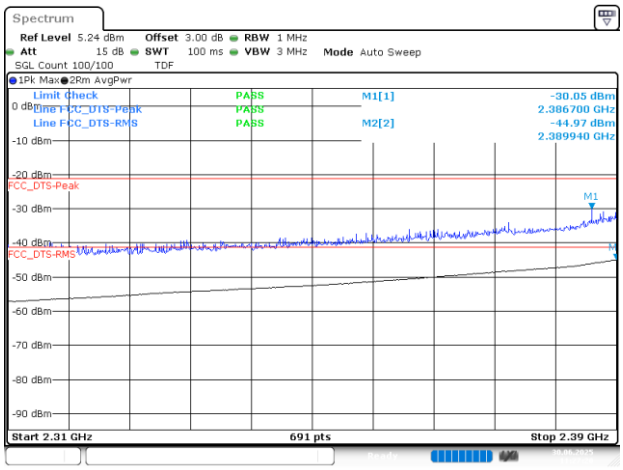
BE-R-HIGH-2MHz, SISO-A, 802.11n40-HT0, Ch10



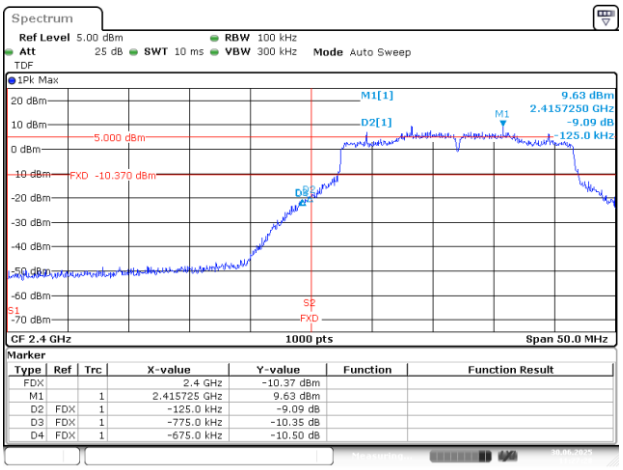
BE-R-HIGH, SISO-A, 802.11n40-HT0, Ch11



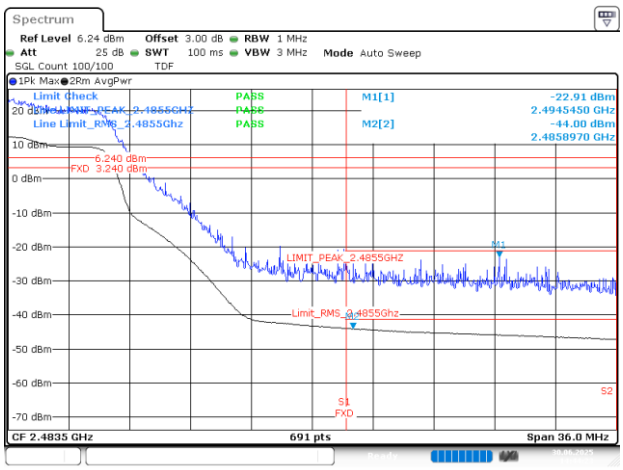
BE-R-HIGH-2MHz, SISO-A, 802.11n40-HT0, Ch11



