

TEST REPORT

EUT Description	WLAN and BT, 2x2 PCIe M.2 1216 adapter card
Brand Name	Intel®
Model Name	BE201D2WP
FCC ID	PD2BE201D2P
Date of Test Start/End	2024-05-27 / 2024-06-25
Features	2x2 Wi-Fi - Bluetooth® (see section 5)

Applicant	Intel Corporation SAS
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Reference Standards	FCC CFR Title 47 Part 15 E (see section 1)
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Test Report identification	240521-02.TR01
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

Reviewed by

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1. Standards, reference documents and applicable test methods

1. FCC Title 47 CFR part 15 – Subpart E – Unlicensed National Information Infrastructure Devices. 2023-10-01 Edition
2. FCC Title 47 CFR part 15 - Subpart C – §15.209 Radiated emission limits; general requirements. 2023-10-01 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.

2. General conditions, competences and guarantees

- ✓ 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 WRF Lab declines any responsibility with respect to the identified information provided by the customer and that may affect the validity of results.
- ✓ 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	24.0 °C +/- 3.0 °C
Humidity	45.4%+/- 10.8%

4. Test samples

Sample	Control #	Description	Model	Serial #	Date of receipt	Note
#01	240521-01.S03	WiFi 7 Module	BE201D2WP	F8FE5ECDD124	2024-05-22	Used for conducted tests
	200203-01.S09	Laptop	HP Oleander	00095101LK	2024-04-24	
	231109-03.S31	Extender Board	CRF DB 2230 BNJ	ASS00862-01-0A	2023-11-10	
#02	240521-02.S05	Wifi 7 Module	BE201D2WP	F8FE5ECDC9B3	2024-05-22	Used for Radiated Spurious Emissions tests
	220225-03.S07	Microwave Absorber	Eccosorb BSR-1	-	2022-03-14	
	231109-03.S48	Adaptor	PCB00866-00_A	124627	2023-11-24	
	200611-03.S31	Extender	ADEXELEC	-	2020-08-19	
	200504-04.S07	Laptop	Latitude 5401	BVHLK13	2020-06-02	
	220117-04.S11	Antenna 5GHz	ANT24-P855-00	-	2022-02-09	
	240521-01.S11	Antenna 5GHz	ANT24-P855-00	-	2022-02-09	
	231120-05.S21	WiFi 7 Module	BE201D2WP	F8FE5CDCA49	2024-02-07	
	180001-01.S21	Socket	1216SD to M.2	-	2021-06-07	
#03	240521-02.S04	Wifi 7 Module	BE201D2WP	F8FE5ECDCA08	2024-05-22	Used for Radiated Spurious Emissions tests
	220225-03.S07	Microwave Absorber	Eccosorb BSR-1	-	2022-03-14	
	231109-03.S47	Adaptor	PCB00866-00_A	124727	2023-11-24	
	220915-09.S01	Extender	ADEXELEC	-	2022-04-06	
	200611-03.S30	Laptop	Latitude 5401	6DJLK13	2020-08-19	
	220117-04.S11	Antenna 5GHz	ANT24-P855-00	-	2022-02-09	
	240521-01.S11	Antenna 5GHz	ANT24-P855-00	-	2022-02-09	
	231120-05.S20	WiFi 7 Module	BE201D2WP	F8FE5CDCA49	2024-02-07	
	180001-01.S21	Socket	1216SD to M.2	-	2021-06-07	

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®		
Model Name	BE201D2WP		
Software Version	DRTU.05726.99.0.86		
Driver Version	99.0.86.3		
Prototype / Production	Production		
Supported Radios	802.11b/g/n/ax/be	2.4GHz	
	802.11a/n/ac/ax/be	5.2GHz	
		5.6GHz	
		5.8GHz	
	802.11ax/be	6.0GHz	
Antenna Information	Bluetooth	2.4GHz	
	Transmitter	Chain A (1)	Chain B (2)
	Manufacturer	Intel	Intel
	Antenna type	PIFA / Slot / Monopole	PIFA / Slot / Monopole
	Part number	ANT24-P855-00 / ANT24-S855-00 / ANT24-M855-00	ANT24-P855-00 / ANT24-S855-00 / ANT24-M855-00
	Max Declared antenna gain (dBi) – 5 GHz	+8.07	+8.07

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 802.11 mode and test case measurements have been reported excepted for band edge measurements where all plots are reported
3. Conducted tests have been performed using the maximum antenna gain between the PIFA, Monopole and Slot antennas

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-1

FCC part	Test name	Verdict
15.407 (a) (1)	Power Limits. Maximum output power	Pass
15.407 (a) (1)	Power spectral density	Pass
15.407 (b) (1) 15.209	Undesirable emissions limits: Band Edge (conducted)	Pass
15.407 (b) (1) 15.209	Undesirable emissions limits: Spurious emissions (radiated)	Pass

7.2. 802.11 a/n/ac/ax/be – U-NII-2A

FCC part	Test name	Verdict
15.407 (a) (2)	Power Limits. Maximum output power	Pass
15.407 (a) (2)	Power spectral density	Pass
15.407 (b) (2) 15.209	Undesirable emissions limits: Band Edge (conducted)	Pass
15.407 (b) (2) 15.209	Undesirable emissions limits: Spurious emissions (radiated)	Pass

8. Document Revision History

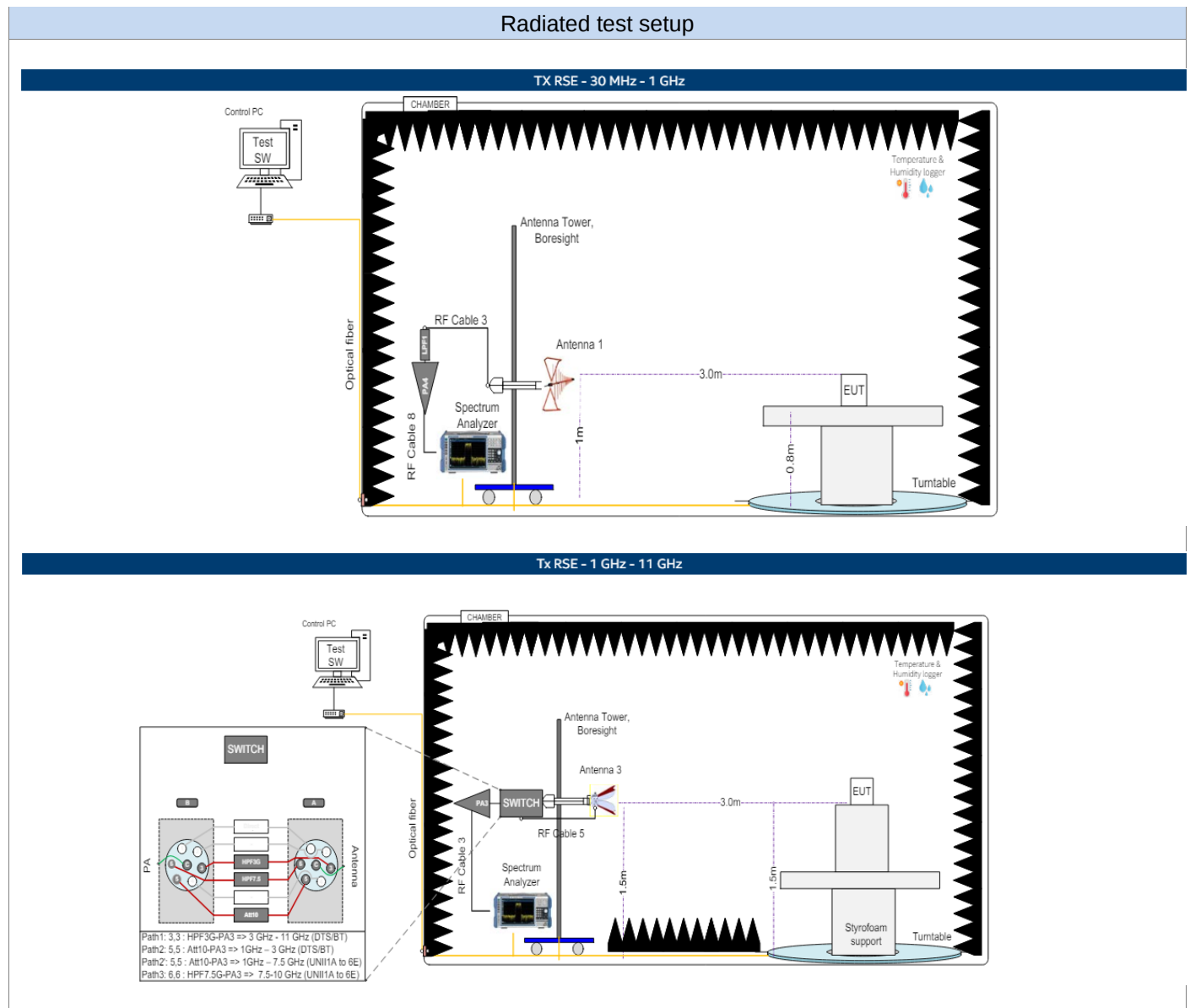
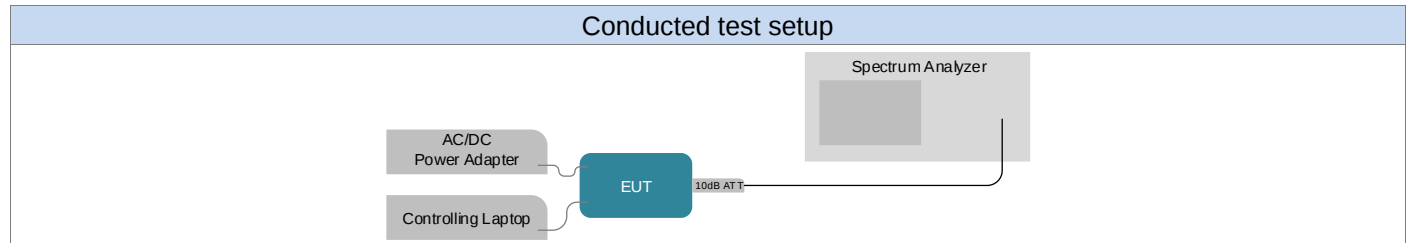
Revision #	Modified by	Revision Details
Rev. 00	T.MATHIEU R.SIMONINI	First Issue

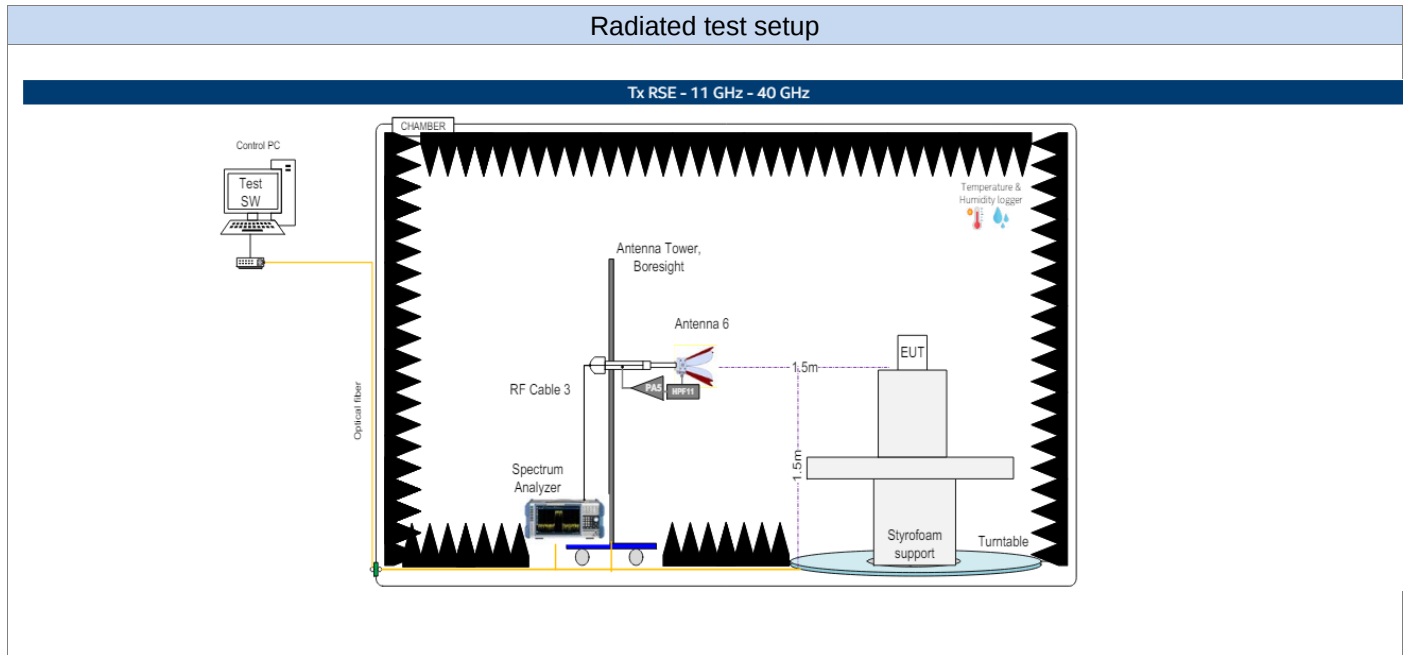
Annex A. Test & System Description

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.





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:

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

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

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
266-000	Spectrum Analyzer	FSV30	103307	Rohde & Schwarz	2024-05-22	2026-05-22
018-003	RF cable 50cm	PE360-50CM	N/A	PASTERNAK	2024-02-20	2025-02-20
018-001	10dB Attenuator + MH4	N/A	N/A	N/A	2024-02-20	2025-02-20
363-000	Temp & Humidity Logger	RA12E-TH1-RAS	RA12-D0EB1A	AVITECH	2023-09-28	2025-09-28
413-000	Measurement SW v1.5.4.2	Octopi	N/A	Step AT	N/A	N/A

N/A: Not Applicable

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
006-008	Measurement SW, v11.30	EMC32	100623	Rohde & Schwarz	N/A	N/A
259-000	Temp & Humidity Logger	RA12E-TH-RAS	RA12-B9BD70	Avtech	2022-06-27	2024-06-27
006-001	Turn Table	ETS	-	ETS-Lindgren	N/A	N/A
006-011	Boresight antenna mast	BAM 4.0-P	P/278/2890.01	Maturo	N/A	N/A
057-000	Double Horn Ridged antenna	3117	167062	ETS-Lindgren	2022-07-08	2024-07-08
058-000	Double Horn Ridged antenna	3116C	157511	ETS-Lindgren	2022-10-21	2024-10-21
006-061	Bi-Log Periodic antenna	CBL6143A	61382	Teseq	2022-10-24	2024-10-24
147-000	Spectrum analyzer	FSW43	101847	Rohde & Schwarz	2022-11-30	2024-11-30
301-000	Amplifier 9kHz-1300MHz	8447F	3113A07440	HP	2024-03-19	2025-03-19
261-000	Amplifier 1GHz-18GHz	3117-PA	00157993	ETS-Lindgren	2024-03-14	2025-03-14
502-006	Amplifier 0.5GHz-40GHz	DEPA0540-43	2023A05	Diamond Engineering	2024-03-19	2025-03-19
009-007	RF Filter	ZHSS-k11G+	8493 1831830	Mini-Circuits	2024-03-19	2025-03-19
006-068	RF Switch	RC-2SP6T-40	02112090061	Micro-Circuits	2024-03-14	2025-03-14
006-066	Cable 7m – 25MHz to 40GHz	R286304174	20.46.370	Radiall	2024-03-14	2025-03-14
006-063	Cable 30cm – 1GHz to 40GHz	PE371-12	-	Pasternack	2024-03-14	2025-03-14
006-064	Cable 30cm – 1GHz to 40GHz	PE371-12	-	Pasternack	2024-03-14	2025-03-14
006-065	Cable 60cm – 25MHz to 1GHz	PE300-24	-	Pasternack	2024-03-12	2025-03-12

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
127-000	Spectrum Analyzer	FSV40	101358	Rohde & Schwarz	2023-01-27	2025-01-27
007-007	Double Ridge Horn (1- 18GHz)	3117	00152266	ETS Lindgren	2024-03-26	2026-03-26
007-006	Switch & Positioner	EMCenter	00151232	ETS Lindgren	N/A	N/A
059-000	Double Ridge Horn (1- 18GHz)	3117	201542	ETS-Lindgren	2023-09-26	2025-09-26
264-000	Amplifier 1GHz-18GHz	3117-PA	00169546	ETS-Lindgren	2024-03-14	2025-03-14
007-011	RF Cable 1-18GHz - 6.5m	140-8500-11-51	001	Atem	2024-03-15	2025-03-15
007-005	Measurement SW, v11.20.00	EMC32	100401	Rohde & Schwarz	N/A	N/A
007-003	Antenna Tower	2171B-3.0M	00150123	ETS Lindgren	N/A	N/A
007-002	Turntable	-	-	ETS Lindgren	N/A	N/A
007-022	RF Cable 1-18GHz, 1.5m	0501050991200GX	19.23.493	Radiall	2024-03-12	2025-03-12
007-015	RF Cable 1GHz-18GHz 1.5m	-	-	Spirent	2024-03-12	2025-03-12
007-018	RF Cable 1-9.5GHz 1.2m	0500990991200KE	-	Radiall	2024-03-12	2025-03-12
007-020	RF Cable 1-18GHz, 1.2 m	2301761761200PJ	12.22.1104	Radiall	2024-03-15	2025-03-15
349-000	Temp & Humidity Logger	RA12E-TH1-RAS	RA12-D4F8C3	Avtech	2023-11-30	2025-11-30

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	NA	NA
139-000	Power Sensor	NRP-Z81	104383	Rohde & Schwarz	2023-04-21	2025-04-21
061-000	Power Sensor	NRP-Z81	104386	Rohde & Schwarz	2024-04-09	2026-04-09
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 <40 GHz	± 3.45	dB
Radiated tests <1GHz	± 6.23	dB
Radiated tests 1GHz – 40 GHz	± 6.40	dB

Annex B. Test Results U-NII-1 & U-NII-2A

The herein test results were performed by:

Test case measurement	Test Personnel
26dB & 99% bandwidth	T.MATHIEU
Power Limits. Maximum output power	T.MATHIEU
Power spectral density	T.MATHIEU
Undesirable emissions limits: Band Edge (conducted)	T.MATHIEU
Undesirable emissions limits (radiated)	K.KHATIB, R.SIMONINI

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 conducted RF output power at each chain was adjusted according to the client's supplied target values (see following table) using the Intel DRTU tool and measuring the power by using a spectrum analyser with the channel integration method according to section II) E) 2) e) (Method SA-2 Alternative) of Guidance 789033 D02.

