N° 1-6736
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CERTIFICATE #3478.01

TEST REPORT

EUT Description	**WLAN and BT, 2x2 PCIe M.2 1216 SD adapter card**
Brand Name	**Intel® Wi-Fi 6E AX210**
Model Name	**AX210D2W**
FCC/IC ID	**FCCID: PD9AX210D2 / IC ID: 1000M-AX210D2**
Date of Test Start/End	**2020-09-23 /2020-10-28**
Features	**802.11ax, Dual Band, 2x2 Wi-Fi + Bluetooth® 5.2** (see section 5)

Applicant	**Intel Mobile Communications**
Address	**100 Center Point Circle, Suite 200** **Columbia, South Carolina 29210** **USA**
Contact Person	**Steven Hackett**
Telephone/Fax/ Email	**steven.c.hackett@intel.com**

Reference Standards	**FCC CFR Title 47 Part 15 E** (see section 1)

Test Report identification	**200611-04.TR02**
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.
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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. 2019-10-01 Edition 2. FCC Title 47 CFR part 15 - Subpart C – §15.209 Radiated emission limits; general requirements. 2019-10-01 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. ANSI C63.10-2013 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 2 - 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. ANSI C63.10-2013 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.
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- ✓ This report does not imply an approval of the product by the Certification Bodies or competent Authorities.
- ✓ Complete or partial reproduction of the report cannot be made without written permission of Intel WRF Lab.

3. Environmental Conditions

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

Temperature	22.5ºC ± 3.5ºC
Humidity	48% ± 24%

4. Test samples

Sample	Control #	Description	Model	Serial #	Date of receipt	Note
#1	200611-04.S11	WiFi 6E Module	AX210D2W	WFM: BC17B87707EF	2020-09-18	RF Conducted
	180001-01.S18	Adapter	Socket	-	2018-11-22	
	170000-01.S02	Laptop	Latitude E5450	21HTPF2	2017-03-28	
	170524-01.S13	Extender	PCB00495	4955013-032	2017-05-29	
#2	200611-04.S10	WiFi 6E Module	AX210D2W	WFM:BC17B8770880	2020-09-18	Used for 30MHz-1GHz Radiated Spurious Emissions tests and 18-40GHz Radiated Spurious Emissions MIMO tests
	200504-04.S07	Laptop	Latitude 5401	BVHLK13	2020-06-02	
	200504-04.S07	Extender	ADEXELEC	-	2020-06-02	
	180001-01.S17	Socket	Socket WsP/ThP	8882-043	2018-11-22	
	200611-03.S28	Main Antenna	Skycross	-	2020-07-01	
	200611-03.S29	Aux Antenna	Skycross	-	2020-07-01	
#3	200611-04.S08	WiFi 6E Module	AX210D2W	WFM:BC17B8770597	2020-09-18	Used for 18-40GHz Radiated Spurious Emissions SISO Tests
	200504-04.S07	Laptop	Latitude 5401	BVHLK13	2020-06-02	
	200504-04.S07	Extender	ADEXELEC	-	2020-06-02	
	180001-01.S17	Socket	Socket WsP/ThP	8882-043	2018-11-22	
	200611-03.S28	Main Antenna	Skycross	-	2020-07-01	
	200611-03.S29	Aux Antenna	Skycross	-	2020-07-01	
#4	200611-04.S07	WiFi 6E Module	AX210D2W	WFM:BC17B87707B8	2020-09-18	Used for 1-18GHz Radiated Spurious Emissions tests
	200615-05.S09	Laptop	Latitude 5401	GVGLK13	2020-06-12	
	200611-03.S31	Extender	ADEXELEC	-	2020-08-19	
	180001-01.S16	Socket	Socket WsP/ThP	8882-017	2018-11-22	
	200611-03.S12	Main Antenna	Skycross	-	2020-07-15	
	200611-03.S11	Aux Antenna	Skycross	-	2020-07-15	

5. EUT Features

The herein information is provided by the customer

Brand Name	Intel® Wi-Fi 6E AX210
Model Name	AX210D2W
Software Version	DRTU version: 01465_99_3500_57W
Driver Version	V0.17.2
Prototype / Production	Production
Supported Radios	802.11b/g/n/ax 2.4GHz (2400.0 – 2483.5 MHz) 802.11a/n/ac/ax 5.2GHz (5150.0 – 5350.0 MHz) 5.6GHz (5470.0 – 5725.0 MHz) 5.8GHz (5725.0 – 5850.0 MHz) Bluetooth 5.2 2.4GHz (2400.0 – 2483.5 MHz)
Antenna Information	

Transmitter	Main (chain A)	Aux (chain B)
Manufacturer	SkyCross	Skycross
Antenna type	PIFA antenna	PIFA antenna
Part number	N/A	N/A
Declared antenna gain (dBi)	+5	+5

Document

Filename	Date of receipt
Intel_Ref_Antenna data_HMC-M2 Ant_Spec_Universe_SkyCross Antenna	2013-01-28

6. Remarks and comments

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

7. Test Verdicts summary

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

7.1. 802.11 a/n/ac/ax – 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

8. Document Revision History

Revision #	Modified by	Revision Details
Rev. 00	C.Requin	First Issue

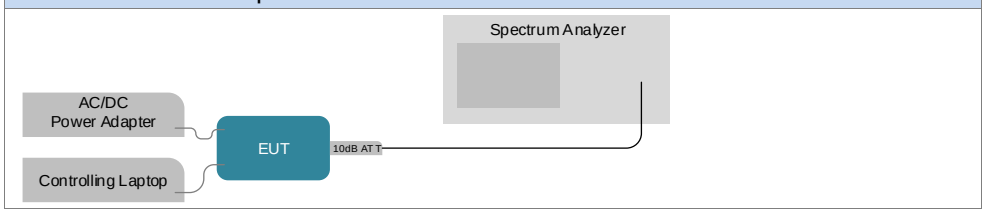
Annex A. Test & System Description

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.

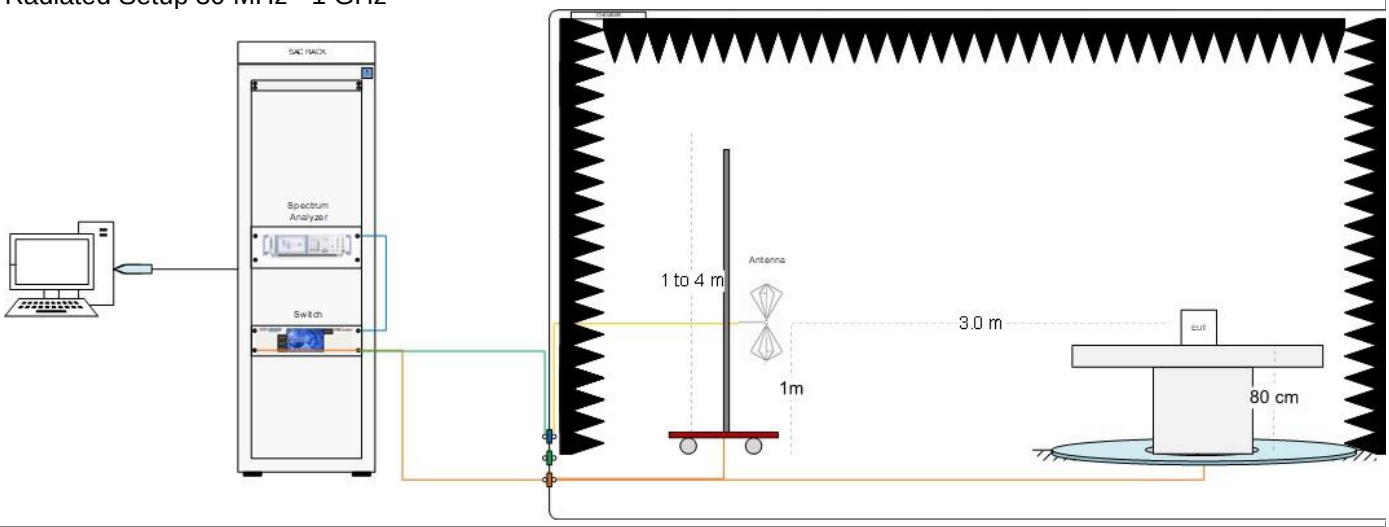
The DUT was installed in a test fixture and this test fixture is connected to a laptop computer and AC/DC power adapter. The laptop computer was used to configure the EUT to continuously transmit at a specified output power using all different modes and modulation schemes, using the Intel proprietary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

Conducted test setup

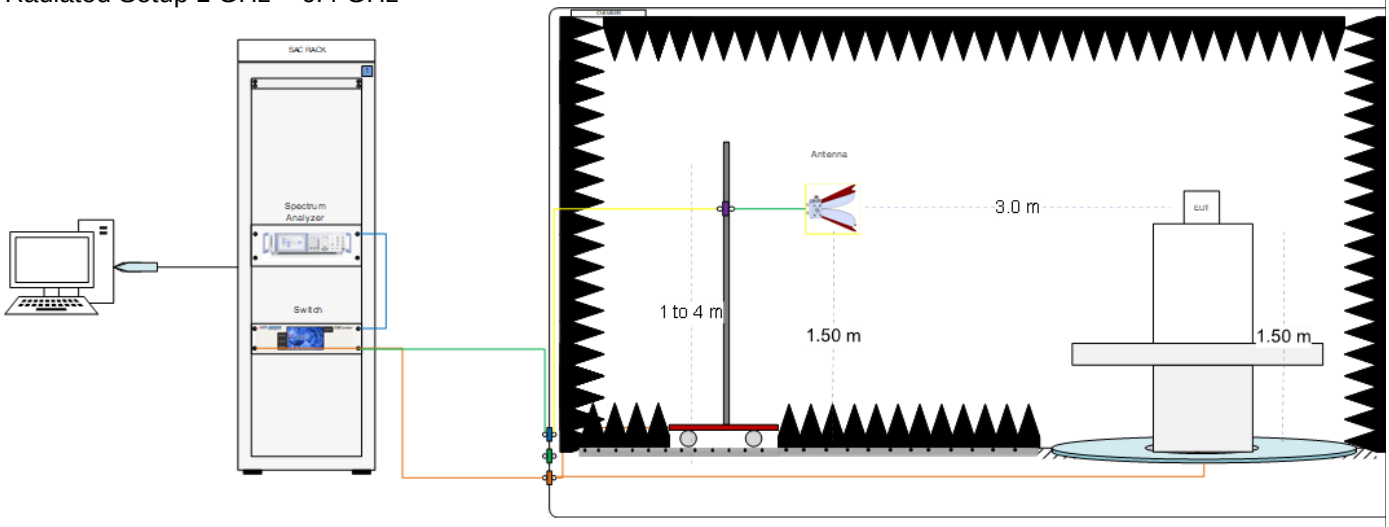


Radiated test setup

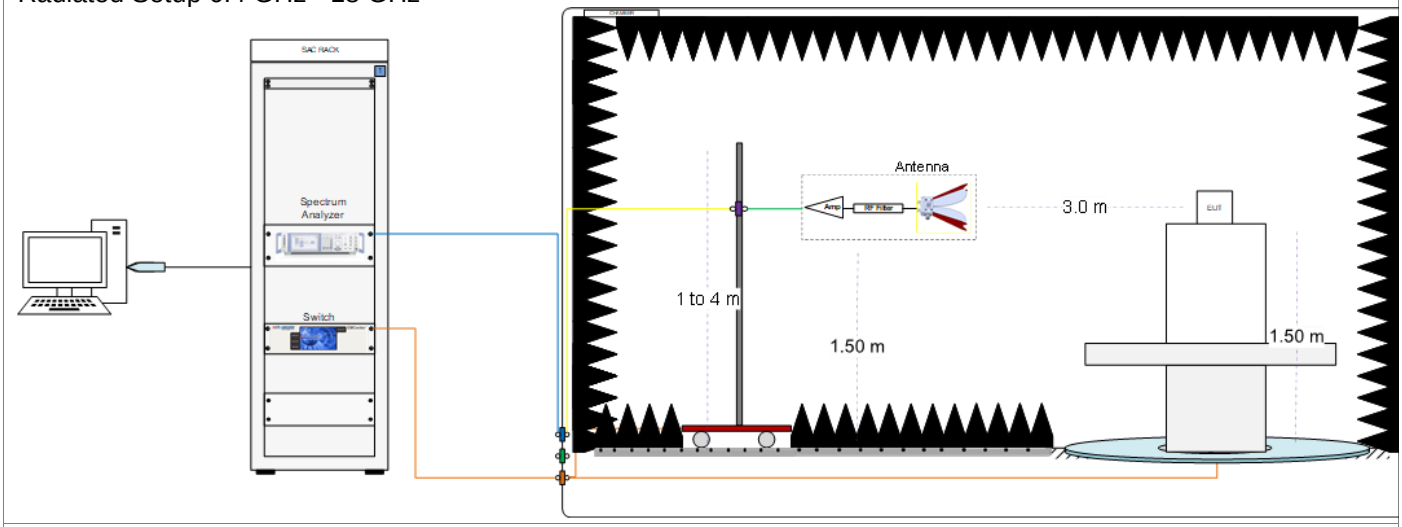
Radiated Setup 30 MHz - 1 GHz



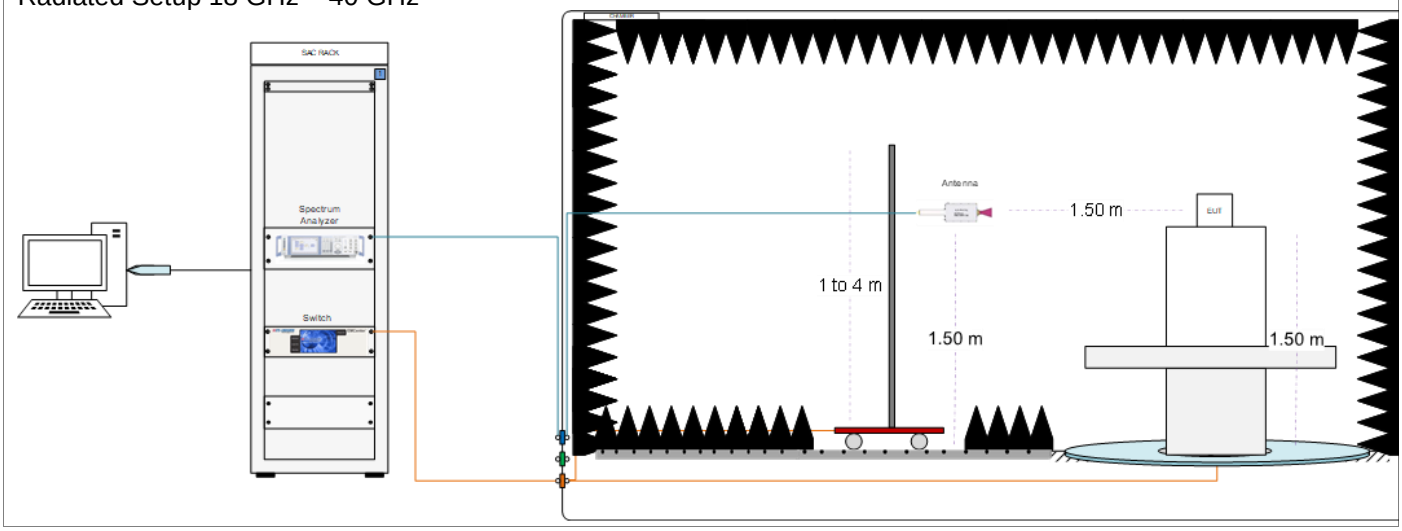
Radiated Setup 1 GHz – 6.4 GHz



Radiated Setup 6.4 GHz - 18 GHz



Radiated Setup 18 GHz – 40 GHz



Sample Calculation

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

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

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

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

where

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

A.2 Test Equipment List

Conducted setup

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
0316	Spectrum Analyzer	FSV30	103309	Rohde & Schwarz	2019-09-02	2021-09-02
0442	RF cable 50cm	Coax 2.92mm Male To 2.92mm Male	N/A	PASTERNACK	2020-08-26	2021-02-26
1044	10dB Attenuator + MH4	N/A	N/A	N/A	N/A	N/A
0583	Temp & Humidity Logger	RA12E-TH1-RAS	RA12-B9D6E	AVITECH	2019-09-06	2021-09-06
1002	Measurement SW v1.5.4.2	Octopi	N/A	Step AT	N/A	N/A