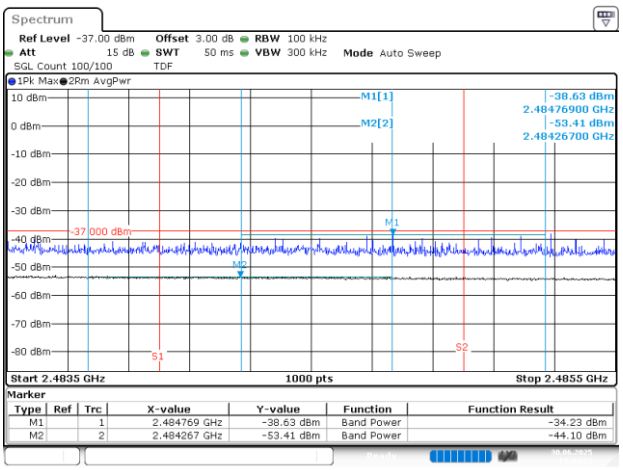
BE-R-LOW, SISO-A, 802.11ax20-HE0, Ch1



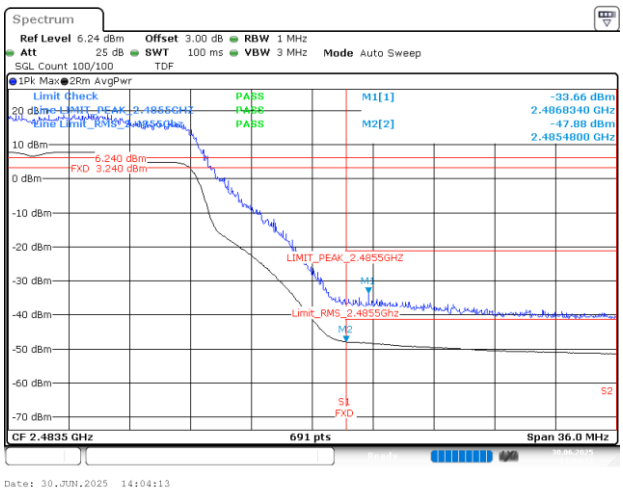
BE-NR, SISO-A, 802.11ax20-HE0, Ch1



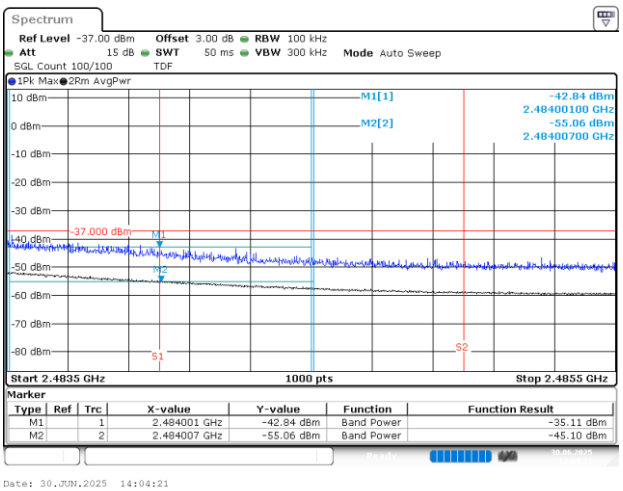
BE-R-HIGH, SISO-A, 802.11ax20-HE0, Ch11



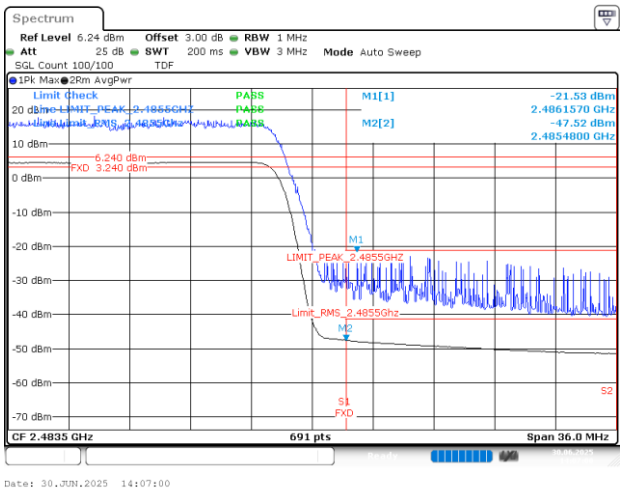
BE-R-HIGH-2MHz, SISO-A, 802.11ax20-HE0, Ch11



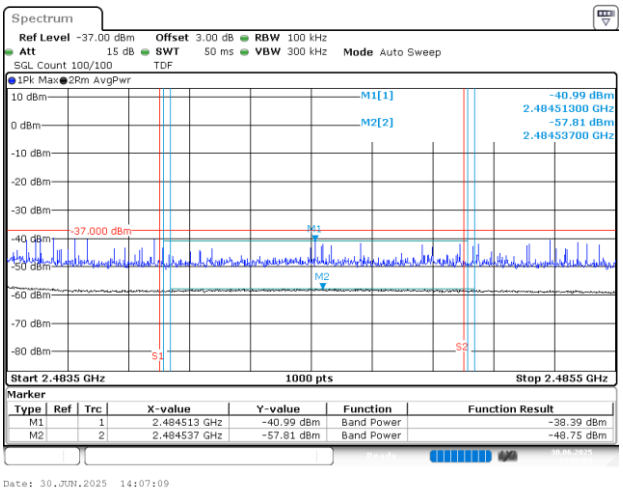
BE-R-HIGH, SISO-A, 802.11ax20-HE0, Ch12



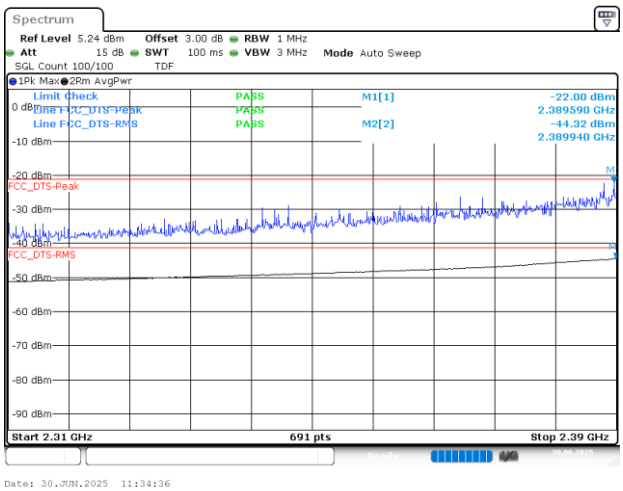
BE-R-HIGH-2MHz, SISO-A, 802.11ax20-HE0, Ch12



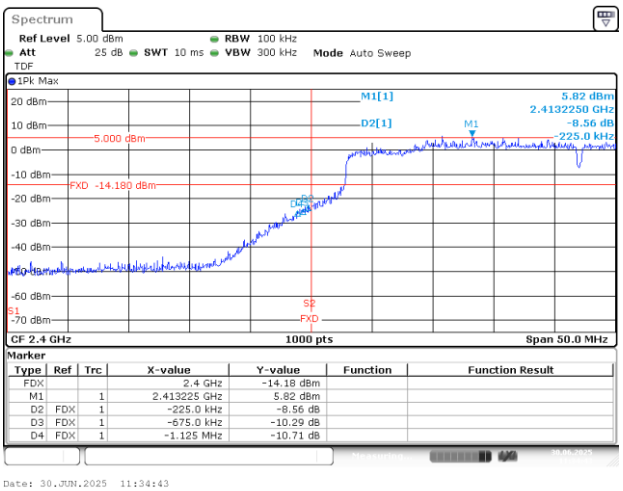
BE-R-HIGH, SISO-A, 802.11ax20-HE0, Ch13



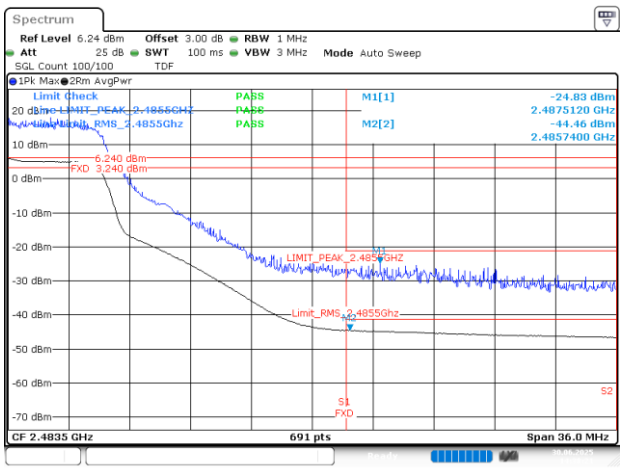
BE-R-HIGH-2MHz, SISO-A, 802.11ax20-HE0, Ch13



