

TEST REPORT

EUT Description	WLAN and BT, 2x2 PCIe M.2 2230 adapter card
Brand Name	Intel® BE211NGW
Model Name	BE211NGW, BE211NGW M
FCC/IC ID	FCC ID: PD9BE211NG / IC ID: 1000M-BE211NG
Date of Test Start/End	2025-06-07 / 2025-07-08
Features	2x2 Wi-Fi - Bluetooth® (see section 0)
Applicant	Intel Corporation SAS
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 E RSS-247 issue 3, RSS-Gen A1 issue 5 - A1 (see section 1)
Test Report identification	250519-01.TR09
Revision Control	Rev. 00 This test report revision replaces any previous test report revision (see section 0)

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

Issued by

Reviewed by

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1. Standards, reference documents and applicable test methods

FCC	1. FCC Title 47 CFR part 15 – Subpart E – Unlicensed National Information Infrastructure Devices. 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 789033 D02 v02r01 - General U-NII Test Procedures New Rules – Guidelines for compliance testing of Unlicensed National Information Infrastructure (U-NII) Devices (Part 15, Subpart E) 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-Gen Issue 5 Amendment 1 - General Requirements for Compliance of Radio Apparatus. 2. RSS-247 Issue 3 - Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and License-Exempt Local Area Network (LE-LAN) Devices. 3. FCC OET KDB 789033 D02 v02r01 - General U-NII Test Procedures New Rules – Guidelines for compliance testing of Unlicensed National Information Infrastructure (U-NII) Devices (Part 15, Subpart E) 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: 21.18°C Max: 28.7°C Average: 24.94°C
Humidity	Min: 45.88% Max: 60.38% Average: 56.25%

4. Test samples

Sample	Control #	Description	Model	Serial #	Date of receipt	Note
#01	250514-01.S06	Module	BE211NGW	28920086B83E	2025-05-14	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	250514-01.S06	Module	BE211NGW	28920086B83E	2025-05-14	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	00425000000002AA521	2025-03-24	
	230526-09.S06	Triband Antenna	-	014	2023-07-06	
	230526-09.S05	Triband Antenna	-	013	2023-07-06	
#03	250514-01.S04	Module	BE211NGW	28920086B915	2025-05-14	Used for Conducted tests
	230824-01.S02	Laptop	HP Willie	A5CD32257RT	2023-08-28	
	231109-03.S70	Extender Mother Board	PCB00887-00_A	2207308398	2024-06-05	
	230526-08.S03	Extender Daughter Board	PCB00862-00_A	2202207510	2023-05-26	
#04	250514-01.S13	Module	BE211NGW	FC6D77BADAC4	2025-06-17	
	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® BE211NGW		
Model Name	BE211NGW, BE211NGW 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 802.11a/n/ac/ax/be 802.11ax/be Bluetooth 2.4GHz 5.2GHz 5.6GHz 5.8GHz 5.9GHz 6.0GHz 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)	+5.15	+5.15

6. Remarks and comments

1. No deviations were made from the test methods listed in section 1 of this report
2. Only the worst-case plot per BW have been reported excepted for band edge measurements where all plots are reported

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 a/n/ac/ax/be – U-NII-2C

FCC part	RSS clause	Test name	Verdict
15.407 (a) (2)	RSS-247 Clause 6.2.3.1	Power Limits. Maximum output power	P
15.407 (a) (2)	RSS-247 Clause 6.2.3.1	Power spectral density	P
15.407 (b) (3) 15.209 (a)	RSS-247 Clause 6.2.3.2 RSS-GEN A1 Clause 8.9	Undesirable emissions limits: out of band (conducted)	P
15.407 (b) (3) 15.209 (a)	RSS-247 Clause 6.2.3.2 RSS-GEN A1 Clause 8.9	Undesirable emissions limits: Spurious emissions (radiated)	P

P: Pass

F: Fail

NM: Not Measured

NA: Not Applicable

1 & 3: See Section 0,

8. Document Revision History

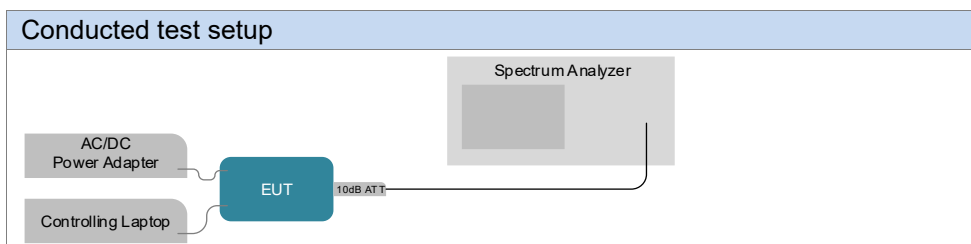
Revision #	Modified by	Revision Details
Rev. 00	K.RIDA	First Issue

Annex A. Test & System Description

A.1 Measurement System

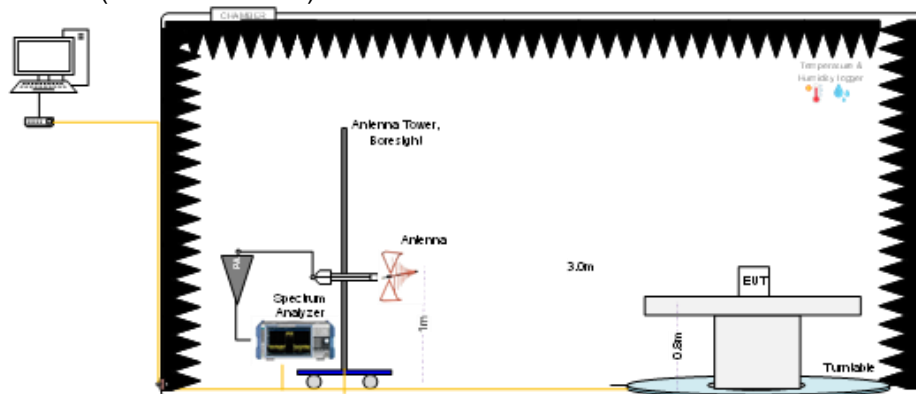
Measurements were performed using the following setups, made in accordance to the general provisions of FCC OET KDB 789033 D02 General UNII Test Procedures.

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.

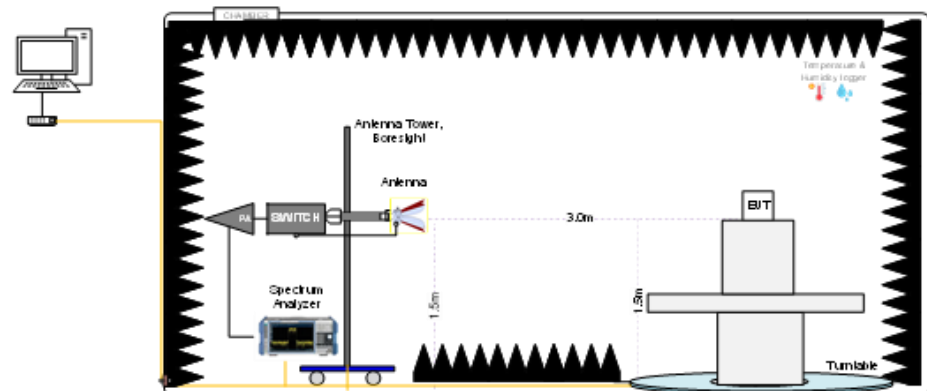


Radiated test setup

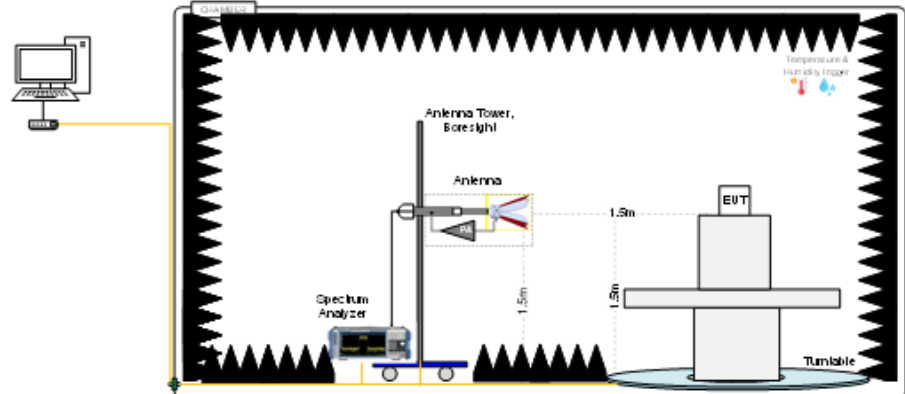
Radiated Setup 30MHz - 1GHz (Transmitter tests)



Radiated Setup 1GHz – 11GHz (Transmitter tests)



Radiated Setup 11GHz – 40GHz (Transmitter tests)



Sample Calculation

The spurious received voltage $V(\text{dB}\mu\text{V})$ in the spectrum Analyzer is converted to Electric field strength using the transducer factor F corresponding to the Rx path Loss:

$$F(\text{dB/m}) = \text{Rx Antenna Factor}(\text{dB/m}) + \text{Cable losses}(\text{dB}) - \text{Amplifiers Gain}(\text{dBi})$$

$$E(\text{dB}\mu\text{V/m}) = V(\text{dB}\mu\text{V}) + F(\text{dB/m})$$

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:

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

where

$E_{\text{SpecLimit}}$ is the field strength of the emission at the distance specified by the limit, in $\text{dB}\mu\text{V/m}$

E_{Meas} is the field strength of the emission at the measurement distance, in $\text{dB}\mu\text{V/m}$

D_{Meas} is the measurement distance, in m

$D_{\text{SpecLimit}}$ 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
178-000	Spectrum Analyzer	FSV13	101311	Rohde & Schwarz	2023-05-25	2025-06-25*
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	WEINSCHTEL	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

* Within a grace period of 30 days

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, v11.3	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
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

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

Shared Radiated Equipment

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
412-000	DRTU Power finder V2.1	-	-	Intel	NA	NA
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

A.3 Measurement Uncertainty Evaluation

The system uncertainty evaluation is shown in 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	± 3.45	dB
Radiated tests <1GHz	± 6.33	dB
Radiated tests 1GHz – 40 GHz	± 6.72	dB

Annex B. Test Results U-NII-2C

The herein test results were performed by:

Test case measurement	Test Peronnel
Power Limits. Maximum output power	Zayd Ouachicha
Power spectral density	Zayd Ouachicha
Undesirable emissions limits: out of band (conducted)	Zayd Ouachicha
Undesirable emissions limits (radiated)	K. RIDA

B.1 Test Conditions

For 802.11a mode 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), 802.11ac80 & 802.11ax/be80 (80MHz channel bandwidth) and 802.11ac160 &802.11ax/be160 (160MHz 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	802.11a	20	6Mbps
	802.11n	20	HT0
		40	HT0
	802.11ac	80	VHT0
		160	VHT0
	802.11ax/be	20/40/80/160	MCS0
MIMO	802.11n	20/40	HT8
	802.11ac	80/160	VHT0
	802.11ax/be	20/40/80/160	MCS0

B.2 Test Results Tables

B.2.1 26dB & 99% Bandwidth

Test procedure

The conducted setup shown in section *Test & System Description* was used to measure the 26dB & 99% bandwidth. The antenna terminal of the EUT is connected to the spectrum analyzer through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.

For the overlapped channels between U-NII-2C and U-NII-3 bands, and according to FCC OET KDB 789033 D02, the boundary frequency between the bands is used as one edge for defining the portion of the 26dB bandwidth that falls within a particular U-NII band. This rule is only applicable for the 26dB bandwidth and for those channels marked as overlapped.

Results tables

U-NII-2C channels

Mode	Rate	Antenna	Channel	Freq [MHz]	26dB BW [MHz]	99% BW [MHz]
802.11a	6Mbps	SISO A	100	5500	24.30	16.73
			120	5600	24.45	16.74
			140	5700	24.65	16.69
		SISO B	100	5500	24.05	16.65
			120	5600	24.60	16.73
			140	5700	24.45	16.75
802.11n20	HT0	SISO A	100	5500	24.90	17.81
			120	5600	24.65	17.83
			140	5700	24.95	17.83
		SISO B	100	5500	24.75	17.81
			120	5600	25.40	17.76
			140	5700	24.80	17.85
	HT8	MIMO A	100	5500	24.95	17.82
			120	5600	25.00	17.83
			140	5700	24.75	17.73
		MIMO B	100	5500	24.60	17.73
			120	5600	24.35	17.77
			140	5700	25.10	17.76
802.11n40	HT0	SISO A	102	5510	43.20	36.16
			118	5590	47.30	36.16
			134	5670	43.89	36.08
		SISO B	102	5510	43.56	36.08
			118	5590	46.42	36.24
			134	5670	44.22	36.08
	HT8	MIMO A	102	5510	42.66	36.08
			118	5590	44.11	36.08
			134	5670	44.55	36.08
		MIMO B	102	5510	42.84	36.08
			118	5590	42.46	36.08
			134	5670	42.68	36.00
802.11ac80	VHT0	SISO A	106	5530	88.16	75.24
			122	5610	88.16	75.24
		SISO B	106	5530	87.97	75.24
			122	5610	87.78	75.24
		MIMO A	106	5530	87.40	75.24
			122	5610	87.78	75.24
		MIMO B	106	5530	87.40	75.24
			122	5610	87.97	75.12
802.11ac160	VHT0	SISO A	114	5570	164.67	153.50
		SISO B			165.00	153.50
		MIMO A			164.34	153.50
		MIMO B			164.34	153.50

Max Value

Mode	Rate	Antenna	Channel	Freq[MHz]	RU config.	26dB BW [MHz]	99% BW [MHz]
802.11ax/be20	MCS0	SISO A	100	5500	Full	24.30	18.93
					26/0	20.75	18.33
					52/37	21.55	17.93
					106/53	22.95	17.94
			120	5600	Full	24.65	18.87
					26/8	24.35	18.91
					52/40	21.35	16.15
					106/54	22.50	17.59
			140	5500	Full	24.30	17.99
					26/0	24.35	18.89
					52/37	20.70	17.84
					106/53	21.45	17.31
		SISO B	100	5500	Full	23.10	18.07
					26/0	24.45	18.87
					52/37	24.40	18.93
					106/54	21.15	17.45
			120	5600	Full	22.40	18.30
					26/8	23.55	18.32
					52/40	24.95	18.90
					106/53	20.75	18.65
		MIMO A	100	5500	Full	21.65	18.32
					26/0	21.80	18.36
					52/37	24.85	18.95
					106/53	24.40	18.93
			120	5600	Full	21.00	18.17
					26/8	22.30	17.99
					52/40	23.90	18.17
					106/54	23.90	18.17
		MIMO B	100	5500	Full	23.60	18.99
					26/0	21.00	17.91
					52/37	22.10	18.38
					106/53	22.70	18.00
			120	5600	Full	24.40	18.89
					26/8	24.35	18.99
					52/40	20.90	18.31
					106/54	22.35	18.20
802.11ax/be40	MCS0	SISO A	102	5510	Full	42.93	37.60
					242/62	24.30	18.88
			118	5590	Full	47.07	37.92
					Full	43.83	37.44
		SISO B	102	5510	Full	43.29	37.52
					242/62	24.39	18.80
			118	5590	Full	45.36	37.76
					Full	42.93	37.52
		MIMO A	102	5510	Full	43.20	37.44
					242/62	24.66	18.88
			118	5590	Full	43.29	37.44
					Full	43.92	37.60
		MIMO B	102	5510	Full	43.29	37.68
					242/62	24.93	18.88
			118	5590	Full	43.47	37.52
					Full	43.92	37.52
			134	5670	Full	43.92	37.52
					242/62	24.39	18.96

802.11ax/be80	MCS0	SISO A	106	5530	Full	84.36	76.80
					484/65	42.37	37.44
			122	5610	Full	84.17	76.80
		SISO B	106	5530	Full	83.41	76.80
					484/65	43.51	37.44
			122	5610	Full	84.55	76.80
		MIMO A	106	5530	Full	84.36	76.80
					484/65	43.51	37.44
			122	5610	Full	85.12	76.80
		MIMO B	106	5530	Full	83.03	76.68
			484/65	43.51	37.32		
122	5610		Full	83.60	76.80		
802.11ax/be160	MCS0	SISO A	114	5570	Full	164.34	155.00
					996/67	84.15	77.00
					996/S67	86.79	77.00
		SISO B			Full	163.68	155.25
					996/67	84.15	77.00
					996/S67	85.80	77.00
		MIMO A			Full	163.35	155.00
					996/67	83.82	77.25
					996/S67	85.80	77.00
		MIMO B			Full	163.68	155.25
					996/67	84.48	77.00
					996/S67	86.13	77.00

Max Value

Overlapped channels between U-NII-2C and U-NII-3

Mode	Rate	Channel	Frequency (MHz)	Antenna	Chain	26dB BW [MHz] UNII2C
802.11n20	HT0	144	5720	SISO	A	17.73
					B	16.98
	HT8			MIMO	A	17.13
					B	16.87
802.11n40	HT0	142	5710	SISO	A	36.65
					B	36.25
	HT8			MIMO	A	36.15
					B	36.25
802.11ac80	VHT0	138	5690	SISO	A	79.82
					B	79.10
				MIMO	A	78.14
					B	76.82
802.11ax/be20	MCS0	144	5720	SISO	A	17.32
					B	16.98
				MIMO	A	16.98
					B	16.83
802.11ax/be40	MCS0	142	5710	SISO	A	36.15
					B	35.65
				MIMO	A	36.55
					B	36.05
				Combined	A+B	78.38
802.11ax/be80	MCS0	138	5690	SISO	A	76.82
					B	77.06
				MIMO	A	76.70
					B	17.73

Max Value

B.2.2 Power Limits. Maximum Output power & Maximum power spectral Density

Test limits

Part	Limits
FCC 15.407 (a) (2)	For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band.
RSS-247 Clause 6.2.3 (1)	The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10} B$, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10} B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

Test procedure

The Maximum Conducted Output Power was measured using the channel integration method according to section E) 2) e) (Method SA-2 Alternative) of FCC OET KDB 789033 D02.