Measured values for adjustment were within +/- 0.25 dB from the declared target values.

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	MCS0
		40	MCS0
		80	MCS0
		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 U-NII-1

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.

Results tables

Mode	Rate	Antenna	Channel	Freq [MHz]	26dB BW [MHz]	99% BW [MHz]
802.11a	6Mbps	SISO A	36	5180	24.40	16.60
			40	5200	24.60	16.72
			48	5240	24.30	16.64
		SISO B	36	5180	24.15	16.64
			40	5200	24.40	16.76
			48	5240	24.35	16.76
802.11n20	HT0	SISO A	36	5180	24.45	17.84
			40	5200	25.50	17.80
			48	5240	25.00	17.76
		SISO B	36	5180	24.45	17.72
			40	5200	24.75	17.72
			48	5240	25.15	17.72
	HT8	MIMO A	36	5180	25.00	17.80
			40	5200	24.65	17.76
			48	5240	25.25	17.84
		MIMO B	36	5180	24.25	17.76
			40	5200	24.40	17.80
			48	5240	24.45	17.80
802.11n40	HT0	SISO A	38	5190	43.38	36.08
			46	5230	43.92	36.24
		SISO B	38	5190	44.10	36.08
			46	5230	43.92	36.08
	HT8	MIMO A	38	5190	43.47	36.00
			46	5230	44.01	36.08
		MIMO B	38	5190	42.57	36.00
			46	5230	43.02	36.08
			46	5230	43.02	36.08
802.11ac80	VHT0	SISO A	42	5210	87.21	75.24
		SISO B			87.02	75.24
		MIMO A			86.07	75.24
		MIMO B			85.12	75.00
802.11ac160	VHT0	SISO A	50	5250	165.66	153.50
		SISO B			164.34	153.50
		MIMO A			164.67	153.75
		MIMO B			165.33	153.50

Max Value

Mode	Rate	Antenna	Channel	Freq [MHz]	RU config.	26dB BW [MHz]	99% BW [MHz]
802.11ax/be20	MCS0	SISO A	36	5180	Full	24.00	19.00
					26/0	20.45	17.88
					52/37	20.65	18.12
					106/53	22.65	18.20
			40	5200	Full	24.20	18.96
			48	5240	Full	24.10	19.04
		SISO B	36	5180	Full	23.80	18.92
					26/0	20.65	17.64
					52/37	21.00	18.08
					106/53	22.45	18.32
			40	5200	Full	24.50	18.92
			48	5240	Full	23.95	18.92
		MIMO A	36	5180	Full	24.75	18.96
					26/0	20.30	18.56
					52/37	20.60	18.28
					106/53	21.00	15.84
			40	5200	Full	24.25	18.92
			48	5240	Full	24.35	18.88
		MIMO B	36	5180	Full	24.10	18.92
					26/0	20.00	18.60
					52/37	20.25	18.24
					106/53	20.95	17.72
			40	5200	Full	23.80	18.92
			48	5240	Full	24.15	18.92
802.11ax/be40	MCS0	SISO A	38	5190	Full	43.47	37.60
					242/61	24.03	18.72
			46	5230	Full	43.83	37.60
		SISO B	38	5190	Full	42.93	37.52
					242/61	34.29	18.96
			46	5230	Full	42.39	37.44
		MIMO A	38	5190	Full	43.74	37.60
					242/61	26.46	18.72
			46	5230	Full	42.48	37.60
		MIMO B	38	5190	Full	42.84	37.52
					242/61	26.19	18.72
			46	5230	Full	43.02	37.44
802.11ax/be80	MCS0	SISO A	42	5210	Full	85.12	77.04
					484/65	43.51	37.32
		SISO B			Full	84.17	76.80
					484/65	43.32	37.32
		MIMO A			Full	83.98	76.92
					484/65	49.59	37.44
		MIMO B			Full	83.41	76.68
					484/65	48.45	37.44
802.11ax/be160	MCS0	SISO A	50	5250	Full	164.01	155.00
					996/67	84.15	77.00
		SISO B			Full	163.35	155.00
					996/67	83.82	76.75
		MIMO A			Full	163.35	155.25
					996/67	84.15	77.25
		MIMO B			Full	163.35	155.00
					996/67	83.82	77.00

Max Value

See Section B.4.1 for the screenshot results.

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

Test limits

FCC part	Limits
15.407 (a) (1) (iv)	For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test procedure

The Maximum Conducted Output Power was measured using the channel integration method according to section E) 2) e) (Method SA-2 and 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 and 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.

Results tables

Duty cycle

Mode	Rate	Antenna	Duty Cycle [%]
802.11a	6Mbps	SISO A	97.8
		SISO B	97.8
802.11n20	HT0	SISO A	98.8
		SISO B	98.8
	HT8	MIMO A	98.8
		MIMO B	98.8
802.11ax/be20	MCS0	SISO A	98.8
		SISO B	98.8
		MIMO A	99.4
		MIMO B	99.4
802.11n40	HT0	SISO A	98.8
		SISO B	98.8
	HT8	MIMO A	98.8
		MIMO B	98.8
802.11ax/be40	MCS0	SISO A	98.8
		SISO B	98.8
		MIMO A	99.4
		MIMO B	99.4
802.11ac80	VHT0	SISO A	98.9
		SISO B	98.9
		MIMO A	99.4
		MIMO B	99.4
802.11ax/be80	MCS0	SISO A	98.8
		SISO B	98.8
		MIMO A	99.4
		MIMO B	99.4
802.11ac160	VHT0	SISO A	98.8
		SISO B	98.8
		MIMO A	99.2
		MIMO B	99.2
802.11ax/be160	MCS0	SISO A	98.8
		SISO B	98.8
		MIMO A	98.9
		MIMO B	98.9

Maximum output power

Mode	Rate	Channel	Freq [MHz]	Antenna	Average Conducted Ouput Power [dBm]	Avg Max* Conducted Ouput Power [dBm]	Avg Max*. EIRP [dBm]	Avg Max* Conducted Power [mW]
802.11a	6Mbps	36	5180	SISO A	19.59	19.69	27.76	93.04
				SISO B	19.58	19.68	27.75	92.82
		40	5200	SISO A	19.63	19.73	27.80	93.90
				SISO B	19.40	19.50	27.57	89.06
		48	5240	SISO A	19.51	19.61	27.68	91.34
				SISO B	19.63	19.73	27.80	93.90
802.11n20	HT0	36	5180	SISO A	19.78	19.78	27.85	95.06
				SISO B	19.87	19.87	27.94	97.05
		40	5200	SISO A	19.81	19.81	27.88	95.72
				SISO B	19.89	19.89	27.96	97.50
		48	5240	SISO A	19.75	19.75	27.82	94.41
				SISO B	19.80	19.80	27.87	95.50
	HT8	36	5180	MIMO A	16.79	16.79	24.86	47.75
				MIMO B	16.81	16.81	24.88	47.97
				Combined A+B	19.81	19.81	27.88	95.73
		40	5200	MIMO A	16.87	16.87	24.94	48.64
				MIMO B	16.87	16.87	24.94	48.64
				Combined A+B	19.88	19.88	27.95	97.28
		48	5240	MIMO A	16.83	16.83	24.90	48.19
				MIMO B	16.91	16.91	24.98	49.09
				Combined A+B	19.88	19.88	27.95	97.29
802.11n40	HT0	38	5190	SISO A	18.91	18.91	26.98	77.80
				SISO B	19.01	19.01	27.08	79.62
		46	5230	SISO A	20.65	20.65	28.72	116.14
				SISO B	21.03	21.03	29.10	126.77
	HT8	38	5190	MIMO A	16.92	16.92	24.99	49.20
				MIMO B	16.90	16.90	24.97	48.98
				Combined A+B	19.92	19.92	27.99	98.18
		46	5230	MIMO A	18.62	18.62	26.69	72.78
				MIMO B	18.72	18.72	26.79	74.47
				Combined A+B	21.68	21.68	29.75	147.25
802.11ac80	VHT0	42	5210	SISO A	19.93	19.93	28.00	98.40
				SISO B	20.08	20.08	28.15	101.86
				MIMO A	17.74	17.74	25.81	59.43
				MIMO B	17.16	17.16	25.23	52.00
				Combined A+B	20.47	20.47	28.54	111.43
802.11ac160	VHT0	50	5250	SISO A	16.67	16.67	24.74	46.45
				SISO B	17.10	17.10	25.17	51.29
				MIMO A	14.90	14.90	22.97	30.90
				MIMO B	14.85	14.85	22.92	30.55
				Combined A+B	17.89	17.89	25.96	61.45

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

Max Value

Min Value

Mode	Rate	Channel	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	36	5180	SISO A	Full	19.88	19.88	27.95	97.27
					26/0	11.07	11.07	19.14	12.79
					52/37	14.02	14.02	22.09	25.23
					106/53	16.99	16.99	25.06	50.00
				SISO B	Full	19.78	19.78	27.85	95.06
					26/0	11.22	11.22	19.29	13.24
					52/37	14.04	14.04	22.11	25.35
					106/53	17.32	17.32	25.39	53.95
				MIMO A	Full	16.87	16.87	24.94	48.64
					26/0	8.35	8.35	16.42	6.84
					52/37	11.24	11.24	19.31	13.30
					106/53	14.25	14.25	22.32	26.61
				MIMO B	Full	17.00	17.00	25.07	50.12
					26/0	8.47	8.47	16.54	7.03
					52/37	11.23	11.23	19.30	13.27
					106/53	14.28	14.28	22.35	26.79
				Combined A+B	Full	19.95	19.95	28.02	98.76
					26/0	11.42	11.42	19.49	13.87
					52/37	14.25	14.25	22.32	26.58
					106/53	17.28	17.28	25.35	53.40
		40	5200	SISO A	Full	19.80	19.80	27.87	95.50
				SISO B	Full	19.80	19.80	27.87	95.50
				MIMO A	Full	16.73	16.73	24.80	47.10
				MIMO B	Full	17.03	17.03	25.10	50.47
				Combined A+B	Full	19.89	19.89	27.96	97.56
		48	5240	SISO A	Full	19.76	19.76	27.83	94.62
				SISO B	Full	19.85	19.85	27.92	96.61
				MIMO A	Full	16.73	16.73	24.80	47.10
				MIMO B	Full	16.83	16.83	24.90	48.19
				Combined A+B	Full	19.79	19.79	27.86	95.29
802.11ax/be40	MCS0	38	5190	SISO A	Full	18.56	18.56	26.63	71.78
					242/61	19.58	19.58	27.65	90.78
				SISO B	Full	18.67	18.67	26.74	73.62
					242/61	19.69	19.69	27.76	93.11
				MIMO A	Full	16.54	16.54	24.61	45.08
					242/61	16.63	16.63	24.70	46.03
				MIMO B	Full	16.56	16.56	24.63	45.29
					242/61	16.62	16.62	24.69	45.92
				Combined A+B	Full	19.56	19.56	27.63	90.37
					242/61	19.64	19.64	27.71	91.95
		46	5230	SISO A	Full	20.54	20.54	28.61	113.24
				SISO B	Full	20.94	20.94	29.01	124.17
				MIMO A	Full	18.51	18.51	26.58	70.96
				MIMO B	Full	18.62	18.62	26.69	72.78
				Combined A+B	Full	21.58	21.58	29.65	143.74
802.11ax/be80	MCS0	42	5210	SISO A	Full	19.87	19.87	27.94	97.05
					484/65	19.86	19.86	27.93	96.83
				SISO B	Full	19.68	19.68	27.75	92.90
					484/65	20.00	20.00	28.07	100.00
				MIMO A	Full	17.40	17.40	25.47	54.95
					484/65	15.74	15.74	23.81	37.50
				MIMO B	Full	16.89	16.89	24.96	48.87
					484/65	15.69	15.69	23.76	37.07
				Combined A+B	Full	20.16	20.16	28.23	103.82
					484/65	18.73	18.73	26.80	74.57

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

Max Value / Min Value

Mode	Rate	Channel	Freq [MHz]	Antenna	RU config.	Average Conducted Ouput Power [dBm]	Avg Max* Conducted Ouput Power [dBm]	Avg Max*. EIRP [dBm]	Avg Max* Conducted Power [mW]
802.11ax/be160	MCS0	50	5250	SISO A	Full	16.56	16.56	24.63	45.29
					996/67	18.36	18.36	26.43	68.55
				SISO B	Full	16.96	16.96	25.03	49.66
					996/67	18.50	18.50	26.57	70.79
				MIMO A	Full	14.66	14.66	22.73	29.24
					996/67	15.86	15.86	23.93	38.55
				MIMO B	Full	14.82	14.82	22.89	30.34
					996/67	15.85	15.85	23.92	38.46
				Combined A+B	Full	17.75	17.75	25.82	59.58
					996/67	18.87	18.87	26.94	77.01

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

Max Value

Min Value

Maximum power spectral Density (PSD)

Mode	Rate	Channel	Freq [MHz]	Antenna	Average conducted PSD [dBm/MHz]	Maximum* conducted PSD [dBm/MHz]
802.11a	6Mbps	36	5180	SISO A	8.79	8.89
				SISO B	8.77	8.87
		40	5200	SISO A	8.82	8.92
				SISO B	8.60	8.70
		48	5240	SISO A	8.71	8.81
				SISO B	8.81	8.91
802.11n20	HT0	36	5180	SISO A	8.80	8.80
				SISO B	8.89	8.89
		40	5200	SISO A	8.80	8.80
				SISO B	8.89	8.89
		48	5240	SISO A	8.77	8.77
				SISO B	8.81	8.81
	HT8	36	5180	MIMO A	5.79	5.79
				MIMO B	5.81	5.81
				Combined A+B	8.81	8.81
		40	5200	MIMO A	5.87	5.87
				MIMO B	5.85	5.85
				Combined A+B	8.87	8.87
		48	5240	MIMO A	5.82	5.82
				MIMO B	5.89	5.89
				Combined A+B	8.87	8.87
802.11n40	HT0	38	5190	SISO A	4.75	4.75
				SISO B	4.93	4.93
		46	5230	SISO A	6.46	6.46
				SISO B	6.88	6.88
	HT8	38	5190	MIMO A	2.82	2.82
				MIMO B	2.81	2.81
				Combined A+B	5.83	5.83
		46	5230	MIMO A	4.53	4.53
				MIMO B	4.55	4.55
				Combined A+B	7.55	7.55
802.11ac80	VHT0	42	5210	SISO A	2.70	2.70
				SISO B	2.87	2.87
				MIMO A	0.51	0.51
				MIMO B	0.02	0.02
				Combined A+B	3.28	3.28
802.11ac160	VHT0	50	5250	SISO A	-3.31	-3.31
				SISO B	-2.98	-2.98
				MIMO A	-5.22	-5.22
				MIMO B	-5.11	-5.11
				Combined A+B	-2.15	-2.15