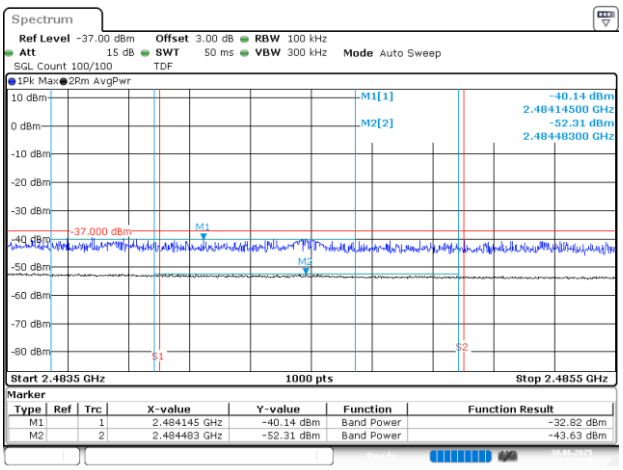
BE-R-LOW, SISO-A, 802.11ax40-HE0, Ch3



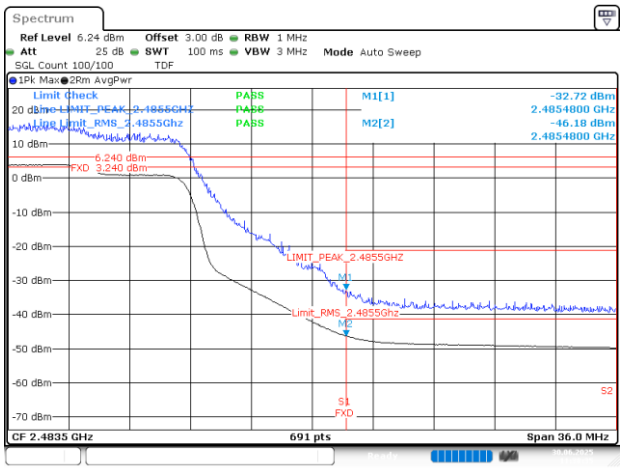
BE-NR, SISO-A, 802.11ax40-HE0, Ch3



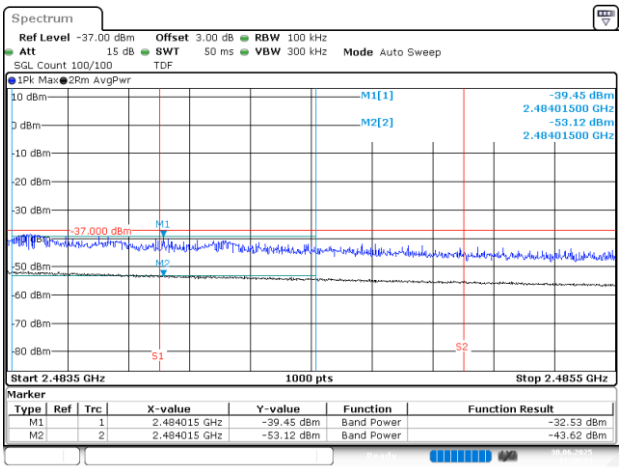
BE-R-HIGH, SISO-A, 802.11ax40-HE0, Ch9



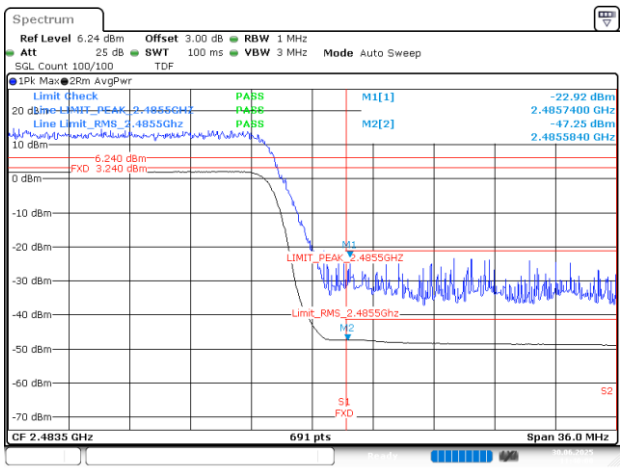
BE-R-HIGH-2MHz, SISO-A, 802.11ax40-HE0, Ch9



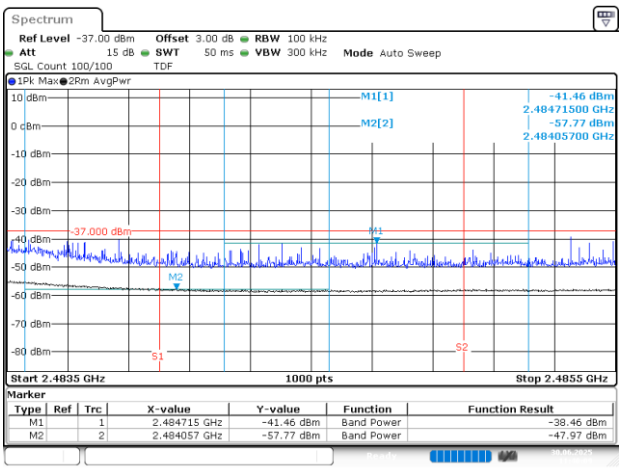
BE-R-HIGH, SISO-A, 802.11ax40-HE0, Ch10



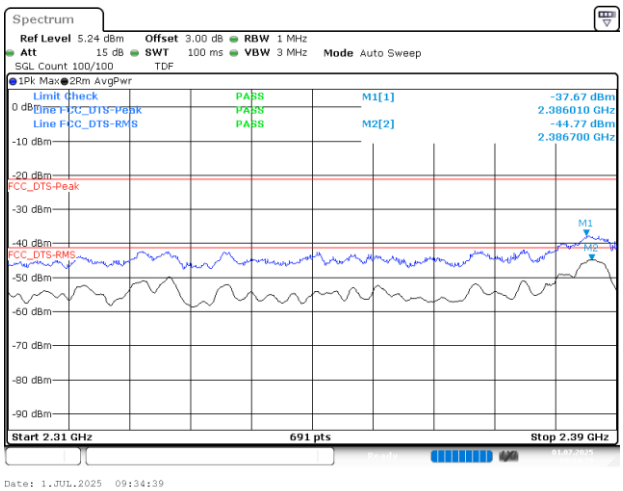
BE-R-HIGH-2MHz, SISO-A, 802.11ax40-HE0, Ch10