The maximum power spectral density (PSD) was measured using the method according to section F) (Method SA-2 Alternative) of FCC OET KDB 789033 D02.

In the measure-and-sum approach for MIMO mode, 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 and power spectral density. The antenna terminal of the EUT is connected to the spectrum analyser through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.

For the overlapped channels between U-NII-2C and U-NII-3, and according to FCC OET KDB 789033 D02 the power is computed based on the portion of the emission bandwidth contained within that band. This rule is only applicable for those channels marked as overlapped

Results tables

Duty cycle

Mode	Rate	Antenna	Duty Cycle [%]
802.11a	6Mbps	SISO A	97.9
		SISO B	97.9
802.11n20	HT0	SISO A	98.9
		SISO B	98.9
	HT8	MIMO A	98.9
		MIMO B	98.9
802.11ax/be20	MCS0	SISO A	98.9
		SISO B	98.9
		MIMO A	98.9
		MIMO B	98.9
802.11n40	HT0	SISO A	98.9
		SISO B	98.9
	HT8	MIMO A	98.9
		MIMO B	98.9
802.11ax/be40	MCS0	SISO A	98.9
		SISO B	98.9
		MIMO A	98.9
		MIMO B	98.9
802.11ac80	VHT0	SISO A	98.9
		SISO B	98.9
		MIMO A	98.9
		MIMO B	98.9
802.11ax/be80	MCS0	SISO A	98.9
		SISO B	98.9
		MIMO A	98.9
		MIMO B	98.9
802.11ac160	VTH0	SISO A	98.9
		SISO B	98.9
		MIMO A	98.9
		MIMO B	98.9
802.11ax/be160	MCS0	SISO A	98.9
		SISO B	98.9
		MIMO A	98.9
		MIMO B	98.9

Maximum output power – U-NII-2C Channels

Mode	Rate	#Ch	Freq [MHz]	Antenna	Average Conducted Output Power [dBm]	Avg Max* Conducted Output Power [dBm]	Avg Max* EIRP [dBm]	Avg Max* Conducted Power [mW]
802.11a	6Mbps	100	5500	SISO A	20.89	20.98	26.13	125.43
				SISO B	20.91	21.00	26.15	126.01
		120	5600	SISO A	20.73	20.82	25.97	120.89
				SISO B	21.41	21.50	26.65	141.39
		140	5700	SISO A	20.74	20.83	25.98	121.17
				SISO B	20.82	20.91	26.06	123.43
802.11n20	HT0	100	5500	SISO A	20.83	20.83	25.98	121.06
				SISO B	21.41	21.41	26.56	138.36
		120	5600	SISO A	20.64	20.64	25.79	115.88
				SISO B	21.21	21.21	26.36	132.13
		140	5700	SISO A	20.67	20.67	25.82	116.68
				SISO B	21.33	21.33	26.48	135.83
	HT8	100	5500	MIMO A	18.18	18.18	23.33	65.77
				MIMO B	17.75	17.75	22.90	59.57
				Combined A+B	20.98	20.98	26.13	125.33
		120	5600	MIMO A	18.00	18.00	23.15	63.10
				MIMO B	18.10	18.10	23.25	64.57
				Combined A+B	21.06	21.06	26.21	127.66
		140	5700	MIMO A	18.17	18.17	23.32	65.61
				MIMO B	18.15	18.15	23.30	65.31
				Combined A+B	21.17	21.17	26.32	130.93
802.11n40	HT0	102	5510	SISO A	20.81	20.81	25.96	120.50
				SISO B	20.90	20.90	26.05	123.03
		118	5590	SISO A	23.13	23.13	28.28	205.59
				SISO B	23.10	23.10	28.25	204.17
		134	5670	SISO A	22.31	22.31	27.46	170.22
				SISO B	22.37	22.37	27.52	172.58
	HT8	102	5510	MIMO A	19.16	19.16	24.31	82.41
				MIMO B	18.36	18.36	23.51	68.55
				Combined A+B	21.79	21.79	26.94	150.96
		118	5590	MIMO A	20.52	20.52	25.67	112.72
				MIMO B	20.95	20.95	26.10	124.45
				Combined A+B	23.75	23.75	28.90	237.17
		134	5670	MIMO A	20.51	20.51	25.66	112.46
				MIMO B	20.44	20.44	25.59	110.66
				Combined A+B	23.49	23.49	28.64	223.12
802.11ac80	VHT0	106	5530	SISO A	20.95	20.95	26.10	124.45
				SISO B	18.83	18.83	23.98	76.38
				MIMO A	18.36	18.36	23.51	68.55
				MIMO B	16.65	16.65	21.80	46.24
				Combined A+B	20.60	20.60	25.75	114.79
		122	5610	SISO A	21.25	21.25	26.40	133.35
				SISO B	21.33	21.33	26.48	135.83
				MIMO A	20.62	20.62	25.77	115.35
				MIMO B	20.50	20.50	25.65	112.20
				Combined A+B	23.57	23.57	28.72	227.55
802.11ac160	VHT0	114	5570	SISO A	17.36	17.36	22.51	54.45
				SISO B	17.92	17.92	23.07	61.94
				MIMO A	16.66	16.66	21.81	46.34
				MIMO B	17.06	17.06	22.21	50.82
				Combined A+B	19.87	19.87	25.02	97.16

* Maximum values are the duty cycle compensated values calculated from the average (measured) values

Max/Min Value

Mode	Rate	#Ch	Freq [MHz]	Antenna	RU config.	Average Conducted Output Power [dBm]	Avg Max Conducted Output Power [dBm]	Avg Max EIRP [dBm]	Avg Max Conducted Power [mW]
802.11ax/be20	MCS0	100	5500	SISO A	Full	20.68	20.68	25.83	116.95
					26/0	13.32	13.32	18.47	21.48
					52/37	16.01	16.01	21.16	39.90
					106/53	19.36	19.36	24.51	86.30
				SISO B	Full	21.30	21.30	26.45	134.90
					26/0	13.43	13.43	18.58	22.03
					52/37	16.18	16.18	21.33	41.50
					106/53	19.08	19.08	24.23	80.91
				MIMO A	Full	18.06	18.06	23.21	63.97
					26/0	10.35	10.35	15.50	10.84
					52/37	13.17	13.17	18.32	20.75
					106/53	16.31	16.31	21.46	42.76
				MIMO B	Full	18.08	18.08	23.23	64.27
					26/0	10.52	10.52	15.67	11.27
					52/37	13.44	13.44	18.59	22.08
					106/53	16.47	16.47	21.62	44.36
				Combined A+B	Full	21.08	21.08	26.23	128.24
					26/0	13.45	13.45	18.60	22.11
					52/37	16.32	16.32	21.47	42.83
					106/53	19.40	19.40	24.55	87.12
		120	5600	SISO A	Full	20.54	20.54	25.69	113.24
				SISO B	Full	21.13	21.13	26.28	129.72
				MIMO A	Full	18.02	18.02	23.17	63.39
				MIMO B	Full	18.89	18.89	24.04	77.45
				Combined A+B	Full	21.49	21.49	26.64	140.83
		140	5700	SISO A	Full	20.54	20.54	25.69	113.24
					26/0	13.30	13.30	18.45	21.38
					52/37	16.37	16.37	21.52	43.35
					106/53	19.32	19.32	24.47	85.51
				SISO B	Full	21.23	21.23	26.38	132.74
					26/0	13.73	13.73	18.88	23.60
					52/37	16.33	16.33	21.48	42.95
					106/53	19.22	19.22	24.37	83.56
				MIMO A	Full	18.03	18.03	23.18	63.53
					26/0	10.63	10.63	15.78	11.56
					52/37	13.28	13.28	18.43	21.28
					106/53	16.33	16.33	21.48	42.95
				MIMO B	Full	18.07	18.07	23.22	64.12
					26/0	10.67	10.67	15.82	11.67
					52/37	13.29	13.29	18.44	21.33
					106/53	16.34	16.34	21.49	43.05
				Combined A+B	Full	21.06	21.06	26.21	127.65
					26/0	13.66	13.66	18.81	23.23
					52/37	16.30	16.30	21.45	42.61
					106/53	19.35	19.35	24.50	86.01
802.11ax/be40	MCS0	102	5510	SISO A	Full	20.68	20.68	25.83	116.95
					242/62	20.31	20.31	25.46	107.40
				SISO B	Full	20.82	20.82	25.97	120.78
					242/62	21.43	21.43	26.58	139.00
				MIMO A	Full	18.23	18.23	23.38	66.53
					242/62	18.10	18.10	23.25	64.57
				MIMO B	Full	18.26	18.26	23.41	66.99
					242/62	18.23	18.23	23.38	66.53
				Combined A+B	Full	21.26	21.26	26.41	133.52
					242/62	21.18	21.18	26.33	131.09
		118	5590	SISO A	Full	23.00	23.00	28.15	199.53
				SISO B	Full	23.02	23.02	28.17	200.45
				MIMO A	Full	20.94	20.94	26.09	124.17
				MIMO B	Full	20.76	20.76	25.91	119.12
				Combined A+B	Full	23.86	23.86	29.01	243.29
		134	5670	SISO A	Full	22.22	22.22	27.37	166.72
					242/62	20.45	20.45	25.60	110.92
				SISO B	Full	22.08	22.08	27.23	161.44
					242/62	21.40	21.40	26.55	138.04
				MIMO A	Full	20.41	20.41	25.56	109.90
					242/62	18.22	18.22	23.37	66.37
				MIMO B	Full	20.76	20.76	25.91	119.12
					242/62	18.17	18.17	23.32	65.61
				Combined A+B	Full	23.60	23.60	28.75	229.02
					242/62	21.21	21.21	26.36	131.99

802.11ax/be80	MCS0	106	5530	SISO A	Full	20.87	20.87	26.02	122.18
					484/65	21.19	21.19	26.34	131.52
				SISO B	Full	18.74	18.74	23.89	74.82
					484/65	21.16	21.16	26.31	130.62
				MIMO A	Full	18.24	18.24	23.39	66.68
					484/65	19.18	19.18	24.33	82.79
				MIMO B	Full	16.54	16.54	21.69	45.08
					484/65	18.73	18.73	23.88	74.64
				Combined A+B	Full	20.48	20.48	25.63	111.76
					484/65	21.97	21.97	27.12	157.44
		122	5610	SISO A	Full	22.18	22.18	27.33	165.20
				SISO B	Full	21.29	21.29	26.44	134.59
				MIMO A	Full	20.94	20.94	26.09	124.17
				MIMO B	Full	20.93	20.93	26.08	123.88
				Combined A+B	Full	23.95	23.95	29.10	248.04
802.11ax/be160	MCS0	114	5570	SISO A	Full	17.31	17.31	22.46	53.83
					996/67	18.25	18.25	23.40	66.83
					996/S67	21.26	21.26	26.41	133.66
				SISO B	Full	17.90	17.90	23.05	61.66
					996/67	18.89	18.89	24.04	77.45
					996/S67	21.63	21.63	26.78	145.55
				MIMO A	Full	16.61	16.61	21.76	45.81
					996/67	15.65	15.65	20.80	36.73
					996/S67	20.89	20.89	26.04	122.74
				MIMO B	Full	17.01	17.01	22.16	50.23
					996/67	16.33	16.33	21.48	42.95
					996/S67	19.17	19.17	24.32	82.60
				Combined A+B	Full	19.82	19.82	24.97	96.05
					996/67	19.01	19.01	24.16	79.68
					996/S67	23.12	23.12	28.27	205.35

* Maximum values are the duty cycle compensated values calculated from the average (measured) values

Max/Min Value

Maximum output power – Overlapped channels between U-NII-2C and U-NII-3

Mode	Rate	Antenna	Chain	Channel	Frequency (MHz)	Average Cond. Output Power - UNII-2C [dBm]	Max.* Cond. Output Power - UNII-2C [dBm]	Max.* EIRP UNII2C [dBm]	Max.* Cond. Output Power - UNII-2C [mW]
802.11n20	HT0	SISO	A	144	5720	20.77	20.77	25.92	119.40
			B		5720	20.78	20.78	25.93	119.67
	HT8	MIMO	A		5720	17.92	17.92	23.07	61.94
			B		5720	17.63	17.63	22.78	57.94
		Combined	A+B		5720	20.79	20.79	25.94	119.89
			A+B		5720	20.79	20.79	25.94	119.89
802.11n40	HT0	SISO	A	142	5710	23.37	23.37	28.52	217.27
			B		5710	23.11	23.11	28.26	204.64
	HT8	MIMO	A		5710	20.78	20.78	25.93	119.67
			B		5710	20.81	20.81	25.96	120.50
		Combined	A+B		5710	23.81	23.81	28.96	240.18
			A+B		5710	23.81	23.81	28.96	240.18
802.11ac80	VHT0	SISO	A	138	5690	23.59	23.59	28.74	228.56
			B		5690	23.29	23.29	28.44	213.30
		MIMO	A		5690	20.79	20.79	25.94	119.95
			B		5690	20.71	20.71	25.86	117.76
		Combined	A+B		5690	23.76	23.76	28.91	237.71
			A+B		5690	23.76	23.76	28.91	237.71
802.11ax/be20	MCS0	SISO	A	144	5720	20.84	20.84	25.99	121.34
			B		5720	20.88	20.88	26.03	122.46
		MIMO	A		5720	17.81	17.81	22.96	60.39
			B		5720	17.91	17.91	23.06	61.80
		Combined	A+B		5720	20.87	20.87	26.02	122.20
			A+B		5720	20.87	20.87	26.02	122.20
802.11ax/be40	MCS0	SISO	A	142	5710	23.21	23.21	28.36	209.41
			B		5710	23.02	23.02	28.17	200.45
		MIMO	A		5710	20.87	20.87	26.02	122.18
			B		5710	20.65	20.65	25.80	116.14
		Combined	A+B		5710	23.77	23.77	28.92	238.32
			A+B		5710	23.77	23.77	28.92	238.32
802.11ax/be80	MCS0	SISO	A	138	5690	23.53	23.53	28.68	225.42
			B		5690	23.22	23.22	28.37	209.89
		MIMO	A		5690	20.72	20.72	25.87	118.03
			B		5690	20.60	20.60	25.75	114.82
		Combined	A+B		5690	23.67	23.67	28.82	232.85
			A+B		5690	23.67	23.67	28.82	232.85

* Maximum values are the duty cycle compensated values calculated from the average (measured) values