Radiated Setup #1

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
0135	Anechoic Chamber	FACT3	5720	ETS-Lindgren	2020-07-06	2022-01-07
0136	Turn Table	ETS	-	ETS-Lindgren	N/A	N/A
0147	Switch & Positioning systems	EMC Center	00159757	ETS-Lindgren	N/A	N/A
0530	Measurement SW	EMC32, v10.40.10	100623	Rohde & Schwarz	2020-06-24	2021-06-24
1033	Boresight antenna mast	BAM 4.0-P	P/278/2890.01	Maturo	N/A	N/A
0420	Spectrum Analyzer	FSV40	101556	Rohde & Schwarz	2020-05-25	2022-05-25
0993	Biconical antenna 30 MHz – 1 GHz	UBAA9115 + BBVU9135 + DGA9552N	0286 + CH 9044	Schwarzbeck	2019-11-22	2021-11-22
0325	Horn antenna 1 GHz-18 GHz	3117	00157734	ETS-Lindgren	2019-08-12	2021-08-12
0141	Horn Antenna + Amplifier + HPF6.4	3117	00157736	ETS-Lindgren	2020-04-02	2022-04-02
0334	Double-Ridged Waveguide Horn with Pre-Amplifier 18 GHz to 40 GHz	3116C+PA	00169308bis + 00196308	ETS-Lindgren	2019-07-24	2021-07-24
0202	Cable 1m - 30MHz to 18 GHz	UFB311A-0-3360-50U300	MFR 64639223229-001	Micro-coax	2020-08-25	2021-02-25
0206	Cable 1.2m – 18 to 40 GHz	UFA147A-0-0480-200200	MFR 64639223720-003	Micro-coax	2020-08-25	2021-02-25
0263	Cable 1m - 1GHz to 18GHz	UFA147A	-	Utilflex	2020-08-25	2021-02-25
0369	Cable 2m - 26.5GHz to 40GHz	794-9191-2000A	E00327	Atem	2020-08-25	2021-02-25
0371	Cable 1m – 30 MHz - 18GHz	UFB311A-0-0590-50U50U	MFR 64639 223230-001	Micro-coax	2020-08-25	2021-02-25
0758	Cable 7.5m - 30MHz to 18GHz	0501051057000GX	18.23.181	Radiall	2020-08-25	2021-02-25
0809	Cable 7m - 18GHz to 40GHz	R286304009	-	Radiall	2020-08-25	2021-02-25
0859	Cable 2.5m - 30MHz to 18GHz	0500990992500KE	19.23.395	Radiall	2020-08-25	2021-02-25
0797	Temp & Humidity Logger	RA12E-TH1-RAS	RA12-D0EB1A	Avtech	2019-07-04	2021-07-04

N/A: Not Applicable

Radiated Setup #2

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
0337	Anechoic chamber	RFD-FA-100	5996	ETS Lindgren	2020-07-06	2022-07-06
0238	Switch & Positioner	EMCenter	00151232	ETS Lindgren	N/A	N/A
0382	Antenna Tower	2171B-3.0M	00150123	ETS Lindgren	N/A	N/A
0383	Turntable	-	-	ETS Lindgren	N/A	N/A
0329	Measurement SW	EMC32, v10.50.10	100401	Rohde & Schwarz	N/A	N/A
0133	Spectrum Analyzer	FSV40	101358	Rohde & Schwarz	2020-02-25	2022-02-25
0138	Double Ridge Horn (1- 18GHz)	3117	00152266	ETS Lindgren	2020-03-08	2022-03-08
0141	Horn Antenna 3117 + Amplifier + HPF6.4	3117	00157736	ETS-Lindgren	2020-04-02	2022-04-02
0334	Double Horn Ridged antenna	3116C-PA	00169308bis + 00196308	ETS-Lindgren	2019-07-24	2021-07-24
0871	RF Cable 1-18GHz, 1.5 m	0501050991200GX	19.21.710	Radiall	2020-08-20	2021-02-20
0860	RF Cable 1-18GHz, 1.2 m	2301761761200PJ	12.22.1104	Radiall	2020-08-20	2021-02-20
0275	RF Cable 1-18GHz - 6.5m	140-8500-11-51	001	Spectrum	2020-08-20	2021-02-20
0684	RF Cable 1GHz-18GHz 1.5m	-	-	Spirent	2020-08-20	2021-02-20
0679	RF Cable 18-40 GHz 6m	R286304009	1747364	Radiall	2020-08-20	2021-02-20
0028	RF Cable 1.2m 40MHz-40GHz	794-9191-1200A	DA585	Atem	2020-08-20	2021-02-20
0725	RF Cable 1-9.5GHz 1.2m	0500990991200KE	-	Radiall	2020-08-20	2021-02-20
0796	Temp & Humidity Logger	RA12E-TH1-RAS	RA12-D4F316	Avtech	2019-07-05	2021-07-05

N/A: Not Applicable

Shared Radiated Equipment

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
0616	Power Sensor	NRP-Z81	104385	Rohde & Schwarz	2020-04-08	2022-04-08
0617	Power Sensor	NRP-Z81	104386	Rohde & Schwarz	2020-04-08	2022-04-08
0618	Power Sensor	NRP-Z81	104382	Rohde & Schwarz	2020-04-08	2022-04-08

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 <40 GHz	±3.45	dB
Radiated tests <1GHz	±3.24	dB
Radiated tests 1GHz – 40 GHz	±4.34	dB

Annex B. Test Results U-NII-2C

The herein test results were performed by:

Test case measurement	Test Engineer
Power Limits. Maximum output power	C.Requin
Power spectral density	C.Requin
Undesirable emissions limits: out of band (conducted)	C.Requin
Undesirable emissions limits (radiated)	A.Lounes. N.Nachabe, N.Bui

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 & 802.11ax20 (20 MHz channel bandwidth), 802.11n40 & 802.11ax40 (40MHz channel bandwidth), 802.11ac80 & 802.11ax80 (80MHz channel bandwidth) and 802.11ac160 &802.11ax160 (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	20	HE0
		40	HE0
		80	HE0
		160	HE0
MIMO	802.11n	20/40	HT8
	802.11ac	80/160	VHT0
	802.11ax	20/40/80/160	HE0

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.

See annex C.1.1 and C.1.2 for screenshot results

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	24.15	16.60
			120	5600	24.70	16.62
			140	5700	24.20	16.63
		SISO B	100	5500	23.50	16.61
			120	5600	24.40	16.70
			140	5700	24.10	16.75
802.11n20	HT0	SISO A	100	5500	23.95	17.71
			120	5600	24.55	17.79
			140	5700	23.90	17.74
		SISO B	100	5500	23.90	17.67
			120	5600	24.45	17.76
			140	5700	24.30	17.68
	HT8	MIMO A	100	5500	24.50	17.71
			120	5600	24.25	17.79
			140	5700	24.70	17.70
		MIMO B	100	5500	23.70	17.77
			120	5600	24.00	17.80
			140	5700	24.05	17.75
802.11n40	HT0	SISO A	102	5510	44.28	36.16
			118	5590	45.81	36.24
			134	5670	45.00	36.08
		SISO B	102	5510	44.01	36.08
			118	5590	46.62	36.16
			134	5670	44.37	36.16
	HT8	MIMO A	102	5510	44.91	36.16
			118	5590	46.44	36.48
			134	5670	44.64	36.08
		MIMO B	102	5510	43.29	36.24
			118	5590	44.28	36.32
			134	5670	42.39	36.00
802.11ac80	VHT0	SISO A	106	5530	86.64	75.00
			122	5610	89.30	75.24
		SISO B	106	5530	86.83	75.00
			122	5610	88.54	75.12
		MIMO A	106	5530	87.40	75.00
			122	5610	87.59	75.12
		MIMO B	106	5530	86.45	74.88
			122	5610	89.75	75.12
802.11ac160	VHT0	SISO A	114	5570	164.67	153.20
		SISO B			163.35	153.20
		MIMO A			165.00	153.00
		MIMO B			163.35	153.20

Max Value

Mode	Rate	Antenna	Channel	Freq [MHz]	RU config.	26dB BW [MHz]	99% BW [MHz]
802.11ax20	HE0	SISO A	100	5500	Full	24.35	18.95
					26/0	20.60	18.67
					52/37	21.55	18.11
					106/53	22.45	18.02
			120	5600	Full	24.90	18.97
			140	5700	Full	23.15	18.93
					26/8	21.25	17.95
					52/40	22.00	18.19
					106/54	23.30	17.95
		SISO B	100	5500	Full	23.50	18.83
					26/0	20.75	16.09
					52/37	21.60	16.20
					106/53	22.30	15.87
			120	5600	Full	23.60	18.91
			140	5700	Full	23.50	18.91
					26/8	21.10	16.37
					52/40	22.35	18.37
					106/54	23.80	17.40
		MIMO A	100	5500	Full	23.30	18.89
					26/0	20.55	18.55
					52/37	21.65	17.49
					106/53	22.60	18.25
			120	5600	Full	24.70	18.87
			140	5700	Full	24.45	18.91
					26/8	21.20	18.43
					52/40	22.10	17.98
					106/54	24.00	18.41
		MIMO B	100	5500	Full	23.15	18.95
					26/0	21.05	18.69
					52/37	22.05	18.71
					106/53	23.65	17.70
			120	5600	Full	23.80	18.95
			140	5700	Full	23.70	18.87
					26/8	20.90	18.43
					52/40	23.10	18.50
					106/54	23.85	17.20
802.11ax40	HE0	SISO A	102	5510	Full	42.84	37.52
					242/61	24.39	18.96
			118	5590	Full	44.55	37.52
			134	5670	Full	43.11	37.44
			134	5670	242/62	24.12	18.88
		SISO B	102	5510	Full	43.29	37.52
					242/61	24.12	18.80
			118	5590	Full	44.19	37.44
			134	5670	Full	44.10	37.52
			134	5670	242/62	25.83	18.96
		MIMO A	102	5510	Full	43.38	37.44
					242/61	24.30	18.96
			118	5590	Full	44.46	37.68
			134	5670	Full	43.74	37.68
			134	5670	242/62	24.12	19.04
		MIMO B	102	5510	Full	43.65	37.44
					242/61	23.94	18.96
			118	5590	Full	46.17	37.68
			134	5670	Full	43.29	37.52
			134	5670	242/62	25.02	18.80
802.11ax80	HE0	SISO A	106	5530	Full	83.41	76.68
					484/65	43.70	37.32
			122	5610	Full	83.41	76.80
		SISO B	106	5530	Full	83.41	76.68
					484/65	42.94	37.32
			122	5610	Full	83.79	76.56
		MIMO A	106	5530	Full	84.74	76.68
					484/65	43.89	37.44
			122	5610	Full	83.98	76.92
		MIMO B	106	5530	Full	83.60	76.80
					484/65	43.89	37.44
			122	5610	Full	83.41	76.68

Max Value

Mode	Rate	Antenna	Channel	Freq [MHz]	RU config.	26dB BW [MHz]	99% BW [MHz]
802.11ax160	HE0	SISO A	114	5570	Full	163.02	154.80
					996/67	85.47	77.00
					996/S67	86.13	77.00
		SISO B			Full	163.02	154.80
					996/67	85.14	76.80
					996/S67	85.14	76.80
		MIMO A			Full	163.02	154.80
					996/67	84.81	76.80
					996/S67	86.13	77.00
		MIMO B			Full	163.02	154.80
					996/67	85.80	76.80
					996/S67	85.80	76.80

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	16.67
					B	16.67
	HT8			MIMO	A	16.82
					B	16.72
802.11n40	HT0	142	5710	SISO	A	36.65
					B	36.01
	HT8			MIMO	A	36.73
					B	36.46
802.11ac80	VHT0	138	5690	SISO	A	79.55
					B	79.17
				MIMO	A	79.74
					B	78.41
802.11ax20	HE0	144	5720	SISO	A	16.42
					B	16.03
				MIMO	A	16.03
					B	16.12
802.11ax40	HE0	142	5710	SISO	A	36.55
					B	36.28
				MIMO	A	36.37
					B	36.91
802.11ax80	HE0	138	5690	SISO	A	78.41
					B	78.22
				MIMO	A	78.76
					B	77.65

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 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 log10B, 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 log10B, 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

See annex C.1.3 and C.1.4 for screenshot results

Results tables

Duty cycle

Mode	Rate	Antenna	Duty Cycle [%]
802.11a	6Mbps	SISO A	98.0
		SISO B	98.9
802.11n20	HT0	SISO A	98.9
		SISO B	98.9
	HT8	MIMO A	98.9
		MIMO B	98.9
802.11ax20	HE0	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	98.7
		MIMO B	98.7
802.11ax40	HE0	SISO A	98.8
		SISO B	98.8
		MIMO A	99.3
		MIMO B	99.3
802.11ac80	VHT0	SISO A	98.8
		SISO B	98.8
		MIMO A	99.4
		MIMO B	99.4
802.11ax80	HE0	SISO A	98.8
		SISO B	98.8
		MIMO A	99.4
		MIMO B	99.4
802.11ac160	VTH0	SISO A	98.8
		SISO B	98.8
		MIMO A	99.1
		MIMO B	99.1
802.11ax160	HE0	SISO A	98.8
		SISO B	98.8
		MIMO A	98.9
		MIMO B	98.9

Maximum output power – U-NII-2C Channels

Mode	Rate	#Ch	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	100	5500	SISO A	19.97	19.97	24.97	99.31
				SISO B	19.50	19.50	24.50	89.13
		120	5600	SISO A	20.82	20.82	25.82	120.78
				SISO B	20.97	20.97	25.97	125.03
		140	5700	SISO A	19.59	19.59	24.59	90.99
				SISO B	19.61	19.61	24.61	91.41
802.11n20	HT0	100	5500	SISO A	19.59	19.59	24.59	90.99
				SISO B	19.65	19.65	24.65	92.26
		120	5600	SISO A	20.97	20.97	25.97	125.03
				SISO B	20.85	20.85	25.85	121.62
		140	5700	SISO A	19.70	19.70	24.70	93.33
				SISO B	19.88	19.88	24.88	97.27
	HT8	100	5500	MIMO A	18.92	18.92	23.92	77.98
				MIMO B	18.92	18.92	23.92	77.98
				Combined A+B	21.93	21.93	26.93	155.97
		120	5600	MIMO A	18.82	18.82	23.82	76.21
				MIMO B	18.89	18.89	23.89	77.45
				Combined A+B	21.87	21.87	26.87	153.65
		140	5700	MIMO A	19.01	19.01	24.01	79.62
				MIMO B	18.79	18.79	23.79	75.68
				Combined A+B	21.91	21.91	26.91	155.30
802.11n40	HT0	102	5510	SISO A	19.45	19.45	24.45	88.10
				SISO B	19.60	19.60	24.60	91.20
		118	5590	SISO A	21.02	21.02	26.02	126.47
				SISO B	21.10	21.10	26.10	128.82
		134	5670	SISO A	20.33	20.33	25.33	107.89
				SISO B	20.34	20.34	25.34	108.14
	HT8	102	5510	MIMO A	17.49	17.49	22.49	56.10
				MIMO B	17.36	17.36	22.36	54.45
				Combined A+B	20.44	20.44	25.44	110.56
		118	5590	MIMO A	20.92	20.92	25.92	123.59
				MIMO B	20.78	20.78	25.78	119.67
				Combined A+B	23.86	23.86	28.86	243.27
		134	5670	MIMO A	19.00	19.00	24.00	79.43
				MIMO B	18.63	18.63	23.63	72.95
				Combined A+B	21.83	21.83	26.83	152.38
802.11ac80	VHT0	106	5530	SISO A	18.99	18.99	23.99	79.25
				SISO B	19.37	19.37	24.37	86.50
				MIMO A	16.14	16.14	21.14	41.11
				MIMO B	16.10	16.10	21.10	40.74
				Combined A+B	19.13	19.13	24.13	81.85
		122	5610	SISO A	20.50	20.50	25.50	112.20
				SISO B	20.47	20.47	25.47	111.43
				MIMO A	19.81	19.81	24.81	95.72
				MIMO B	20.49	20.49	25.49	111.94
				Combined A+B	23.17	23.17	28.17	207.66
802.11ac160	VHT0	114	5570	SISO A	16.91	16.91	21.91	49.09
				SISO B	16.59	16.59	21.59	45.60
				MIMO A	14.83	14.83	19.83	30.41
				MIMO B	13.34	13.34	18.34	21.58
				Combined A+B	17.16	17.16	22.16	51.99