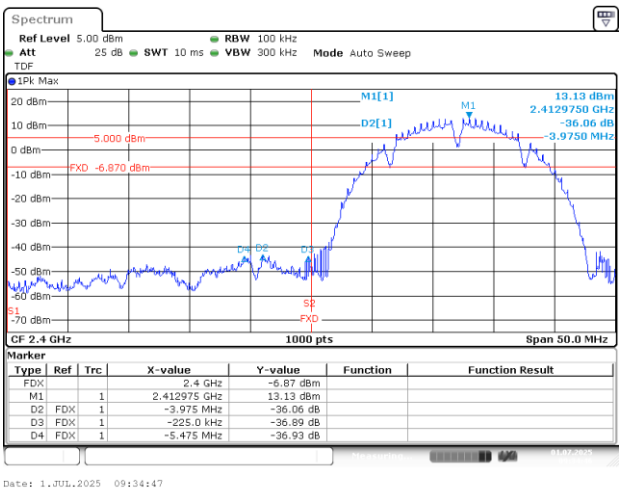
BE-R-HIGH, SISO-A, 802.11ax40-HE0, Ch11



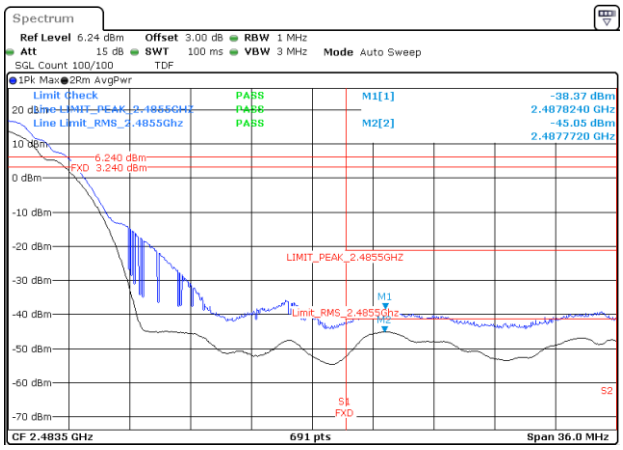
BE-R-HIGH-2MHz, SISO-A, 802.11ax40-HE0, Ch11



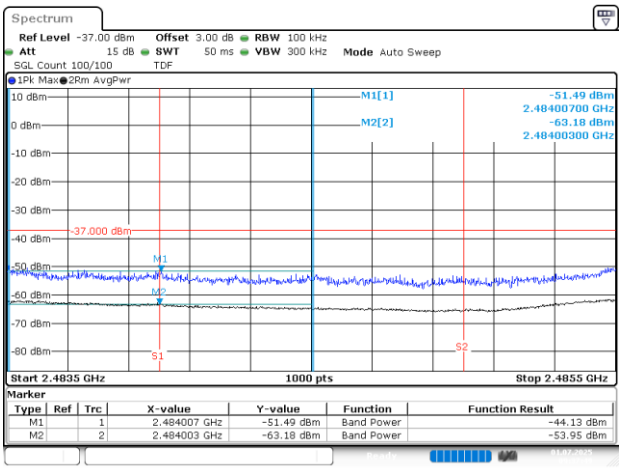
BE-R-LOW, SISO-A, 802.11b-1Mbps, Ch1



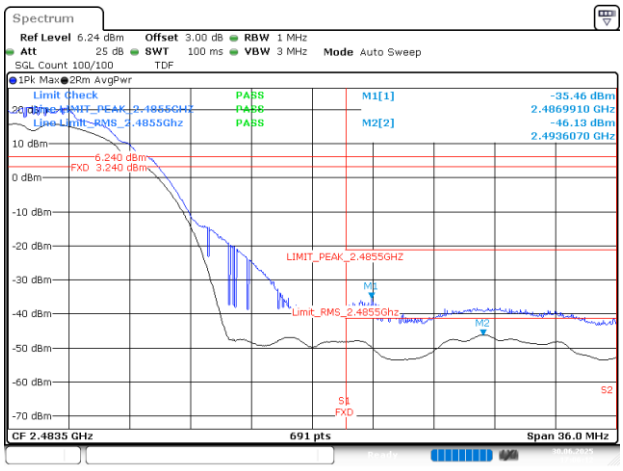
BE-NR, SISO-A, 802.11b-1Mbps, Ch1



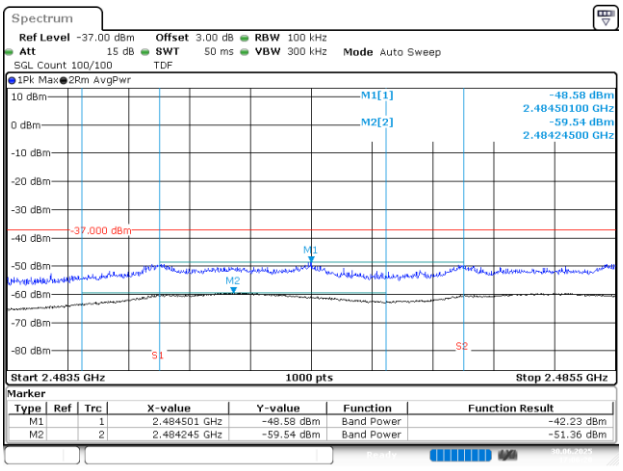
BE-R-HIGH, SISO-A, 802.11b-1Mbps, Ch11



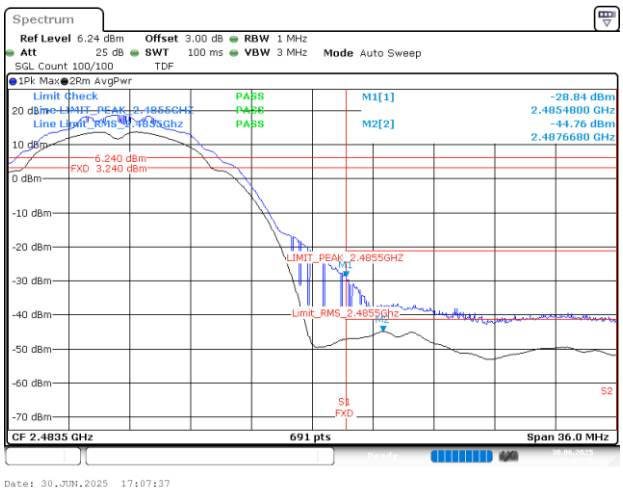
BE-R-HIGH-2MHz, SISO-A, 802.11b-1Mbps, Ch11