Max/Min Value

Maximum Power Spectral Density (PSD) – U-NII-2C channels

Mode	Rate	Channel	Freq [MHz]	Antenna	Average conducted PSD [dBm/MHz]	Maximum* conducted PSD [dBm/MHz]
802.11a	6Mbps	100	5500	SISO A	10.41	10.50
				SISO B	10.42	10.51
		120	5600	SISO A	10.26	10.35
				SISO B	10.90	10.99
		140	5700	SISO A	10.26	10.35
				SISO B	10.28	10.37
802.11n20	HT0	100	5500	SISO A	10.05	10.05
				SISO B	10.82	10.82
		120	5600	SISO A	9.92	9.92
				SISO B	10.57	10.57
		140	5700	SISO A	10.04	10.04
				SISO B	10.53	10.53
	HT8	100	5500	MIMO A	7.49	7.49
				MIMO B	7.16	7.16
				Combined A+B	10.40	10.40
		120	5600	MIMO A	7.39	7.39
				MIMO B	7.48	7.48
				Combined A+B	10.53	10.53
		140	5700	MIMO A	7.45	7.45
				MIMO B	7.42	7.42
				Combined A+B	10.73	10.73
802.11n40	HT0	102	5510	SISO A	6.70	6.70
				SISO B	6.73	6.73
		118	5590	SISO A	9.05	9.05
				SISO B	9.09	9.09
		134	5670	SISO A	7.40	7.40
				SISO B	7.57	7.57
	HT8	102	5510	MIMO A	5.07	5.07
				MIMO B	4.31	4.31
				Combined A+B	9.77	9.77
		118	5590	MIMO A	6.39	6.39
				MIMO B	6.92	6.92
				Combined A+B	10.44	10.44
		134	5670	MIMO A	6.50	6.50
				MIMO B	6.39	6.39
				Combined A+B	8.23	8.23
802.11ac80	VHT0	106	5530	SISO A	3.68	3.68
				SISO B	1.57	1.57
				MIMO A	1.14	1.14
				MIMO B	-0.67	-0.67
				Combined A+B	8.16	8.16
		122	5610	SISO A	3.96	3.96
				SISO B	4.20	4.20
				MIMO A	3.40	3.40
				MIMO B	3.22	3.22
				Combined A+B	10.60	10.60
802.11ac160	VHT0	114	5570	SISO A	-2.65	-2.65
				SISO B	-1.92	-1.92
				MIMO A	-3.44	-3.44
				MIMO B	-3.03	-3.03
				Combined A+B	10.60	10.60

* Maximum values are the duty cycle compensated values calculated from the average (measured) values

Mode	Rate	Channel	Freq [MHz]	Antenna	RU config.	Average conducted PSD [dBm/MHz]	Maximum* conducted PSD [dBm/MHz]
802.11ax/be20	MCS0	100	5500	SISO A	Full	9.97	9.97
					26/0	10.72	10.72
					52/37	10.71	10.71
					106/53	10.95	10.95
				SISO B	Full	10.70	10.70
					26/0	10.84	10.84
					52/37	10.93	10.93
					106/53	10.60	10.60
				MIMO A	Full	7.40	7.40
					26/0	7.72	7.72
					52/37	7.74	7.74
					106/53	7.95	7.95
				MIMO B	Full	7.29	7.29
					26/0	7.65	7.65
					52/37	7.97	7.97
					106/53	7.98	7.98
				Combined A+B	Full	8.99	8.99
					26/0	10.71	10.71
					52/37	10.36	10.36
					106/53	10.34	10.34
		120	5600	SISO A	Full	9.78	9.78
				SISO B	Full	10.34	10.34
				MIMO A	Full	7.20	7.20
				MIMO B	Full	8.20	8.20
				Combined A+B	Full	8.98	8.98
		140	5500 5700	SISO A	FullBW	10.05	10.05
					26/0	10.57	10.57
					52/37	10.90	10.90
					106/53	10.87	10.87
				SISO B	FullBW	10.27	10.27
					26/0	11.00	11.00
					52/37	10.99	10.99
					106/53	11.00	11.00
				MIMO A	FullBW	7.28	7.28
					26/0	8.08	8.08
					52/37	7.99	7.99
					106/53	7.92	7.92
				MIMO B	FullBW	7.29	7.29
					26/0	7.85	7.85
					52/37	7.78	7.78
					106/53	7.95	7.95
				Combined A+B	FullBW	7.87	7.87
					26/0	8.78	8.78
					52/37	8.26	8.26
					106/53	7.90	7.90
802.11ax/be40	MCS0	102	5510	SISO A	Full	6.47	6.47
					242/62	9.28	9.28
				SISO B	Full	6.64	6.64
					242/62	10.48	10.48
				MIMO A	Full	4.22	4.22
					242/62	7.21	7.21
		118	5590	MIMO B	Full	4.11	4.11
					242/62	7.28	7.28
				Combined A+B	Full	3.25	3.25
					242/62	6.86	6.86
				SISO A	Full	8.93	8.93
				SISO B	Full	8.84	8.84
				MIMO A	Full	6.80	6.80
				MIMO B	Full	6.59	6.59
				Combined A+B	Full	10.36	10.36
		134	5670	SISO A	Full	7.10	7.10
					242/62	9.60	9.60
				SISO B	Full	7.91	7.91
					242/62	10.44	10.44
				MIMO A	Full	6.38	6.38
					242/62	7.54	7.54
				MIMO B	Full	6.64	6.64

802.11ax/be80	MCS0	106	5530	Combined A+B	242/62	7.21	7.21
					Full	10.34	10.34
				SISO A	242/62	8.98	8.98
					Full	3.62	3.62
				SISO B	484/65	7.01	7.01
					Full	1.57	1.57
				MIMO A	484/65	6.77	6.77
					Full	1.04	1.04
				MIMO B	484/65	4.99	4.99
					Full	-0.63	-0.63
		122	5610	Combined A+B	484/65	4.42	4.42
					Full	7.52	7.52
				SISO A	484/65	9.26	9.26
					Full	4.88	4.88
				SISO B	Full	4.14	4.14
					Full	3.72	3.72
				MIMO A	Full	3.73	3.73
					Full	5.60	5.60
				MIMO B	Full	-2.50	-2.50
					996/67	1.47	1.47
802.11ax/be160	MCS0	114	5570	SISO A	996/S67	4.19	4.19
					Full	-1.95	-1.95
					996/67	1.79	1.79
				SISO B	996/S67	4.49	4.49
					Full	-3.12	-3.12
					996/67	-1.54	-1.54
				MIMO A	996/S67	3.73	3.73
					Full	-3.05	-3.05
					996/67	-0.75	-0.75
				MIMO B	996/S67	2.30	2.30
					Full	4.55	4.55
					996/67	1.24	1.24
				Combined A+B	996/S67	6.08	6.08
					Full	6.08	6.08

* Maximum values are the duty cycle compensated values calculated from the average (measured) values

Max Value

Maximum Power Spectral Density (PSD) – Overlapped channels between U-NII-2C and U-NII-3

Mode	Rate	Channel	Frequency (MHz)	Antenna	Chain	Average conducted PSD UNII-2C [dBm/MHz]	Maximum* conducted PSD UNII-2C [dBm/MHz]
802.11n20	HT0	144	5720	SISO	A	10.76	10.76
					B	10.74	10.74
	HT8			MIMO	A	7.86	7.86
					B	7.88	7.88
	Combined			A+B	10.88	10.88	
802.11n40	HT0	142	5710	SISO	A	9.42	9.42
					B	9.16	9.16
	HT8			MIMO	A	6.83	6.83
					B	6.87	6.87
	Combined			A+B	9.86	9.86	
802.11ac80	VHT0	138	5690	SISO	A	6.46	6.46
					B	6.12	6.12
				MIMO	A	3.74	3.74
					B	3.50	3.50
				Combined	A+B	6.63	6.63
802.11ax/be20	MCS0	144	5720	SISO	A	10.82	10.82
					B	10.77	10.77
				MIMO	A	7.70	7.70
					B	7.94	7.94
				Combined	A+B	10.83	10.83
802.11ax/be40	MCS0	142	5710	SISO	A	9.19	9.19
					B	9.19	9.19
				MIMO	A	6.92	6.92
					B	6.96	6.96
				Combined	A+B	9.95	9.95
802.11ax/be80	MCS0	138	5690	SISO	A	6.35	6.35
					B	6.20	6.20
				MIMO	A	3.54	3.54
					B	3.44	3.44
				Combined	A+B	6.50	6.50

* Maximum values are the duty cycle compensated values calculated from the average (measured) values

Max Value

See Section B.3.1 for the screenshot results.

B.2.3 Undesirable emission limits : out of band (Conducted)

Test limits

FCC part	RSS clause	Limits
15.407 (b) (3)	RSS-247 Clause 6.2.3 (2)	For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.
15.209	RSS-GEN A1, Clause 8.9	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):

Test procedure

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

Both lower and upper side of the out of band were performed using the integration method as defined in the out of band measurements section (paragraph II.G.3.d) of FCC OET KDB 789033 D02

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

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	53.98	-41.2

See Section B.3.2 for the screenshot results.

B.2.4 Radiated spurious emission

Standard references

FCC part	RSS clause	Limits																				
15.407 (b) (3)	RSS-247 Clause 6.2.3 (2)	For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.																				
15.209	RSS-GEN A1, Clause 8.9	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 Strength (μV/m)</th><th>Field Strength (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.	Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)	30-88	100	40	3	88-216	150	43.5	3	216-960	200	46	3	Above 960	500	54	3
Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)																			
30-88	100	40	3																			
88-216	150	43.5	3																			
216-960	200	46	3																			
Above 960	500	54	3																			

Test procedure

The radiated setup shown in section *Test & System Description* was 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, the EUT azimuth over 360° and for both Vertical and Horizontal polarizations.

According to ANSI C63.10, 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	Quasi-Peak	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dB	---
90.6	12.1	43.5	31.4	V
272.3	24.47	46	21.5	H

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

1 GHz – 40 GHz, 802.11ax/be20, MCS0, Chain A**Radiated Spurious – CH140**

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
10538.5	60.0	Peak	68.2	8.2	V
22766.3	48.1	Peak	74.0	25.9	V
22766.3	42.7	Average	54.0	11.3	V

1 GHz – 40 GHz, 802.11a, 6Mbps, Chain B**Radiated Spurious – CH100**

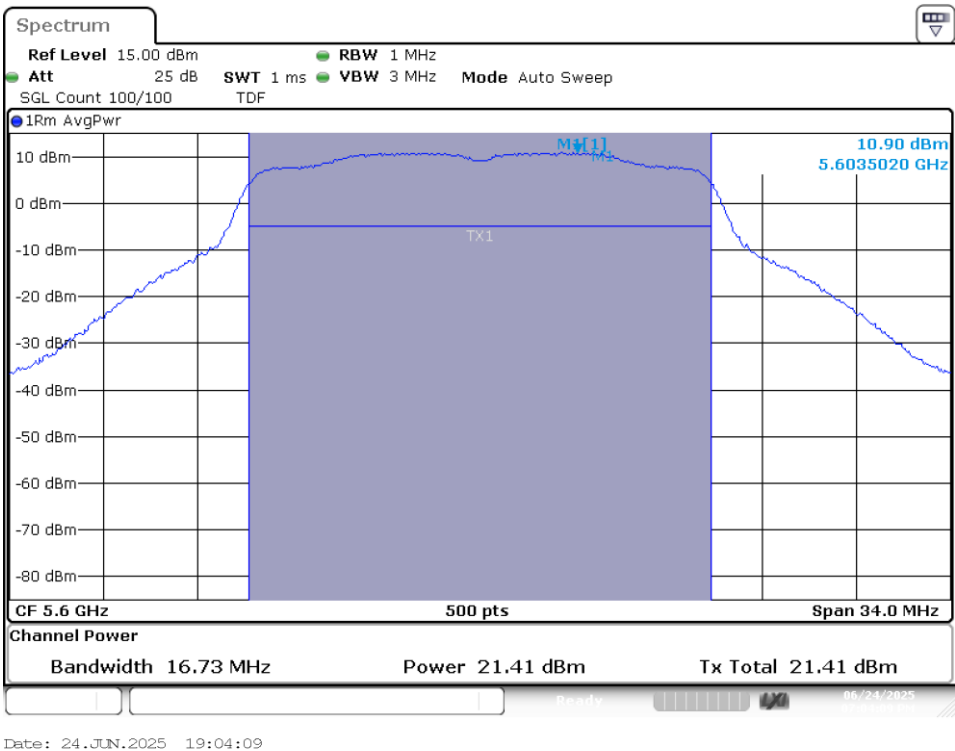
Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
10678.5	58.1	Peak	74.0	15.9	V
10678.5	47.5	Average	54.0	6.5	H
21999.7	47.8	Peak	68.2	20.4	H

1 GHz – 40 GHz, 802.11ax/be20, MCS0, Chain A+B**Radiated Spurious – CH120**

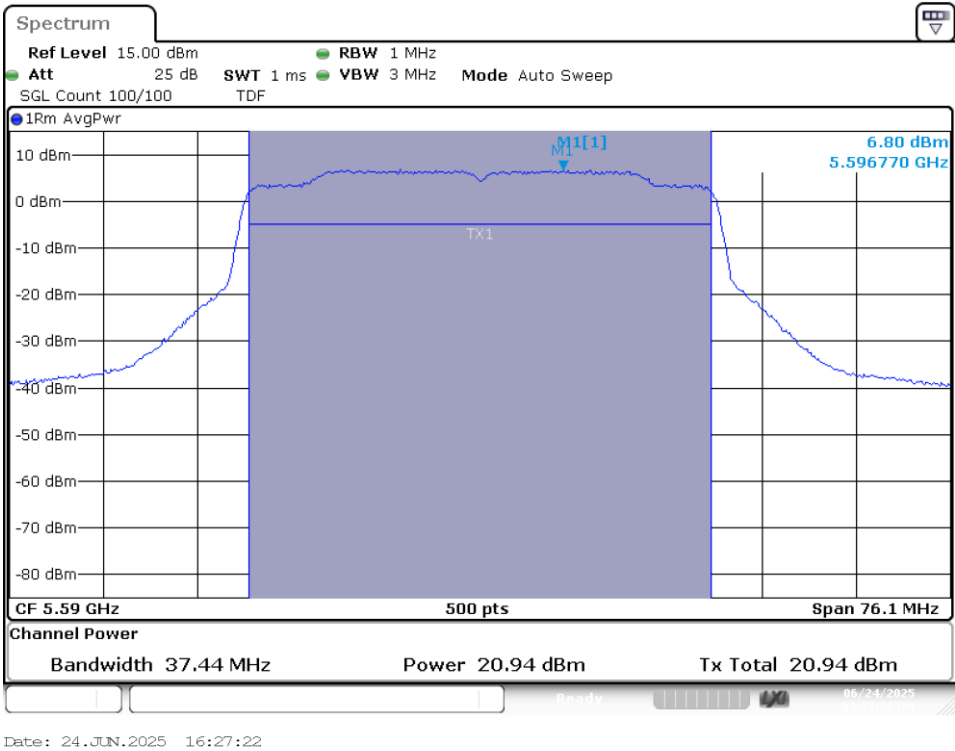
Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
10556.0	60.4	Peak	68.2	7.8	H
22365.1	47.3	Peak	74.0	26.7	H
22365.1	42.3	Average	54.0	11.7	V