* 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 Ouput Power [dBm]	Avg Max* Conducted Ouput Power [dBm]	Avg Max*. EIRP [dBm]	Avg Max* Conducted Power [mW]
802.11ax20	HE0	100	5500	SISO A	Full	19.96	19.96	24.96	99.08
					26/0	13.76	13.76	18.76	23.77
					52/37	16.55	16.55	21.55	45.19
					106/53	19.64	19.64	24.64	92.04
				SISO B	Full	19.61	19.61	24.61	91.41
					26/0	13.80	13.80	18.80	23.99
					52/37	16.74	16.74	21.74	47.21
					106/53	19.76	19.76	24.76	94.62
				MIMO A	Full	19.16	19.16	24.16	82.41
					26/0	10.82	10.82	15.82	12.08
					52/37	13.65	13.65	18.65	23.17
					106/53	16.67	16.67	21.67	46.45
				MIMO B	Full	19.15	19.15	24.15	82.22
					26/0	10.69	10.69	15.69	11.72
					52/37	13.41	13.41	18.41	21.93
					106/53	16.59	16.59	21.59	45.60
				Combined A+B	Full	22.17	22.17	27.17	164.64
					26/0	13.77	13.77	18.77	23.80
					52/37	16.54	16.54	21.54	45.10
					106/53	19.64	19.64	24.64	92.06
		120	5600	SISO A	Full	20.89	20.89	25.89	122.74
				SISO B	Full	21.08	21.08	26.08	128.23
				MIMO A	Full	19.06	19.06	24.06	80.54
				MIMO B	Full	19.16	19.16	24.16	82.41
				Combined A+B	Full	22.12	22.12	27.12	162.95
		140	5700	SISO A	Full	19.65	19.65	24.65	92.26
					26/8	13.65	13.65	18.65	23.17
					52/40	16.68	16.68	21.68	46.56
					106/54	19.77	19.77	24.77	94.84
				SISO B	Full	19.99	19.99	24.99	99.77
					26/8	13.81	13.81	18.81	24.04
					52/40	16.74	16.74	21.74	47.21
					106/54	19.74	19.74	24.74	94.19
				MIMO A	Full	18.96	18.96	23.96	78.70
					26/8	10.71	10.71	15.71	11.78
					52/40	13.68	13.68	18.68	23.33
					106/54	16.67	16.67	21.67	46.45
				MIMO B	Full	18.68	18.68	23.68	73.79
					26/8	10.74	10.74	15.74	11.86
					52/40	13.65	13.65	18.65	23.17
					106/54	16.69	16.69	21.69	46.67
				Combined A+B	Full	21.83	21.83	26.83	152.50
					26/8	13.74	13.74	18.74	23.63
					52/40	16.68	16.68	21.68	46.51
					106/54	19.69	19.69	24.69	93.12
802.11ax40	HE0	102	5510	SISO A	Full	19.27	19.27	24.27	84.53
					242/61	19.86	19.86	24.86	96.83
				SISO B	Full	19.39	19.39	24.39	86.90
					242/61	20.25	20.25	25.25	105.93
				MIMO A	Full	17.20	17.20	22.20	52.48
					242/61	19.11	19.11	24.11	81.47
				MIMO B	Full	17.13	17.13	22.13	51.64
					242/61	19.27	19.27	24.27	84.53
				Combined A+B	Full	20.18	20.18	25.18	104.12
					242/61	22.20	22.20	27.20	166.00
		118	5590	SISO A	Full	20.91	20.91	25.91	123.31
				SISO B	Full	21.09	21.09	26.09	128.53
				MIMO A	Full	20.97	20.97	25.97	125.03
				MIMO B	Full	16.10	16.10	21.10	40.74
				Combined A+B	Full	22.19	22.19	27.19	165.76
		134	5670	SISO A	Full	20.15	20.15	25.15	103.51
					242/62	20.89	20.89	25.89	122.74
				SISO B	Full	20.30	20.30	25.30	107.15
					242/62	21.10	21.10	26.10	128.82
				MIMO A	Full	19.17	19.17	24.17	82.60
					242/62	19.26	19.26	24.26	84.33
				MIMO B	Full	19.02	19.02	24.02	79.80
					242/62	19.24	19.24	24.24	83.95
				Combined A+B	Full	22.11	22.11	27.11	162.40
					242/62	22.26	22.26	27.26	168.28

* 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 Ouput Power [dBm]	Avg Max* Conducted Ouput Power [dBm]	Avg Max*. EIRP [dBm]	Avg Max* Conducted Power [mW]
802.11ax80	HE0	106	5530	SISO A	Full	18.96	18.96	23.96	78.70
					484/65	19.26	19.26	24.26	84.33
				SISO B	Full	18.74	18.74	23.74	74.82
					484/65	19.42	19.42	24.42	87.50
				MIMO A	Full	16.99	16.99	21.99	50.00
					484/65	17.48	17.48	22.48	55.98
				MIMO B	Full	18.53	18.53	23.53	71.29
					484/65	18.34	18.34	23.34	68.23
				Combined A+B	Full	20.84	20.84	25.84	121.29
					484/65	20.94	20.94	25.94	124.21
		122	5610	SISO A	Full	20.46	20.46	25.46	111.17
				SISO B	Full	20.62	20.62	25.62	115.35
				MIMO A	Full	19.81	19.81	24.81	95.72
				MIMO B	Full	19.87	19.87	24.87	97.05
				Combined A+B	Full	22.85	22.85	27.85	192.77
802.11ax160	HE0	114	5570	SISO A	Full	16.98	16.98	21.98	49.89
					996/67	17.30	17.30	22.30	53.70
					996/S67	20.17	20.17	25.17	103.99
				SISO B	Full	16.53	16.53	21.53	44.98
					996/67	16.73	16.73	21.73	47.10
					996/S67	19.70	19.70	24.70	93.33
				MIMO A	Full	15.17	15.17	20.17	32.89
					996/67	15.18	15.18	20.18	32.96
					996/S67	19.25	19.25	24.25	84.14
				MIMO B	Full	13.59	13.59	18.59	22.86
					996/67	14.12	14.12	19.12	25.82
					996/S67	18.89	18.89	23.89	77.45
				Combined A+B	Full	17.46	17.46	22.46	55.74
					996/67	17.69	17.69	22.69	58.78
					996/S67	22.08	22.08	27.08	161.59

* 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	19.76	19.82	24.82	95.93
			B		5720	19.77	19.83	24.83	96.15
	HT8	MIMO	A		5720	17.84	17.90	22.90	61.70
			B		5720	17.81	17.87	22.87	61.28
		Combined	A+B		5720	20.84	20.90	25.90	122.98
802.11n40	HT0	SISO	A	142	5710	20.76	20.82	25.82	120.73
			B		5710	20.74	20.80	25.80	120.18
	HT8	MIMO	A		5710	17.92	17.98	22.98	62.79
			B		5710	18.35	18.41	23.41	69.32
		Combined	A+B		5710	21.15	21.21	26.21	132.11
802.11ac80	VHT0	SISO	A	138	5690	21.01	21.07	26.07	127.88
			B		5690	21.15	21.21	26.21	132.07
		MIMO	A		5690	20.41	20.46	25.46	111.19
			B		5690	20.17	20.23	25.23	105.46
		Combined	A+B		5690	23.30	23.36	28.36	216.65
802.11ax20	HE0	SISO	A	144	5720	19.73	19.79	24.79	95.25
			B		5720	19.72	19.78	24.78	95.02
		MIMO	A		5720	17.63	17.69	22.69	58.72
			B		5720	17.51	17.57	22.57	57.13
		Combined	A+B		5720	20.58	20.64	25.64	115.85
802.11ax40	HE0	SISO	A	142	5710	20.62	20.68	25.68	116.90
			B		5710	20.66	20.72	25.72	118.02
		MIMO	A		5710	19.27	19.33	24.33	85.69
			B		5710	19.75	19.81	24.81	95.68
		Combined	A+B		5710	22.53	22.59	27.59	181.37
802.11ax80	HE0	SISO	A	138	5690	21.21	21.27	26.27	133.93
			B		5690	21.22	21.28	26.28	134.22
		MIMO	A		5690	20.16	20.22	25.22	105.15
			B		5690	20.15	20.21	25.21	104.94
		Combined	A+B		5690	23.17	23.22	28.22	210.09

* 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	9.19	9.19
				SISO B	8.69	8.69
		120	5600	SISO A	10.02	10.02
				SISO B	10.16	10.16
		140	5700	SISO A	8.77	8.77
				SISO B	8.78	8.78
802.11n20	HT0	100	5500	SISO A	8.59	8.59
				SISO B	8.65	8.65
		120	5600	SISO A	9.98	9.98
				SISO B	9.85	9.85
		140	5700	SISO A	8.70	8.70
				SISO B	8.86	8.86
	HT8	100	5500	MIMO A	7.91	7.91
				MIMO B	7.96	7.96
				Combined A+B	10.95	10.95
		120	5600	MIMO A	7.84	7.84
				MIMO B	7.92	7.92
				Combined A+B	10.89	10.89
		140	5700	MIMO A	8.00	8.00
				MIMO B	7.80	7.80
				Combined A+B	10.91	10.91
802.11n40	HT0	102	5510	SISO A	4.97	4.97
				SISO B	5.17	5.17
		118	5590	SISO A	6.58	6.58
				SISO B	6.66	6.66
		134	5670	SISO A	5.87	5.87
				SISO B	5.88	5.88
	HT8	102	5510	MIMO A	3.05	3.05
				MIMO B	2.94	2.94
				Combined A+B	6.01	6.01
		118	5590	MIMO A	6.50	6.50
				MIMO B	6.36	6.36
				Combined A+B	9.44	9.44
		134	5670	MIMO A	4.56	4.56
				MIMO B	4.20	4.20
				Combined A+B	7.39	7.39
802.11ac80	VHT0	106	5530	SISO A	1.49	1.49
				SISO B	1.86	1.86
				MIMO A	-1.31	-1.31
				MIMO B	-1.40	-1.40
				Combined A+B	1.66	1.66
		122	5610	SISO A	3.02	3.02
				SISO B	3.00	3.00
				MIMO A	2.31	2.31
				MIMO B	3.04	3.04
				Combined A+B	5.70	5.70
802.11ac160	VHT0	114	5570	SISO A	-3.47	-3.47
				SISO B	-3.77	-3.77
				MIMO A	-5.52	-5.52
				MIMO B	-7.02	-7.02
				Combined A+B	-3.20	-3.20

* 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]
802.11ax20	HE0	100	5500	SISO A	Full	8.78	8.78
					26/0	10.94	10.94
					52/37	10.81	10.81
					106/53	10.86	10.86
				SISO B	Full	8.47	8.47
					26/0	10.97	10.97
					52/37	10.99	10.99
					106/53	10.97	10.97
				MIMO A	Full	7.97	7.97
					26/0	8.00	8.00
					52/37	7.92	7.92
					106/53	7.87	7.87
				MIMO B	Full	7.96	7.96
					26/0	7.83	7.83
					52/37	7.64	7.64
					106/53	7.79	7.79
				Combined A+B	Full	10.98	10.98
					26/0	10.93	10.93
					52/37	10.79	10.79
					106/53	10.84	10.84
		120	5600	SISO A	Full	9.68	9.68
				SISO B	Full	9.89	9.89
				MIMO A	Full	7.92	7.92
				MIMO B	Full	7.97	7.97
				Combined A+B	Full	10.96	10.96
		140	5700	SISO A	Full	8.42	8.42
					26/8	10.81	10.81
					52/40	10.94	10.94
					106/54	10.96	10.96
				SISO B	Full	8.80	8.80
					26/8	11.00	11.00
					52/40	10.98	10.98
					106/54	10.96	10.96
				MIMO A	Full	7.78	7.78
					26/8	7.91	7.91
					52/40	7.93	7.93
					106/54	7.84	7.84
				MIMO B	Full	7.45	7.45
					26/8	7.88	7.88
					52/40	7.94	7.94
					106/54	7.88	7.88
				Combined A+B	Full	10.63	10.63
					26/8	10.91	10.91
					52/40	10.95	10.95
					106/54	10.87	10.87
802.11ax40	HE0	102	5510	SISO A	Full	4.62	4.62
					242/61	8.56	8.56
				SISO B	Full	4.75	4.75
					242/61	8.95	8.95
				MIMO A	Full	2.60	2.60
					242/61	7.82	7.82
				MIMO B	Full	2.53	2.53
					242/61	7.99	7.99
				Combined A+B	Full	5.58	5.58
					242/61	10.92	10.92
		118	5590	SISO A	Full	6.29	6.29
				SISO B	Full	6.47	6.47
				MIMO A	Full	6.39	6.39
				MIMO B	Full	6.24	6.24
				Combined A+B	Full	9.33	9.33
		134	5670	SISO A	Full	5.52	5.52
					242/62	9.58	9.58
				SISO B	Full	5.66	5.66
					242/62	9.78	9.78
				MIMO A	Full	4.57	4.57
					242/62	7.95	7.95
				MIMO B	Full	4.44	4.44
					242/62	7.92	7.92
				Combined A+B	Full	7.52	7.52
					242/62	10.95	10.95

* 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]
802.11ax80	HE0	106	5530	SISO A	Full	1.41	1.41
					484/65	4.71	4.71
				SISO B	Full	1.14	1.14
					484/65	4.88	4.88
				MIMO A	Full	-0.58	-0.58
					484/65	3.00	3.00
				MIMO B	Full	0.95	0.95
					484/65	3.81	3.81
				Combined A+B	Full	3.26	3.26
					484/65	6.43	6.43
		122	5610	SISO A	Full	2.86	2.86
				SISO B	Full	3.04	3.04
				MIMO A	Full	2.26	2.26
				MIMO B	Full	2.87	2.87
				Combined A+B	Full	5.59	5.59
802.11ax160	HE0	114	5570	SISO A	Full	-3.52	-3.52
					996/67	-0.21	-0.21
					996/S67	2.57	2.57
				SISO B	Full	-3.93	-3.93
					996/67	-0.80	-0.80
					996/S67	2.05	2.05
				MIMO A	Full	-5.33	-5.33
					996/67	-2.42	-2.42
					996/S67	1.68	1.68
				MIMO B	Full	-6.91	-6.91
					996/67	-3.39	-3.39
					996/S67	1.30	1.30
				Combined A+B	Full	-3.04	-3.04
					996/67	0.13	0.13
					996/S67	4.50	4.50

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

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	9.44	9.50
					B	9.47	9.53
	HT8			MIMO	A	7.52	7.58
					B	7.52	7.58
				Combined	A+B	10.52	10.59
802.11n40	HT0	142	5710	SISO	A	6.56	6.62
					B	6.53	6.59
	HT8			MIMO	A	3.64	3.70
					B	4.10	4.16
				Combined	A+B	6.59	6.95
802.11ac80	VHT0	138	5690	SISO	A	3.58	3.64
					B	3.70	3.76
				MIMO	A	2.93	2.99
					B	2.78	2.84
				Combined	A+B	5.86	5.93
802.11ax20	HE0	144	5720	SISO	A	9.47	9.53
					B	9.46	9.52
				MIMO	A	7.28	7.34
					B	7.19	7.25
				Combined	A+B	10.23	10.30
802.11ax40	HE0	142	5710	SISO	A	6.42	6.48
					B	6.40	6.46
				MIMO	A	5.05	5.11
					B	5.95	6.01
				Combined	A+B	8.52	8.59
802.11ax80	HE0	138	5690	SISO	A	3.75	3.81
					B	3.77	3.83
				MIMO	A	2.68	2.74
					B	2.67	2.73
				Combined	A+B	5.69	5.74

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

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

Test limits

<table>
<tr><th>FCC part</th><th>RSS clause</th><th>Limits</th></tr>
<tr><td>15.407 (b) (3)</td><td>RSS-247 Clause 6.2.3 (2)</td><td>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.</td></tr>
<tr><td>15.209</td><td>RSS-GEN A1, Clause 8.9</td><td>Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a):
<table>
<tr><th>Freq Range (MHz)</th><th>Field 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 table above are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
For average radiated emission measurements above 1000 MHz, there is also a limit specified when measuring with peak detector function, corresponding to 20 dB above the indicated values in the table.</td></tr>
</table>

Test procedure

The 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 annec C.1.5 for screenshot results

Results tables

Band Edge

Mode	Rate	BW [MHz]	#Ch	Freq [MHz]	Antenna	RU config.	Restricted Peak Low channel	Restricted RMS Low channel	Non Restricted Peak Low channel	Restricted Peak High channel	Restricted RMS High channel	Non Restricted Peak High channel
802.11a	6	20	100	5500	SISO A	n/a	-35.16	-44.85	-28.35	n/a	n/a	n/a
					SISO B	n/a	-36.33	-46.38	-28.86	n/a	n/a	n/a
			140	5700	SISO A	n/a	n/a	n/a	n/a	n/a	n/a	-28.89
					SISO B	n/a	n/a	n/a	n/a	n/a	n/a	-28.45
802.11n	HT0	20	100	5500	SISO A	n/a	-34.62	-44.87	-28.24	n/a	n/a	n/a
					SISO B	n/a	-35.19	-45.08	-29.95	n/a	n/a	n/a
			140	5700	SISO A	n/a	n/a	n/a	n/a	n/a	n/a	-27.43
					SISO B	n/a	n/a	n/a	n/a	n/a	n/a	-27.89
		40	102	5510	SISO A	n/a	-31.17	-42.51	-31.46	n/a	n/a	n/a
					SISO B	n/a	-32.90	-43.03	-30.35	n/a	n/a	n/a
			134	5670	SISO A	n/a	n/a	n/a	n/a	n/a	n/a	-28.06
					SISO B	n/a	n/a	n/a	n/a	n/a	n/a	-28.12
	HT8	20	100	5500	MIMO A	n/a	-37.54	-47.51	-33.93	n/a	n/a	n/a
					MIMO B	n/a	-38.51	-48.06	-35.10	n/a	n/a	n/a
			140	5700	MIMO A	n/a	n/a	n/a	n/a	n/a	n/a	-32.11
					MIMO B	n/a	n/a	n/a	n/a	n/a	n/a	-32.82
		40	102	5510	MIMO A	n/a	-37.97	-46.94	-31.41	n/a	n/a	n/a
					MIMO B	n/a	-37.70	-46.74	-31.20	n/a	n/a	n/a
			134	5670	MIMO A	n/a	n/a	n/a	n/a	n/a	n/a	-31.42
					MIMO B	n/a	n/a	n/a	n/a	n/a	n/a	-31.23
802.11ac	VHT0	80	106	5530	SISO A	n/a	-37.57	-46.17	-34.84	n/a	n/a	n/a
					SISO B	n/a	-33.99	-42.96	-33.98	n/a	n/a	n/a
					MIMO A	n/a	-37.61	-44.70	-32.63	n/a	n/a	n/a
					MIMO B	n/a	-36.46	-45.79	-33.65	n/a	n/a	n/a
			122	5610	SISO A	n/a	n/a	n/a	n/a	n/a	n/a	-29.19
					SISO B	n/a	n/a	n/a	n/a	n/a	n/a	-28.49
					MIMO A	n/a	n/a	n/a	n/a	n/a	n/a	-31.47
					MIMO B	n/a	n/a	n/a	n/a	n/a	n/a	-31.56
		160	114	5570	SISO A	n/a	-36.07	-45.73	-35.27	n/a	n/a	-28.33
					SISO B	n/a	-34.43	-43.86	-34.65	n/a	n/a	-27.73
					MIMO A	n/a	-36.80	-47.31	-36.33	n/a	n/a	-31.04
					MIMO B	n/a	-37.19	-48.08	-36.78	n/a	n/a	-31.47