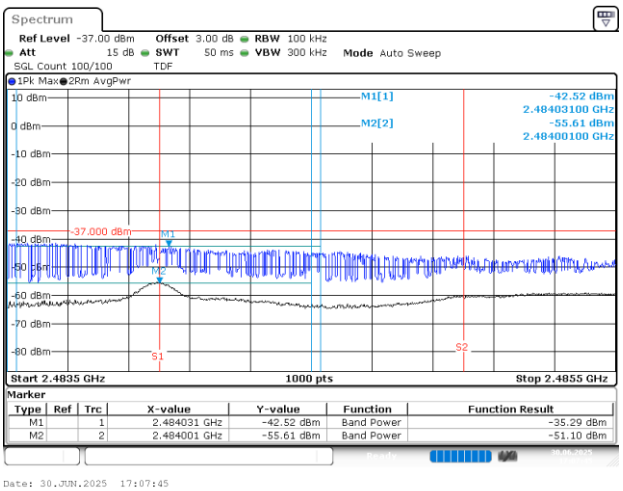
BE-R-HIGH, SISO-A, 802.11b-1Mbps, Ch12



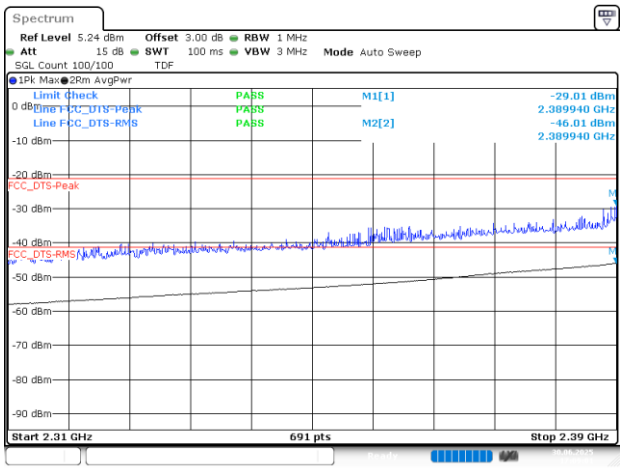
BE-R-HIGH-2MHz, SISO-A, 802.11b-1Mbps, Ch12



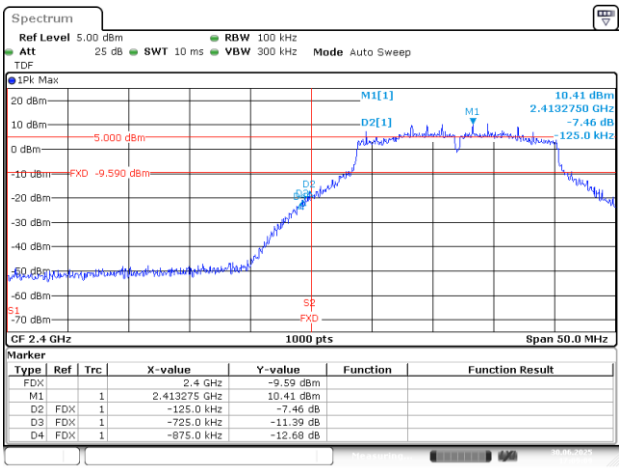
BE-R-HIGH, SISO-A, 802.11b-1Mbps, Ch13



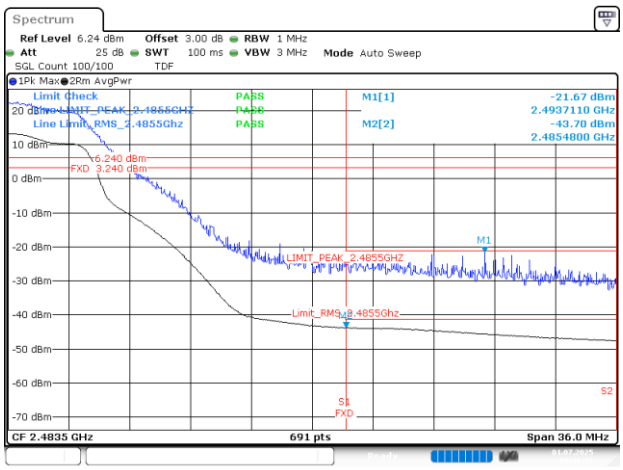
BE-R-HIGH-2MHz, SISO-A, 802.11b-1Mbps, Ch13