B.3 Test Results Screenshots

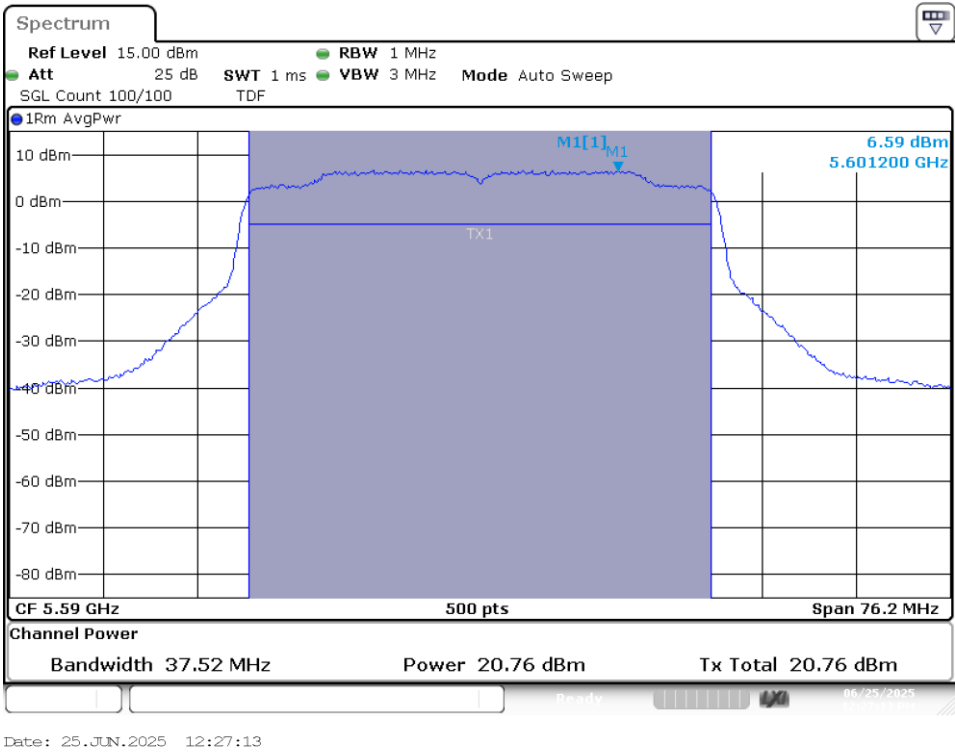
B.3.1 Maximum Output Power per BW



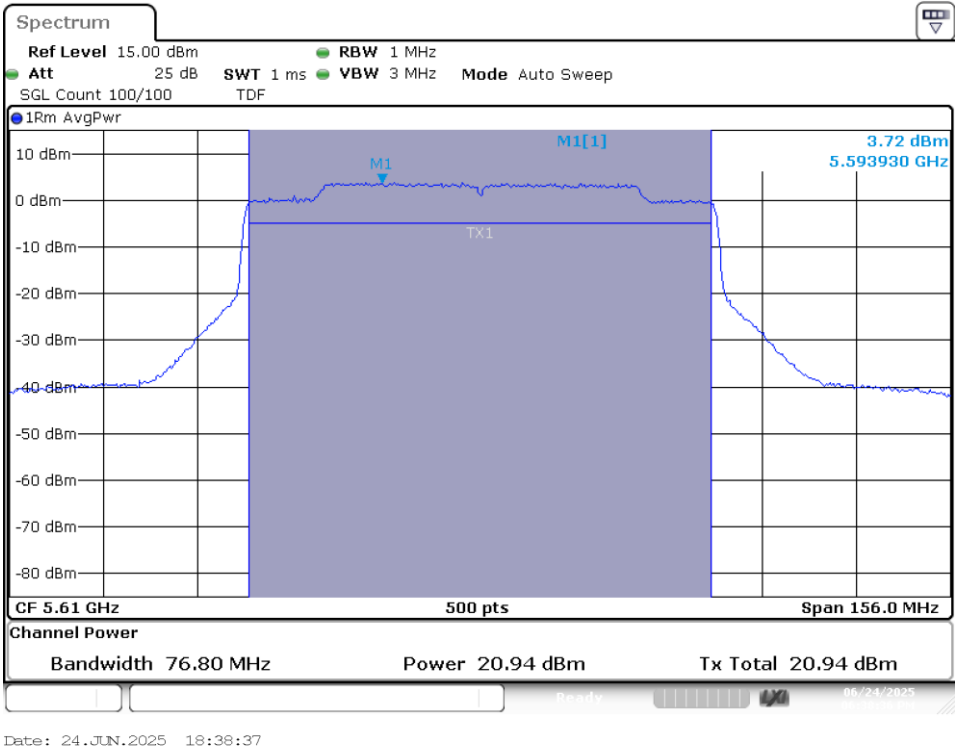
SISO B-802.11a20-Ch120-5600MHz-6



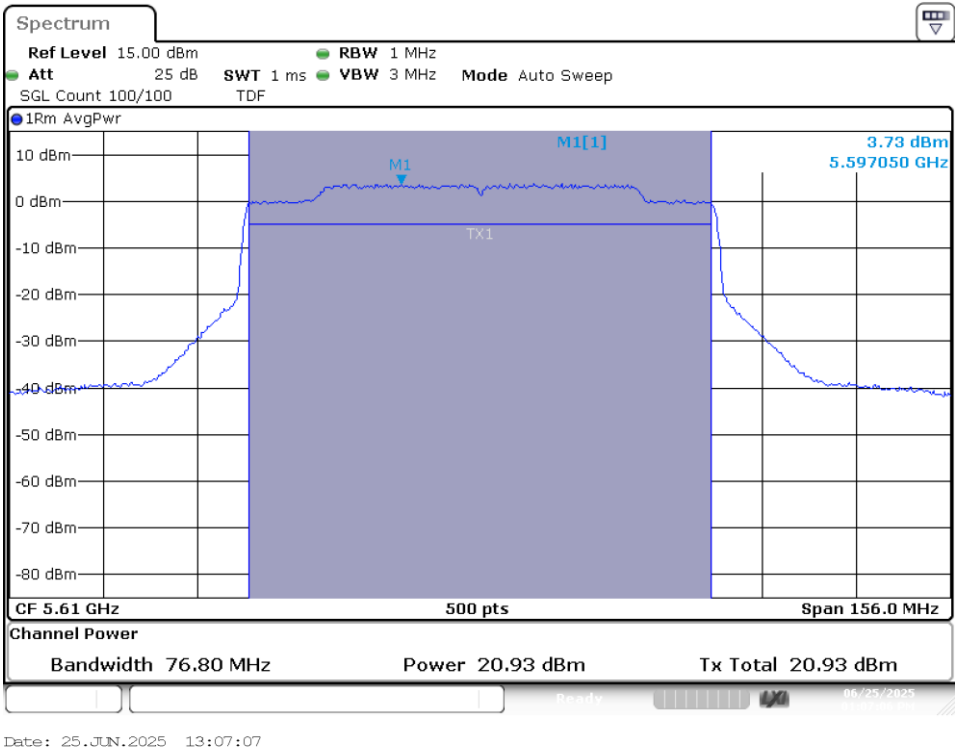
MIMO A-802.11ax/be40-Ch118-5590MHz-MCS0



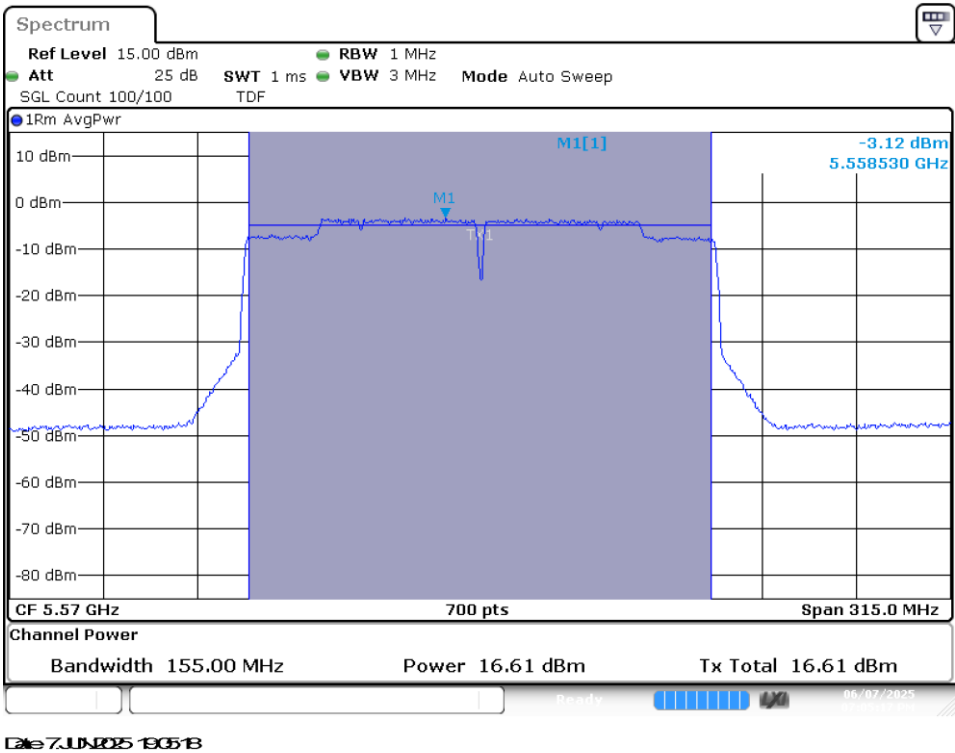
MIMO B-802.11ax/be40-Ch118-5590MHz-MCS0



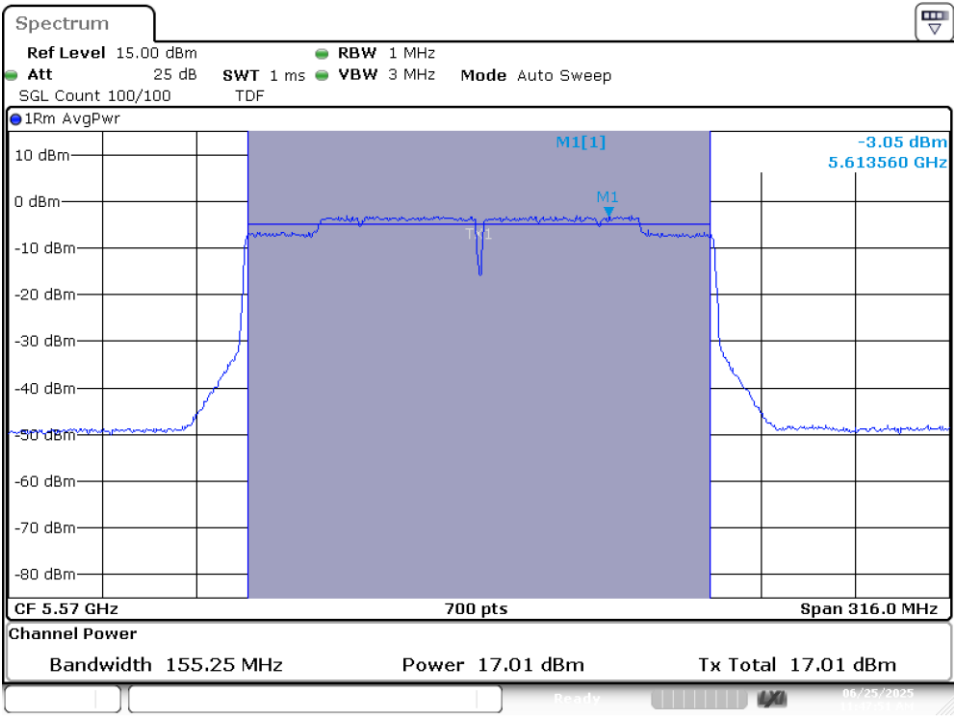
MIMO A-802.11ax/be80-Ch122-5610MHz-MCS0



MIMO B-802.11ax/be80-Ch122-5610MHz-MCS0



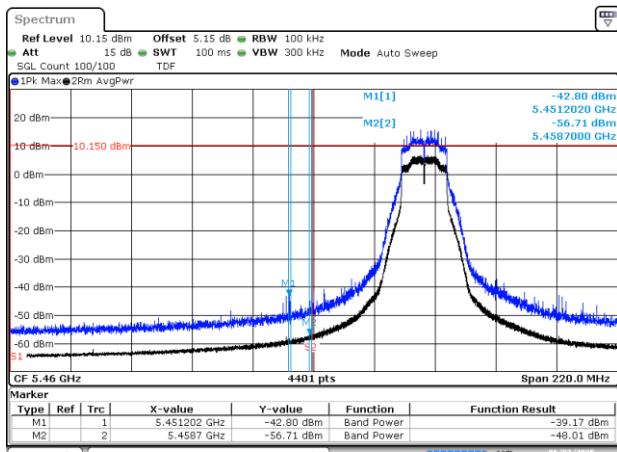
MIMO A-802.11ax/be160-Ch114-5570MHz-MCS0



Date: 25.JUN.2025 11:47:51

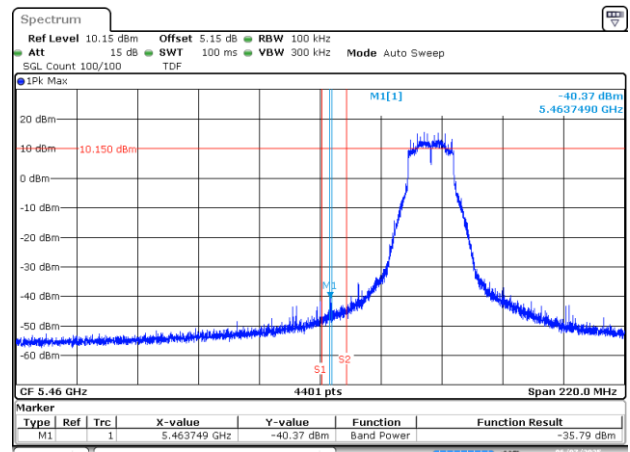
MIMO B-802.11ax/be160-Ch114-5570MHz-MCS0

B.3.2 Undesirable emission limits : out of band (Conducted)



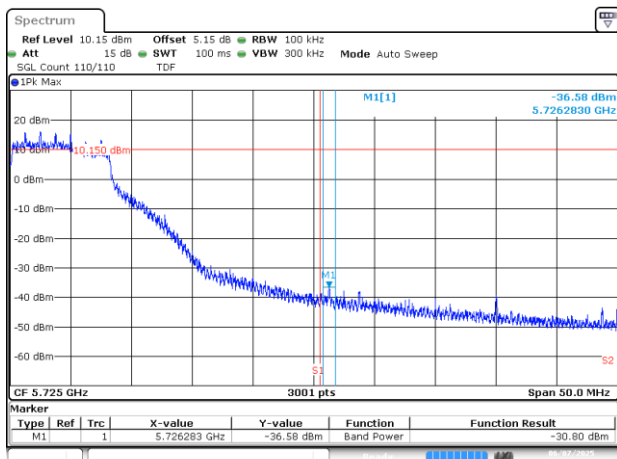
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BE-R-LOW, SISO-A, 802.11a20-6Mbps, Ch100



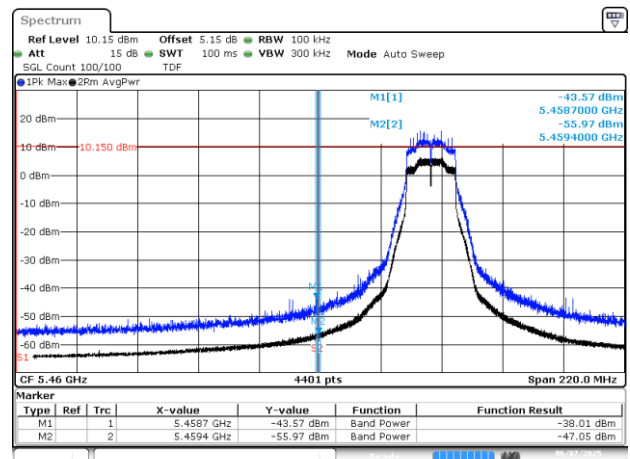
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BE-NR-LOW, SISO-A, 802.11a20-6Mbps, Ch100



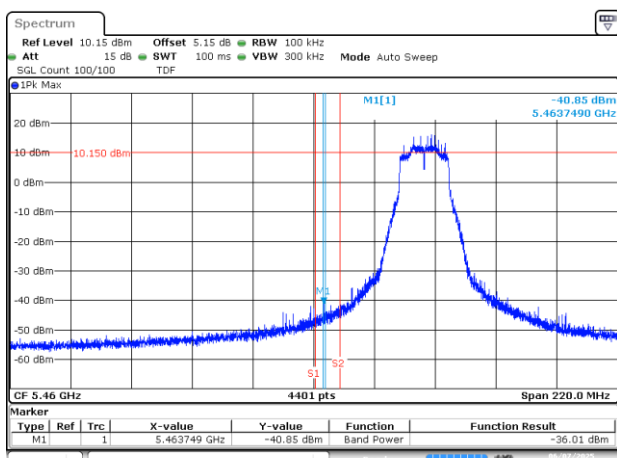
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BE-NR-HIGH, SISO-A, 802.11a20-6Mbps, Ch140



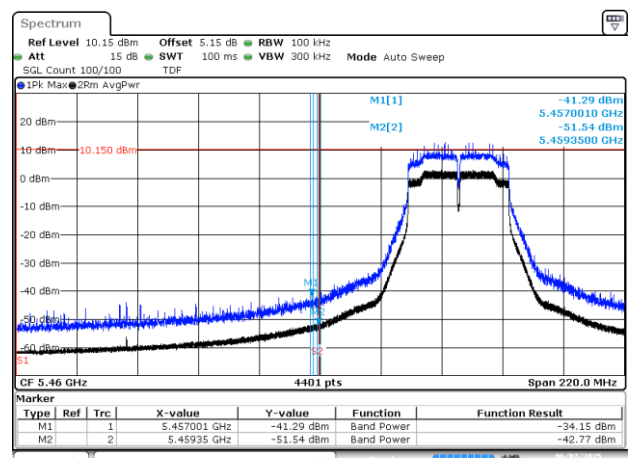
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BE-R-LOW, SISO-A, 802.11n20-HT0, Ch100



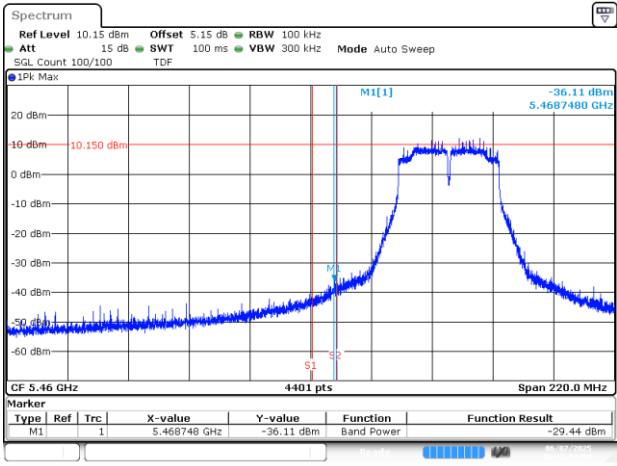
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BE-NR-LOW, SISO-A, 802.11n20-HT0, Ch100