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

Mode	Rate	#Ch	Freq [MHz]	Antenna	RU config.	Average cond.PSD [dBm/MHz]	Max*cond.PSD [dBm/MHz]
802.11ax/be20	MCS0	36	5180	SISO A	Full	8.67	8.67
					26/0	8.51	8.51
					52/37	8.59	8.59
					106/53	8.56	8.56
				SISO B	Full	8.59	8.59
					26/0	8.88	8.88
					52/37	8.70	8.70
					106/53	8.91	8.91
				MIMO A	Full	5.66	5.66
					26/0	5.80	5.80
					52/37	5.81	5.81
					106/53	5.90	5.90
				MIMO B	Full	5.78	5.35
					26/0	5.84	5.84
					52/37	5.80	5.80
					106/53	5.90	5.90
				Combined A+B	Full	8.73	8.73
					26/0	8.83	8.83
					52/37	8.82	8.82
					106/53	8.91	8.91
		40	5200	SISO A	Full	8.59	8.59
				SISO B	Full	8.59	8.59
				MIMO A	Full	5.50	5.50
				MIMO B	Full	5.83	5.83
				Combined A+B	Full	8.68	8.68
		48	5240	SISO A	Full	8.53	8.53
				SISO B	Full	8.64	8.64
				MIMO A	Full	5.53	5.53
				MIMO B	Full	5.62	5.62
				Combined A+B	Full	8.59	8.59
802.11ax/be40	MCS0	38	5190	SISO A	Full	4.25	4.25
					242/61	8.66	8.66
				SISO B	Full	4.50	4.50
					242/61	8.68	8.68
				MIMO A	Full	2.49	2.49
					242/61	5.87	5.87
				MIMO B	Full	2.41	2.41
					242/61	5.91	5.91
				Combined A+B	Full	5.46	5.46
					242/61	8.90	8.90
		46	5230	SISO A	Full	6.29	6.29
				SISO B	Full	6.80	6.80
				MIMO A	Full	4.33	4.33
				MIMO B	Full	4.45	4.45
				Combined A+B	Full	7.40	7.40
802.11ax/be80	MCS0	42	5210	SISO A	Full	2.77	2.77
					484/65	5.56	5.56
				SISO B	Full	2.45	2.45
					484/65	5.64	5.64
				MIMO A	Full	0.24	0.24
					484/65	1.24	1.24
				MIMO B	Full	-0.25	-0.25
					484/65	1.43	1.43
802.11ax/be160	MCS0	50	5250	Combined A+B	Full	3.01	3.01
					484/65	4.35	4.35
				SISO A	Full	-3.47	-3.47
					996/67	1.20	1.20
				SISO B	Full	-3.04	-3.04
					996/67	1.32	1.32
				MIMO A	Full	-5.17	-5.17
					996/67	-1.41	-1.41
				MIMO B	Full	-5.32	-5.32
					996/67	-1.33	-1.33
				Combined A+B	Full	-2.23	-2.23
					996/67	1.64	1.64

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

See Section B.4.2 for the screenshot results.

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

Test limits

FCC part	Limits																				
15.407 (b) (1)	For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.																				
15.209	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 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.

For out of band 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

See Section B.4.3 for the screenshot results.

B.2.4 Radiated spurious emission

Standard references

FCC part	Limits
15.407 (b) (1)	For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
15.209	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 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.

The radiated spurious emission was measured on the worst case configuration selected from the section B.2.2 and using the low, middle and high channels.

For 802.11ax/be20, 802.11ax/be40, 802.11ax/be80 and 802.11ax/be160 modes the worst case in terms of spurious emissions found among the low, mid and high channels tested on chain A and B separately is used to perform the test in MIMO mode (Chain A+B).

For 802.11n20, 802.11n40, 802.11ac80 and 802.11ac160 modes the worst case in terms of spurious emissions found among the low, mid and high channels tested on 802.11ax/be20, 802.11ax/be40, 802.11ax/be80 and 802.11ax/be160 is used to perform the test in chain A, B ,and A+B modes.

Test Results

Radiated spurious - 30 MHz to 1 GHz

Radiated Spurious – All modes

Frequency	Level	Detector	Limit	Margin	Polarization
MHz	dBμV/m	---	dBμV/m	dB	---
32.6	36.6	Quasi-Peak	40.0	3.4	V

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

802.11a

1 GHz – 40 GHz, 802.11a, 6Mbps, Chain A

Radiated Spurious – CH36

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6475.2	60.0	Peak	68.2	8.2	H
15542.9	47.5	Peak	74.0	26.5	H
15542.9	39.8	Average	54.0	14.2	H

Radiated Spurious – CH40

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
7799.8	55.7	Peak	68.2	12.5	H
39945.4	56.3	Peak	74.0	17.7	H
39945.4	48.0	Average	54.0	6.0	V

Radiated Spurious – CH48

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
7859.5	58.1	Peak	68.2	10.1	V
10500.0	54.1	Peak	68.2	14.1	H
39942.0	56.3	Peak	74.0	17.7	H
39942.0	47.9	Average	54.0	6.1	H

1 GHz – 40 GHz, 802.11a, 6Mbps, Chain B

Radiated Spurious – CH36

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
7767.9	56.8	Peak	68.2	11.4	V
10500.1	53.9	Peak	68.2	14.3	V
39941.5	55.9	Peak	74.0	18.1	H
39941.5	48.0	Average	54.0	6.0	H

Radiated Spurious – CH40

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
1249.7	44.8	Peak	74.0	29.2	V
1249.7	34.7	Average	54.0	19.3	H
25997.8	51.5	Peak	68.2	16.7	V

Radiated Spurious – CH48

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
1249.7	44.6	Peak	74.0	29.4	H
1249.7	35.0	Average	54.0	19.0	H
26205.7	53.0	Peak	68.2	15.2	V

802.11n

1 GHz – 40 GHz, 802.11n20, HT0, Chain A

Radiated Spurious – CH36

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
1249.7	43.6	Peak	74.0	30.4	H
1249.7	35.4	Average	54.0	18.6	H
15528.8	48.6	Peak	74.0	25.4	H
15540.9	39.7	Average	54.0	14.3	H

Radiated Spurious – CH40

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
1249.7	44.9	Peak	74.0	29.1	V
1249.7	35.0	Average	54.0	19.0	H
15603.3	46.8	Peak	74.0	27.2	H
15603.8	38.5	Average	54.0	15.5	H

Radiated Spurious – CH48

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
1249.7	44.4	Peak	74.0	29.6	H
1249.7	35.0	Average	54.0	19.0	H
39992.8	56.3	Peak	74.0	17.7	V
39992.8	48.0	Average	54.0	6.0	H

1 GHz – 40 GHz, 802.11n20, HT0, Chain B

Radiated Spurious – CH36

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1249.7	44.7	Peak	74.0	29.3	V
1249.7	35.1	Average	54.0	18.9	H
25898.8	53.5	Peak	68.2	14.7	V

Radiated Spurious – CH40

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1249.7	44.0	Peak	74.0	30.0	H
1249.7	34.7	Average	54.0	19.3	H
25990.1	53.3	Peak	68.2	14.9	V

Radiated Spurious – CH48

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1035.2	42.7	Peak	74.0	31.3	H
1035.2	34.1	Average	54.0	19.9	H
39984.5	47.9	Average	54.0	6.1	H
39985.0	57.5	Peak	74.0	16.5	V

1 GHz – 40 GHz, 802.11n20, HT8, Chain A+B

Radiated Spurious – CH36

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1249.7	44.7	Peak	74.0	29.3	V
1249.7	35.0	Average	54.0	19.0	H
15529.8	49.3	Peak	74.0	24.7	H
15536.6	40.2	Average	54.0	13.8	H

Radiated Spurious – CH40

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6497.1	58.3	Peak	68.2	9.9	H
7799.6	57.0	Peak	68.2	11.2	H
10500.1	54.3	Peak	68.2	13.9	V
39979.2	55.0	Peak	74.0	19.0	H
39979.2	48.0	Average	54.0	6.0	V

Radiated Spurious – CH48

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1035.2	49.2	Peak	74.0	24.8	V
1035.2	39.7	Average	54.0	14.3	V
39993.7	55.4	Peak	74.0	18.6	V
39993.7	47.9	Average	54.0	6.1	V

1 GHz – 40 GHz, 802.11n40, HT0, Chain A

Radiated Spurious – CH38

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
7786.2	52.6	Peak	68.2	15.6	V
10499.7	54.1	Peak	68.2	14.1	V
23989.6	49.3	Peak	74.0	24.7	V
23989.6	41.7	Average	54.0	12.3	V
39979.2	55.6	Peak	74.0	18.4	V
39979.2	47.9	Average	54.0	6.1	V

Radiated Spurious – CH46

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
7843.0	53.6	Peak	68.2	14.6	V
10500.0	54.6	Peak	68.2	13.6	H
39984.5	56.1	Peak	74.0	17.9	H
39984.5	48.0	Average	54.0	6.0	H

1 GHz – 40 GHz, 802.11n40, HT0, Chain B

Radiated Spurious – CH38

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1124.6	41.8	Peak	74.0	32.2	V
1124.6	33.3	Average	54.0	20.7	V
25942.2	53.9	Peak	68.2	14.3	V

Radiated Spurious – CH46

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1249.7	44.1	Peak	74.0	29.9	H
1249.7	34.5	Average	54.0	19.5	H
39996.6	48.0	Average	54.0	6.0	V
39997.1	56.2	Peak	74.0	17.8	V

1 GHz – 40 GHz, 802.11n40, HT8, Chain A+B

Radiated Spurious – CH38

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
7780.6	54.9	Peak	68.2	13.3	V
23905.0	49.5	Peak	74.0	24.5	H
23905.0	41.7	Average	54.0	12.3	H
39988.9	48.0	Average	54.0	6.0	V
39989.4	56.4	Peak	74.0	17.6	V

Radiated Spurious – CH46

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
4559.2	57.2	Peak	74.0	16.8	V
4591.2	36.4	Average	54.0	17.6	V
6537.5	57.5	Peak	68.2	10.7	V
7846.0	58.2	Peak	68.2	10.0	V
10499.8	53.8	Peak	68.2	14.4	V
39961.3	48.0	Average	54.0	6.0	V
39962.8	56.7	Peak	74.0	17.3	H

802.11ac

1 GHz – 40 GHz, 802.11ac80, VHT0, Chain A

Radiated Spurious – CH42

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
1125.1	41.6	Peak	74.0	32.4	H
1125.1	33.3	Average	54.0	20.7	V
23892.4	49.7	Peak	74.0	24.3	H
23892.4	41.5	Average	54.0	12.5	H
39972.0	56.5	Peak	74.0	17.5	V
39972.0	48.0	Average	54.0	6.0	V

1 GHz – 40 GHz, 802.11ac80, VHT0, Chain B

Radiated Spurious – CH42

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
1249.7	43.9	Peak	74.0	30.1	H
1249.7	35.0	Average	54.0	19.0	H
23964.0	47.9	Peak	74.0	26.1	H
23964.0	41.6	Average	54.0	12.4	H
39988.4	56.5	Peak	74.0	17.5	H
39988.4	48.0	Average	54.0	6.0	V

1 GHz – 40 GHz, 802.11ac80, VHT0, Chain A+B

Radiated Spurious – CH42

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6512.9	53.3	Peak	68.2	14.9	V
7815.5	54.1	Peak	68.2	14.1	V
10500.3	54.2	Peak	68.2	14.0	V
23924.8	49.5	Peak	74.0	24.5	H
23924.8	41.9	Average	54.0	12.1	H
39983.6	56.0	Peak	74.0	18.0	V
39983.6	48.0	Average	54.0	6.0	V

1 GHz – 40 GHz, 802.11ac160, VHT0, Chain A

Radiated Spurious – CH50

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1249.7	44.3	Peak	74.0	29.7	H
1249.7	34.8	Average	54.0	19.2	H
23896.8	49.1	Peak	74.0	24.9	H
23896.8	41.6	Average	54.0	12.4	H
39872.9	56.5	Peak	74.0	17.5	V
39872.9	48.0	Average	54.0	6.0	H

1 GHz – 40 GHz, 802.11ac160, VHT0, Chain B

Radiated Spurious – CH50

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1249.7	44.7	Peak	74.0	29.3	H
1249.7	34.8	Average	54.0	19.2	H
23892.9	49.6	Peak	74.0	24.4	H
23892.9	41.4	Average	54.0	12.6	H
39987.9	56.9	Peak	74.0	17.1	H
39987.9	48.0	Average	54.0	6.0	H

1 GHz – 40 GHz, 802.11ac160, VHT0, Chain A+B**Radiated Spurious – CH50**

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6562.6	58.4	Peak	68.2	9.8	V
10500.3	53.2	Peak	68.2	15.0	V
23938.3	49.0	Peak	74.0	25.0	V
23938.8	41.9	Average	54.0	12.1	H
39938.6	56.4	Peak	74.0	17.6	H
39938.6	48.0	Average	54.0	6.0	H

802.11ax/be

1 GHz – 40 GHz, 802.11ax/be20, HE0, Chain A

Radiated Spurious – CH36

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
7756.8	57.9	Peak	68.2	10.3	V
10500.1	53.5	Peak	68.2	14.7	V
15512.9	50.4	Peak	74.0	23.6	H
15514.8	41.8	Average	54.0	12.2	H
25859.1	53.4	Peak	68.2	14.8	H

Radiated Spurious – CH40

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6489.7	55.3	Peak	68.2	12.9	V
7788.0	58.7	Peak	68.2	9.5	V
10500.3	54.4	Peak	68.2	13.8	V
15574.8	43.8	Average	54.0	10.2	H
15575.2	51.4	Peak	74.0	22.6	H

Radiated Spurious – CH48

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6539.4	54.7	Peak	68.2	13.5	V
7847.1	58.1	Peak	68.2	10.1	V
10500.3	53.4	Peak	68.2	14.8	H
23889.0	48.4	Peak	74.0	25.6	H
23889.0	41.5	Average	54.0	12.5	V
39999.0	56.0	Peak	74.0	18.0	H
39999.0	48.0	Average	54.0	6.0	H

1 GHz – 40 GHz, 802.11ax/be20, HE0, Chain B

Radiated Spurious – CH36

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6464.2	54.8	Peak	68.2	13.4	V
7756.3	59.0	Peak	68.2	9.2	V
10500.3	54.0	Peak	68.2	14.2	V
15514.8	38.9	Average	54.0	15.1	V
15515.8	48.0	Peak	74.0	26.0	V
25858.2	55.7	Peak	68.2	12.5	V

Radiated Spurious – CH40

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1125.1	42.2	Peak	74.0	31.8	H
1125.1	32.8	Average	54.0	21.2	V
25958.7	55.9	Peak	68.2	12.3	V

Radiated Spurious – CH48

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1026.0	44.8	Peak	74.0	29.2	H
1026.0	36.6	Average	54.0	17.4	H
23926.8	49.6	Peak	74.0	24.4	H
23926.8	41.3	Average	54.0	12.7	H
26160.2	56.5	Peak	68.2	11.7	V

1 GHz – 40 GHz, 802.11ax/be20, HE0, Chain A+B

Radiated Spurious – CH36

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6464.2	56.3	Peak	68.2	11.9	V
7756.5	61.6	Peak	68.2	6.6	V
10343.6	55.0	Peak	68.2	13.2	H
10499.8	54.2	Peak	68.2	14.0	V
15513.4	50.4	Peak	74.0	23.6	H
15514.3	43.5	Average	54.0	10.5	H
25857.2	61.8	Peak	68.2	6.4	V

Radiated Spurious – CH40

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6488.8	55.2	Peak	68.2	13.0	V
7788.0	62.2	Peak	68.2	6.0	V
10384.0	55.2	Peak	68.2	13.0	H
10499.8	53.5	Peak	68.2	14.7	V
15574.3	43.7	Average	54.0	10.3	H
15574.3	51.4	Peak	74.0	22.6	H
25959.2	56.0	Peak	68.2	12.2	V