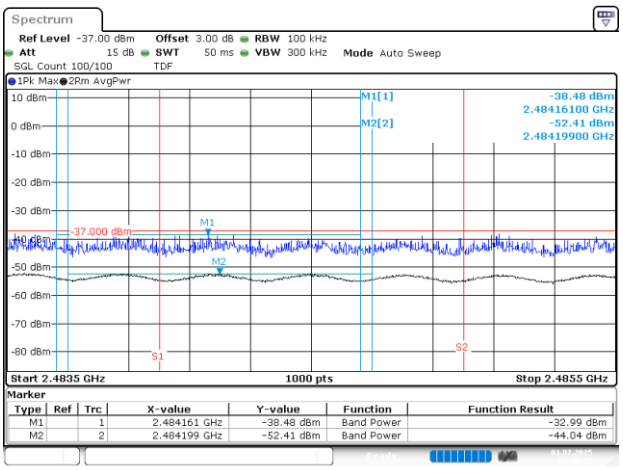
BE-R-LOW, SISO-A, 802.11g-6Mbps, Ch1



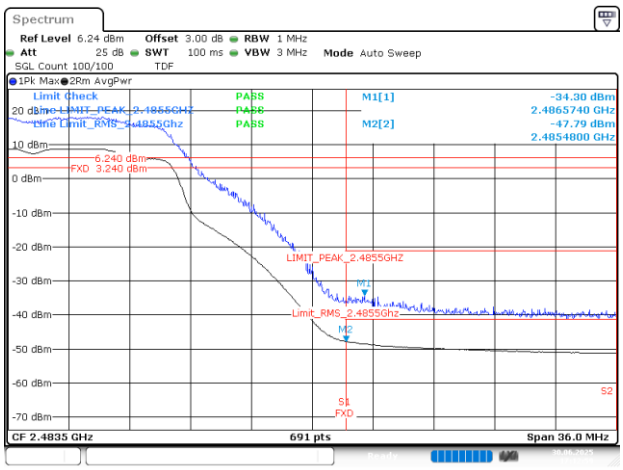
BE-NR, SISO-A, 802.11g-6Mbps, Ch1



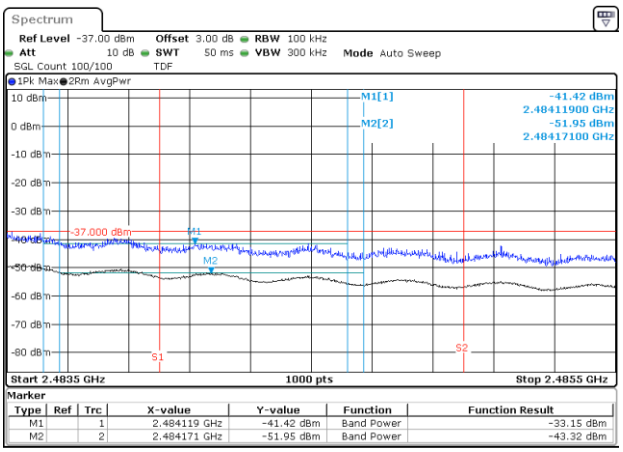
BE-R-HIGH, SISO-A, 802.11g-6Mbps, Ch11



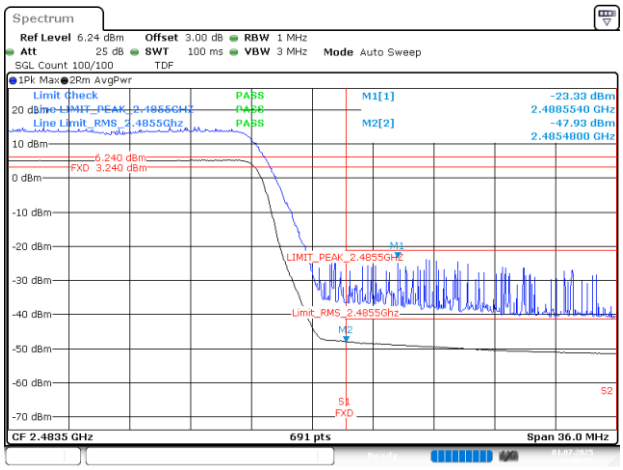
BE-R-HIGH-2MHz, SISO-A, 802.11g-6Mbps, Ch11



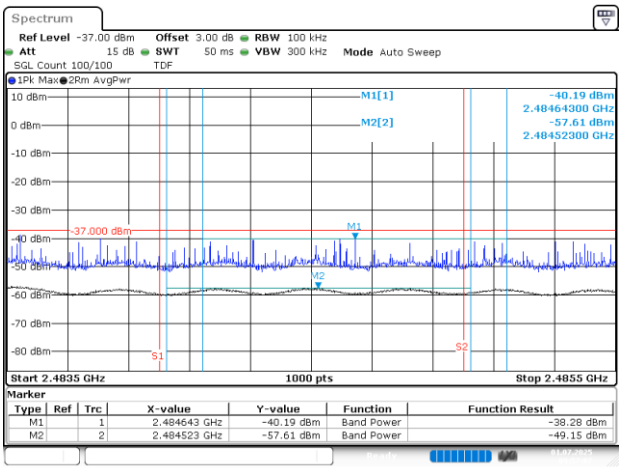
BE-R-HIGH, SISO-A, 802.11g-6Mbps, Ch12



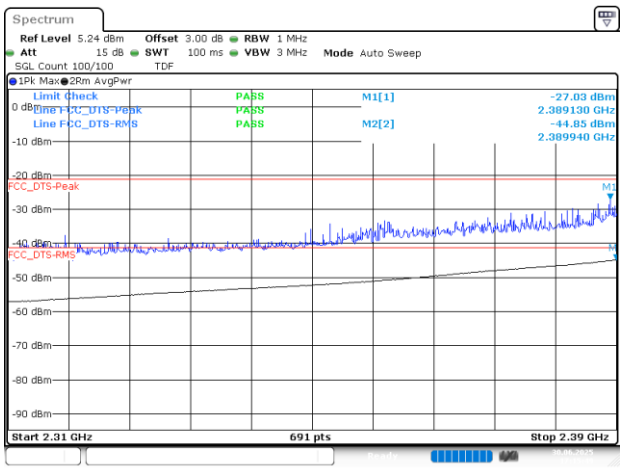
BE-R-HIGH-2MHz, SISO-A, 802.11g-6Mbps, Ch12



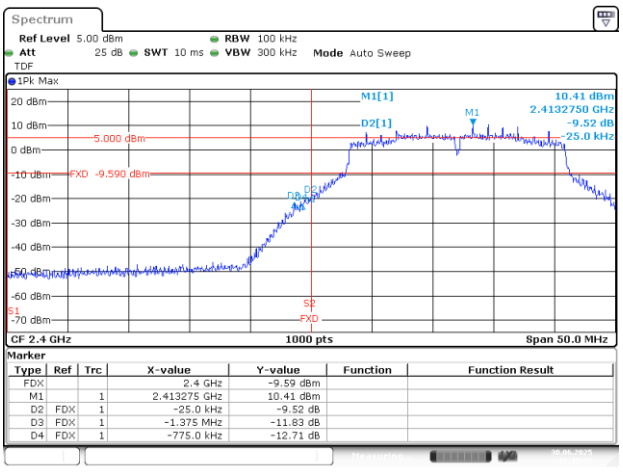
BE-R-HIGH, SISO-A, 802.11g-6Mbps, Ch13



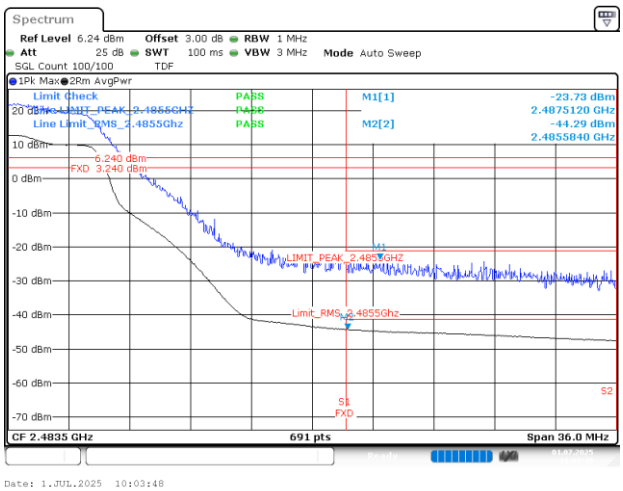
BE-R-HIGH-2MHz, SISO-A, 802.11g-6Mbps, Ch13