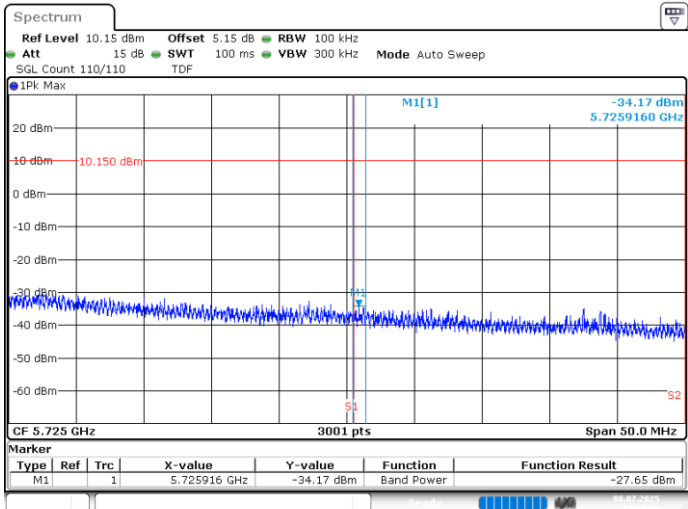


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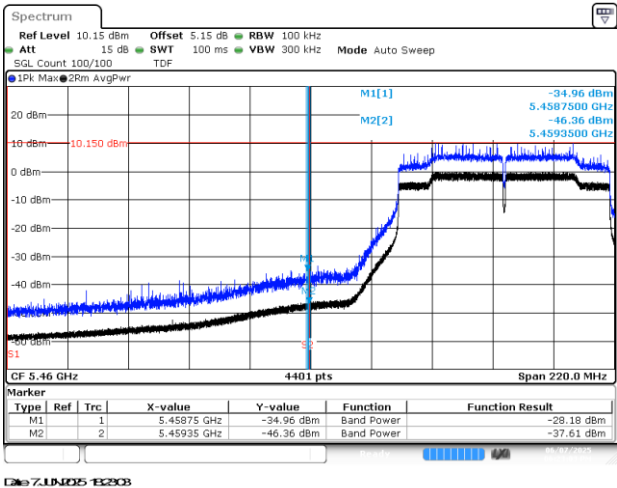
BE-R-LOW, SISO-A, 802.11n40-HT0, Ch102



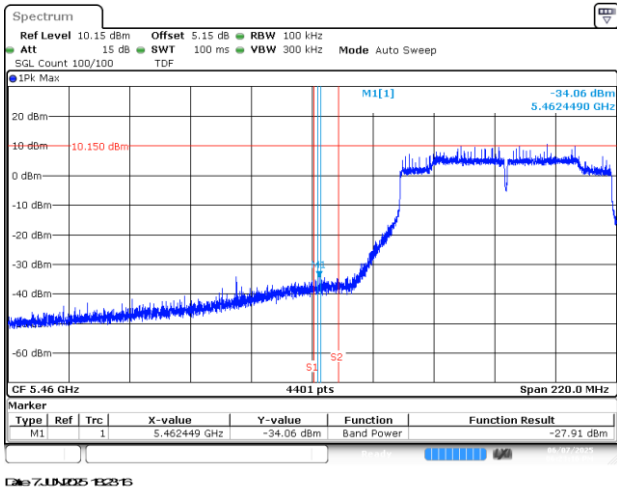
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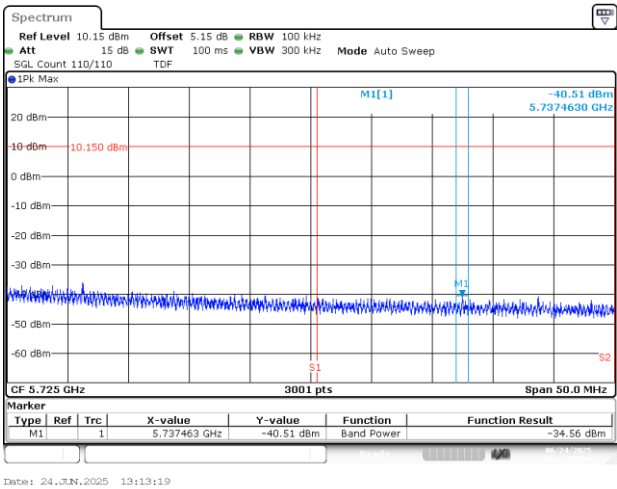
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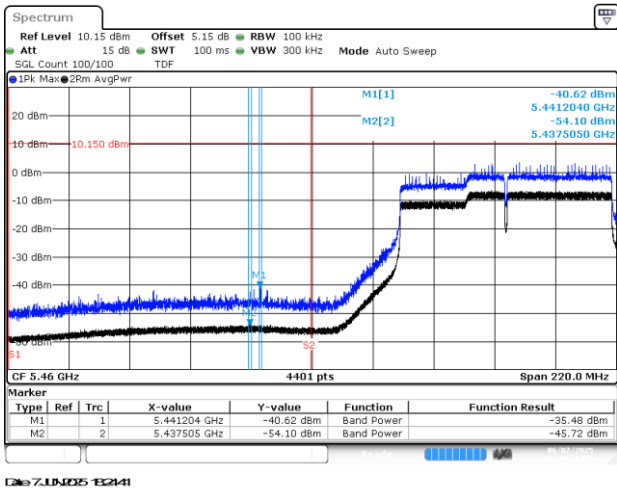
BE-R-LOW, SISO-A, 802.11ac80-VHT0, Ch106



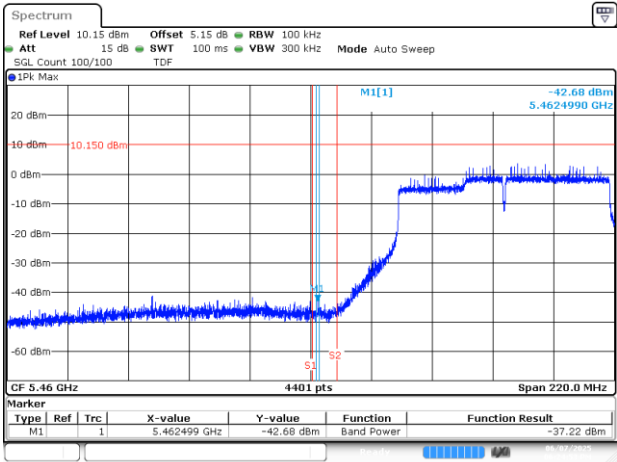
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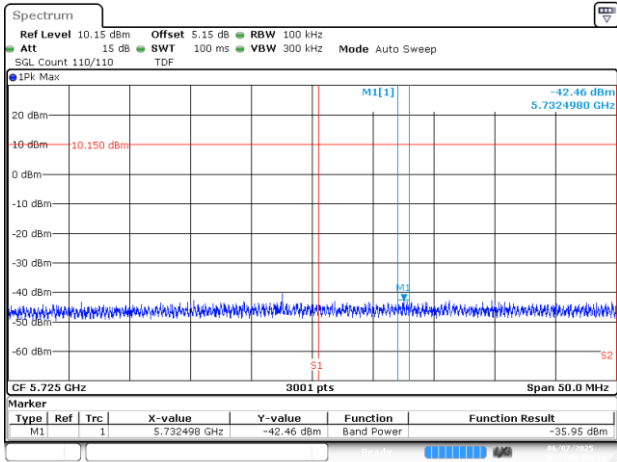
BE-NR-HIGH, SISO-A, 802.11ac80-VHT0, Ch122



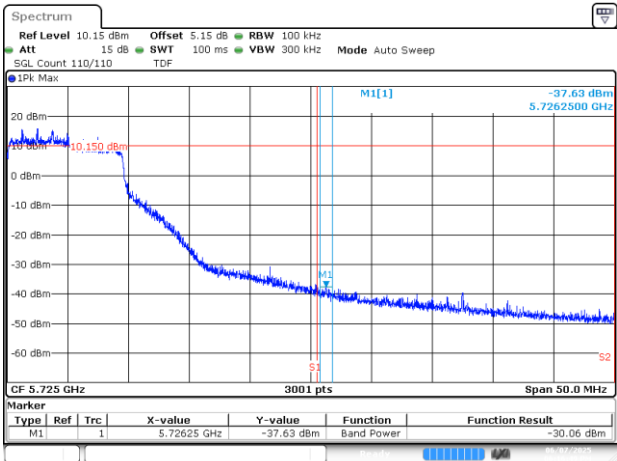
BE-R-LOW, SISO-A, 802.11ac160-VHT0, Ch114



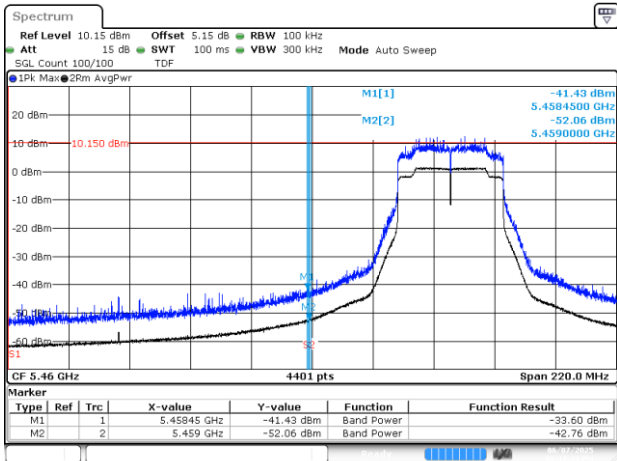
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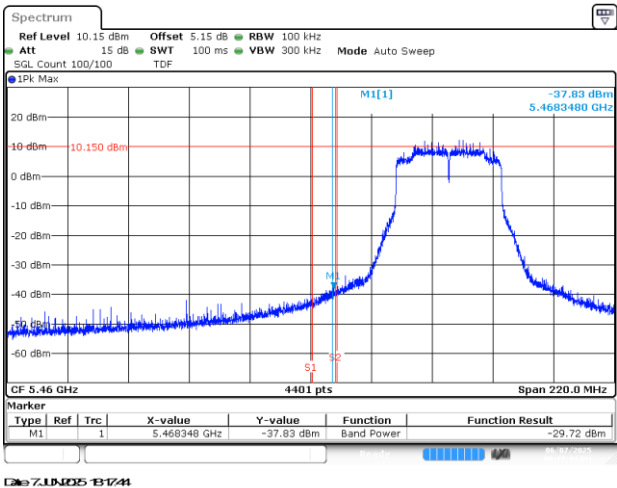
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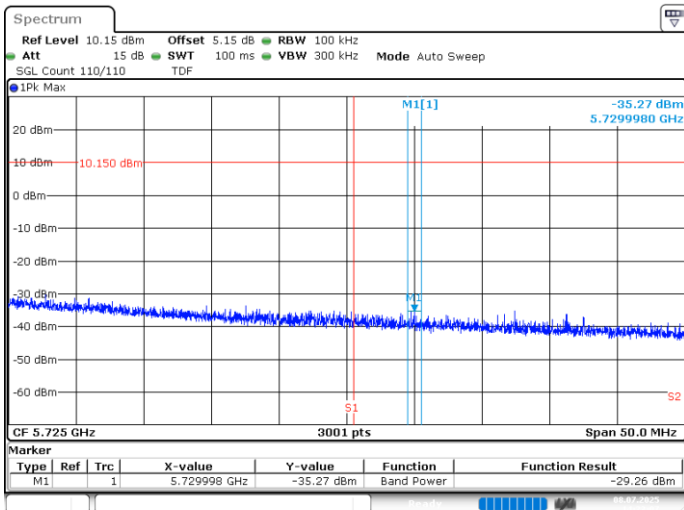
BE-NR-HIGH, SISO-A, 802.11ax20-HE0, Ch140



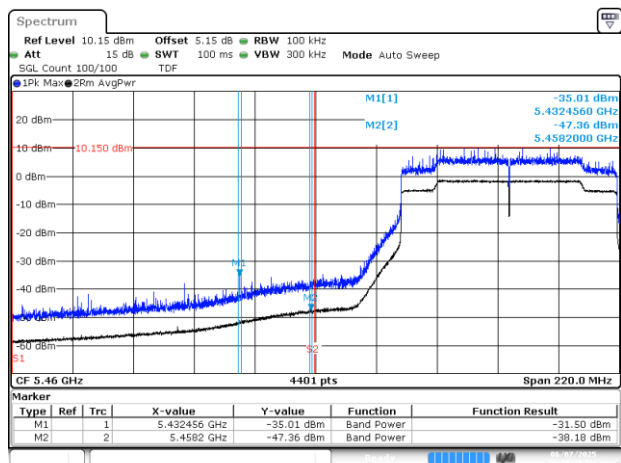
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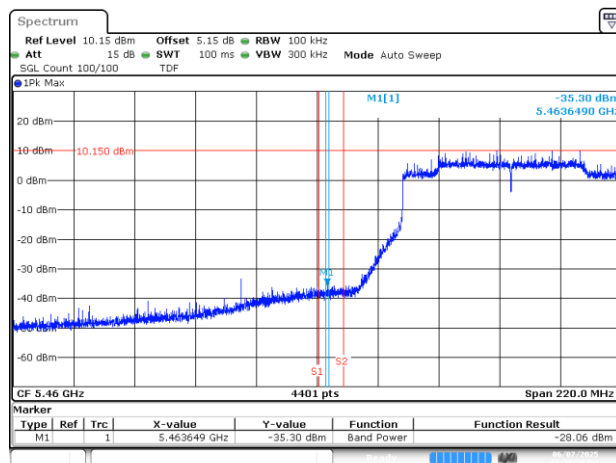
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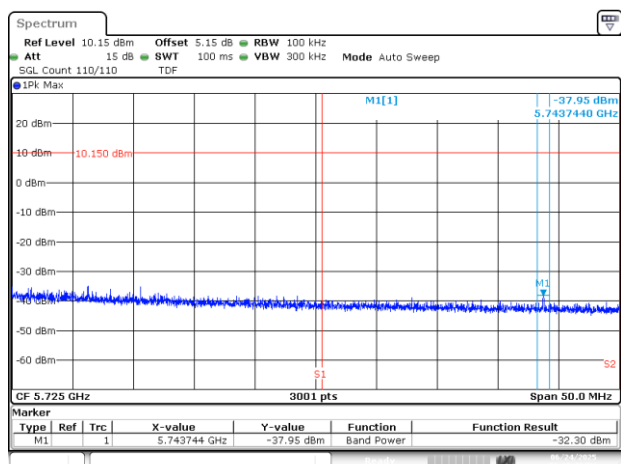
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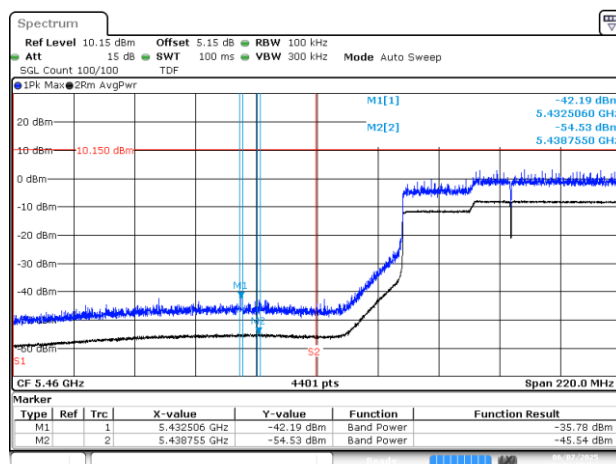
BE-R-LOW, SISO-A, 802.11ax80-HE0, Ch106



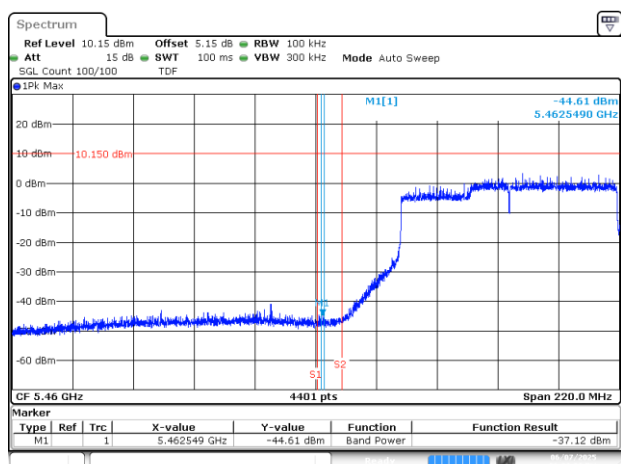
BE-NR-LOW, SISO-A, 802.11ax80-HE0, Ch106