Radiated Spurious – CH48

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6539.4	57.4	Peak	68.2	10.8	V
7846.5	61.5	Peak	68.2	6.7	V
10500.0	53.9	Peak	68.2	14.3	V
15693.6	39.4	Average	54.0	14.6	H
15695.1	49.0	Peak	74.0	25.0	V
20924.8	50.0	Peak	74.0	24.0	V
20926.2	41.8	Average	54.0	12.2	V
26157.3	55.7	Peak	68.2	12.5	V

1 GHz – 40 GHz, 802.11ax/be40, HE0, Chain A

Radiated Spurious – CH38F

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
7770.4	59.5	Peak	68.2	8.7	H
15540.4	54.1	Peak	74.0	19.9	H
15541.4	43.8	Average	54.0	10.2	H
25901.2	52.4	Peak	68.2	15.8	V

Radiated Spurious – CH46

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
4980.3	55.9	Peak	74.0	18.1	H
4980.3	38.6	Average	54.0	15.4	V
6525.0	55.9	Peak	68.2	12.3	V
7830.0	59.9	Peak	68.2	8.3	V
10500.0	53.6	Peak	68.2	14.6	V
11391.5	47.1	Peak	74.0	26.9	V
11395.9	37.6	Average	54.0	16.4	V
15661.8	42.4	Average	54.0	11.6	H
15661.8	51.2	Peak	74.0	22.8	H

1 GHz – 40 GHz, 802.11ax/be40, HE0, Chain B

Radiated Spurious – CH38

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1124.6	42.0	Peak	74.0	32.0	H
1124.6	33.0	Average	54.0	21.0	V
15540.4	47.8	Peak	74.0	26.2	H
15540.9	40.3	Average	54.0	13.7	H
25901.7	57.0	Peak	68.2	11.2	V

Radiated Spurious – CH46

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
1015.2	50.1	Peak	74.0	23.9	H
1015.2	42.0	Average	54.0	12.0	H
7829.3	57.7	Peak	68.2	10.5	V
23909.8	50.1	Peak	74.0	23.9	H
23910.3	41.4	Average	54.0	12.6	H
26101.8	57.3	Peak	68.2	10.9	V

1 GHz – 40 GHz, 802.11ax/be40, HE0, Chain A+B

Radiated Spurious – CH38

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
6476.2	56.0	Peak	68.2	12.2	H
7771.4	62.2	Peak	68.2	6.0	V
10499.8	52.5	Peak	68.2	15.7	V
15541.9	54.0	Peak	74.0	20.0	H
15541.9	42.8	Average	54.0	11.2	H
25899.7	63.0	Peak	68.2	5.2	V

Radiated Spurious – CH46

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
4980.3	58.6	Peak	74.0	15.4	V
4980.3	40.5	Average	54.0	13.5	V
6525.0	59.5	Peak	68.2	8.7	V
7830.3	66.7	Peak	68.2	1.5	V
10441.8	55.0	Peak	68.2	13.2	H
10500.1	54.4	Peak	68.2	13.8	V
15660.3	49.2	Peak	74.0	24.8	V
15661.3	41.8	Average	54.0	12.2	H
26103.2	57.6	Peak	68.2	10.6	V

1 GHz – 40 GHz, 802.11ax/be80, HE0, Chain A

Radiated Spurious – CH42

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
4948.3	39.1	Average	54.0	14.9	V
4948.8	57.1	Peak	74.0	16.9	V
5428.4	39.4	Average	54.0	14.6	V
5429.3	56.3	Peak	74.0	17.7	V
6486.5	55.3	Peak	68.2	12.9	V
7783.2	58.3	Peak	68.2	9.9	V
10500.1	54.1	Peak	68.2	14.1	H
15566.5	44.4	Average	54.0	9.6	H
15567.5	53.3	Peak	74.0	20.7	H

1 GHz – 40 GHz, 802.11ax/be80, HE0, Chain B

Radiated Spurious – CH42

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
4948.3	57.3	Peak	74.0	16.7	V
4948.8	38.9	Average	54.0	15.1	V
5428.8	56.2	Peak	74.0	17.8	H
5428.8	38.9	Average	54.0	15.1	H
6486.5	55.5	Peak	68.2	12.7	V
7783.7	62.0	Peak	68.2	6.2	V
10500.1	54.1	Peak	68.2	14.1	H
25945.6	56.8	Peak	68.2	11.4	V

1 GHz – 40 GHz, 802.11ax/be80, HE0, Chain A+B

Radiated Spurious – CH42

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6486.0	57.6	Peak	68.2	10.6	V
7784.1	60.6	Peak	68.2	7.6	V
10500.1	53.1	Peak	68.2	15.1	V
15565.1	52.8	Peak	74.0	21.2	H
15566.0	43.6	Average	54.0	10.4	H
25943.2	57.2	Peak	68.2	11.0	H

1 GHz – 40 GHz, 802.11ax/be160, HE0, Chain A

Radiated Spurious – CH50

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6497.6	53.3	Peak	68.2	14.9	V
7796.4	58.2	Peak	68.2	10.0	H
10500.1	53.9	Peak	68.2	14.3	V
15590.7	49.9	Peak	74.0	24.1	H
15591.7	42.4	Average	54.0	11.6	H

1 GHz – 40 GHz, 802.11ax/be160, HE0, Chain B

Radiated Spurious – CH50

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6497.6	54.0	Peak	68.2	14.2	V
7796.1	59.4	Peak	68.2	8.8	V
10500.1	54.4	Peak	68.2	13.8	V
25987.7	57.2	Peak	68.2	11.0	V

1 GHz – 40 GHz, 802.11ax/be160, HE0, Chain A+B

Radiated Spurious – CH50

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6497.1	56.3	Peak	68.2	11.9	V
7796.2	62.5	Peak	68.2	5.7	V
10394.0	55.8	Peak	68.2	12.4	H
15590.2	50.2	Peak	74.0	23.8	H
15590.7	41.6	Average	54.0	12.4	H
25987.2	61.8	Peak	68.2	6.4	V

B.3 Test Results Tables U-NII-2A

B.3.1 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 through an attenuator, and the spectrum analyzer reading is compensated to include the RF path loss.

Results tables

Mode	Rate	Antenna	Channel	Freq [MHz]	26dB BW [MHz]	99% BW [MHz]
802.11a	6Mbps	SISO A	52	5260	24.60	16.72
			56	5280	24.25	16.72
			64	5320	24.70	16.80
		SISO B	52	5260	24.60	16.68
			56	5280	24.50	16.72
			64	5320	24.50	16.76
802.11n20	HT0	SISO A	52	5260	24.65	17.72
			56	5280	24.75	17.76
			64	5320	25.15	17.88
		SISO B	52	5260	25.05	17.76
			56	5280	24.95	17.72
			64	5320	24.65	17.84
	HT8	MIMO A	52	5260	25.25	17.80
			56	5280	24.80	17.84
			64	5320	24.65	17.76
		MIMO B	52	5260	25.05	17.84
			56	5280	24.15	17.84
			64	5320	24.10	17.84
802.11n40	HT0	SISO A	54	5270	42.93	36.16
			62	5310	44.28	36.08
		SISO B	54	5270	43.56	36.08
			62	5310	43.92	36.00
	HT8	MIMO A	54	5270	43.92	36.16
			62	5310	43.47	36.16
		MIMO B	54	5270	43.11	36.16
			62	5310	42.75	36.24
802.11ac80	VHT0	SISO A	58	5290	87.59	75.12
		SISO B			87.02	75.24
		MIMO A			88.92	75.12
		MIMO B			87.78	75.12
802.11ac160	VHT0	SISO A	50	5250	165.66	153.50
		SISO B			164.34	153.50
		MIMO A			164.67	153.75
		MIMO B			165.33	153.50

Max Value

Mode	Rate	Antenna	Channel	Freq [MHz]	RU config.	26dB BW [MHz]	99% BW [MHz]	
802.11ax/be20	MCS0	SISO A	52	5260	Full	24.75	18.92	
			56	5280	Full	24.70	18.92	
			64	5320	Full	24.35	19.08	
					26/8	20.85	18.32	
					52/40	21.35	18.20	
					106/54	23.55	18.32	
		52			5260	Full	23.85	18.92
		SISO B	56	5280	Full	24.95	18.92	
			64	5320	Full	23.40	18.88	
					26/8	21.10	18.28	
					52/40	21.25	18.24	
					106/54	23.40	18.20	
					52	5260	Full	24.80
		MIMO A	56	5280	Full	24.25	19.04	
			64	5320	Full	24.45	18.96	
					26/8	21.00	18.52	
					52/40	21.20	18.28	
					106/54	21.85	18.44	
					52	5260	Full	23.75
		MIMO B	56	5280	Full	24.10	18.96	
			64	5320	Full	24.60	18.92	
					26/8	20.20	18.00	
					52/40	20.40	17.32	
					106/54	20.75	18.04	
802.11ax/be40	MCS0				SISO A	54	5270	Full
		62	5310	Full		42.30	37.52	
		SISO B	54	5270	Full	43.11	37.68	
			62	5310	Full	43.20	37.44	
			MIMO A	54	5270	Full	43.11	37.60
				62	5310	Full	43.47	37.44
		MIMO B		54	5270	Full	43.47	37.52
				62	5310	Full	42.48	37.68
802.11ax/be80	MCS0	SISO A	58	5290	Full	83.79	76.80	
					484/66	49.40	37.56	
		SISO B			Full	83.60	76.80	
					484/66	49.59	37.56	
		MIMO A			Full	84.36	76.80	
					484/66	48.07	37.32	
		MIMO B			Full	83.98	76.68	
					484/66	48.45	37.32	
802.11ax/be160	MCS0	SISO A	50	5250	Full	164.01	155.00	
					996/S67	89.76	77.25	
		SISO B			Full	163.35	155.00	
					996/S67	91.41	77.25	
		MIMO A			Full	163.35	155.25	
					996/S67	90.75	77.00	
		MIMO B			Full	163.35	155.00	
					996/S67	85.80	77.25	

Max Value

See Section B.5.1 for the screenshot results.

B.3.2 Power Limits. Maximum Output power & Maximum power spectral density

Test limits

FCC part	Limits
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 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.

Test procedure

The Maximum Conducted Output Power was measured using the channel integration method according to section E) 2) e) (Method SA-2 and 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 and 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.

Results tables

Duty cycle

Mode	Rate	Antenna	Duty Cycle [%]
802.11a	6Mbps	SISO A	97.8
		SISO B	97.8
802.11n20	HT0	SISO A	98.8
		SISO B	98.8
	HT8	MIMO A	98.8
		MIMO B	98.8
802.11ax/be20	MCS0	SISO A	98.8
		SISO B	98.8
		MIMO A	99.4
		MIMO B	99.4
802.11n40	HT0	SISO A	98.8
		SISO B	98.8
	HT8	MIMO A	98.8
		MIMO B	98.8
802.11ax/be40	MCS0	SISO A	98.8
		SISO B	98.8
		MIMO A	99.4
		MIMO B	99.4
802.11ac80	VHT0	SISO A	98.9
		SISO B	98.9
		MIMO A	99.4
		MIMO B	99.4
802.11ax/be80	MCS0	SISO A	98.8
		SISO B	98.8
		MIMO A	99.4
		MIMO B	99.4
802.11ac160	VHT0	SISO A	98.8
		SISO B	98.8
		MIMO A	99.2
		MIMO B	99.2
802.11ax/be160	MCS0	SISO A	98.8
		SISO B	98.8
		MIMO A	98.9
		MIMO B	98.9

Maximum output power

Mode	Rate	Channel	Freq [MHz]	Antenna	Average Conducted Ouput Power [dBm]	Avg Max* Conducted Ouput Power [dBm]	Avg Max*. EIRP [dBm]	Avg Max* Conducted Power [mW]
802.11a	6Mbps	52	5260	SISO A	19.54	19.64	27.71	91.97
				SISO B	19.64	19.74	27.81	94.12
		56	5280	SISO A	19.55	19.65	27.72	92.19
				SISO B	19.56	19.66	27.73	92.40
		64	5320	SISO A	19.53	19.63	27.70	91.76
				SISO B	19.57	19.67	27.74	92.61
802.11n20	HT0	52	5260	SISO A	19.78	19.78	27.85	95.06
				SISO B	19.82	19.82	27.89	95.94
		56	5280	SISO A	19.73	19.73	27.80	93.97
				SISO B	19.89	19.89	27.96	97.50
		64	5320	SISO A	19.76	19.76	27.83	94.62
				SISO B	19.91	19.91	27.98	97.95
	HT8	52	5260	MIMO A	16.37	16.37	24.44	43.35
				MIMO B	16.78	16.78	24.85	47.64
				Combined A+B	19.59	19.59	27.66	90.99
		56	5280	MIMO A	16.51	16.51	24.58	44.77
				MIMO B	16.88	16.88	24.95	48.75
				Combined A+B	19.71	19.71	27.78	93.52
		64	5320	MIMO A	16.53	16.53	24.60	44.98
				MIMO B	16.88	16.88	24.95	48.75
				Combined A+B	19.72	19.72	27.79	93.73
802.11n40	HT0	54	5270	SISO A	20.55	20.55	28.62	113.50
				SISO B	21.52	21.52	29.59	141.91
		62	5310	SISO A	19.00	19.00	27.07	79.43
				SISO B	18.61	18.61	26.68	72.61
	HT8	54	5270	MIMO A	18.80	18.80	26.87	75.86
				MIMO B	18.72	18.72	26.79	74.47
				Combined A+B	21.77	21.77	29.84	150.33
		62	5310	MIMO A	16.58	16.58	24.65	45.50
				MIMO B	16.44	16.44	24.51	44.06
				Combined A+B	19.52	19.52	27.59	89.55
802.11ac80	VHT0	58	5290	SISO A	18.97	18.97	27.04	78.89
				SISO B	18.27	18.27	26.34	67.14
				MIMO A	16.28	16.28	24.35	42.46
				MIMO B	16.19	16.19	24.26	41.59
				Combined A+B	19.25	19.25	27.32	84.05
802.11ac160	VHT0	50	5250	SISO A	16.67	16.67	24.74	46.45
				SISO B	17.10	17.10	25.17	51.29
				MIMO A	14.90	14.90	22.97	30.90
				MIMO B	14.85	14.85	22.92	30.55
				Combined A+B	17.89	17.89	25.96	61.45