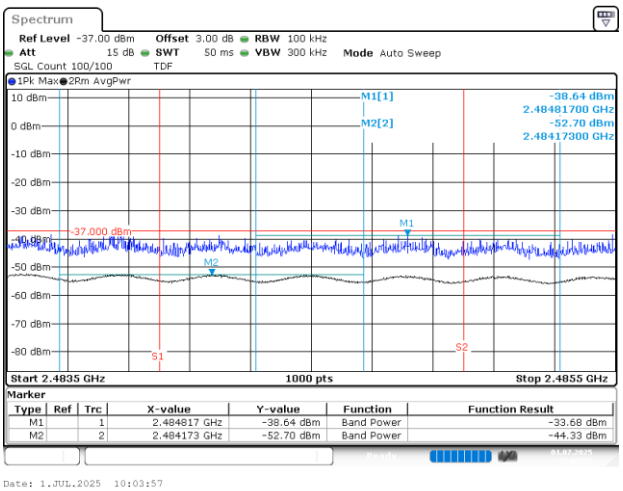
BE-R-LOW, SISO-A, 802.11n20-HT0, Ch1



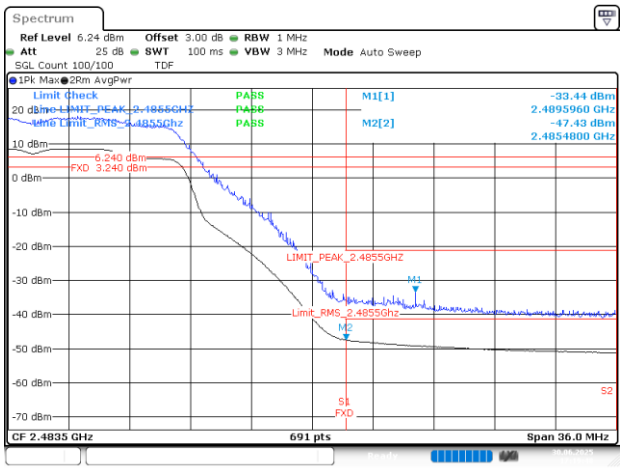
BE-NR, SISO-A, 802.11n20-HT0, Ch1



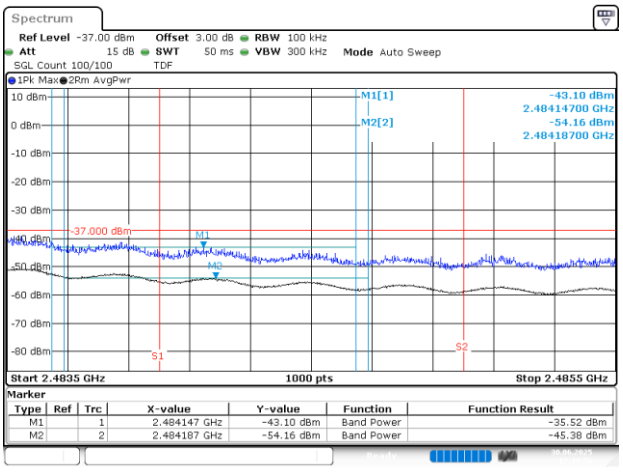
BE-R-HIGH, SISO-A, 802.11n20-HT0, Ch11



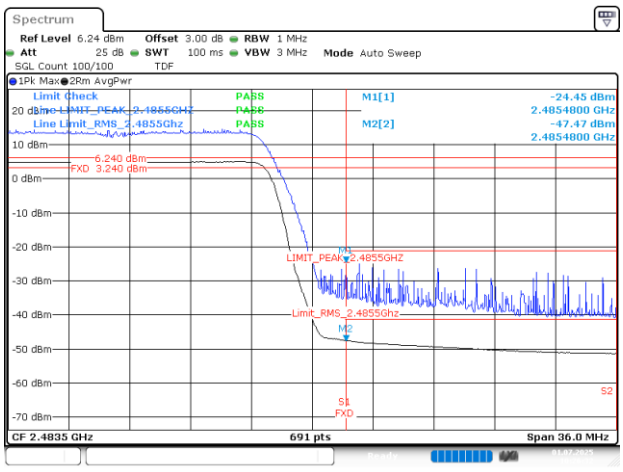
BE-R-HIGH-2MHz, SISO-A, 802.11n20-HT0, Ch11



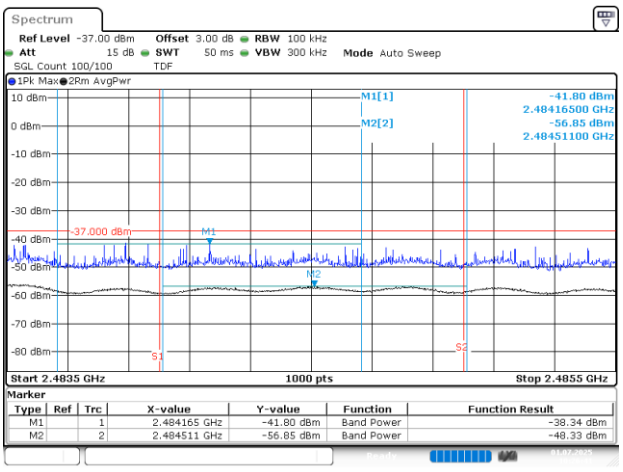
BE-R-HIGH, SISO-A, 802.11n20-HT0, Ch12



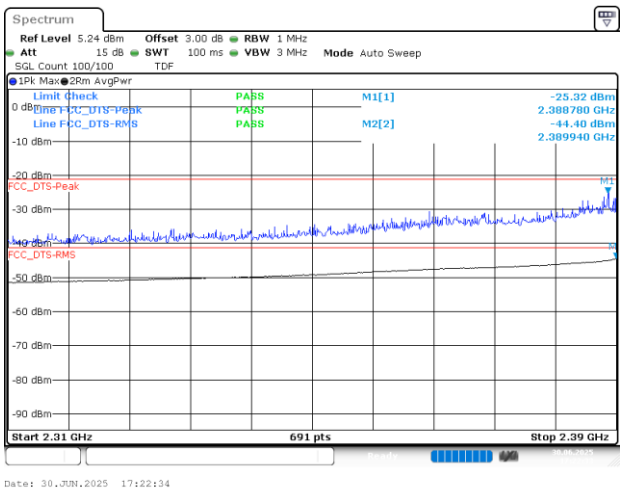
BE-R-HIGH-2MHz, SISO-A, 802.11n20-HT0, Ch12