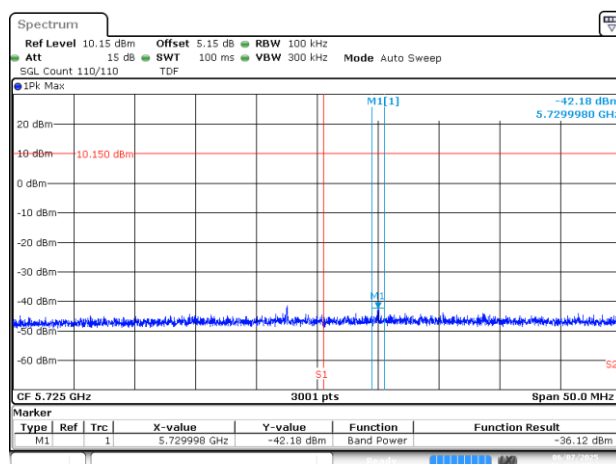
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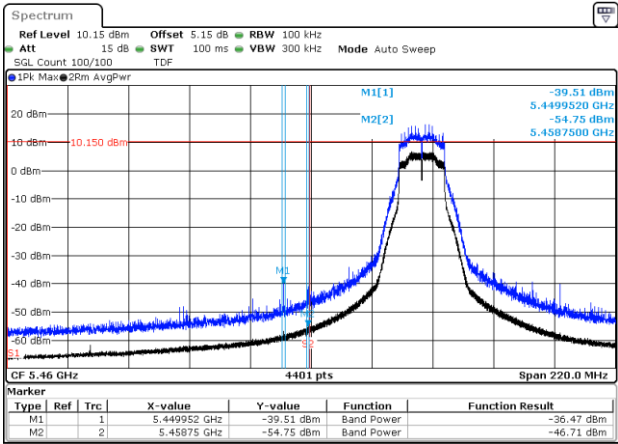
BE-R-LOW, SISO-A, 802.11ax160-HE0, Ch114



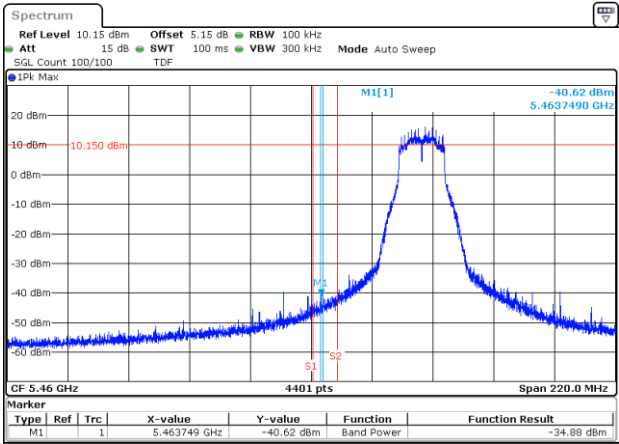
BE-NR-LOW, SISO-A, 802.11ax160-HE0, Ch114



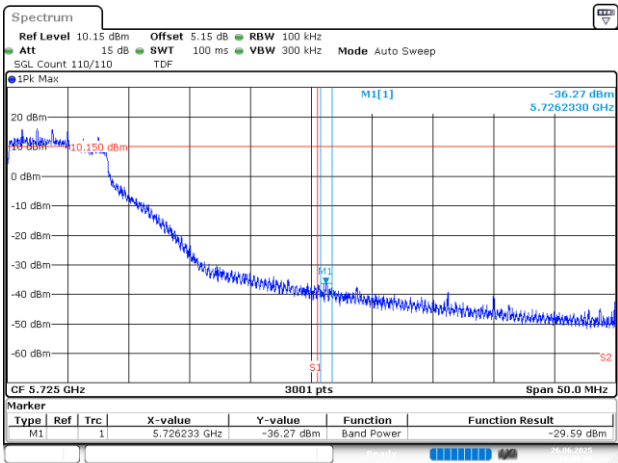
BE-NR-HIGH, SISO-A, 802.11ax160-HE0, Ch114



BE-R-LOW, SISO-B, 802.11a20-6Mbps, Ch100

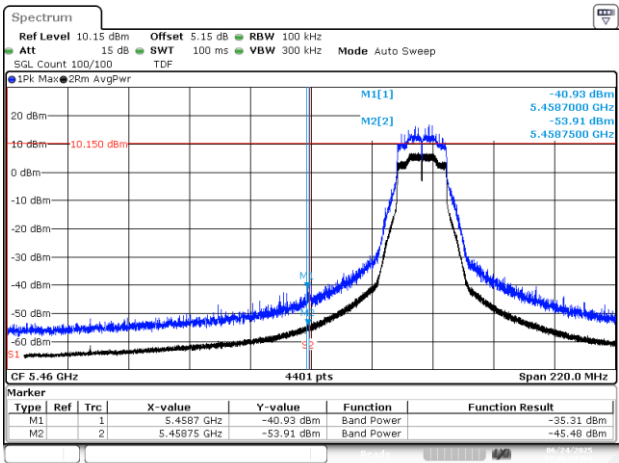


BE-NR-LOW, SISO-B, 802.11a20-6Mbps, Ch100



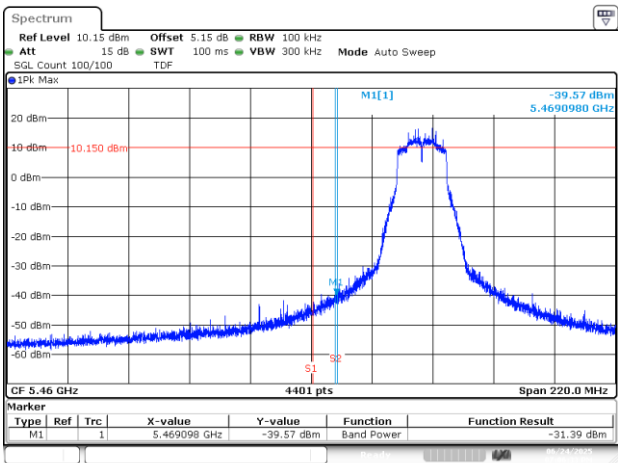
Date: 26.JUN.2025 19:05:08

BE-NR-HIGH, SISO-B, 802.11a20-6Mbps, Ch140



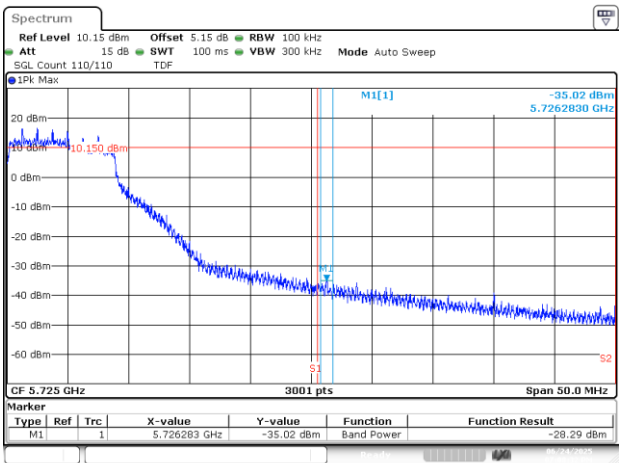
Date: 24.JUN.2025 19:06:21

BE-R-LOW, SISO-B, 802.11n20-HT0, Ch100



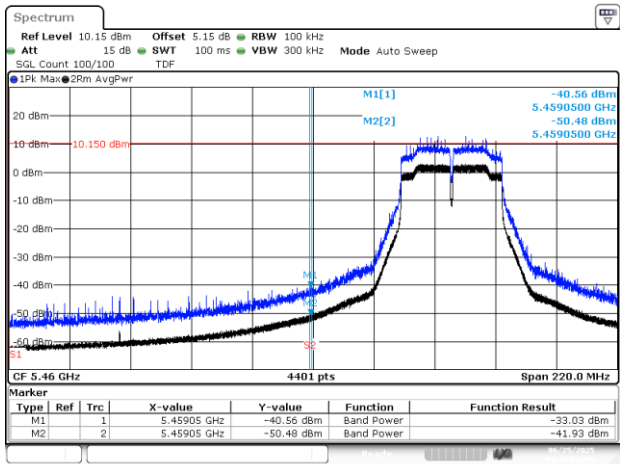
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BE-NR-LOW, SISO-B, 802.11n20-HT0, Ch100

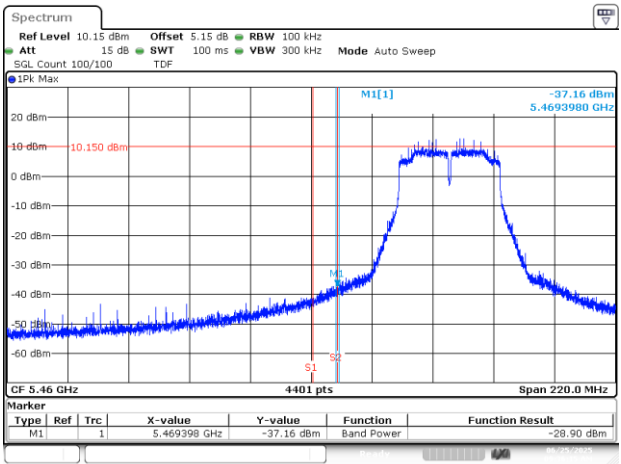


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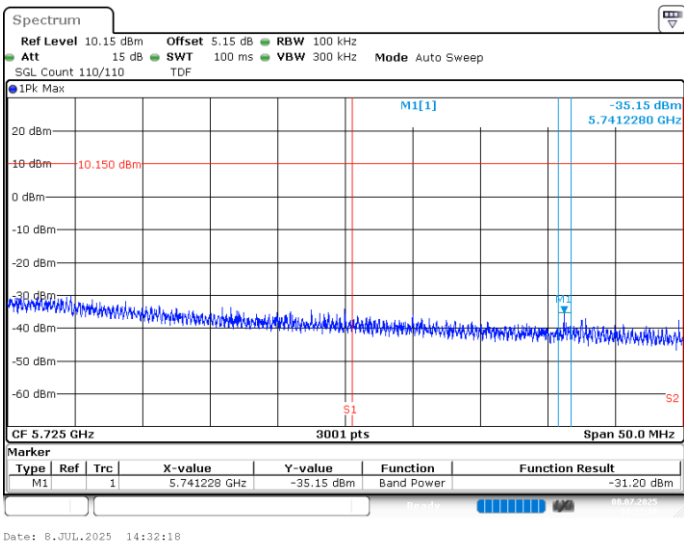
BE-NR-HIGH, SISO-B, 802.11n20-HT0, Ch140



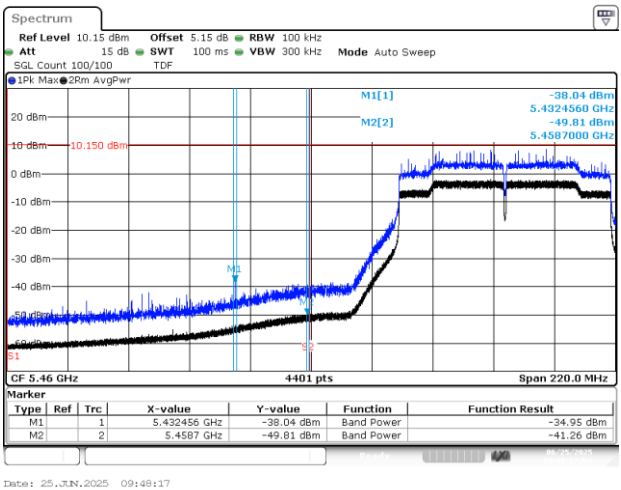
BE-R-LOW, SISO-B, 802.11n40-HT0, Ch102



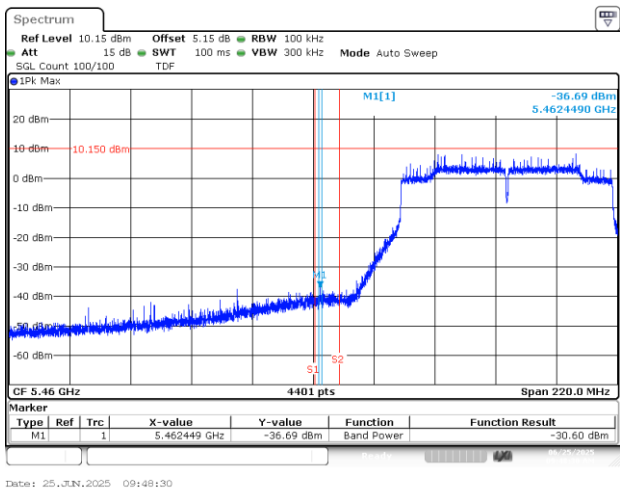
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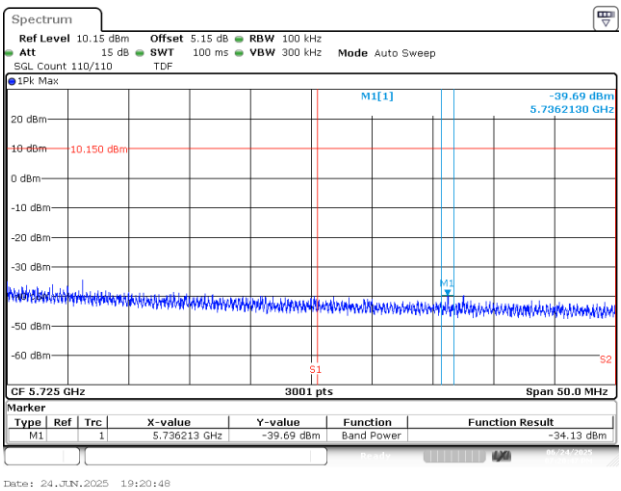
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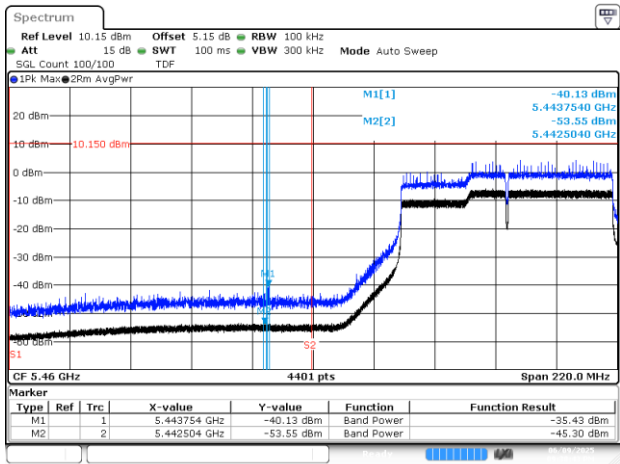
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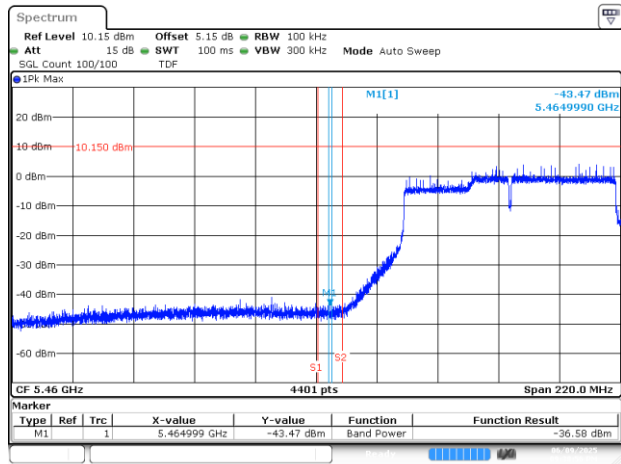
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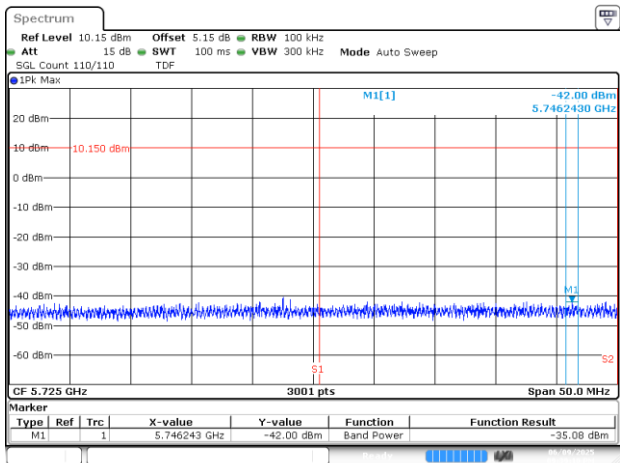
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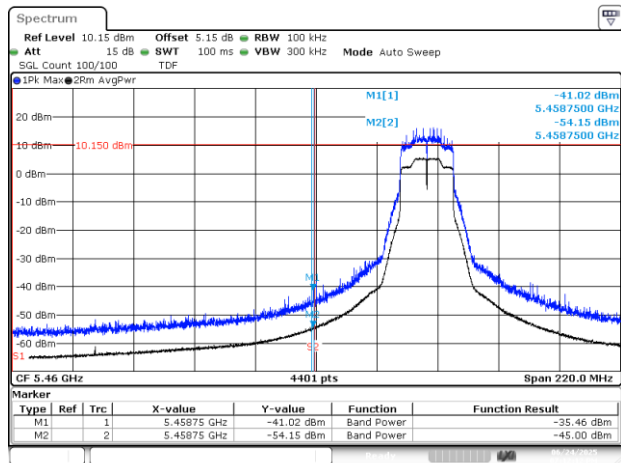
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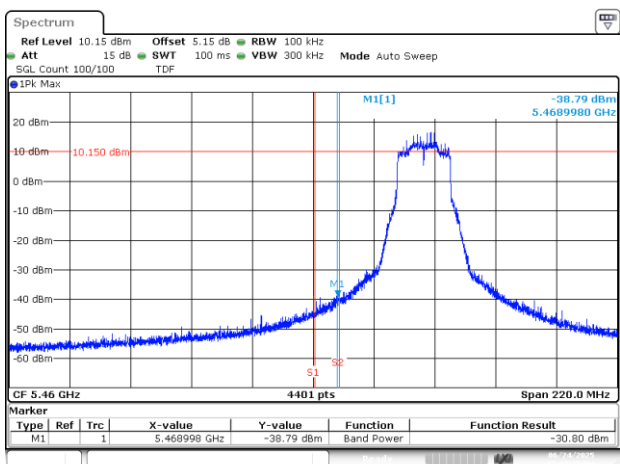
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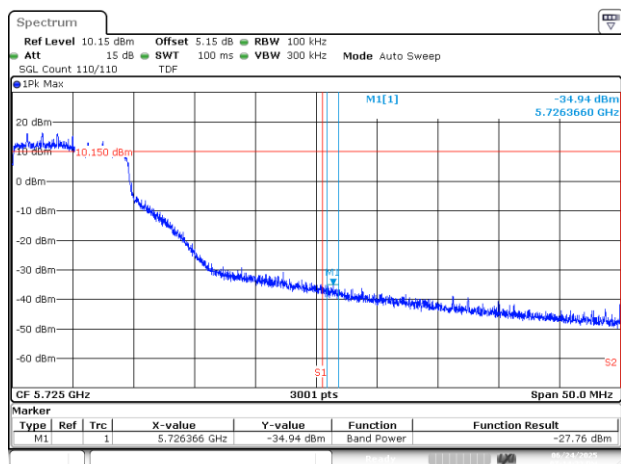
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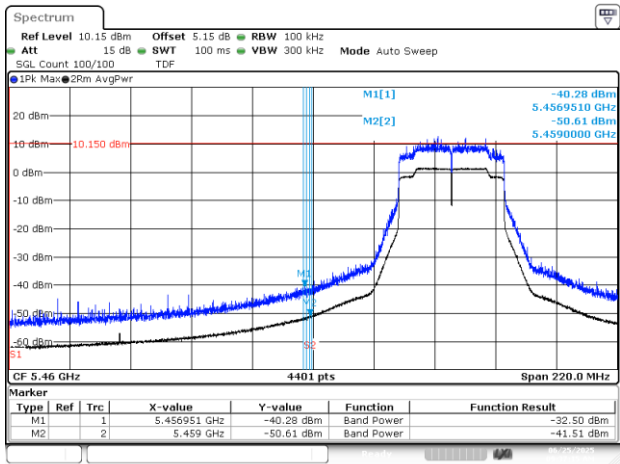
BE-R-LOW, SISO-B, 802.11ax/be20-MCSO, Ch100