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

Max Value

Min Value

Mode	Rate	Channel	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	52	5260	SISO A	Full	19.79	19.79	27.86	95.28
				SISO B	Full	20.01	20.01	28.08	100.23
				MIMO A	Full	16.52	16.52	24.59	44.87
				MIMO B	Full	16.68	16.68	24.75	46.56
				Combined A+B	Full	19.61	19.61	27.68	91.43
		56	5280	SISO A	Full	19.84	19.84	27.91	96.38
				SISO B	Full	19.79	19.79	27.86	95.28
				MIMO A	Full	16.42	16.42	24.49	43.85
				MIMO B	Full	16.78	16.78	24.85	47.64
				Combined A+B	Full	19.61	19.61	27.68	91.50
		64	5320	SISO A	Full	19.90	19.90	27.97	97.72
					26/8	11.38	11.38	19.45	13.74
					52/40	14.05	14.05	22.12	25.41
					106/54	17.00	17.00	25.07	50.12
				SISO B	Full	19.79	19.79	27.86	95.28
					26/8	11.36	11.36	19.43	13.68
					52/40	14.09	14.09	22.16	25.64
					106/54	17.12	17.12	25.19	51.52
				MIMO A	Full	16.42	16.42	24.49	43.85
					26/8	7.99	7.99	16.06	6.30
					52/40	11.06	11.06	19.13	12.76
					106/54	14.15	14.15	22.22	26.00
				MIMO B	Full	16.80	16.80	24.87	47.86
					26/8	7.83	7.83	15.90	6.07
					52/40	10.90	10.90	18.97	12.30
					106/54	14.00	14.00	22.07	25.12
				Combined A+B	Full	19.62	19.62	27.69	91.72
					26/8	10.92	10.92	18.99	12.36
					52/40	13.99	13.99	22.06	25.07
					106/54	17.09	17.09	25.16	51.12
802.11ax/be40	MCS0	54	5270	SISO A	Full	20.96	20.96	29.03	124.74
				SISO B	Full	21.53	21.53	29.60	142.23
				MIMO A	Full	18.67	18.67	26.74	73.62
				MIMO B	Full	18.65	18.65	26.72	73.28
				Combined A+B	Full	21.67	21.67	29.74	146.90
		62	5310	SISO A	Full	18.42	18.42	26.49	69.50
					242/62	17.05	17.05	25.12	50.70
				SISO B	Full	18.46	18.46	26.53	70.15
					242/62	17.34	17.34	25.41	54.20
				MIMO A	Full	16.50	16.50	24.57	44.67
					242/62	16.06	16.06	24.13	40.36
				MIMO B	Full	16.31	16.31	24.38	42.76
					242/62	15.92	15.92	23.99	39.08
				Combined A+B	Full	19.42	19.42	27.49	87.42
					242/62	19.00	19.00	27.07	79.45
802.11ax/be80	MCS0	58	5290	SISO A	Full	18.88	18.88	26.95	77.27
					484/66	16.52	16.52	24.59	44.87
				SISO B	Full	18.33	18.33	26.40	68.08
					484/66	16.82	16.82	24.89	48.08
				MIMO A	Full	16.23	16.23	24.30	41.98
					484/66	15.67	15.67	23.74	36.90
				MIMO B	Full	16.09	16.09	24.16	40.64
					484/66	15.56	15.56	23.63	35.97
802.11ax/be160	MCS0	50	5250	Combined A+B	Full	19.17	19.17	27.24	82.62
					484/66	18.63	18.63	26.70	72.87
				SISO A	Full	16.56	16.56	24.63	45.29
					996/S67	16.40	16.40	24.47	43.65
				SISO B	Full	16.96	16.96	25.03	49.66
					996/S67	17.14	17.14	25.21	51.76
				MIMO A	Full	14.66	14.66	22.73	29.24
					996/S67	15.56	15.56	23.63	35.97
				MIMO B	Full	14.82	14.82	22.89	30.34
					996/S67	15.58	15.58	23.65	36.14

				Combined A+B	Full 996/S67	17.75 18.58	17.75 18.58	25.82 26.65	59.58 72.12
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*Maximum values are the duty cycle compensated values calculated from the average (measured) values

Max/Min Value

Maximum Power Spectral Density (PSD)

Mode	Rate	Channel	Freq [MHz]	Antenna	Average conducted PSD [dBm/MHz]	Maximum* conducted PSD [dBm/MHz]
802.11a	6Mbps	52	5260	SISO A	8.72	8.82
				SISO B	8.82	8.92
		56	5280	SISO A	8.73	8.83
				SISO B	8.75	8.85
		64	5320	SISO A	8.71	8.81
				SISO B	8.75	8.85
802.11n20	HT0	52	5260	SISO A	8.78	8.78
				SISO B	8.84	8.84
		56	5280	SISO A	8.74	8.74
				SISO B	8.89	8.89
		64	5320	SISO A	8.77	8.77
				SISO B	8.90	8.90
	HT8	52	5260	MIMO A	5.62	5.62
				MIMO B	5.78	5.78
				Combined A+B	8.71	8.71
		56	5280	MIMO A	5.81	5.81
				MIMO B	5.88	5.88
				Combined A+B	8.86	8.86
802.11n40	HT0	54	5270	SISO A	6.43	6.43
				SISO B	7.44	7.44
		62	5310	SISO A	4.90	4.90
				SISO B	4.51	4.51
	HT8	54	5270	MIMO A	4.78	4.78
				MIMO B	4.60	4.60
				Combined A+B	7.70	7.70
		62	5310	MIMO A	2.47	2.47
				MIMO B	2.32	2.32
				Combined A+B	5.41	5.41
				SISO A	1.80	1.80
				SISO B	1.17	1.17
802.11ac80	VHT0	58	5290	MIMO A	-0.87	-0.87
				MIMO B	-1.00	-1.00
				Combined A+B	2.08	2.08
				SISO A	-3.31	-3.31
				SISO B	-2.98	-2.98
802.11ac160	VHT0	50	5250	MIMO A	-5.22	-5.22
				MIMO B	-5.11	-5.11
				Combined A+B	-2.15	-2.15

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

Mode	Rate	#Ch	Freq [MHz]	Antenna	RU config.	Average conducted PSD [dBm/MHz]	Maximum* conducted PSD [dBm/MHz]
802.11ax/be20	MCS0	52	5260	SISO A	Full	8.58	8.58
				SISO B	Full	8.80	8.80
				MIMO A	Full	5.64	5.64
				MIMO B	Full	5.45	5.45
				Combined A+B	Full	8.56	8.56
		56	5280	SISO A	Full	8.64	8.64
				SISO B	Full	8.58	8.58
				MIMO A	Full	5.57	5.57
				MIMO B	Full	5.59	5.59
				Combined A+B	Full	8.59	8.59
		64	5320	SISO A	Full	8.67	8.67
					26/8	8.76	8.76
					52/40	8.69	8.69
					106/54	8.61	8.61
				SISO B	Full	8.58	8.58
					26/8	8.80	8.80
					52/40	8.66	8.66
					106/54	8.77	8.77
				MIMO A	Full	5.69	5.69
					26/8	5.41	5.41
					52/40	5.66	5.66
					106/54	5.83	5.83
				MIMO B	Full	5.59	5.59
					26/8	5.16	5.16
					52/40	5.71	5.71
					106/54	5.72	5.72
				Combined A+B	Full	8.65	8.65
					26/8	8.30	8.30
					52/40	8.70	8.70
					106/54	8.79	8.79
802.11ax/be40	MCS0	54	5270	SISO A	Full	6.82	6.82
				SISO B	Full	7.32	7.32
				MIMO A	Full	4.50	4.50
				MIMO B	Full	4.44	4.44
				Combined A+B	Full	7.48	7.48
		62	5310	SISO A	Full	4.16	4.16
					242/62	6.10	6.10
				SISO B	Full	4.59	4.59
					242/62	6.58	6.58
				MIMO A	Full	2.33	2.33
					242/62	5.23	5.23
				MIMO B	Full	2.06	2.06
					242/62	5.24	5.24
				Combined A+B	Full	5.21	5.21
					242/62	8.25	8.25
802.11ax/be80	MCS0	58	5290	SISO A	Full	1.89	1.89
					484/66	2.24	2.24
				SISO B	Full	1.19	1.19
					484/66	2.46	2.46
				MIMO A	Full	-1.00	-1.00
					484/66	1.38	1.38
				MIMO B	Full	-1.06	-1.06
					484/66	1.38	1.38
				Combined A+B	Full	1.98	1.98
					484/66	4.39	4.39
802.11ax/be160	MCS0	50	5250	SISO A	Full	-3.47	-3.47
					996/S67	-0.75	-0.75
				SISO B	Full	-3.04	-3.04
					996/S67	0.01	0.01
				MIMO A	Full	-5.17	-5.17
					996/S67	-1.50	-1.50
				MIMO B	Full	-5.32	-5.32
					996/S67	-1.62	-1.62
				Combined A+B	Full	-2.23	-2.23

					996/S67	1.45	1.45
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* Maximum values are the duty cycle compensated values calculated from the measured average values

See Section B.5.2. for the screenshot results.

B.3.3 Undesirable emissions limits : out of band (Conducted)

Test limits

FCC part	Limits																				
15.407 (b) (2)	For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz.																				
15.209	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 conducted setup shown in section *Test & System Description* was used to measure undesirable emissions on the Band Edge 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.

For out of band 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)
960-25000	3	500	53.98	-41.2

See Section B.5.3 for the screenshot results.

B.3.4 Radiated spurious emission

Standard references

FCC part	Limits																				
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 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.																				
15.209	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><thead><tr><th>Freq Range (MHz)</th><th>Field Strength (μV/m)</th><th>Field Strength (dBμV/m)</th><th>Meas. Distance (m)</th></tr></thead><tbody><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></tbody></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 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, the EUT azimuth over 360° and for both Vertical and Horizontal polarizations.

The radiated spurious emission was measured on the worst case configuration selected from the section B.2.2 and using the low, middle and high channels.

For 802.11ax/be20, 802.11ax/be40, 802.11ax/be80 and 802.11ax/be160 modes the worst case in terms of spurious emissions found among the low, mid and high channels tested on chain A and B separately is used to perform the test in MIMO mode (Chain A+B).

For 802.11n20, 802.11n40, 802.11ac80 and 802.11ac160 modes the worst case in terms of spurious emissions found among the low, mid and high channels tested on 802.11ax/be20, 802.11ax/be40, 802.11ax/be80 and 802.11ax/be160 is used to perform the test in chain A, B ,and A+B modes.

Test Results

Radiated spurious - 30 MHz to 1 GHz

Radiated Spurious – All modes

Frequency	Level	Detector	Limit	Margin	Polarization
MHz	dBμV/m	---	dBμV/m	dB	---
33.4	37.3	Quasi-Peak	40.0	2.7	V
55.0	24.9	Quasi-Peak	40.0	15.1	V

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

802.11a

1 GHz – 40 GHz, 802.11a, 6Mbps, Chain A

Radiated Spurious – CH52

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
7889.5	55.4	Peak	68.2	12.8	V
10499.8	54.0	Peak	68.2	14.2	V
23888.6	48.4	Peak	74.0	25.6	H
23888.6	41.7	Average	54.0	12.3	H
39960.4	56.4	Peak	74.0	17.6	H
39960.4	47.9	Average	54.0	6.1	H

Radiated Spurious – CH56

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
7920.3	55.0	Peak	68.2	13.2	H
10500.0	53.8	Peak	68.2	14.4	V
39935.2	55.8	Peak	74.0	18.2	V
39935.2	48.0	Average	54.0	6.0	H

Radiated Spurious – CH64

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1249.7	44.0	Peak	74.0	30.0	H
1249.7	35.0	Average	54.0	19.0	H
39948.3	56.2	Peak	74.0	17.8	V
39948.3	48.0	Average	54.0	6.0	H

1 GHz – 40 GHz, 802.11a, 6Mbps, Chain B

Radiated Spurious – CH52

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1124.6	42.0	Peak	74.0	32.0	V
1124.6	33.0	Average	54.0	21.0	V
23942.2	49.3	Peak	74.0	24.7	V
23942.2	41.7	Average	54.0	12.3	H
26296.5	52.5	Peak	68.2	15.7	V

Radiated Spurious – CH56

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
7918.3	52.4	Peak	68.2	15.8	V
10500.3	53.6	Peak	68.2	14.6	V
39951.2	55.7	Peak	74.0	18.3	V
39951.2	48.0	Average	54.0	6.0	V

Radiated Spurious – CH64

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
7981.3	54.2	Peak	68.2	14.0	H
10500.0	53.8	Peak	68.2	14.4	V
26586.5	54.0	Peak	68.2	14.2	V

802.11n

1 GHz – 40 GHz, 802.11n20, HT0, Chain A

Radiated Spurious – CH52

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1054.2	45.4	Peak	74.0	28.6	H
1054.2	33.6	Average	54.0	20.4	H
23930.1	41.7	Average	54.0	12.3	V
23930.6	48.5	Peak	74.0	25.5	H
39989.4	56.3	Peak	74.0	17.7	V
39989.4	48.0	Average	54.0	6.0	V

Radiated Spurious – CH56

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1250.2	43.6	Peak	74.0	30.4	H
1250.2	34.8	Average	54.0	19.2	H
39963.3	48.0	Average	54.0	6.0	H
39964.2	56.7	Peak	74.0	17.3	V

Radiated Spurious – CH64

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1249.7	44.5	Peak	74.0	29.5	V
1249.7	35.0	Average	54.0	19.0	H
39983.1	48.0	Average	54.0	6.0	H
39983.6	56.1	Peak	74.0	17.9	V

1 GHz – 40 GHz, 802.11n20, HT0, Chain B

Radiated Spurious – CH52

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1249.7	43.9	Peak	74.0	30.1	H
1249.7	34.9	Average	54.0	19.1	H
23965.9	49.3	Peak	74.0	24.7	H
23965.9	41.8	Average	54.0	12.2	H
26299.0	52.5	Peak	68.2	15.7	V

Radiated Spurious – CH56

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1249.7	44.7	Peak	74.0	29.3	H
1249.7	34.6	Average	54.0	19.4	H
26398.0	52.0	Peak	68.2	16.2	V

Radiated Spurious – CH64

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1249.7	44.0	Peak	74.0	30.0	H
1249.7	34.5	Average	54.0	19.5	H
26600.5	54.4	Peak	68.2	13.8	V

1 GHz – 40 GHz, 802.11n20, HT8, Chain A+B

Radiated Spurious – CH52

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1054.7	48.5	Peak	74.0	25.5	V
1054.7	38.9	Average	54.0	15.1	V
23975.1	50.8	Peak	74.0	23.2	H
23975.1	41.5	Average	54.0	12.5	H
26306.7	54.6	Peak	68.2	13.6	V

Radiated Spurious – CH56

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1075.3	46.9	Peak	74.0	27.1	V
1075.3	37.5	Average	54.0	16.5	V
26391.3	53.6	Peak	68.2	14.6	V

Radiated Spurious – CH64

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1114.8	47.3	Peak	74.0	26.7	V
1114.8	35.8	Average	54.0	18.2	V
26598.6	53.3	Peak	68.2	14.9	V

1 GHz – 40 GHz, 802.11n40, HT0, Chain A

Radiated Spurious – CH54

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1249.7	43.8	Peak	74.0	30.2	H
1249.7	35.3	Average	54.0	18.7	H
39989.4	56.8	Peak	74.0	17.2	V
39989.4	48.0	Average	54.0	6.0	V

Radiated Spurious – CH62

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1249.7	44.4	Peak	74.0	29.6	H
1249.7	34.6	Average	54.0	19.4	H
39986.0	48.0	Average	54.0	6.0	V
39986.5	56.9	Peak	74.0	17.1	H

1 GHz – 40 GHz, 802.11n40, HT0, Chain B

Radiated Spurious – CH54

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1124.6	42.7	Peak	74.0	31.3	V
1124.6	33.2	Average	54.0	20.8	V
26365.7	54.1	Peak	68.2	14.1	V

Radiated Spurious – CH62

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1124.6	43.0	Peak	74.0	31.0	V
1124.6	32.9	Average	54.0	21.1	V
40000.0	56.1	Peak	74.0	17.9	H
40000.0	48.0	Average	54.0	6.0	H

1 GHz – 40 GHz, 802.11n40, HT8, Chain A+B

Radiated Spurious – CH54

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1066.1	48.2	Peak	74.0	25.8	V
1066.1	37.4	Average	54.0	16.6	V
39987.4	48.0	Average	54.0	6.0	H
39988.9	57.5	Peak	74.0	16.5	H

Radiated Spurious – CH62

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
4662.8	58.4	Peak	74.0	15.6	V
4663.7	37.2	Average	54.0	16.8	V
6637.8	54.0	Peak	68.2	14.2	V
7952.0	54.2	Peak	68.2	14.0	H
10499.8	53.7	Peak	68.2	14.5	V
39984.5	56.0	Peak	74.0	18.0	H
39984.5	48.0	Average	54.0	6.0	V

802.11ac

1 GHz – 40 GHz, 802.11ac80, VHT0, Chain A

Radiated Spurious – CH58

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
10499.8	53.9	Peak	68.2	14.3	V
39972.0	56.0	Peak	74.0	18.0	V
39972.0	47.9	Average	54.0	6.1	H

1 GHz – 40 GHz, 802.11ac80, VHT0, Chain B

Radiated Spurious – CH58

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
10500.0	53.0	Peak	68.2	15.2	V
39970.0	56.2	Peak	74.0	17.8	V
39970.0	48.0	Average	54.0	6.0	V

1 GHz – 40 GHz, 802.11ac80, VHT8, Chain A+B

Radiated Spurious – CH58

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6612.3	58.3	Peak	68.2	9.9	V
7903.8	52.5	Peak	68.2	15.7	V
10500.1	53.6	Peak	68.2	14.6	H
39998.1	55.8	Peak	74.0	18.2	H
39998.1	47.8	Average	54.0	6.2	H

802.11ax/be

1 GHz – 40 GHz, 802.11ax/be20, HE0, Chain A

Radiated Spurious – CH52

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6564.9	55.5	Peak	68.2	12.7	V
7877.2	57.2	Peak	68.2	11.0	V
10499.8	53.8	Peak	68.2	14.4	V
15754.1	48.3	Peak	74.0	25.7	H
15754.1	40.0	Average	54.0	14.0	H