Mode	Rate	BW [MHz]	#Ch	Freq [MHz]	Antenna	RU config.	Restricted Peak Low channel	Restricted RMS Low channel	Non Restricted Peak Low channel	Restricted Peak High channel	Restricted RMS High channel	Non Restricted Peak High channel
802.11ax	HE0	20	100	5500	SISO A	FullBW	-34.32	-43.93	-29.21	n/a	n/a	n/a
						26/0	-44.01	-52.62	-43.10	n/a	n/a	n/a
						52/37	-41.48	-50.58	-40.64	n/a	n/a	n/a
						106/53	-40.30	-50.01	-38.17	n/a	n/a	n/a
					SISO B	FullBW	-36.92	-45.68	-29.65	n/a	n/a	n/a
						26/0	-42.08	-50.92	-41.85	n/a	n/a	n/a
						52/37	-41.93	-50.63	-40.79	n/a	n/a	n/a
						106/53	-40.44	-50.12	-36.44	n/a	n/a	n/a
					MIMO A	FullBW	-39.00	-47.67	-35.18	n/a	n/a	n/a
						26/0	-44.98	-53.52	-44.31	n/a	n/a	n/a
						52/37	-44.54	-53.23	-43.93	n/a	n/a	n/a
						106/53	-42.78	-51.32	-41.36	n/a	n/a	n/a
					MIMO B	FullBW	-38.66	-47.02	-34.04	n/a	n/a	n/a
						26/0	-44.52	-53.00	-43.34	n/a	n/a	n/a
						52/37	-44.04	-53.23	-42.28	n/a	n/a	n/a
						106/53	-42.10	-51.09	-40.49	n/a	n/a	n/a
			140	5700	SISO A	FullBW	n/a	n/a	n/a	n/a	n/a	-29.74
						26/8	n/a	n/a	n/a	n/a	n/a	-36.34
						52/40	n/a	n/a	n/a	n/a	n/a	-34.62
						106/54	n/a	n/a	n/a	n/a	n/a	-30.52
					SISO B	FullBW	n/a	n/a	n/a	n/a	n/a	-30.15
						26/8	n/a	n/a	n/a	n/a	n/a	-36.31
						52/40	n/a	n/a	n/a	n/a	n/a	-35.27
						106/54	n/a	n/a	n/a	n/a	n/a	-31.28
					MIMO A	FullBW	n/a	n/a	n/a	n/a	n/a	-31.02
						26/8	n/a	n/a	n/a	n/a	n/a	-42.19
						52/40	n/a	n/a	n/a	n/a	n/a	-38.64
						106/54	n/a	n/a	n/a	n/a	n/a	-34.72
					MIMO B	FullBW	n/a	n/a	n/a	n/a	n/a	-31.25
						26/8	n/a	n/a	n/a	n/a	n/a	-39.96
						52/40	n/a	n/a	n/a	n/a	n/a	-37.15
						106/54	n/a	n/a	n/a	n/a	n/a	-36.78
		40	102	5510	SISO A	FullBW	-33.38	-43.89	-33.22	n/a	n/a	n/a
						242/61	-36.76	-45.66	-32.11	n/a	n/a	n/a
					SISO B	FullBW	-34.84	-44.65	-34.57	n/a	n/a	n/a
						242/61	-36.17	-44.84	-30.71	n/a	n/a	n/a
					MIMO A	FullBW	-37.91	-47.16	-32.03	n/a	n/a	n/a
						242/61	-37.85	-47.12	-34.20	n/a	n/a	n/a
					MIMO B	FullBW	-39.26	-46.92	-35.11	n/a	n/a	n/a
						242/61	-36.76	-46.11	-33.78	n/a	n/a	n/a
			134	5670	SISO A	FullBW	n/a	n/a	n/a	n/a	n/a	-28.39
						242/62	n/a	n/a	n/a	n/a	n/a	-31.63
					SISO B	FullBW	n/a	n/a	n/a	n/a	n/a	-28.66
						242/62	n/a	n/a	n/a	n/a	n/a	-31.27
					MIMO A	FullBW	n/a	n/a	n/a	n/a	n/a	-32.77
						242/62	n/a	n/a	n/a	n/a	n/a	-36.69
					MIMO B	FullBW	n/a	n/a	n/a	n/a	n/a	-31.19
						242/62	n/a	n/a	n/a	n/a	n/a	-37.09
		80	106	5530	SISO A	FullBW	-35.80	-45.07	-35.60	n/a	n/a	n/a
						484/65	-33.04	-42.94	-31.49	n/a	n/a	n/a
					SISO B	FullBW	-35.18	-44.17	-35.16	n/a	n/a	n/a
						484/65	-33.95	-43.22	-32.74	n/a	n/a	n/a
					MIMO A	FullBW	-36.11	-44.94	-34.17	n/a	n/a	n/a
						484/65	-41.00	-47.46	-32.92	n/a	n/a	n/a
					MIMO B	FullBW	-32.02	-46.97	-46.44	n/a	n/a	n/a
						484/65	-38.76	-45.94	-33.73	n/a	n/a	n/a
			122	5610	SISO A	FullBW	n/a	n/a	n/a	n/a	n/a	-27.50
					SISO B	FullBW	n/a	n/a	n/a	n/a	n/a	-29.20
					MIMO A	FullBW	n/a	n/a	n/a	n/a	n/a	-31.16
					MIMO B	FullBW	n/a	n/a	n/a	n/a	n/a	-45.13
		160	114	5570	SISO A	FullBW	-35.28	-44.17	-35.92	n/a	n/a	-28.87
						996/67	-33.35	-42.63	-31.41	n/a	n/a	-41.90
						996/S67	-33.88	-43.07	-33.07	n/a	n/a	-28.33
					SISO B	FullBW	-34.46	-43.21	-35.89	n/a	n/a	-27.96
						996/67	-33.96	-43.21	-32.15	n/a	n/a	-41.51
						996/S67	-35.11	-44.10	-34.49	n/a	n/a	-27.76
					MIMO A	FullBW	-38.77	-47.61	-36.99	n/a	n/a	-31.20
						996/67	-37.98	-46.34	-33.15	n/a	n/a	-42.33
						996/S67	-36.13	-45.20	-34.31	n/a	n/a	-30.85
					MIMO B	FullBW	-37.56	-47.99	-37.68	n/a	n/a	-31.36
						996/67	-36.47	-45.36	-34.55	n/a	n/a	-42.44

						996/S67	-37.39	-46.04	-36.19	n/a	n/a	-44.96

B.2.4 Radiated spurious emission

Standard references

<table>
<tr><th>FCC part</th><th>RSS clause</th><th>Limits</th></tr>
<tr><td>15.407 (b) (3)</td><td>RSS-247 Clause 6.2.3 (2)</td><td>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.</td></tr>
<tr><td>15.209</td><td>RSS-GEN A1, Clause 8.9</td><td>Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a):
<table>
<tr><th>Freq Range (MHz)</th><th>Field 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.</td></tr>
</table>

Test procedure

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

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

For 802.11ax20, 802.11ax40, 802.11ax80 and 802.11ax160 modes, the worst case spurious emission result among the low, mid and high channels tested separately on Chain A and B is used to perform the test on MIMO mode (Chain A+B).

For 802.11n20, 802.11n40, 802.11ac80 and 802.11ac160 modes the worst channel found among all 802.11ax modes mentioned above is chosen to perform the test in Chain A, B , and MIMO (Chain A+B).

Test Results

Radiated spurious - 30 MHz – 1 GHz

Radiated Spurious – All modes

Frequency	Quasi-Peak	Limit	Margin	Polarization
MHz	dBµV/m	dBµV/m	dB	---
972.8	39.6	54.0	14.43	V
982.2	39.3	54.0	14.69	V

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

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

Radiated Spurious – CH100

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.1	---	68.2	12.1	V
10999.9	50.0	---	74.0	24.0	V
10999.9	---	42.5	54.0	11.1	V
39569.0	---	44.8	54.0	9.2	V
39581.0	55.4	---	74.0	18.6	H

Radiated Spurious – CH120

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.6	---	68.2	11.6	V
17995.2	52.3	---	74.0	21.7	H
17995.2	---	41.9	54.0	12.2	H
39589.2	---	44.9	54.0	9.1	V
39614.8	56.0	---	74.0	18.0	H

Radiated Spurious – CH140

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.2	---	68.2	12.0	H
11401.5	51.6	---	74.0	22.4	V
11401.5	---	46.6	54.0	**7.4**	V
17098.1	55.2	---	68.2	13.0	V
39873.7	---	44.7	54.0	9.3	V
39873.7	56.6	---	74.0	17.4	H

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

Radiated Spurious – CH100

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
1200.0	---	39.5	54.0	14.5	H
1200.0	50.1	---	74.0	23.9	H
17999.0	52.2	---	74.0	21.8	V
17999.0	---	42.0	54.0	11.9	V
39611.9	56.1	---	74.0	17.9	H
39625.4	---	45.0	54.0	9.0	V

Radiated Spurious – CH120

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
2999.5	58.5	---	68.2	9.7	V
7529.6	---	35.6	54.0	18.4	V
7529.6	54.7	---	74.0	19.3	V
11199.5	48.4	---	74.0	25.6	V
11199.5	---	40.1	54.0	13.8	V
39608.0	56.0	---	74.0	18.1	H
39623.0	---	45.5	54.0	8.5	V

Radiated Spurious – CH140

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.3	---	68.2	11.9	V
17997.1	51.7	---	74.0	22.3	H
17997.1	---	41.7	54.0	12.1	V
39649.0	56.4	---	74.0	17.6	H
39654.3	---	45.6	54.0	8.4	V

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

Radiated Spurious – CH100

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.2	---	68.2	12.0	H
10999.9	51.3	---	74.0	22.7	V
10999.9	---	42.2	54.0	11.8	V
39747.4	55.5	---	74.0	18.6	H
39747.8	---	43.7	54.0	10.3	H

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

Radiated Spurious – CH100

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.4	---	68.2	11.8	H
17991.8	52.9	---	74.0	21.1	V
17991.8	---	41.7	54.0	11.9	V
39507.7	56.0	---	74.0	18.1	V
39618.1	---	44.0	54.0	10.0	V

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

Radiated Spurious – CH100

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3374.5	58.9	---	68.2	9.3	V
10998.0	---	38.0	54.0	16.0	V
10999.4	48.3	---	74.0	25.7	V
39547.8	---	44.9	54.0	**9.2**	H
39553.1	56.4	---	74.0	17.6	H

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

Radiated Spurious – CH134

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.8	---	68.2	11.4	V
11340.6	49.1	---	74.0	24.9	V
11340.6	---	42.5	54.0	11.5	V
39471.6	56.2	---	74.0	17.8	H
39596.4	---	45.2	54.0	**8.8**	V

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

Radiated Spurious – CH134

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.5	---	68.2	11.7	H
17992.8	52.0	---	74.0	22.0	H
17992.8	---	41.8	54.0	11.7	H
39627.8	55.8	---	74.0	18.2	V
39631.2	---	45.0	54.0	9.0	H

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

Radiated Spurious – CH134

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3371.5	58.2	---	68.2	10.0	V
11345.0	---	37.9	54.0	16.1	H
11350.3	48.5	---	74.0	25.5	H
23632.2	48.2	---	74.0	25.8	H
23647.3	---	36.5	54.0	17.5	H
30193.2	49.3	---	68.2	18.9	H

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

Radiated Spurious – CH138

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
1200.0	---	40.2	54.0	13.8	H
1200.0	49.4	---	74.0	24.6	H
17997.1	52.8	---	74.0	21.2	V
17997.1	---	41.6	54.0	12.1	V
39419.0	55.9	---	74.0	18.1	V
39544.4	---	45.2	54.0	**8.8**	V

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

Radiated Spurious – CH138

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	57.7	---	68.2	10.5	V
17983.6	51.7	---	74.0	22.3	V
17983.6	---	41.2	54.0	12.2	H
39664.9	---	45.1	54.0	8.9	H
39741.6	56.1	---	74.0	17.9	H

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

Radiated Spurious – CH138

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3372.5	58.7	---	68.2	9.5	H
16424.8	49.4	---	68.2	18.8	H
39576.2	56.2	---	74.0	17.8	H
39578.1	---	45.0	54.0	9.0	V

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

Radiated Spurious – CH114

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.7	---	68.2	11.5	V
17985.5	52.4	---	74.0	21.6	H
17985.5	---	41.6	54.0	11.9	V
39495.7	54.9	---	74.0	19.1	V
39624.9	---	44.8	54.0	9.2	H

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

Radiated Spurious – CH114

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.6	---	68.2	11.6	V
7519.9	---	35.3	54.0	18.7	V
7519.9	55.2	---	74.0	18.8	V
39490.9	55.8	---	74.0	18.2	V
39608.0	---	45.1	54.0	8.9	H

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

Radiated Spurious – CH114

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3366.0	59.0	---	68.2	9.2	H
17833.2	51.2	---	74.0	22.8	H
17840.0	---	39.5	54.0	14.6	V
39563.2	---	45.2	54.0	**8.8**	V
39670.2	56.3	---	74.0	17.7	H

1 GHz – 40 GHz, 802.11ax20, HE0, Chain A

Radiated Spurious – CH100

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.5	---	68.2	11.7	H
7465.3	---	34.2	54.0	19.8	V
7465.3	53.1	---	74.0	20.9	V
10983.0	---	49.1	54.0	**4.9**	V
10984.4	59.8	---	74.0	14.2	H
16475.1	54.7	---	68.2	13.5	V
39666.8	56.1	---	74.0	17.9	H
39684.2	---	44.8	54.0	9.2	H

Radiated Spurious – CH120

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	55.9	---	68.2	12.3	H
11183.5	52.9	---	74.0	21.1	V
11183.5	---	43.9	54.0	10.1	H
16776.7	55.5	---	68.2	12.8	V
39633.1	---	44.7	54.0	9.3	H
39635.5	55.9	---	74.0	18.1	V

Radiated Spurious – CH140

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.5	---	68.2	11.7	H
11383.2	---	46.0	54.0	8.0	H
11384.6	52.9	---	74.0	21.1	H
17073.9	57.9	---	68.2	10.3	V
39494.2	55.8	---	74.0	18.2	V
39509.7	---	44.5	54.0	9.5	H

1 GHz – 40 GHz, 802.11ax20, HE0, Chain B

Radiated Spurious – CH100

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	55.9	---	68.2	12.3	H
18000.0	52.1	---	74.0	21.9	H
18000.0	---	41.5	54.0	11.9	H
39643.7	---	44.2	54.0	9.8	H
39643.7	55.9	---	74.0	18.1	V

Radiated Spurious – CH120

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.9	---	68.2	11.3	H
7492.3	---	34.5	54.0	19.5	V
7492.3	53.9	---	74.0	20.1	V
11183.5	52.4	---	74.0	21.6	V
11183.5	---	44.8	54.0	9.2	V
39732.4	55.8	---	74.0	18.2	V
39750.7	---	44.6	54.0	9.4	H

Radiated Spurious – CH140

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.1	---	68.2	12.1	V
11383.6	48.9	---	74.0	25.1	V
11383.6	---	42.0	54.0	12.1	V
17075.4	56.7	---	68.2	11.5	V
39573.8	56.0	---	74.0	18.1	V
39587.8	---	44.8	54.0	9.2	V