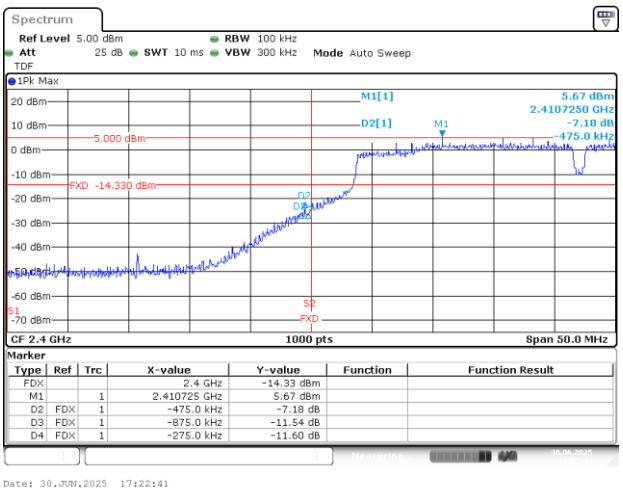
BE-R-HIGH, SISO-A, 802.11n20-HT0, Ch13



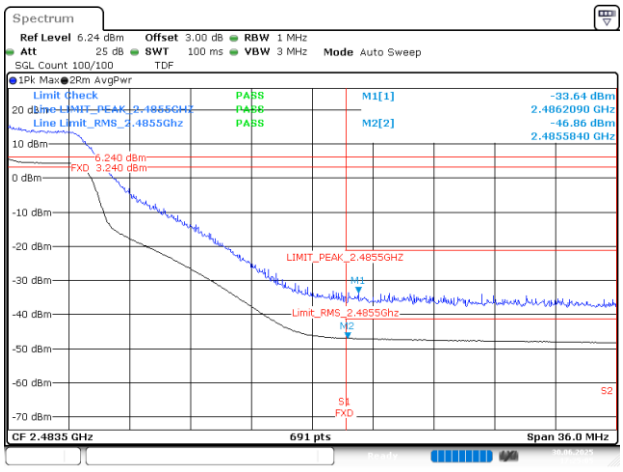
BE-R-HIGH-2MHz, SISO-A, 802.11n20-HT0, Ch13



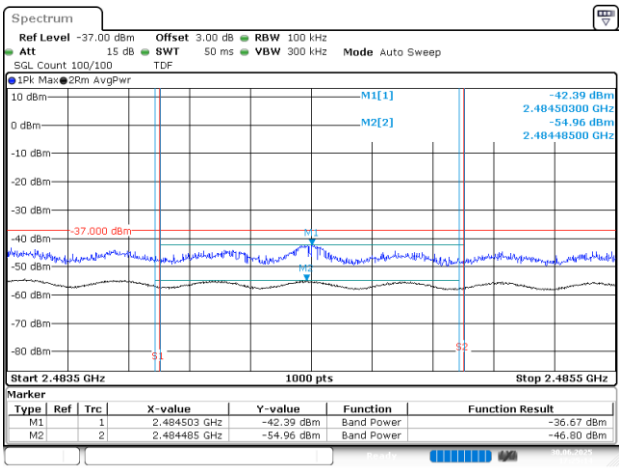
BE-R-LOW, SISO-A, 802.11n40-HT0, Ch3



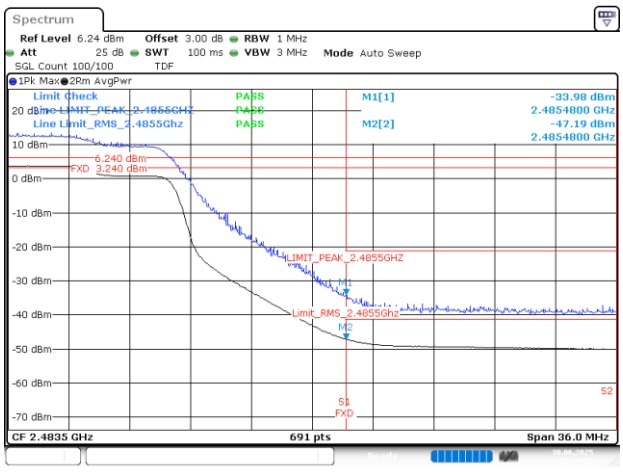
BE-NR, SISO-A, 802.11n40-HT0, Ch3



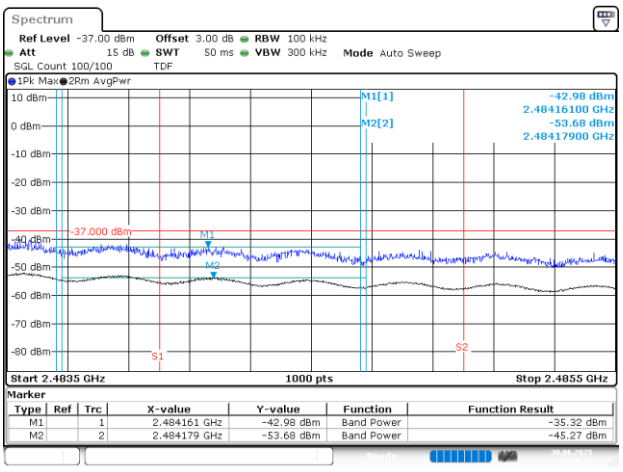
BE-R-HIGH, SISO-A, 802.11n40-HT0, Ch9



BE-R-HIGH-2MHz, SISO-A, 802.11n40-HT0, Ch9



BE-R-HIGH, SISO-A, 802.11n40-HT0, Ch10



BE-R-HIGH-2MHz, SISO-A, 802.11n40-HT0, Ch10