Radiated Spurious – CH56

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1066.1	37.7	Average	54.0	16.3	H
1066.1	46.7	Peak	74.0	27.3	H
7907.5	57.9	Peak	68.2	10.3	H
15812.5	40.4	Average	54.0	13.6	H
15815.0	49.6	Peak	74.0	24.4	H

Radiated Spurious – CH64

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6639.7	54.9	Peak	68.2	13.3	H
7967.7	57.6	Peak	68.2	10.6	H
10500.0	53.6	Peak	68.2	14.6	V
15934.4	50.7	Peak	74.0	23.3	H
15934.4	42.4	Average	54.0	11.6	H

1 GHz – 40 GHz, 802.11ax/be20, HE0, Chain B

Radiated Spurious – CH52

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1046.0	47.0	Peak	74.0	27.0	H
1046.0	37.8	Average	54.0	16.2	H
21007.4	49.9	Peak	74.0	24.1	V
21007.4	41.9	Average	54.0	12.1	V
26257.9	57.6	Peak	68.2	10.6	V

Radiated Spurious – CH56

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
1066.1	48.9	Peak	74.0	25.1	H
1066.1	38.8	Average	54.0	15.2	H
21085.2	50.7	Peak	74.0	23.3	V
21085.7	42.2	Average	54.0	11.8	V
26357.0	57.9	Peak	68.2	10.3	V

Radiated Spurious – CH64

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6639.7	55.9	Peak	68.2	12.3	V
7968.2	51.2	Peak	68.2	17.0	H
10500.0	54.2	Peak	68.2	14.0	V
15935.3	48.2	Peak	74.0	25.8	V
15935.3	41.8	Average	54.0	12.2	V
26559.5	61.3	Peak	68.2	6.9	V

1 GHz – 40 GHz, 802.11ax/be20, HE0, Chain A+B

Radiated Spurious – CH52

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6564.9	57.6	Peak	68.2	10.6	V
7877.5	62.3	Peak	68.2	5.9	V
10500.0	53.8	Peak	68.2	14.4	V
15753.6	47.9	Peak	74.0	26.1	V
15754.1	39.5	Average	54.0	14.5	H
21005.5	43.4	Average	54.0	10.6	V
21007.9	51.5	Peak	74.0	22.5	V
26257.4	57.4	Peak	68.2	10.8	V

Radiated Spurious – CH56

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
6590.0	57.1	Peak	68.2	11.1	V
7907.6	60.9	Peak	68.2	7.3	V
10500.1	53.9	Peak	68.2	14.3	V
15814.0	41.2	Average	54.0	12.8	H
15814.0	50.3	Peak	74.0	23.7	H
26357.4	57.9	Peak	68.2	10.3	V

Radiated Spurious – CH64

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
6640.1	57.8	Peak	68.2	10.4	V
7967.7	53.9	Peak	68.2	14.3	H
10500.1	53.5	Peak	68.2	14.7	H
15934.8	50.7	Peak	74.0	23.3	H
15934.8	42.6	Average	54.0	11.4	H
21245.7	50.9	Peak	74.0	23.1	V
21245.7	42.9	Average	54.0	11.1	V
26556.6	61.1	Peak	68.2	7.1	V

1 GHz – 40 GHz, 802.11ax/be40, HE0, Chain A
Radiated Spurious – CH54

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
6575.6	55.2	Peak	68.2	12.9	H
7890.3	59.9	Peak	68.2	8.3	V
10500.0	54.2	Peak	68.2	14.0	V
15780.6	47.3	Peak	74.0	26.7	H
15780.6	40.6	Average	54.0	13.4	H

Radiated Spurious – CH62

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBµV/m	---	dBµV/m	dB	---
5060.6	57.1	Peak	74.0	16.9	V
5060.6	40.5	Average	54.0	13.5	V
6626.2	54.5	Peak	68.2	13.7	V
7951.0	57.7	Peak	68.2	10.5	H
10500.0	53.8	Peak	68.2	14.4	V
15900.5	42.4	Average	54.0	11.6	H
15902.0	52.1	Peak	74.0	21.9	H

1 GHz – 40 GHz, 802.11ax/be40, HE0, Chain B

Radiated Spurious – CH54

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
5019.8	38.7	Average	54.0	15.3	V
5020.2	56.6	Peak	74.0	17.4	V
6574.7	55.4	Peak	68.2	12.8	H
7890.4	60.0	Peak	68.2	8.2	V
10500.0	54.4	Peak	68.2	13.8	V
21038.8	51.9	Peak	74.0	22.1	V
21041.7	44.2	Average	54.0	9.8	V
26303.3	61.5	Peak	68.2	6.7	V

Radiated Spurious – CH62

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
5060.6	57.6	Peak	74.0	16.4	H
5061.1	39.6	Average	54.0	14.4	V
5540.7	57.7	Peak	68.2	10.5	V
6626.2	55.6	Peak	68.2	12.6	V
7951.0	59.0	Peak	68.2	9.2	H
10500.0	53.5	Peak	68.2	14.7	V
15900.5	40.3	Average	54.0	13.7	V
15901.5	50.2	Peak	74.0	23.8	V
26499.5	61.2	Peak	68.2	7.0	V

1 GHz – 40 GHz, 802.11ax/be40, HE0, Chain A+B

Radiated Spurious – CH54

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
5020.2	57.5	Peak	74.0	16.5	V
5020.2	40.6	Average	54.0	13.4	V
6575.1	58.1	Peak	68.2	10.1	V
7890.6	63.3	Peak	68.2	4.9	V
10500.5	53.2	Peak	68.2	15.0	V
15781.6	40.9	Average	54.0	13.1	H
15782.1	49.2	Peak	74.0	24.8	H
21041.7	50.2	Peak	74.0	23.8	V
21041.7	44.1	Average	54.0	9.9	V
26301.4	57.7	Peak	68.2	10.5	V

Radiated Spurious – CH62

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
5060.2	58.2	Peak	74.0	15.8	H
5060.2	41.3	Average	54.0	12.7	V
5540.7	57.6	Peak	68.2	10.6	H
6625.8	57.3	Peak	68.2	10.9	V
7950.5	61.5	Peak	68.2	6.7	H
10499.7	53.1	Peak	68.2	15.1	H
15901.5	44.4	Average	54.0	9.6	H
15901.5	52.8	Peak	74.0	21.2	H
21201.7	43.5	Average	54.0	10.5	V
21201.7	51.3	Peak	74.0	22.7	V
26500.0	60.6	Peak	68.2	7.6	V

1 GHz – 40 GHz, 802.11ax/be80, HE0, Chain A

Radiated Spurious – CH58

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
5028.1	39.6	Average	54.0	14.4	V
5029.1	56.3	Peak	74.0	17.7	V
5508.7	57.5	Peak	68.2	10.7	H
6585.8	55.1	Peak	68.2	13.1	V
7903.1	58.2	Peak	68.2	10.0	V
10500.1	54.2	Peak	68.2	14.0	H
15804.3	49.3	Peak	74.0	24.7	H
15805.8	42.4	Average	54.0	11.6	H

1 GHz – 40 GHz, 802.11ax/be80, HE0, Chain B

Radiated Spurious – CH58

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
5029.1	39.8	Average	54.0	14.2	V
5029.5	56.7	Peak	74.0	17.3	V
6586.3	55.7	Peak	68.2	12.5	V
7903.0	48.8	Peak	68.2	19.4	H
10500.0	53.6	Peak	68.2	14.6	V
21073.2	51.2	Peak	74.0	22.8	V
21073.6	41.7	Average	54.0	12.3	V
26342.5	60.9	Peak	68.2	7.3	V

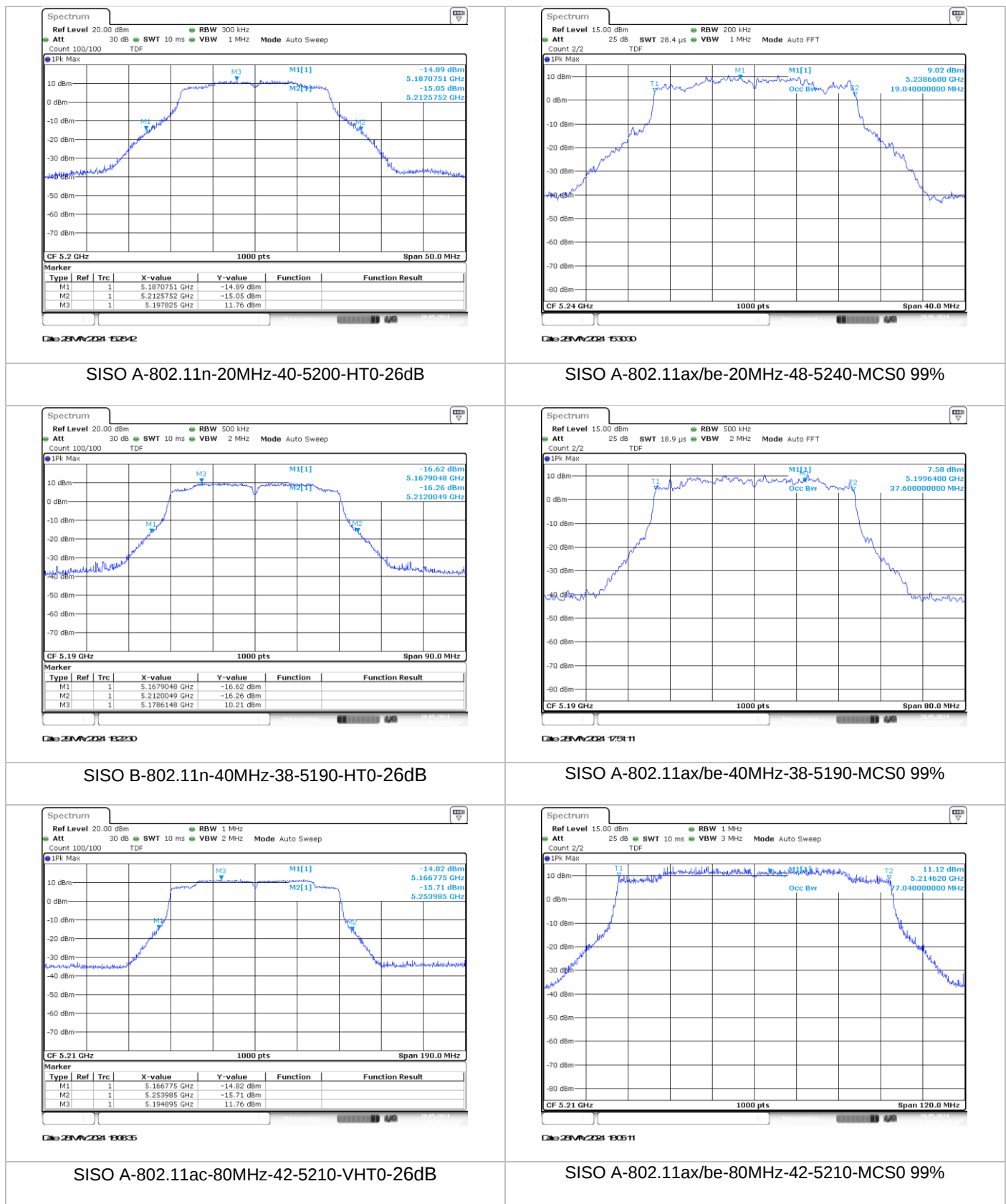
1 GHz – 40 GHz, 802.11ax/be80, HE0, Chain A+B

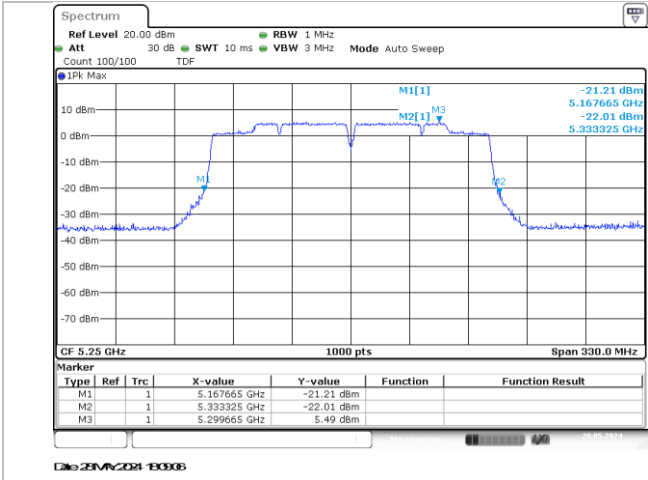
Radiated Spurious – CH58

Frequency	Level	Detector	Limit	Margin	Polar
MHz	dBμV/m	---	dBμV/m	dB	---
5028.1	57.1	Peak	74.0	16.9	V
5028.6	40.1	Average	54.0	13.9	H
6585.8	57.9	Peak	68.2	10.3	V
7903.1	62.7	Peak	68.2	5.5	H
10500.1	53.3	Peak	68.2	14.9	V
15805.3	41.0	Average	54.0	13.0	H
15807.7	49.0	Peak	74.0	25.0	H
21073.2	43.0	Average	54.0	11.0	V
21075.6	51.3	Peak	74.0	22.7	V
26342.5	61.3	Peak	68.2	6.9	V

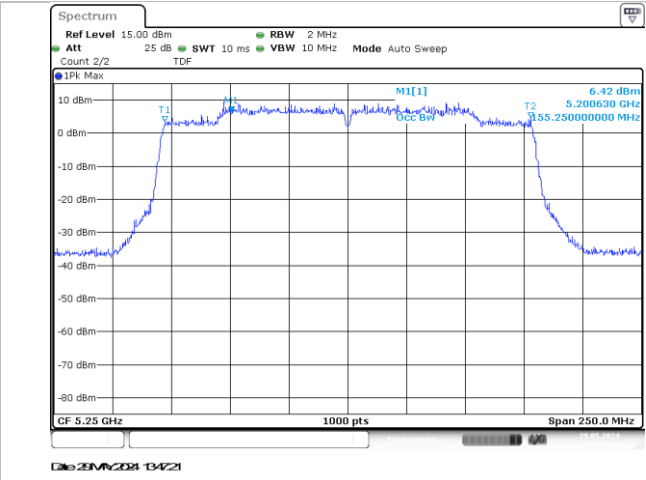
B.4 Test Results Screenshot U-NII-1

B.4.1 26dB and 99% Bandwidth





SISO A-802.11ac-160MHz-50-5250-VHT0 -26dB



MIMO A-802.11ax/be-160MHz-50-5250-MCS0 99%

B.4.2 Power Limits. Maximum Output power & Maximum power spectral density



Spectrum

Ref Level 15.00 dBm
 Att 25 dB
 SWT 1 ms
 VBW 3 MHz
 Mode Auto Sweep
 SCA Count 100/100
 TDF

18M AvgPwr

M1

M1[1]