1 GHz – 40 GHz, 802.11ax20, HE0, Chain A+B

Radiated Spurious – CH100

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3394.0	58.8	---	68.2	9.4	V
10983.5	---	41.7	54.0	12.3	V
10984.4	51.1	---	74.0	22.9	V
16475.1	53.0	---	68.2	15.2	V
39563.7	56.0	---	74.0	18.0	H
39580.1	---	44.8	54.0	9.2	H

1 GHz – 40 GHz, 802.11ax40, HE0, Chain A

Radiated Spurious – CH102

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.1	---	68.2	12.1	H
10984.4	58.1	---	74.0	15.9	V
10984.4	---	48.8	54.0	5.2	V
16477.5	55.8	---	68.2	12.4	V
39604.6	55.4	---	74.0	18.6	H
39605.1	---	44.2	54.0	9.8	V

Radiated Spurious – CH118

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	55.9	---	68.2	12.3	V
11143.9	53.7	---	74.0	20.3	H
11143.9	---	47.3	54.0	6.7	H
16715.8	51.4	---	68.2	16.8	V
39614.3	56.5	---	74.0	17.5	V
39617.7	---	44.3	54.0	9.7	H

Radiated Spurious – CH134

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.5	---	68.2	11.8	H
11304.4	54.4	---	74.0	19.6	V
11304.4	---	50.7	54.0	**3.3**	V
16956.5	56.2	---	68.2	12.0	V
39658.6	55.6	---	74.0	18.4	H
39659.6	---	44.3	54.0	9.7	H

1 GHz – 40 GHz, 802.11ax40, HE0, Chain B

Radiated Spurious – CH102

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.1	---	68.2	12.1	H
16477.0	51.3	---	68.2	16.9	V
39609.9	55.9	---	74.0	18.1	H
39613.3	---	44.6	54.0	9.4	V

Radiated Spurious – CH118

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	57.0	---	68.2	11.2	H
11143.9	52.8	---	74.0	21.2	H
11143.9	---	46.8	54.0	7.2	H
39546.8	55.6	---	74.0	18.4	V
39563.2	---	44.2	54.0	9.8	H

Radiated Spurious – CH134

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.4	---	68.2	11.8	H
11303.9	48.6	---	74.0	25.4	V
11303.9	---	40.3	54.0	13.7	V
16954.1	55.0	---	68.2	13.2	V
39600.3	55.1	---	74.0	18.9	H
39606.1	---	44.9	54.0	9.1	H

1 GHz – 40 GHz, 802.11ax40, HE0, Chain A+B

Radiated Spurious – CH134

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3368.5	58.2	---	68.2	10.0	H
11303.4	52.0	---	74.0	22.0	H
11303.4	---	43.8	54.0	10.2	H
16957.0	53.5	---	68.2	14.7	V
39522.7	---	45.2	54.0	8.8	H
39584.9	56.3	---	74.0	17.7	V

1 GHz – 40 GHz, 802.11ax80, HE0, Chain A

Radiated Spurious – CH106

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.4	---	68.2	11.8	V
10984.4	56.0	---	74.0	18.0	V
10984.4	---	49.0	54.0	5.0	V
16477.0	55.7	---	68.2	12.5	V
39493.8	56.2	---	74.0	17.8	V
39500.5	---	44.8	54.0	9.2	V

Radiated Spurious – CH122

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.6	---	68.2	11.6	H
11143.9	55.0	---	74.0	19.0	H
11143.9	---	48.6	54.0	5.4	H
16717.2	49.4	---	68.2	18.8	V
39637.9	---	44.6	54.0	9.4	H
39652.4	55.7	---	74.0	18.3	V

Radiated Spurious – CH138

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	57.3	---	68.2	10.9	V
11303.9	54.5	---	74.0	19.5	V
11303.9	---	50.5	54.0	**3.5**	V
16956.5	58.6	---	68.2	9.6	V
39497.1	---	44.5	54.0	9.5	H
39506.3	55.2	---	74.0	18.8	V

1 GHz – 40 GHz, 802.11ax80, HE0, Chain B

Radiated Spurious – CH106

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.1	---	68.2	12.1	V
10984.4	47.5	---	74.0	26.5	V
10984.4	---	38.5	54.0	15.5	V
16476.0	50.1	---	68.2	18.1	H
39504.8	---	44.3	54.0	9.7	H
39505.8	56.8	---	74.0	17.2	V

Radiated Spurious – CH122

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.4	---	68.2	11.8	H
11143.9	53.2	---	74.0	20.8	H
11143.9	---	46.0	54.0	8.0	V
39599.3	---	44.6	54.0	9.4	H
39605.6	55.8	---	74.0	18.2	V

Radiated Spurious – CH138

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3000.0	56.5	---	68.2	11.7	V
11303.9	50.0	---	74.0	24.0	V
11303.9	---	40.6	54.0	13.4	V
16957.5	55.6	---	68.2	12.6	V
39650.4	---	44.8	54.0	9.2	V
39651.4	56.0	---	74.0	18.0	H

1 GHz – 40 GHz, 802.11ax80, HE0, Chain A+B

Radiated Spurious – CH138

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3300.0	58.7	---	68.2	9.5	H
11303.9	52.7	---	74.0	21.3	H
11303.9	---	47.1	54.0	6.9	H
16956.5	52.5	---	68.2	15.8	V
39595.5	---	44.6	54.0	9.4	V
39598.4	55.3	---	74.0	18.7	V

1 GHz – 40 GHz, 802.11ax160, HE0, Chain A

Radiated Spurious – CH114

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
4109.6	---	42.3	54.0	11.7	V
4109.6	51.7	---	74.0	22.3	V
10983.5	55.4	---	74.0	18.6	H
10983.5	---	47.9	54.0	5.2	V
16477.5	56.2	---	68.2	12.0	V
39579.6	---	44.7	54.0	9.3	V
39637.4	56.1	---	74.0	17.9	V

1 GHz – 40 GHz, 802.11ax160, HE0, Chain B

Radiated Spurious – CH114

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
4109.6	---	41.7	54.0	12.3	V
4109.6	51.5	---	74.0	22.5	V
6874.6	47.3	---	68.2	20.9	H
10984.4	47.7	---	74.0	26.3	H
10984.4	---	39.4	54.0	14.6	H
16476.0	50.0	---	68.2	18.2	V
34523.8	52.3	---	68.2	15.9	V

1 GHz – 40 GHz, 802.11ax160, HE0, Chain A+B

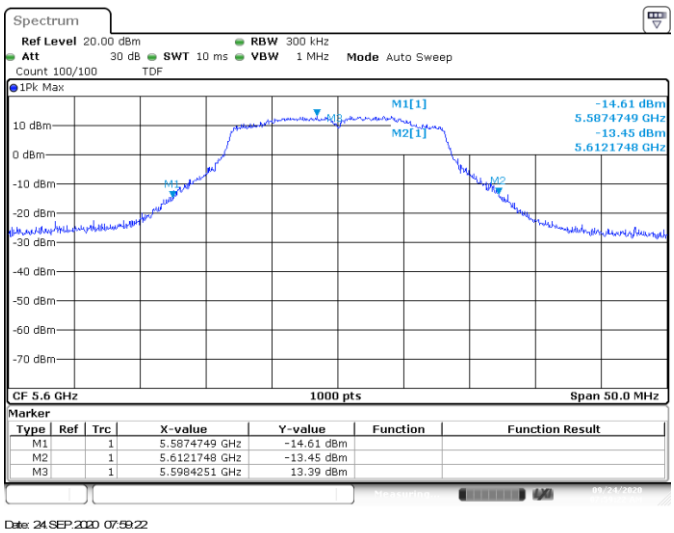
Radiated Spurious – CH114

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
4109.8	---	41.4	54.0	12.6	V
4109.8	51.4	---	74.0	22.6	V
6874.1	47.5	---	68.2	20.8	H
10983.5	53.3	---	74.0	20.7	V
10983.9	---	48.9	54.0	**5.1**	V
16476.5	54.3	---	68.2	13.9	V
22582.4	49.7	---	74.0	24.3	V
22583.4	---	36.7	54.0	17.3	H