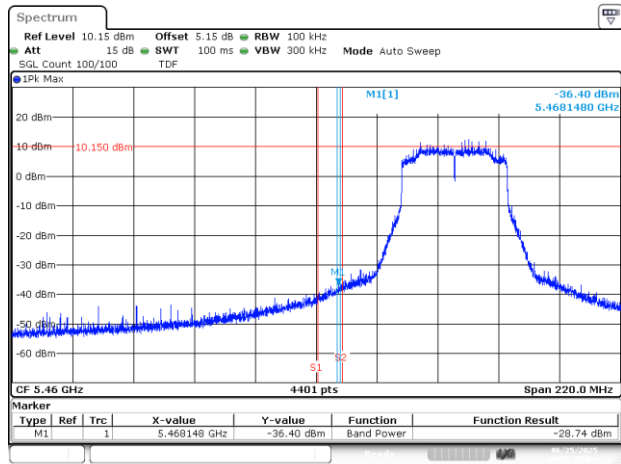
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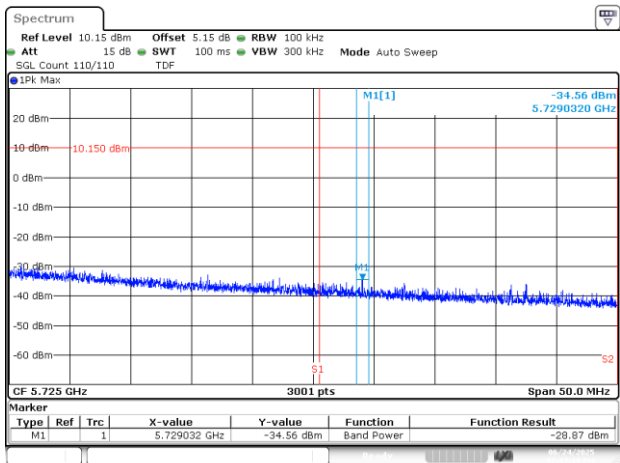
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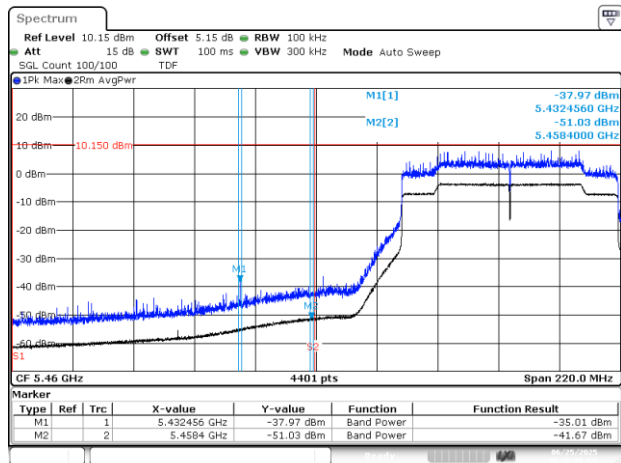
BE-R-LOW, SISO-B, 802.11ax/be40-MCSO, Ch102



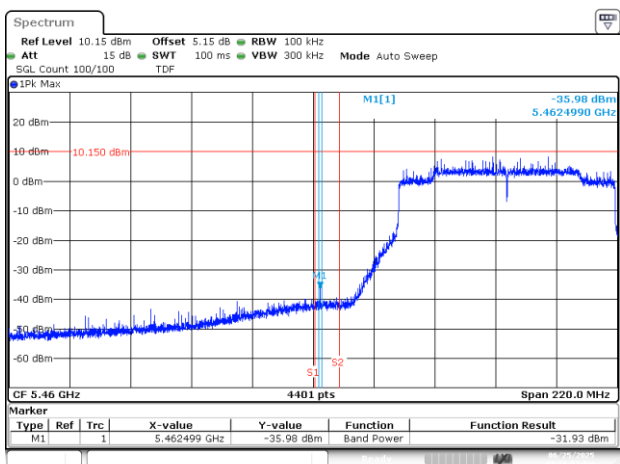
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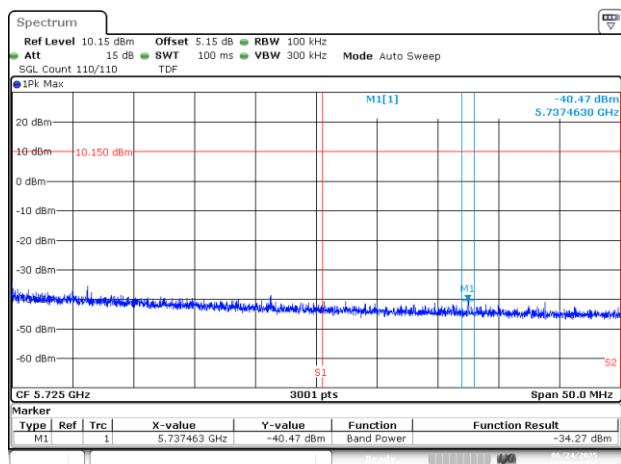
BE-NR-HIGH, SISO-B, 802.11ax/be40-MCSO, Ch134



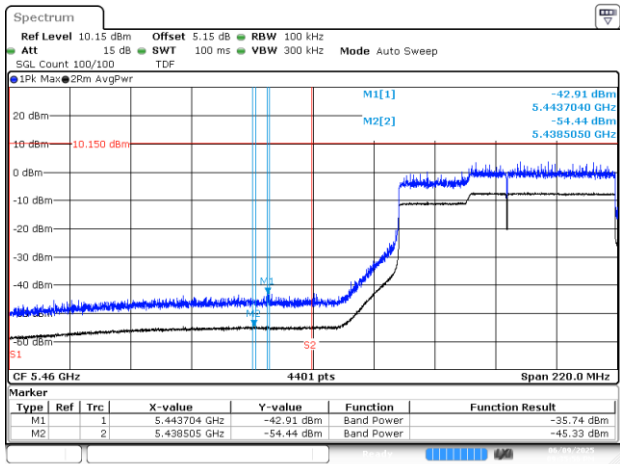
BE-R-LOW, SISO-B, 802.11ax/be80-MCSO, Ch106



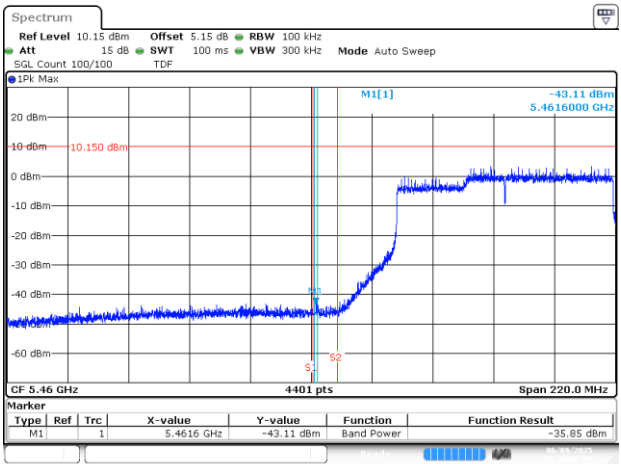
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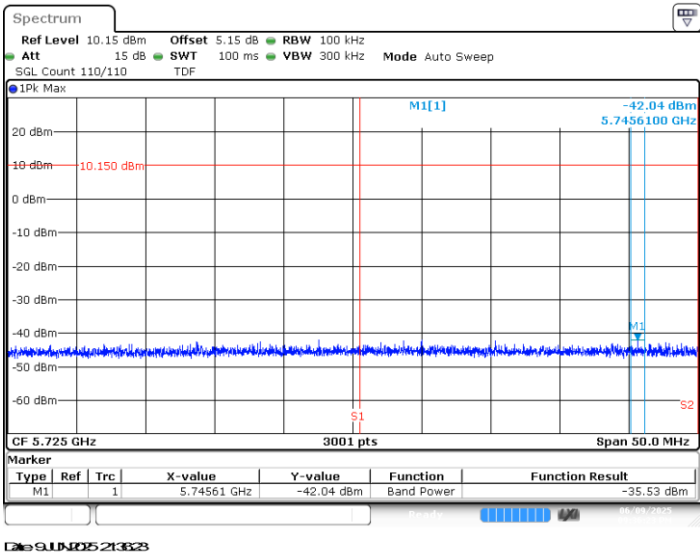
BE-NR-HIGH, SISO-B, 802.11ax/be80-MCSO, Ch122



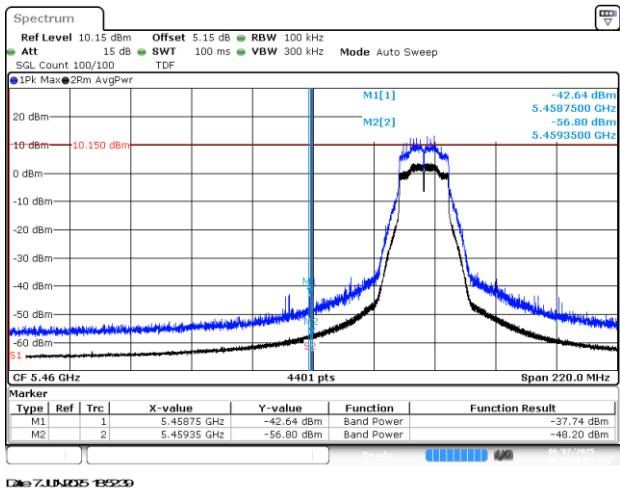
BE-R-LOW, SISO-B, 802.11ax/be160-MCSO, Ch114



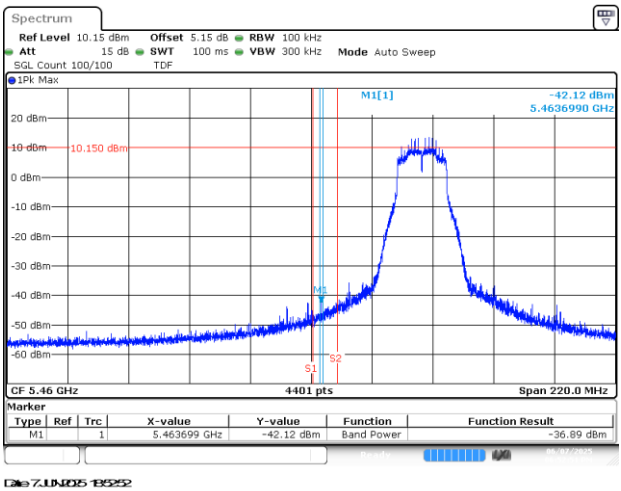
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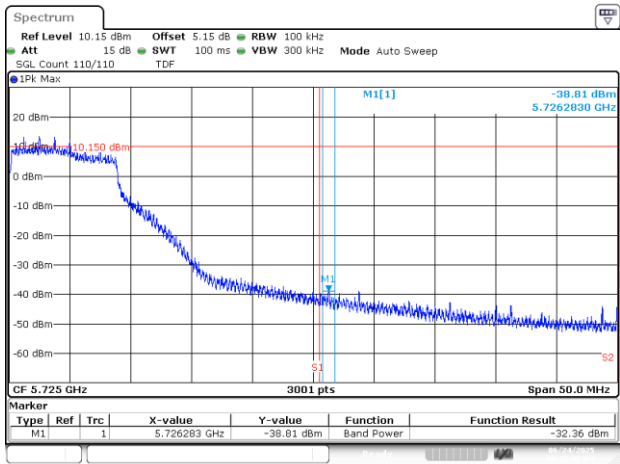
BE-NR-HIGH, SISO-B, 802.11ax/be160-MCSO, Ch114