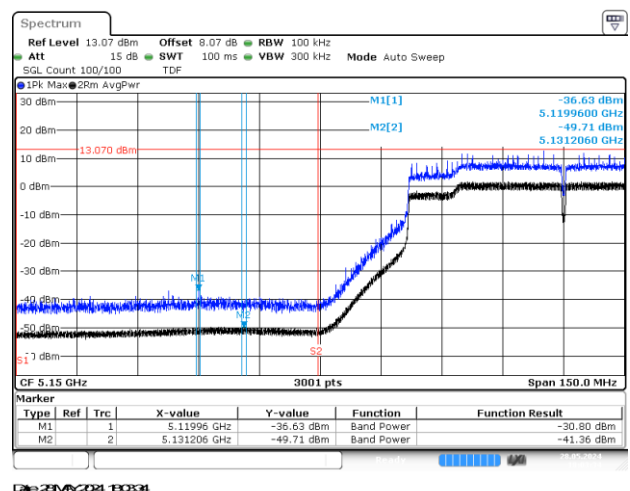
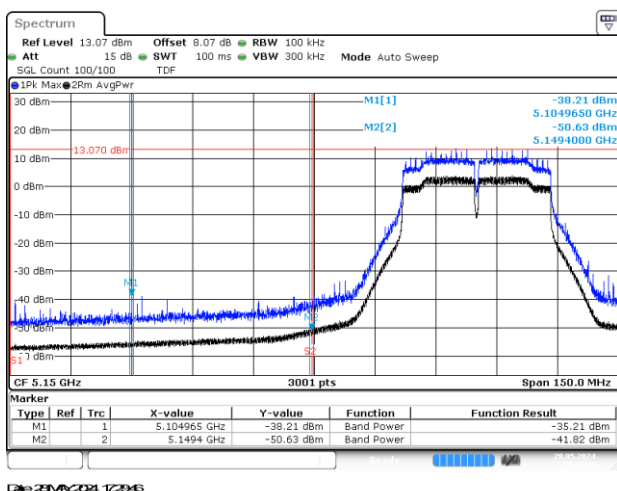
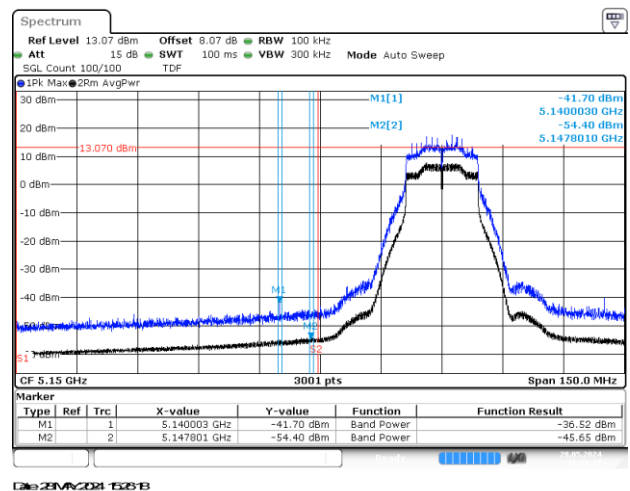
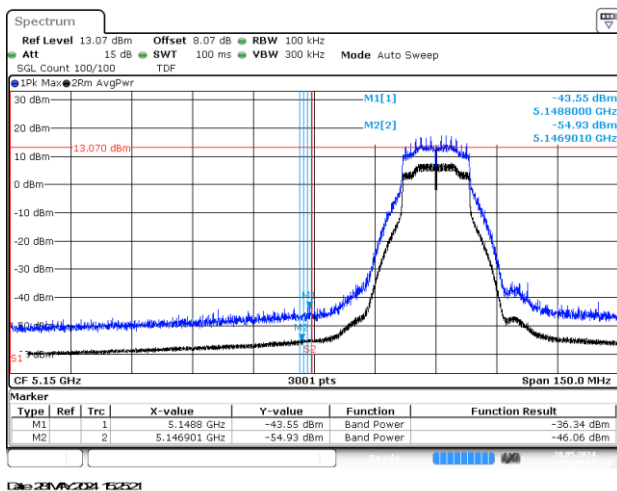
-1.33 dBm
 5.185230 GHz

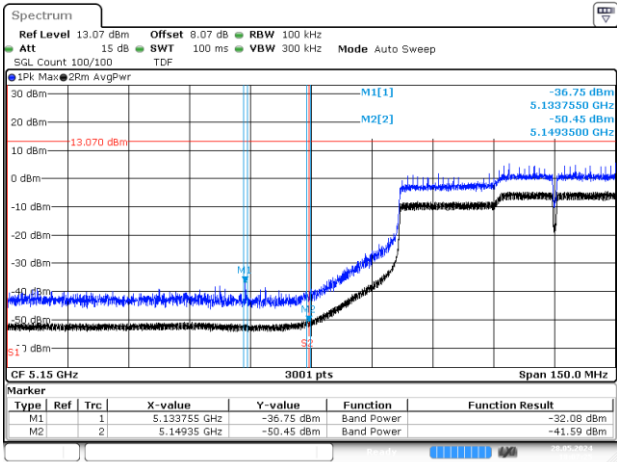
CF 5.25 GHz
 Channel Power 160.00 MHz
 Power 15.85 dBm
 Tx Total 15.85 dBm

700 pts
 Span 325.0 MHz

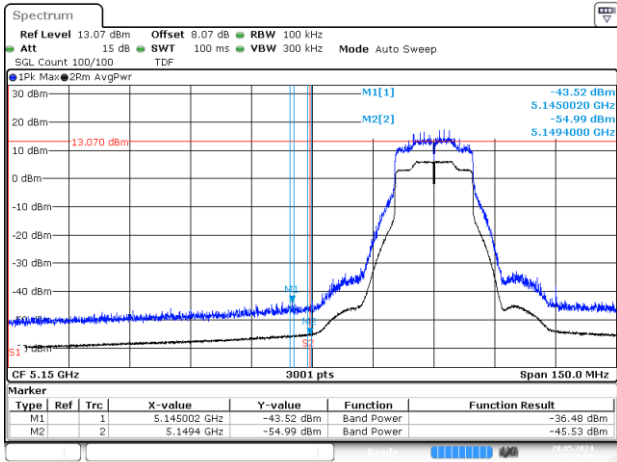
10 dBm
 0 dBm
 -10 dBm
 -20 dBm
 -30 dBm
 -40 dBm
 -50 dBm
 -60 dBm
 -70 dBm
 -80 dBm

5.18515 5.18525 5.18535

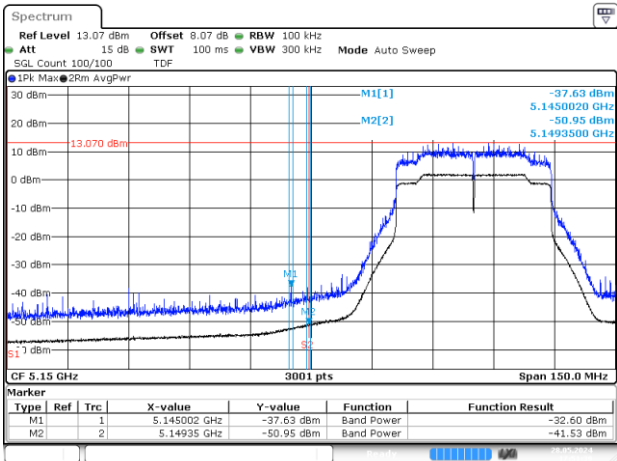




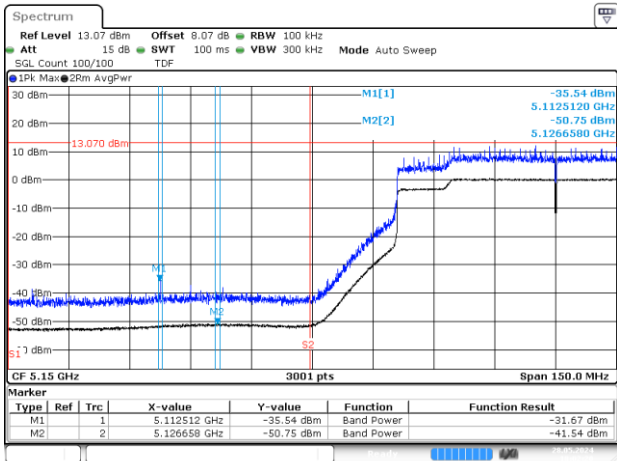
BE-R-LOW, SISO-A, 802.11ac160-VHT0, Ch50



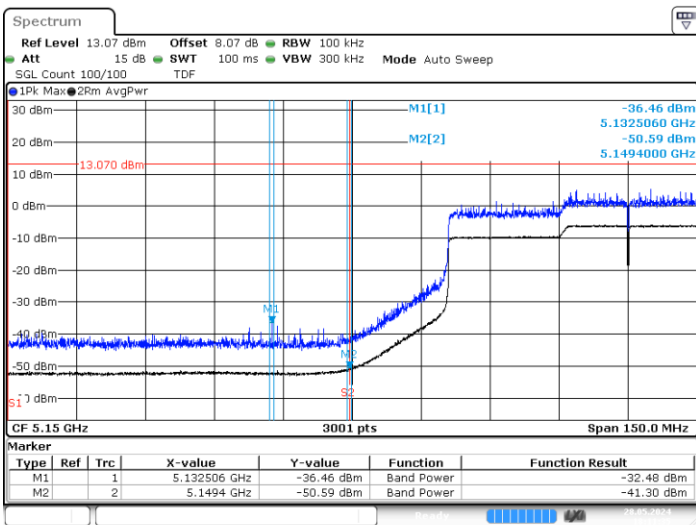
BE-R-LOW, SISO-A, 802.11ax/be20-MCS0, Ch36



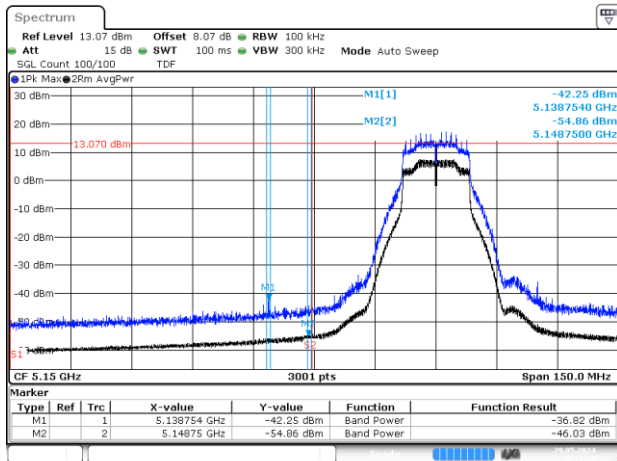
BE-R-LOW, SISO-A, 802.11ax/be40-MCS0, Ch38



BE-R-LOW, SISO-A, 802.11ax/be80-MCS0, Ch42

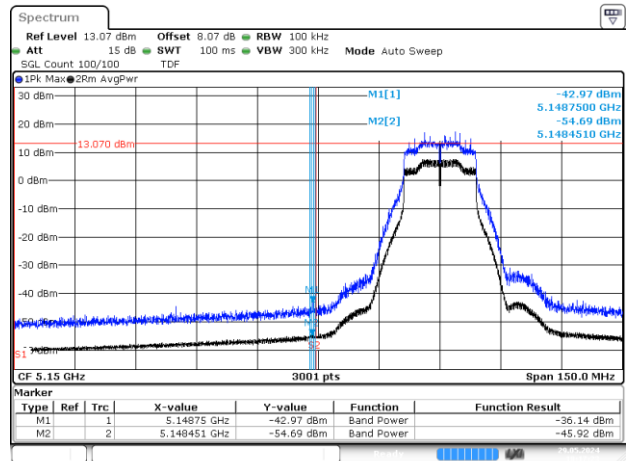


BE-R-LOW, SISO-A, 802.11ax/be160-MCS0, Ch50



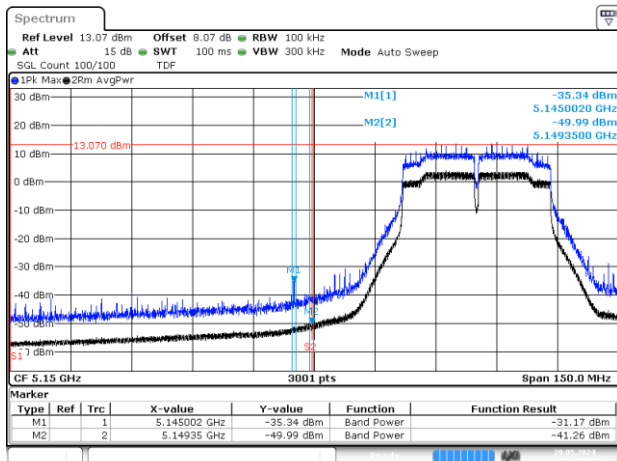
De 20/02/2014

BE-R-LOW, SISO-B, 802.11a20-6Mbps, Ch36



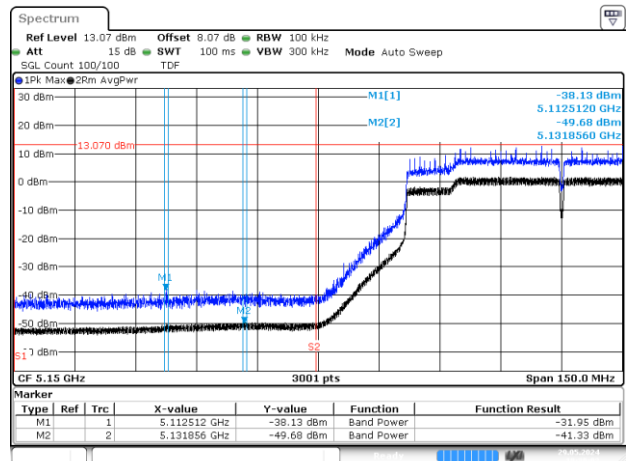
De 20/02/2014

BE-R-LOW, SISO-B, 802.11n20-HT0, Ch36



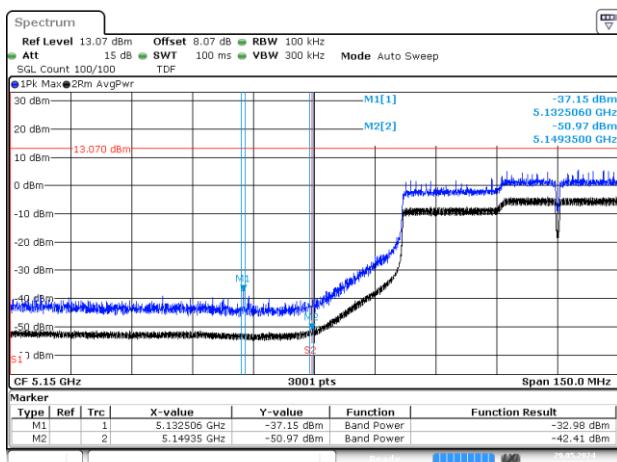
De 20/02/2014

BE-R-LOW, SISO-B, 802.11n40-HT0, Ch38



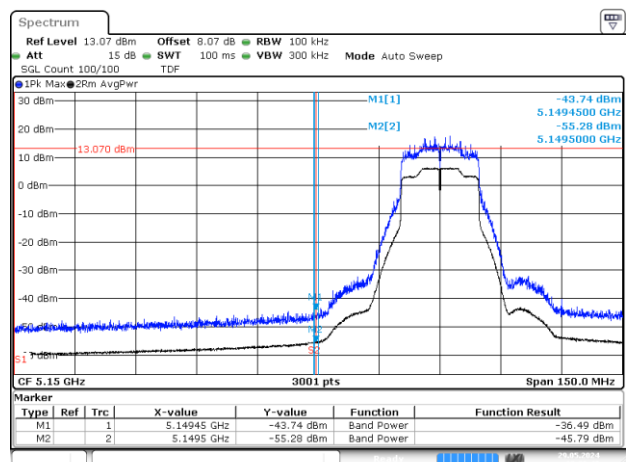
De 20/02/2014

BE-R-LOW, SISO-B, 802.11ac80-VHT0, Ch42



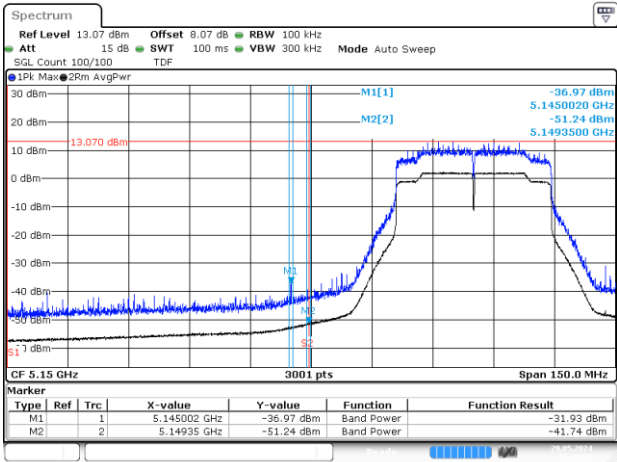
De 20/02/2014

BE-R-LOW, SISO-B, 802.11ac160-VHT0, Ch50

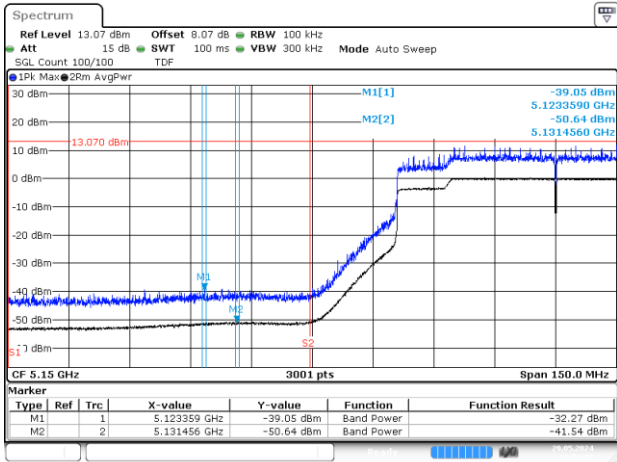


De 20/02/2014

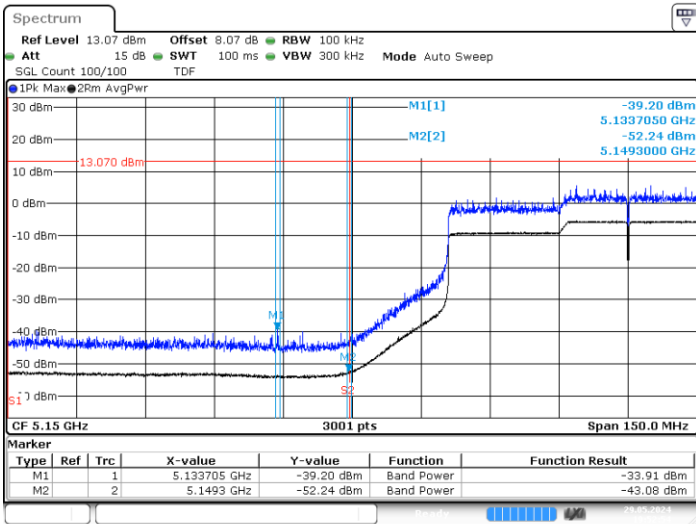
BE-R-LOW, SISO-B, 802.11ax/be20-MCS0, Ch36