Annex C. System Plots

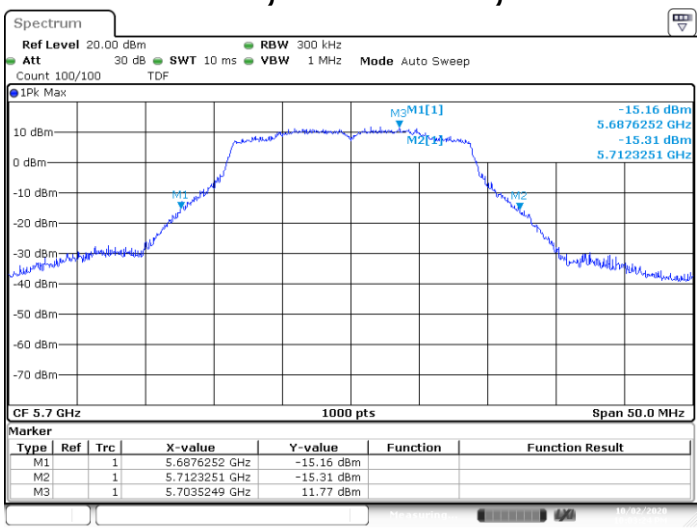
C.1.1 26dB Bandwidth

SISO-A, 802.11a, 6Mbps



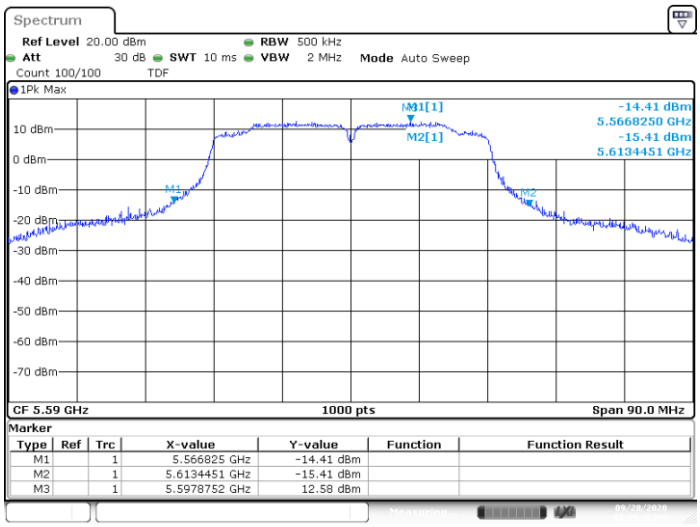
Channel 120

MIMO-A, 802.11n20, HT8



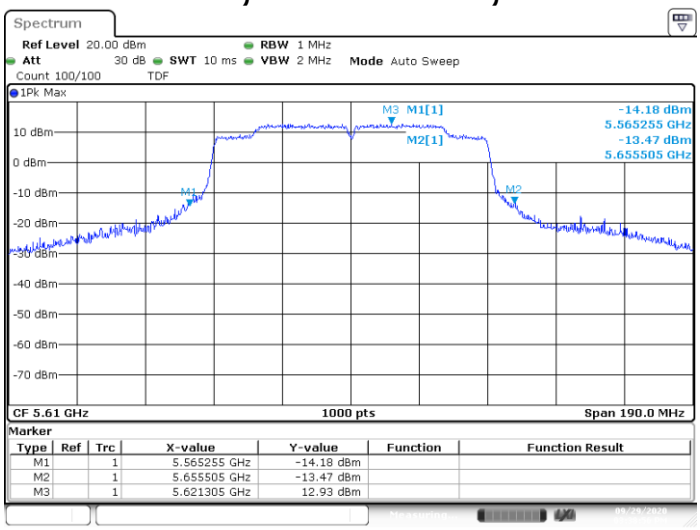
Channel 120

SISO-B, 802.11n40, HT8



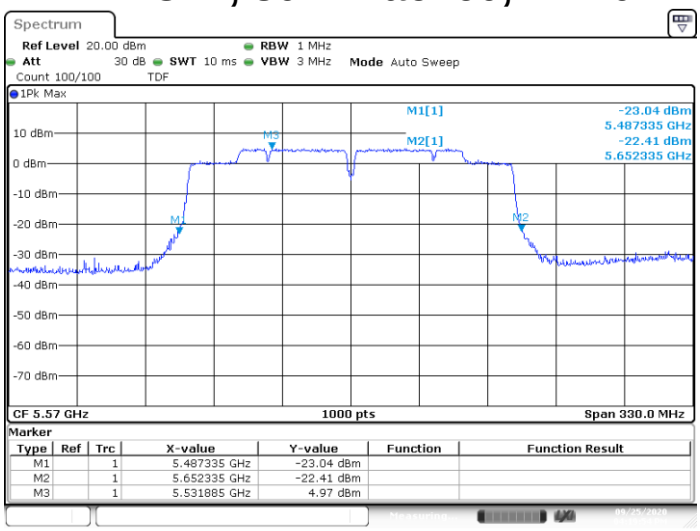
Channel 118

MIMO-B, 802.11ac80, VHT0



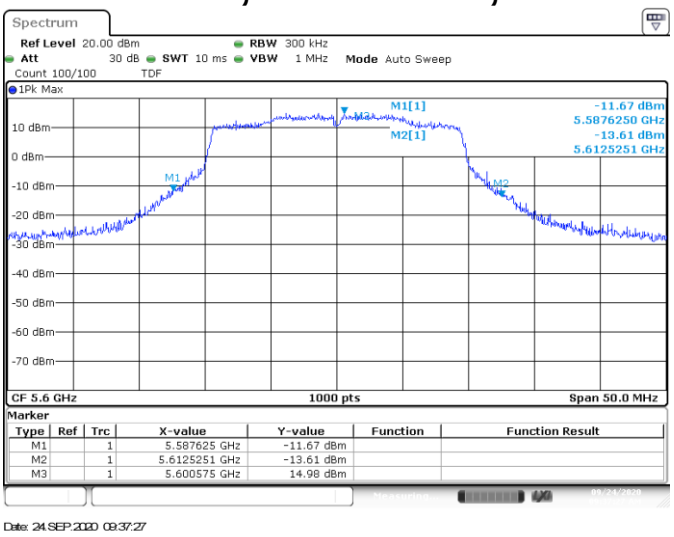
Channel 122

MIMO-A, 802.11ac160, VHT0



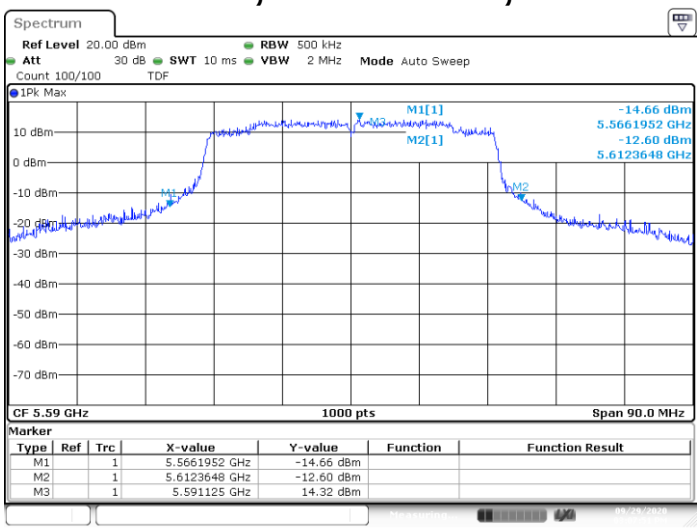
Channel 114

MIMO-A, 802.11ax20, HE0



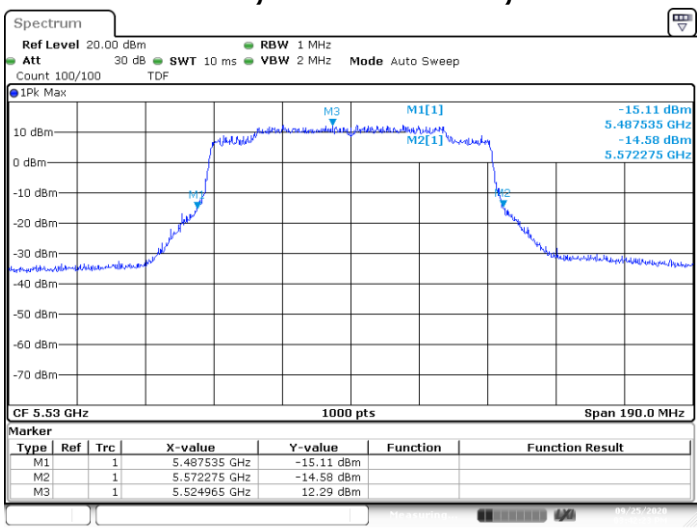
Channel 120

MIMO-B, 802.11ax40, HE0



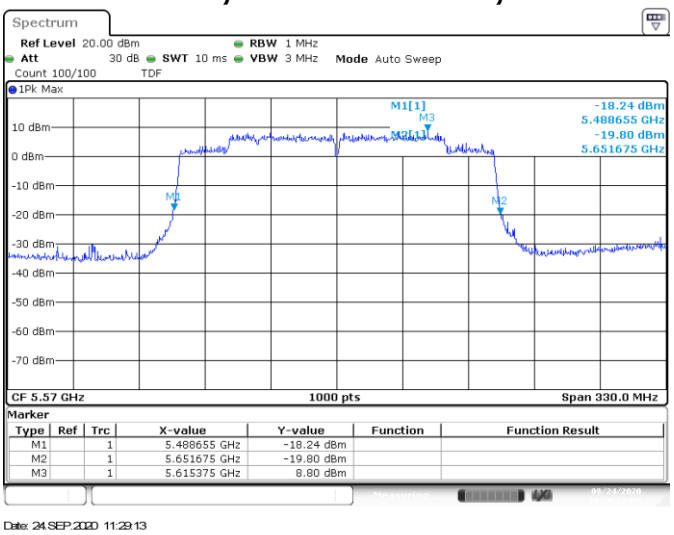
Channel 118

MIMO-A, 802.11ax80, HE0



Channel 106

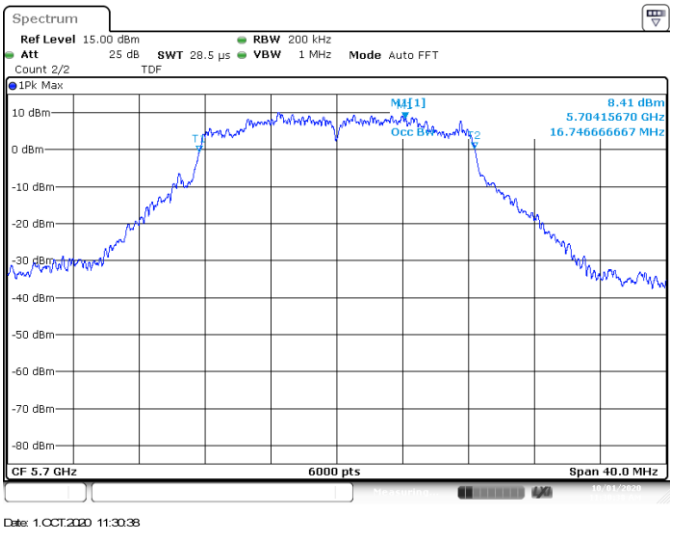
SISO-A, 802.11ax160, HE0



Channel 114

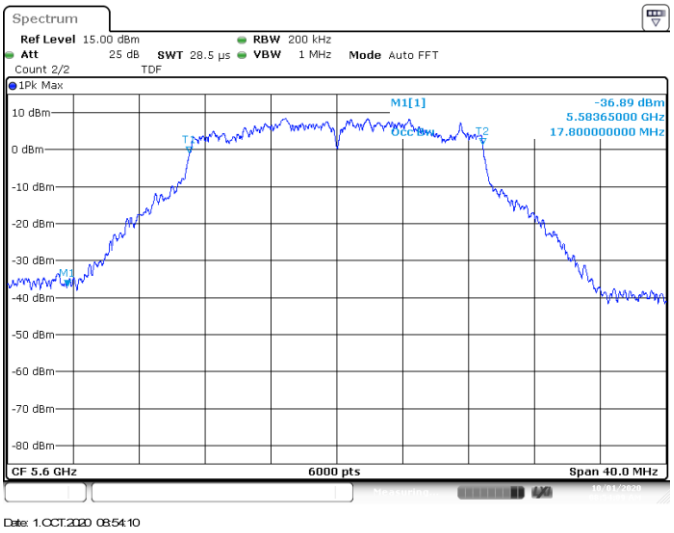
C.1.2 99% Bandwidth

SISO-B, 802.11a, 6Mbps



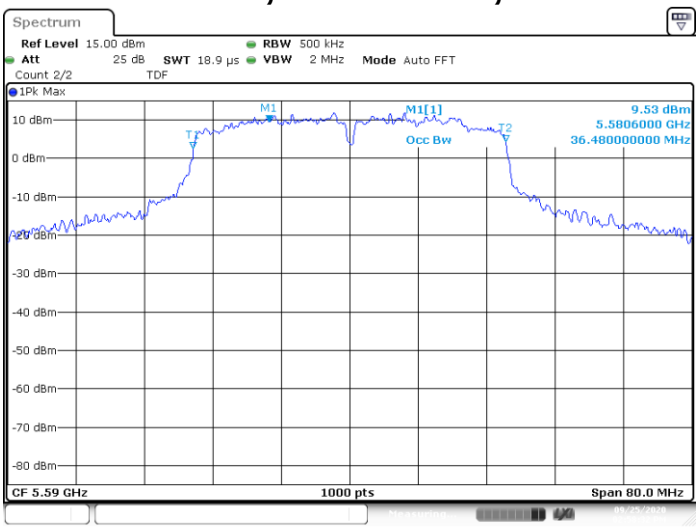
Channel 140

MIMO-B, 802.11n20, HT8



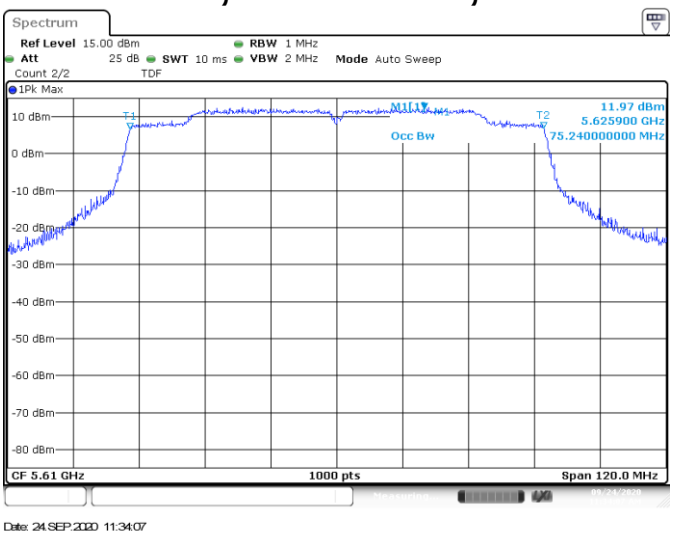
Channel 120

MIMO-A, 802.11n40, HT8



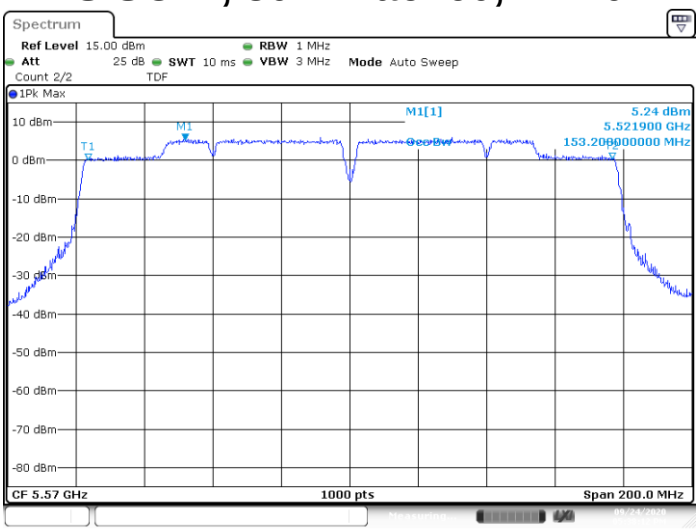
Channel 118

SISO-A, 802.11ac80, VHT0



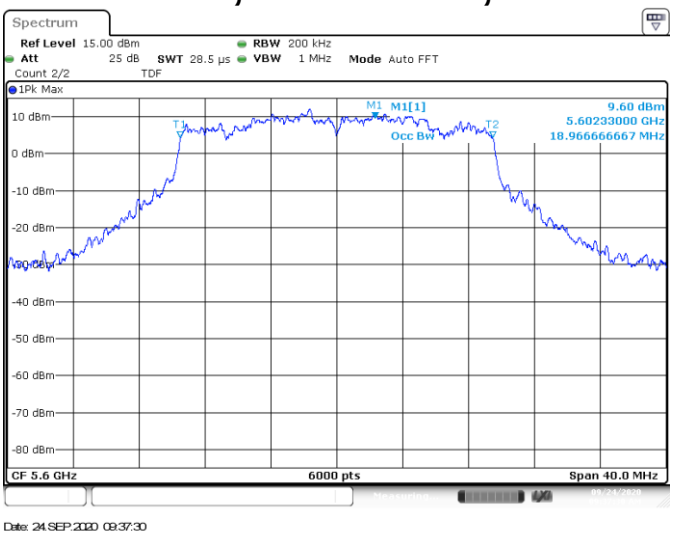
Channel 122

SISO-A, 802.11ac160, VHT0



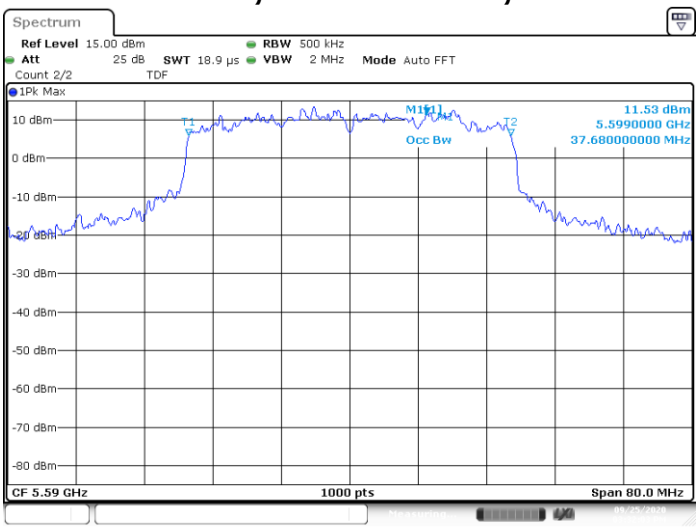
Channel 114

SISO-A, 802.11ax20, HE0



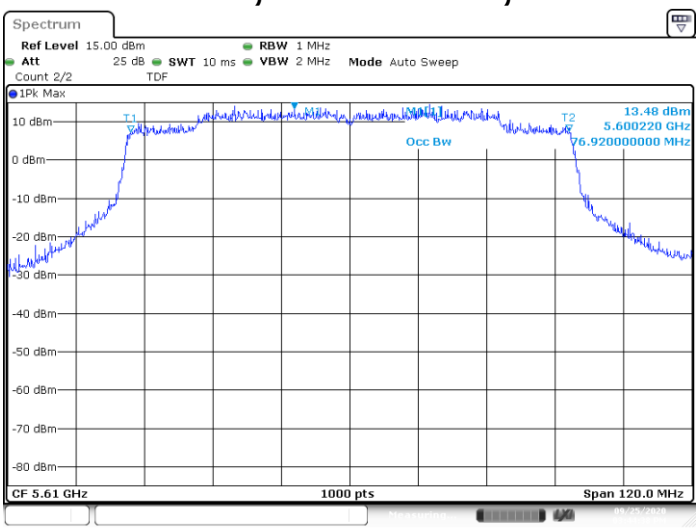
Channel 120

MIMO-A, 802.11ax40, HE0



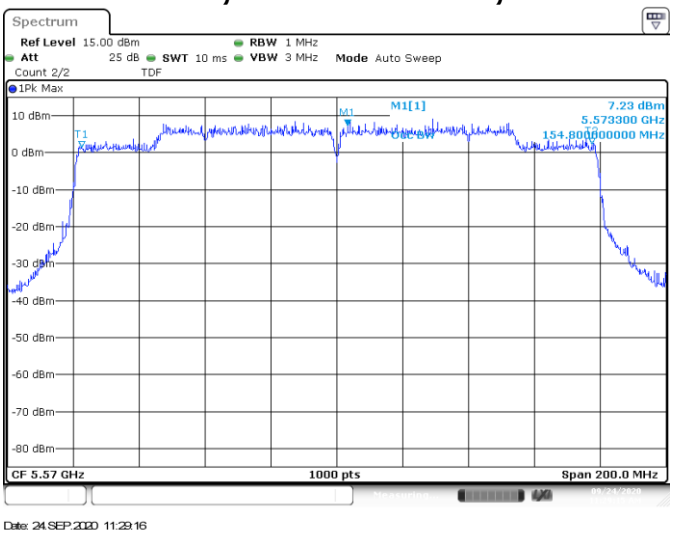
Channel 118

MIMO-A, 802.11ax80, HE0



Channel 122

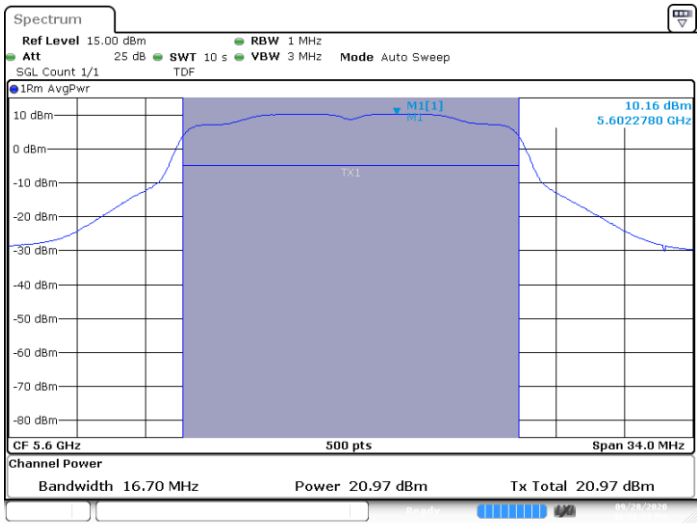
SISO-A, 802.11ax160, HE0



Channel 114

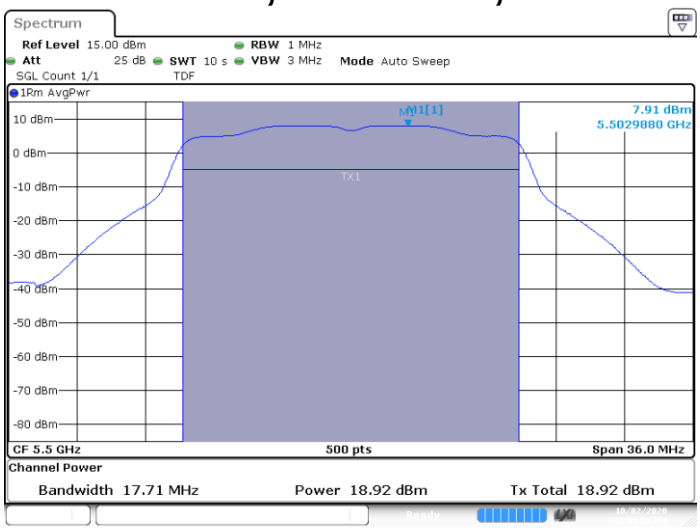
C.1.3 Maximum Output Power & Maximum power spectral Density