BE-R-LOW, MIMO-A, 802.11n20-HT0, Ch100

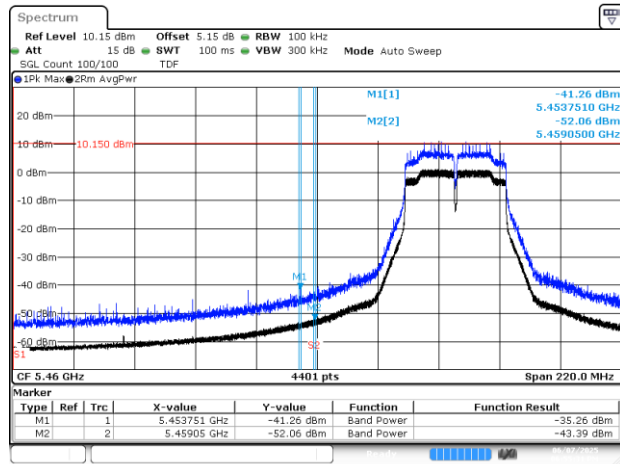


BE-NR-LOW, MIMO-A, 802.11n20-HT0, Ch100



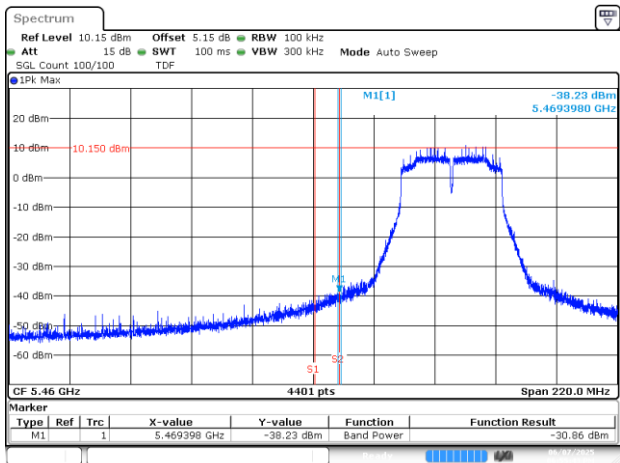
Date: 24.JUN.2025 17:12:26

BE-NR-HIGH, MIMO-A, 802.11n20-HT0, Ch140



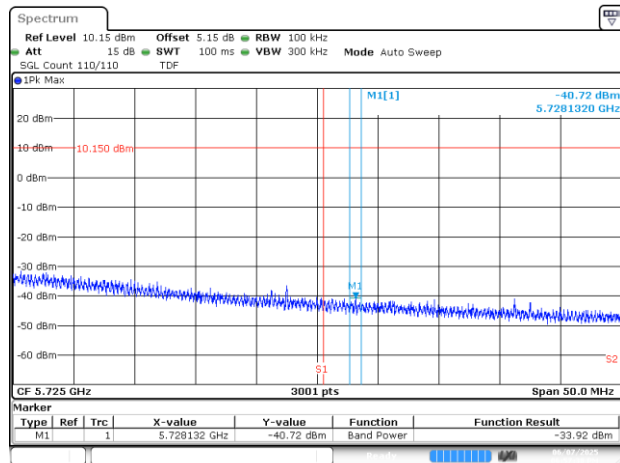
7.JUN.2025 13:53:31

BE-R-LOW, MIMO-A, 802.11n40-HT0, Ch102



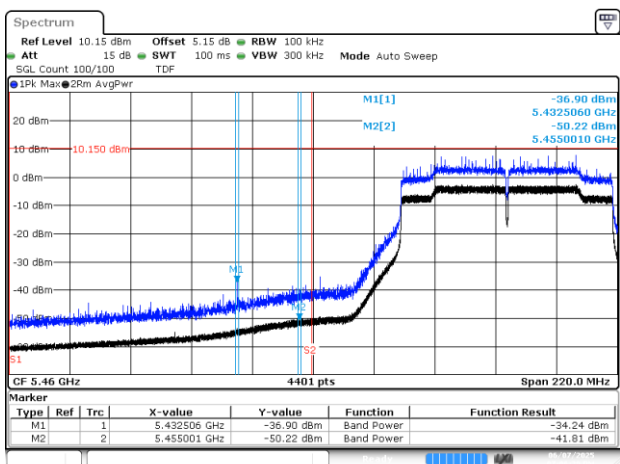
7.JUN.2025 13:54

BE-NR-LOW, MIMO-A, 802.11n40-HT0, Ch102



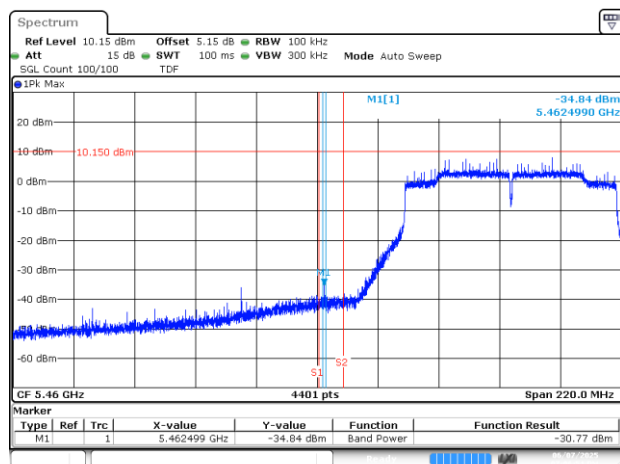
7.JUN.2025 13:53:31

BE-NR-HIGH, MIMO-A, 802.11n40-HT0, Ch134



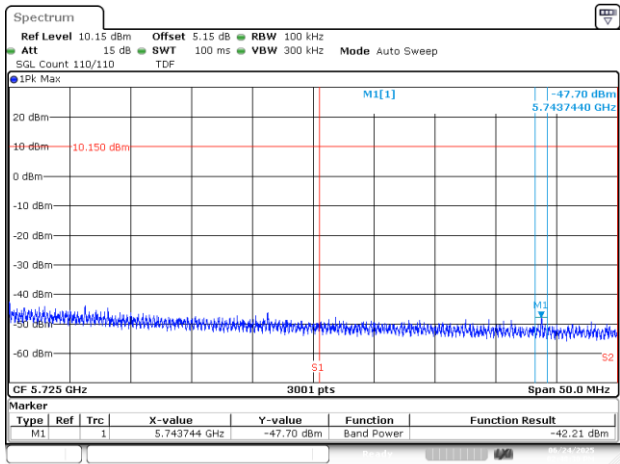
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BE-R-LOW, MIMO-A, 802.11ac80-VHT0, Ch106

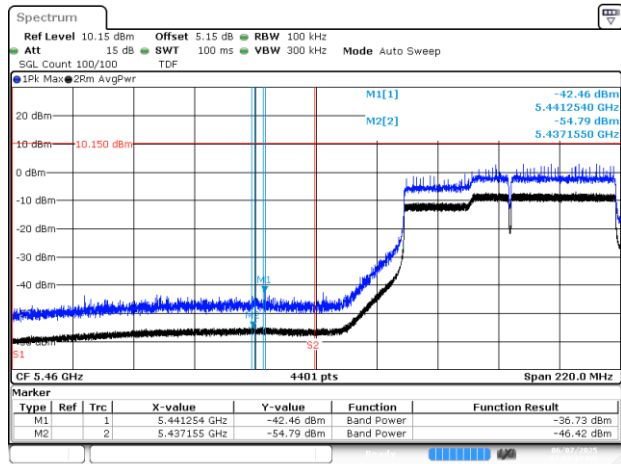


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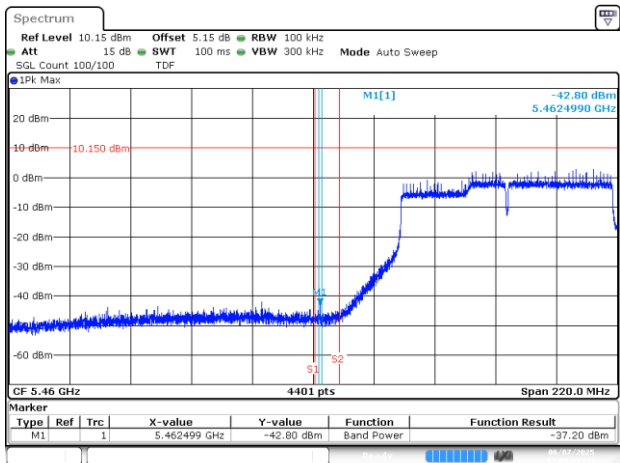
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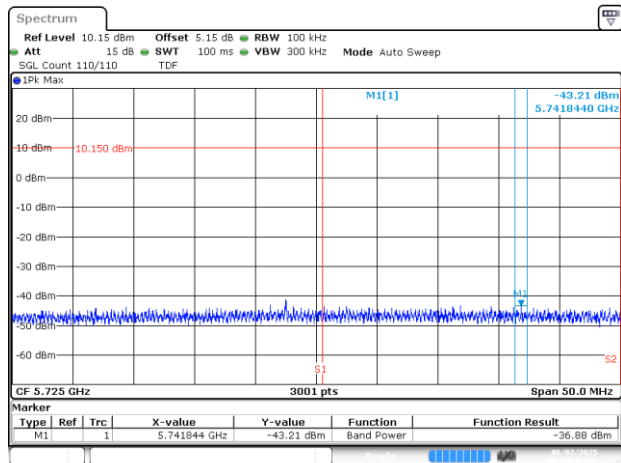
BE-NR-HIGH, MIMO-A, 802.11ac80-VHT0, Ch122



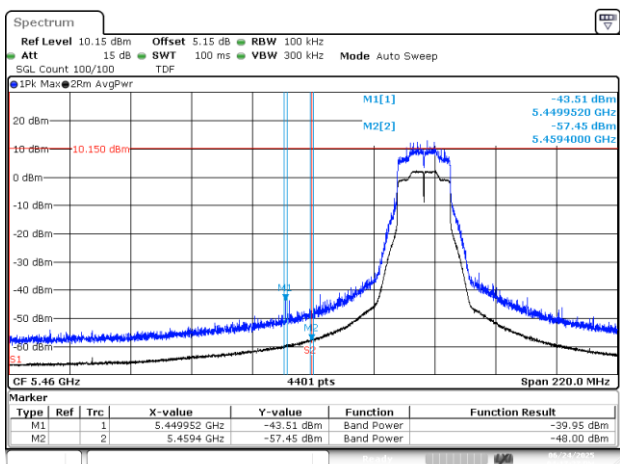
BE-R-LOW, MIMO-A, 802.11ac160-VHT0, Ch114



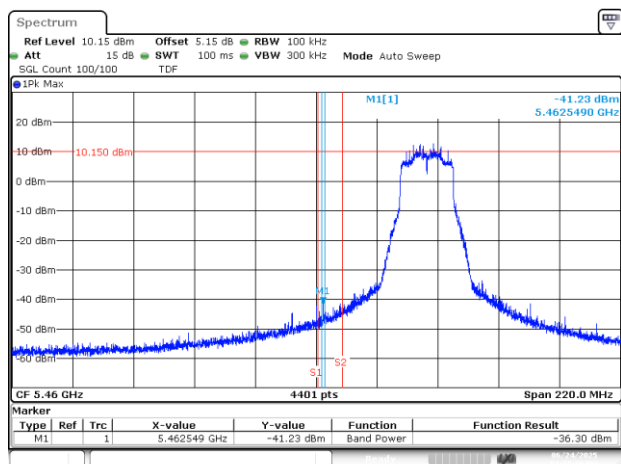
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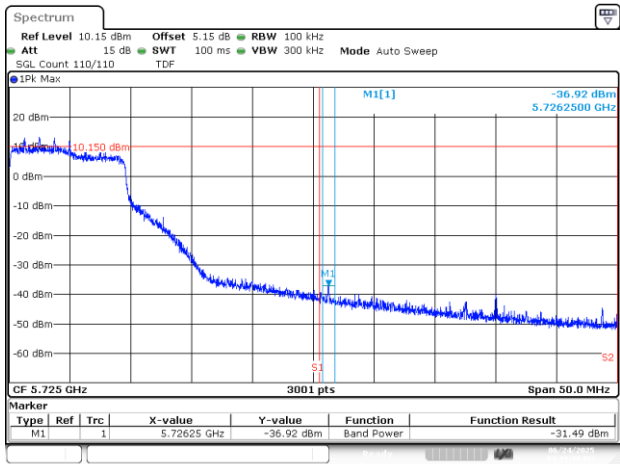
BE-NR-HIGH, MIMO-A, 802.11ac160-VHT0, Ch114



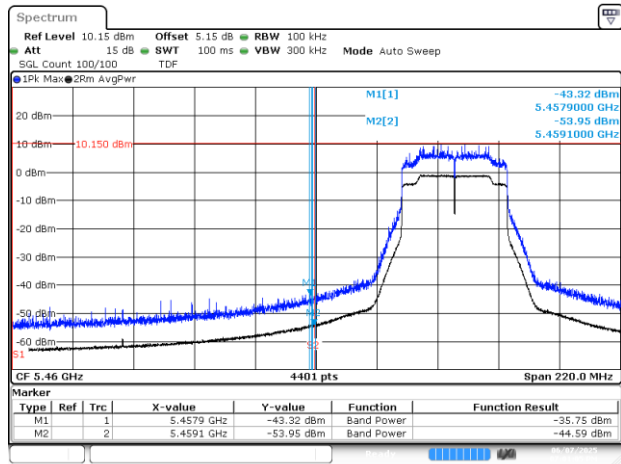
BE-R-LOW, MIMO-A, 802.11ax20-HE0, Ch100



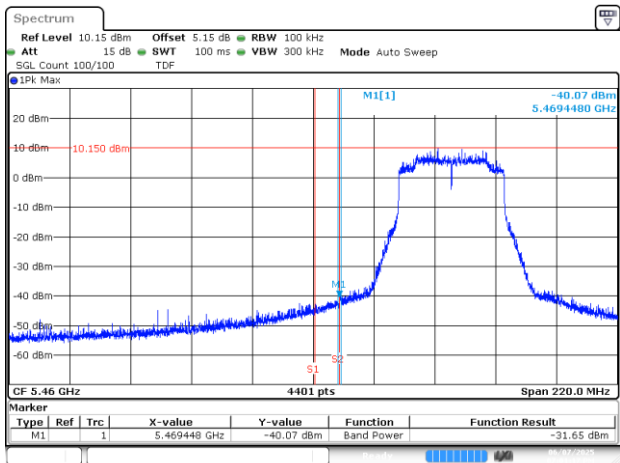
BE-NR-LOW, MIMO-A, 802.11ax20-HE0, Ch100



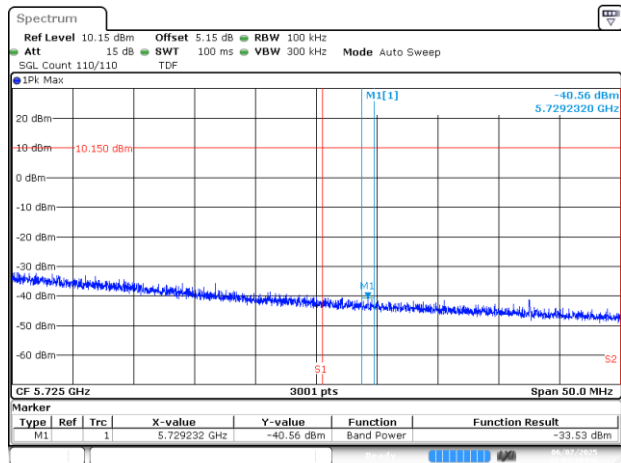
BE-NR-HIGH, MIMO-A, 802.11ax20-HE0, Ch140



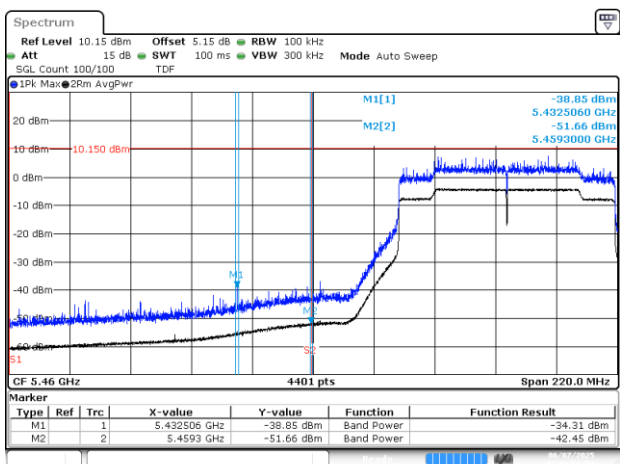
BE-R-LOW, MIMO-A, 802.11ax40-HE0, Ch102



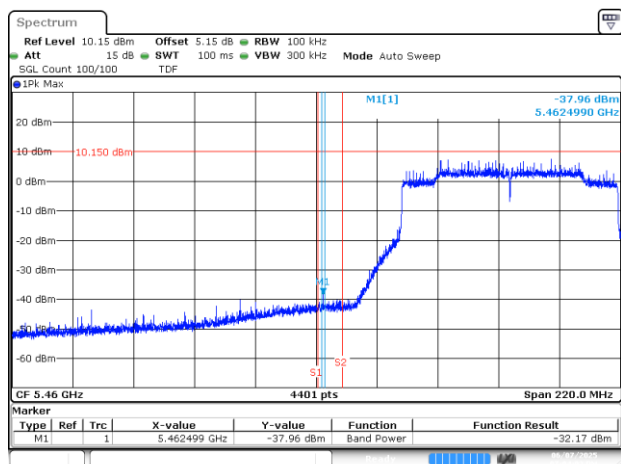
BE-NR-LOW, MIMO-A, 802.11ax40-HE0, Ch102



BE-NR-HIGH, MIMO-A, 802.11ax40-HE0, Ch134



BE-R-LOW, MIMO-A, 802.11ax80-HE0, Ch106



BE-NR-LOW, MIMO-A, 802.11ax80-HE0, Ch106