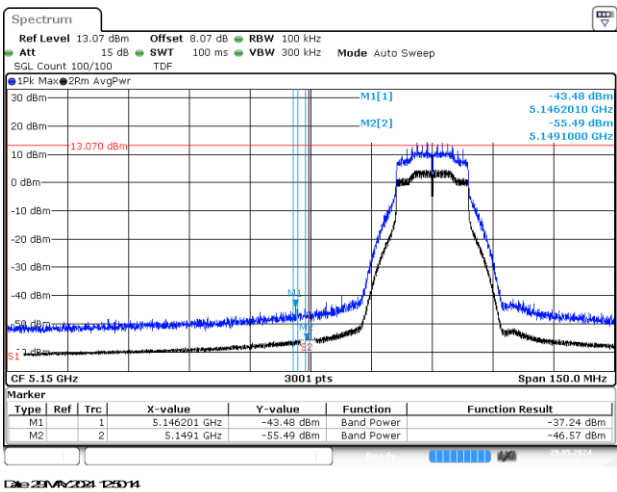
BE-R-LOW, SISO-B, 802.11ax/be40-MCS0, Ch38



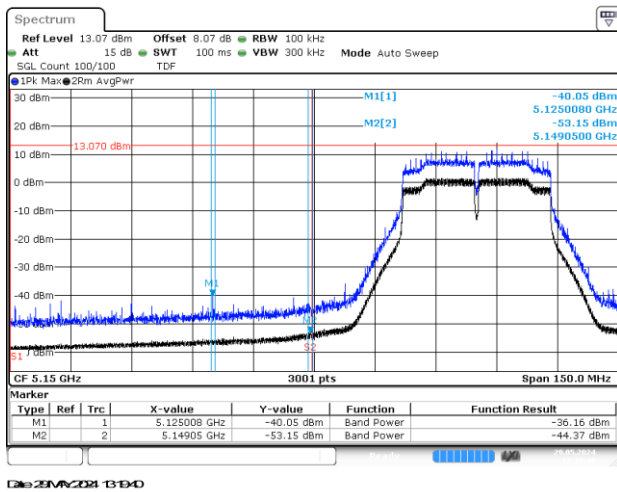
BE-R-LOW, SISO-B, 802.11ax/be80-MCS0, Ch42



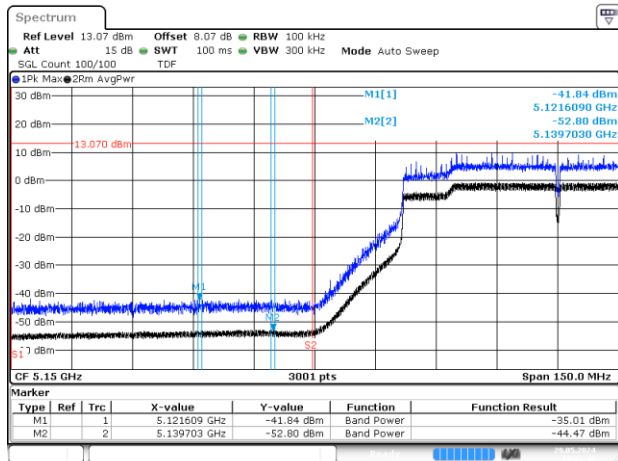
BE-R-LOW, SISO-B, 802.11ax/be160-MCS0, Ch50



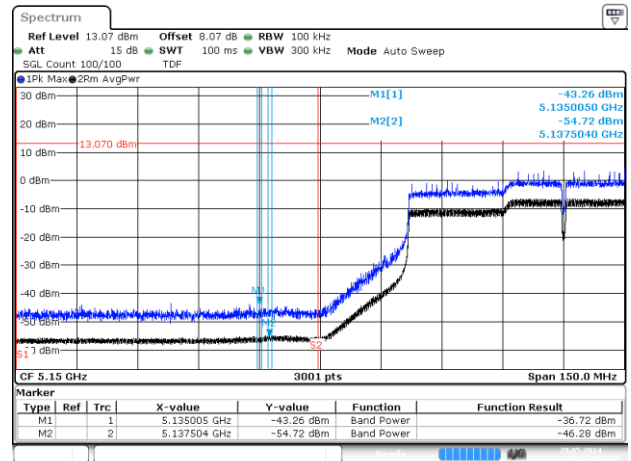
BE-R-LOW, MIMO-A, 802.11n20-HT8, Ch36



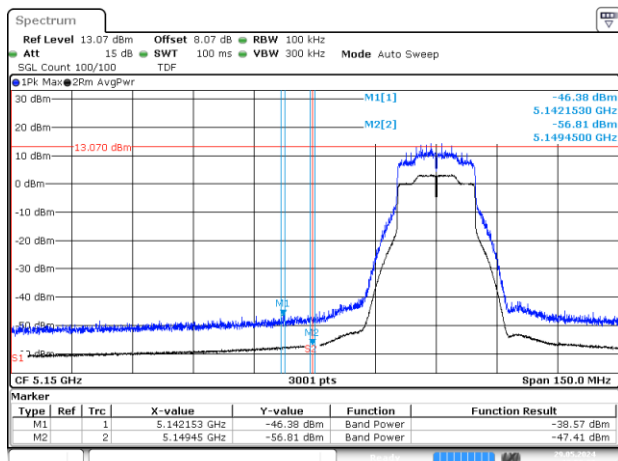
BE-R-LOW, MIMO-A, 802.11n40-HT8, Ch38



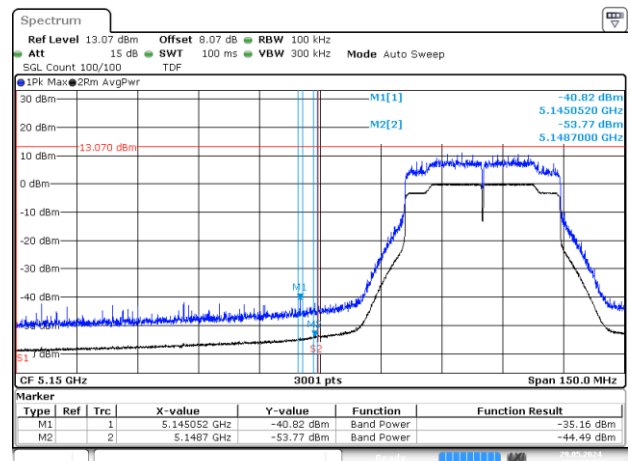
BE-R-LOW, MIMO-A, 802.11ac80-VHT0, Ch42



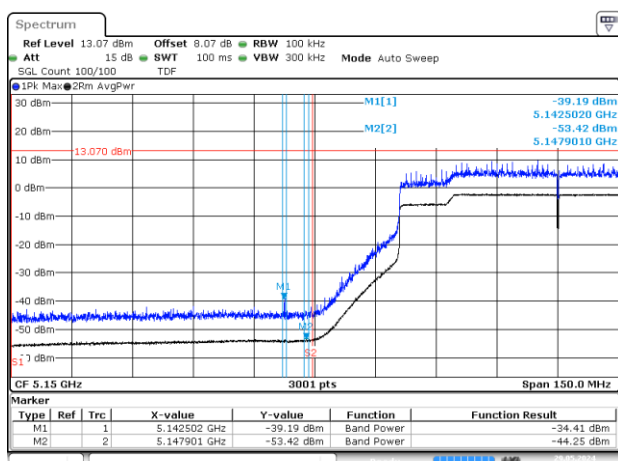
BE-R-LOW, MIMO-A, 802.11ac160-VHT0, Ch50



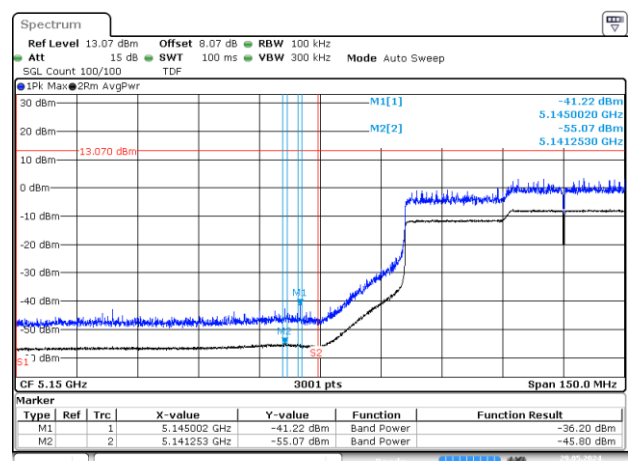
BE-R-LOW, MIMO-A, 802.11ax/be20-MCS0, Ch36



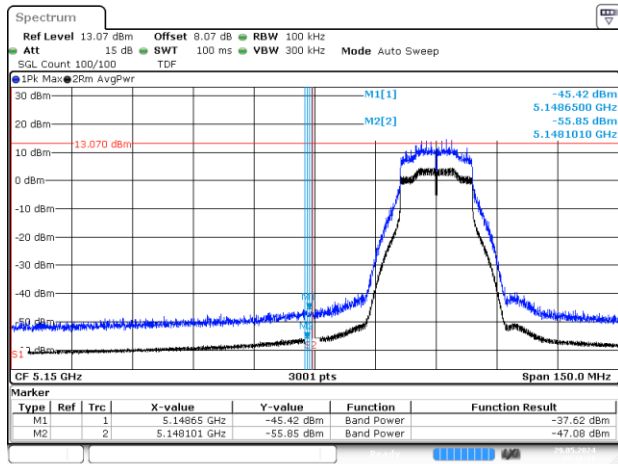
BE-R-LOW, MIMO-A, 802.11ax/be40-MCS0, Ch38



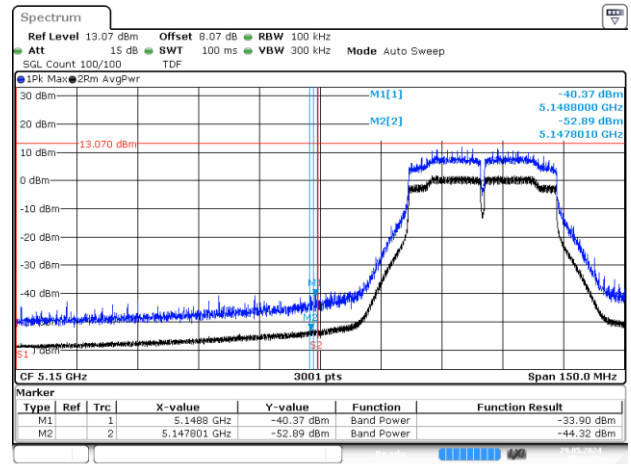
BE-R-LOW, MIMO-A, 802.11ax/be80-MCS0, Ch42



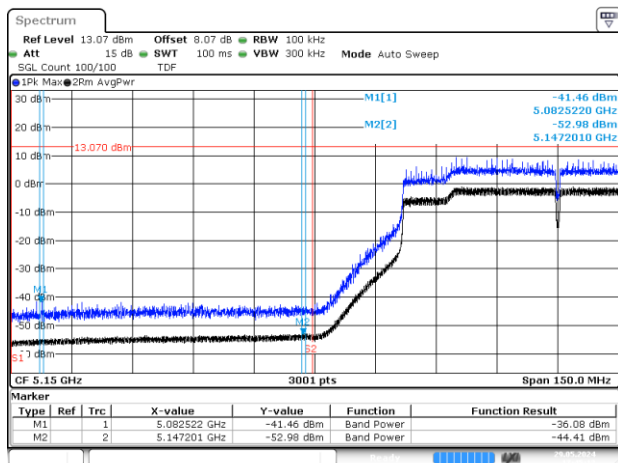
BE-R-LOW, MIMO-A, 802.11ax/be160-MCS0, Ch50



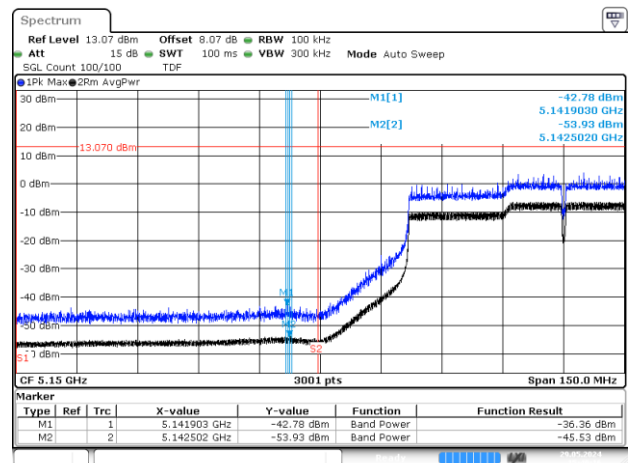
BE-R-LOW, MIMO-B, 802.11n20-HT8, Ch36



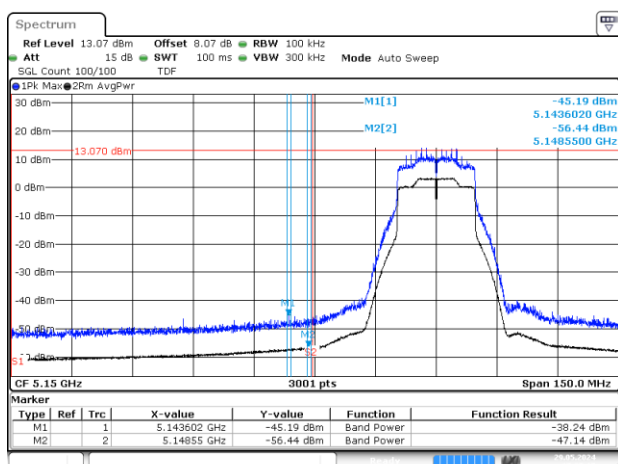
BE-R-LOW, MIMO-B, 802.11n40-HT8, Ch38



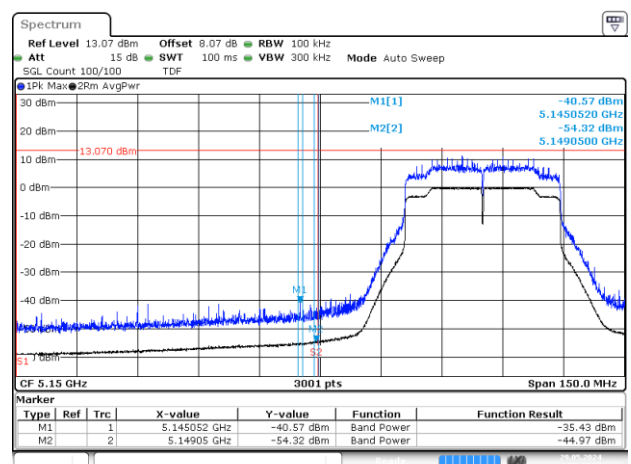
BE-R-LOW, MIMO-B, 802.11ac80-VHT0, Ch42



BE-R-LOW, MIMO-B, 802.11ac160-VHT0, Ch50



BE-R-LOW, MIMO-B, 802.11ax/be20-MCS0, Ch36



BE-R-LOW, MIMO-B, 802.11ax/be40-MCS0, Ch38