SISO-B, 802.11a, 6Mbps



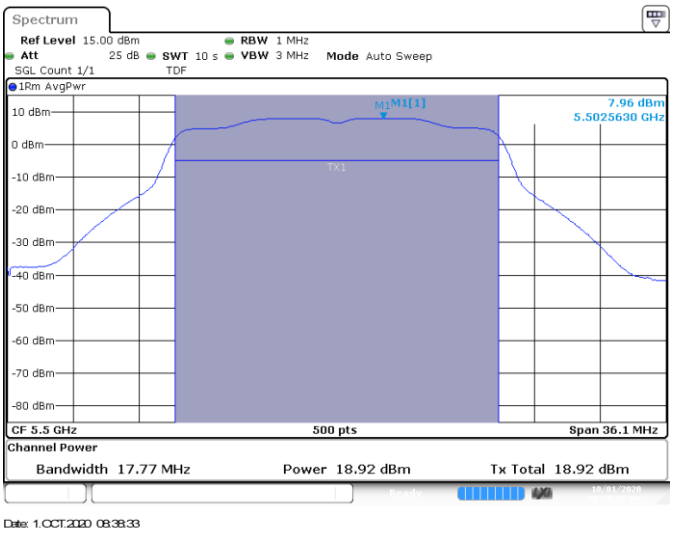
Channel 120

MIMO-A, 802.11n20, HT8



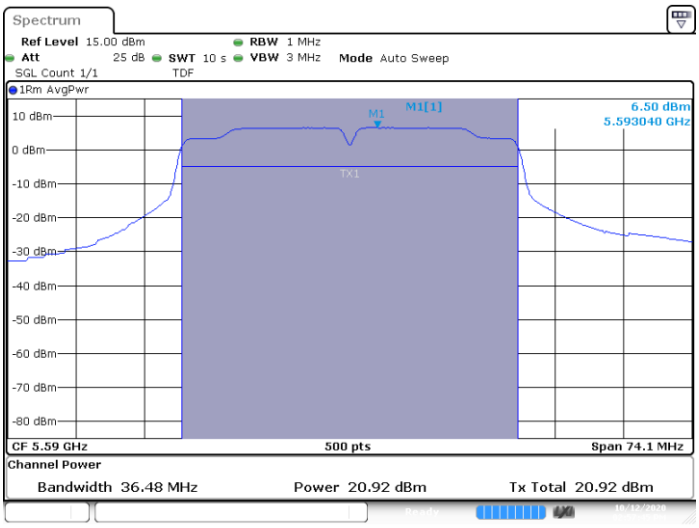
Channel 120

MIMO-B, 802.11n20, HT8



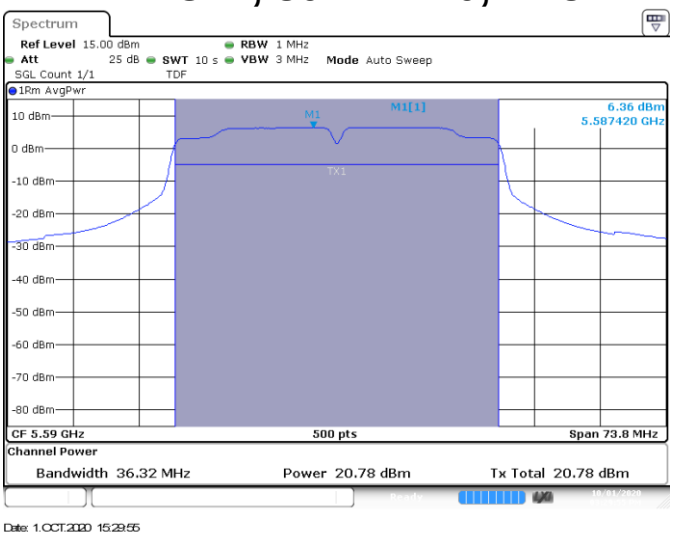
Channel 120

MIMO-A, 802.11n40, HT8



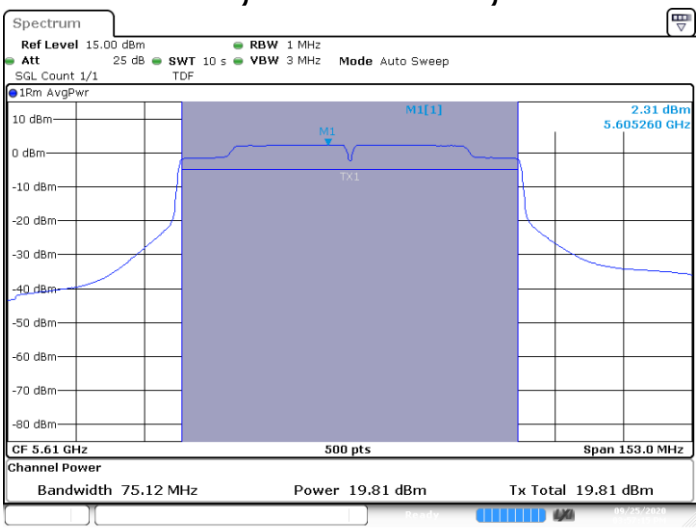
Channel 118

MIMO-B, 802.11n40, HT8



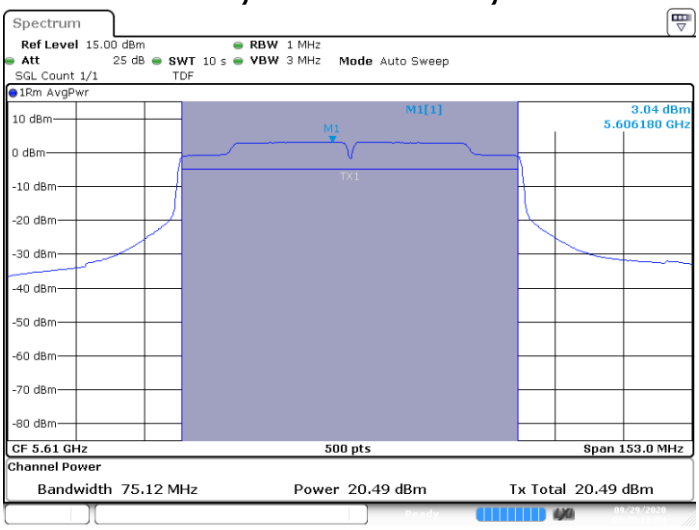
Channel 118

MIMO-A, 802.11ac80, VHT0



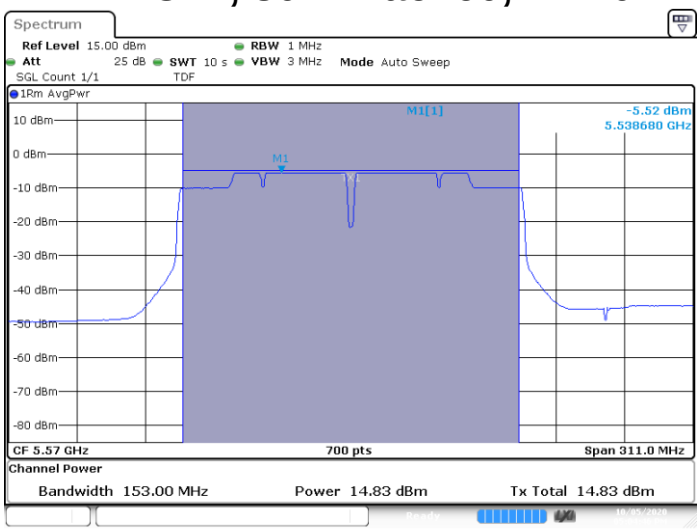
Channel 122

MIMO-B, 802.11ac80, VHT0



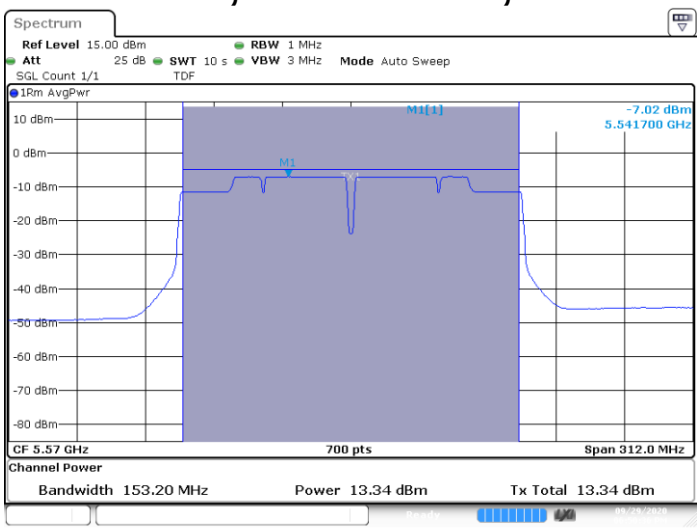
Channel 122

MIMO-A, 802.11ac160, VHT0



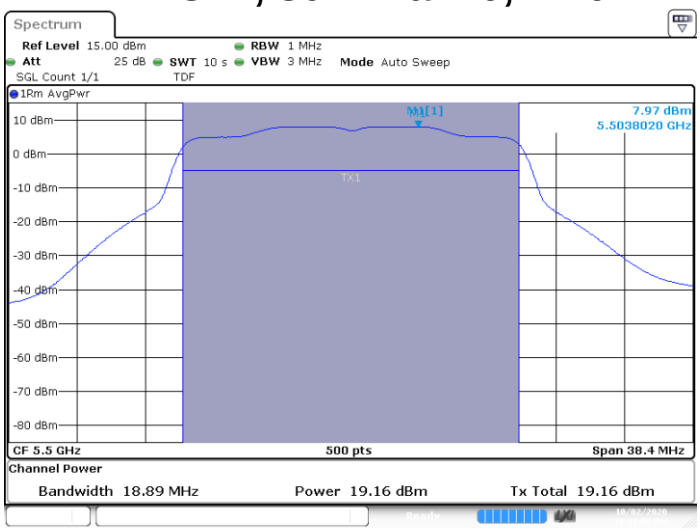
Channel 114

MIMO-B, 802.11ac160, VHT0



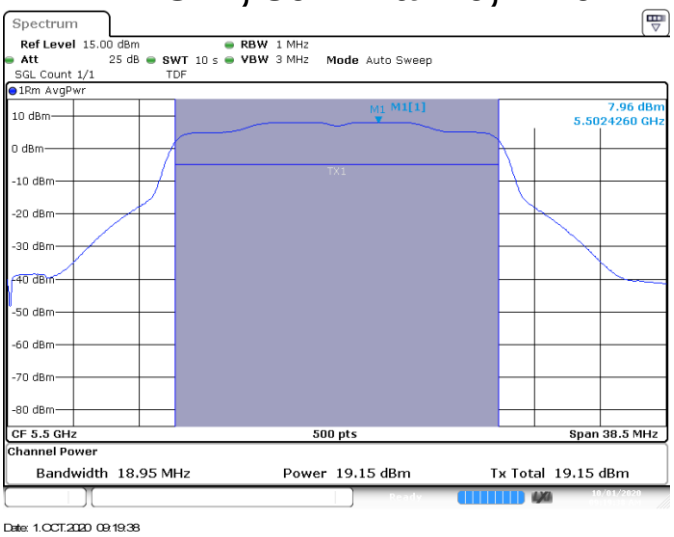
Channel 114

MIMO-A, 802.11ax20, HE0



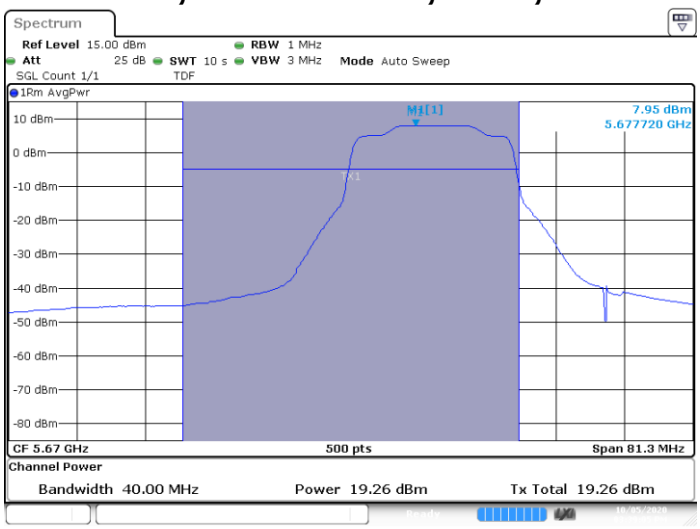
Channel 100

MIMO-B, 802.11ax20, HE0



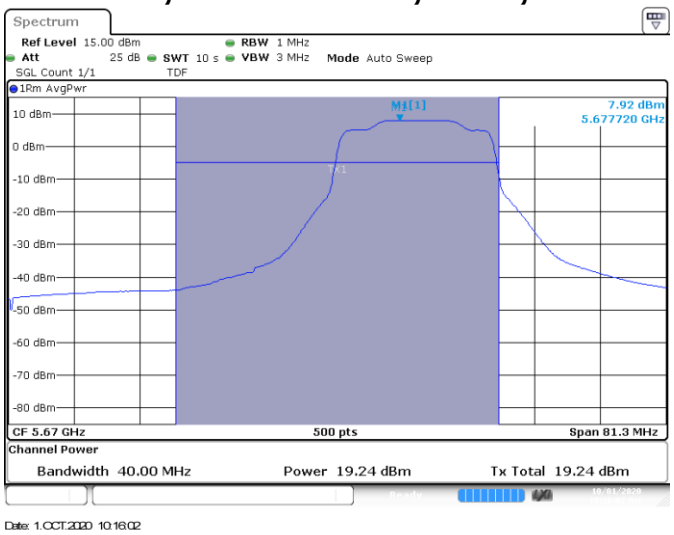
Channel 100

MIMO-A, 802.11ax40, HE0, 242/62



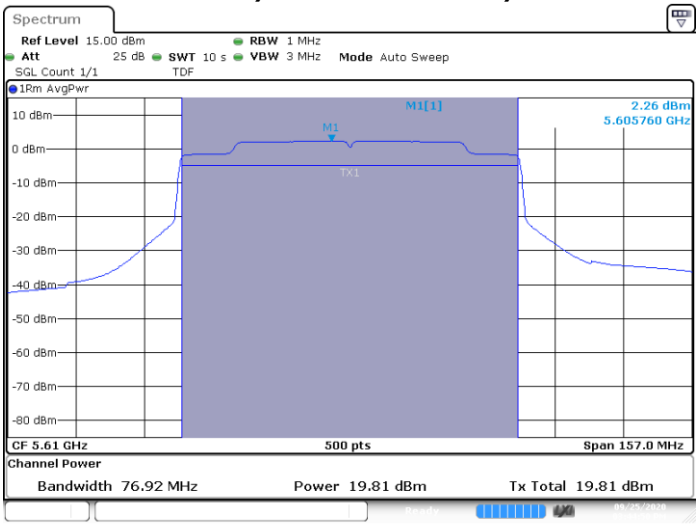
Channel 134

MIMO-B, 802.11ax40, HE0, 242/62



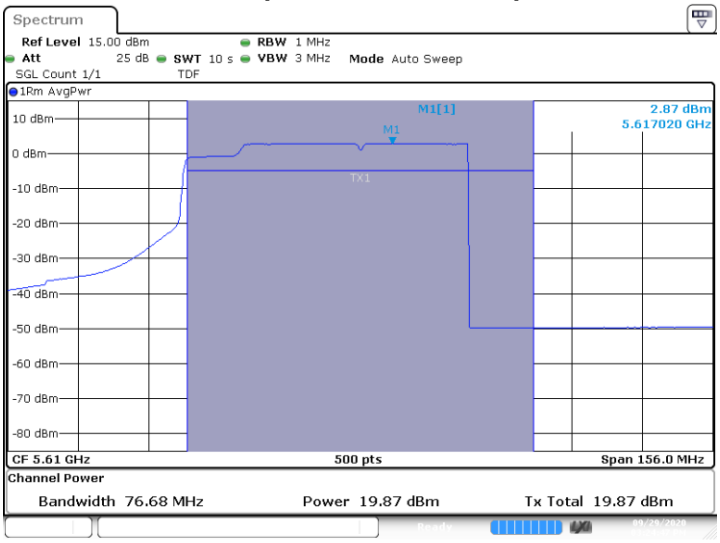
Channel 134

MIMO-A, 802.11ax80, HE0



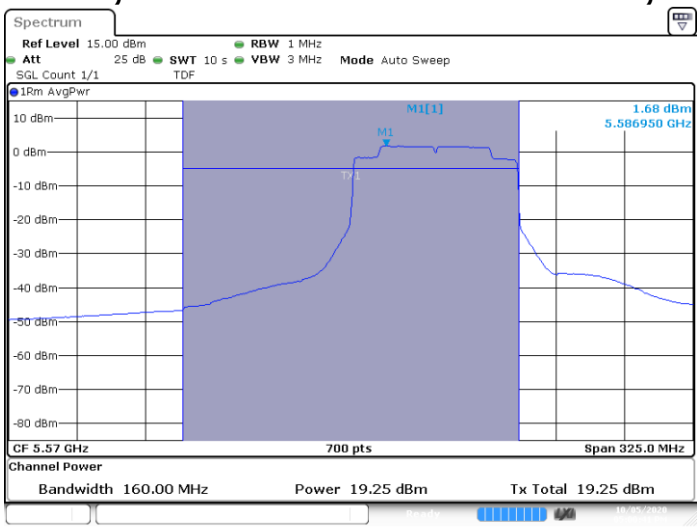
Channel 122

MIMO-B, 802.11ax80, HE0



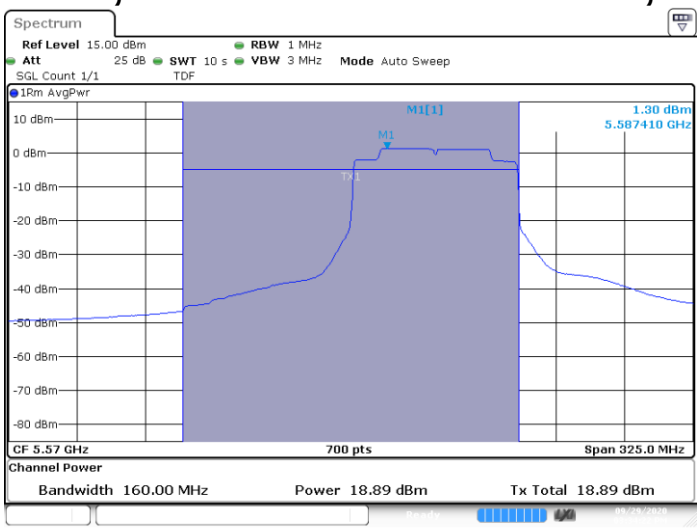
Channel 122

MIMO-A, 802.11ax160 RU: 996/S67, HE0



Channel 114

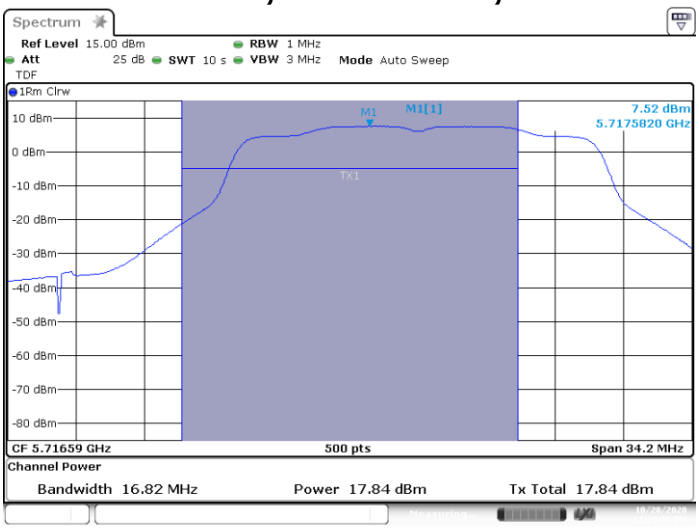
MIMO-B, 802.11ax160 RU: 996/S67, HE0



Channel 114

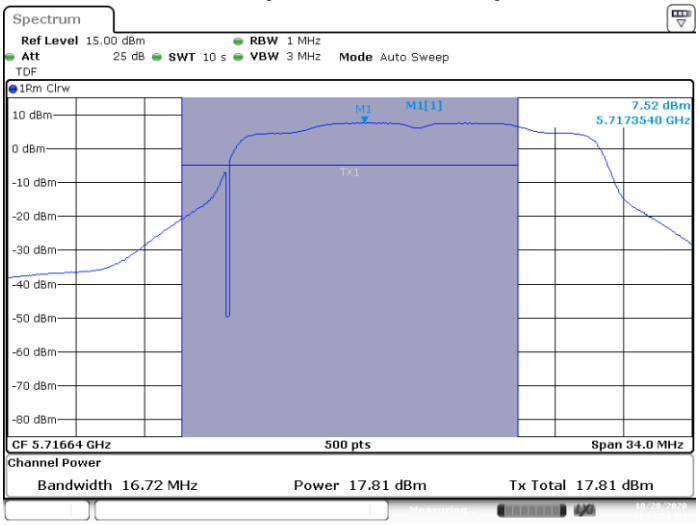
C.1.4 Maximum output power & Maximum power spectral Density (Overlapped Channel)

MIMO-A, 802.11n20, HT8



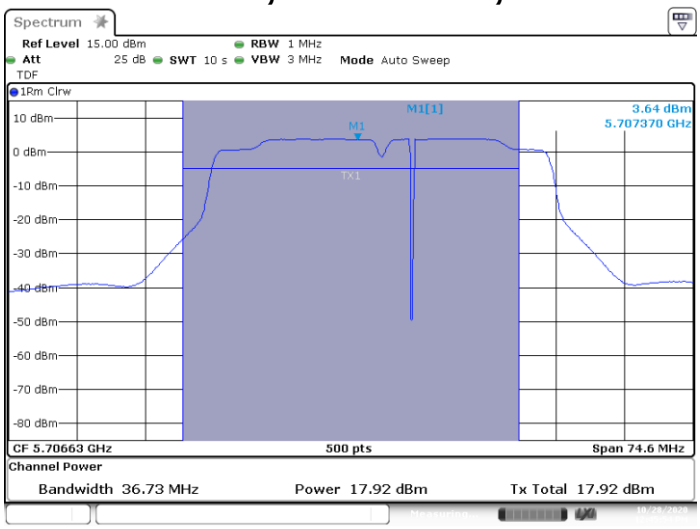
Channel 144 (Overlapped Channel)

MIMO-B, 802.11n20, HT8



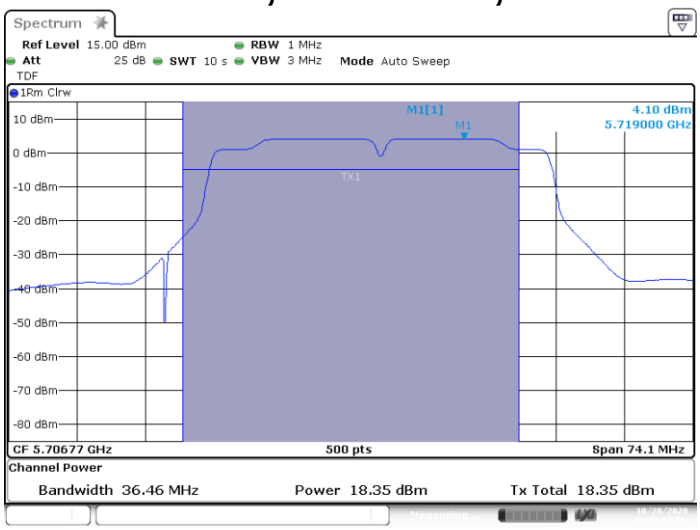
Channel 144 (Overlapped Channel)

MIMO-A, 802.11n40, HT8



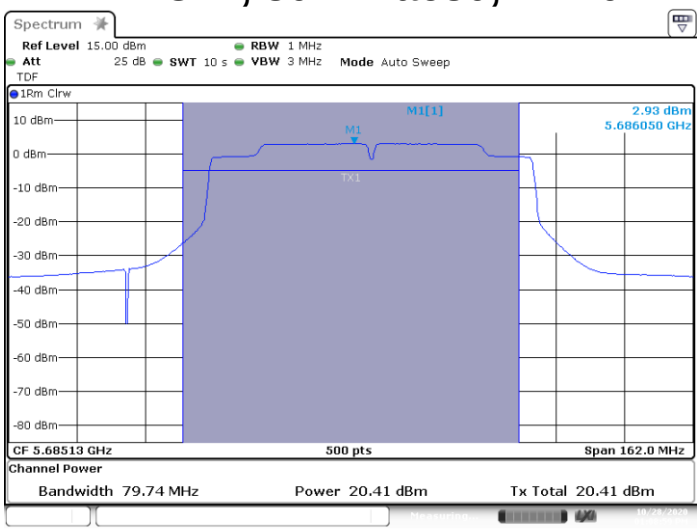
Channel 142 (Overlapped Channel)

MIMO-B, 802.11n40, HT8



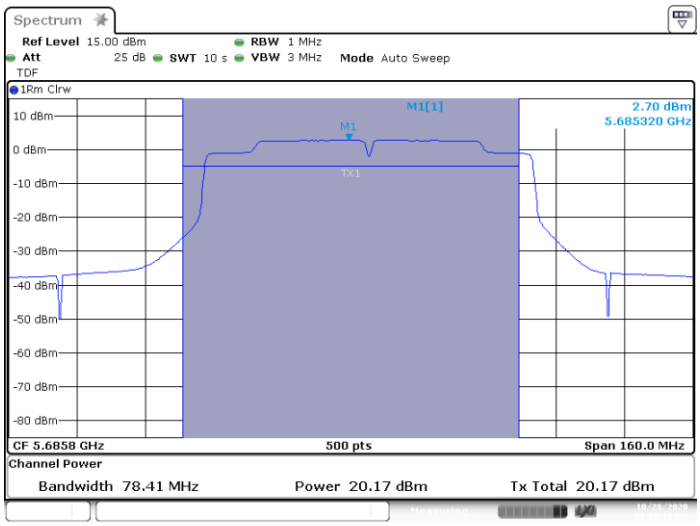
Channel 142 (Overlapped Channel)

MIMO-A, 802.11ac80, VHT0



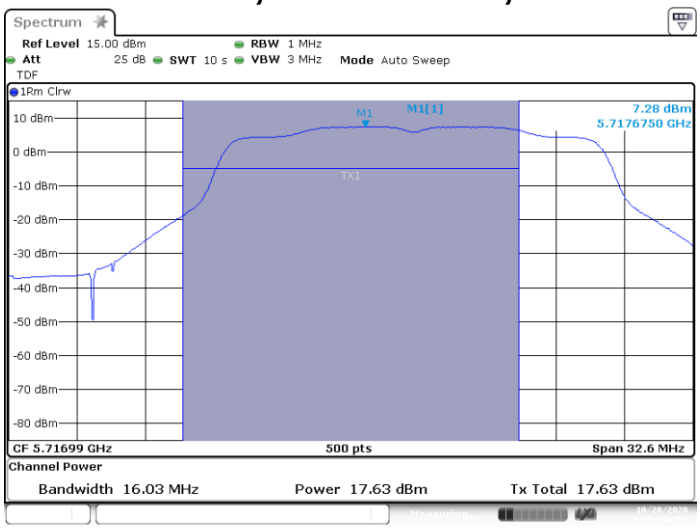
Channel 138 (Overlapped Channel)

MIMO-B, 802.11ac80, VHT0



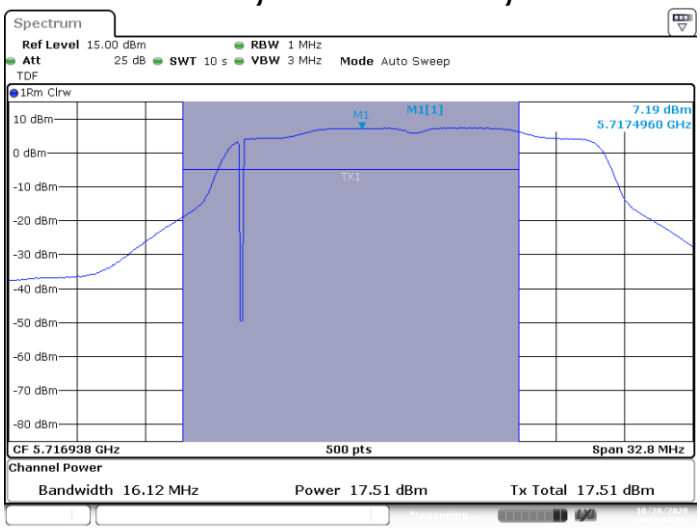
Channel 138 (Overlapped Channel)

MIMO-A, 802.11ax20, HE0



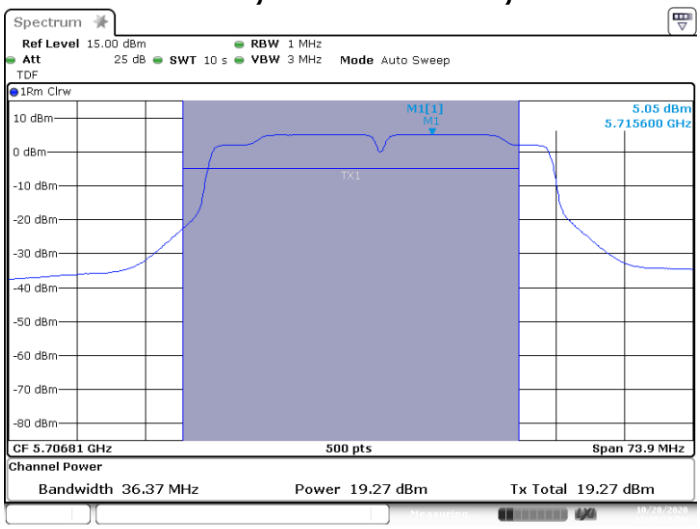
Channel 144 (Overlapped Channel)

MIMO-B, 802.11ax20, HE0



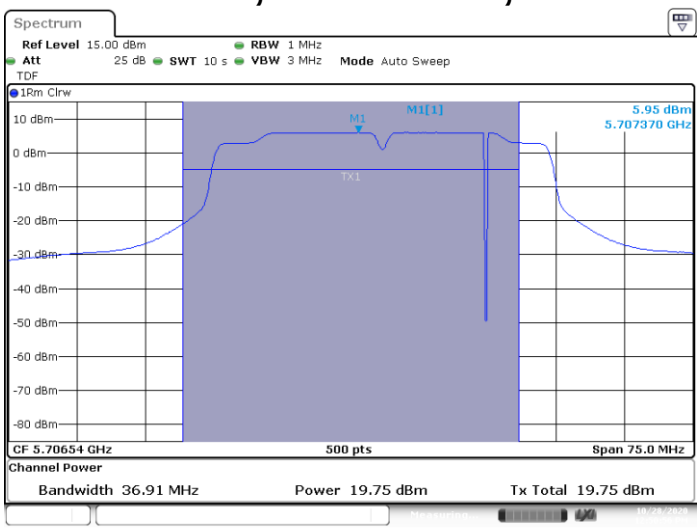
Channel 144 (Overlapped Channel)

MIMO-A, 802.11ax40, HE0



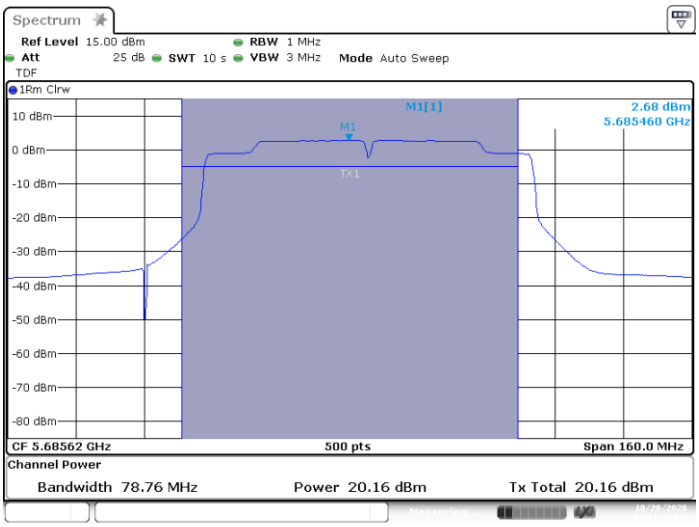
Channel 142 (Overlapped Channel)

MIMO-B, 802.11ax40, HE0



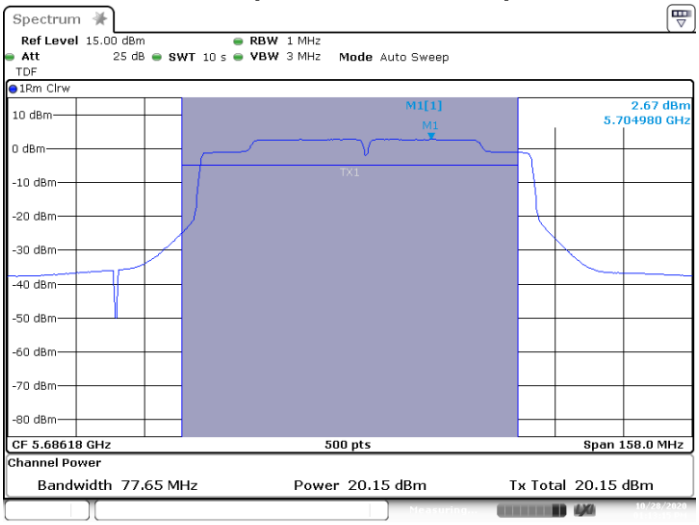
Channel 142 (Overlapped Channel)

MIMO-A, 802.11ax80, HE0



Channel 138 (Overlapped Channel)

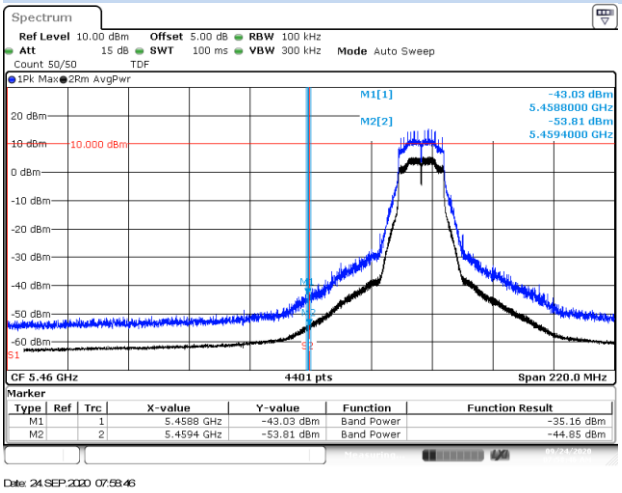
MIMO-B, 802.11ax80, HE0



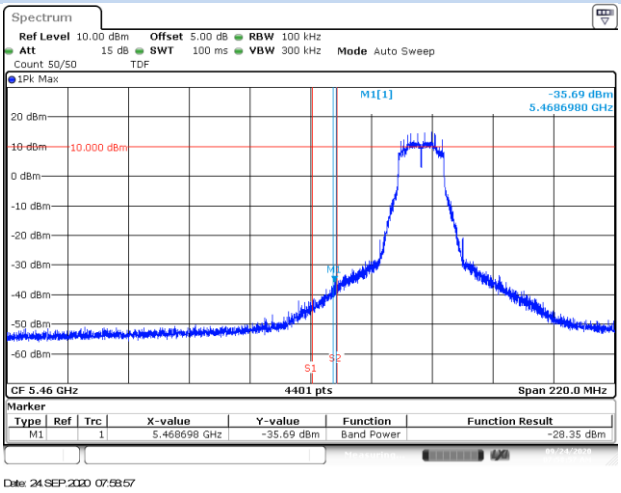
Channel 138 (Overlapped Channel)

C.1.5 Undesirable emission limits: out of band (Conducted)

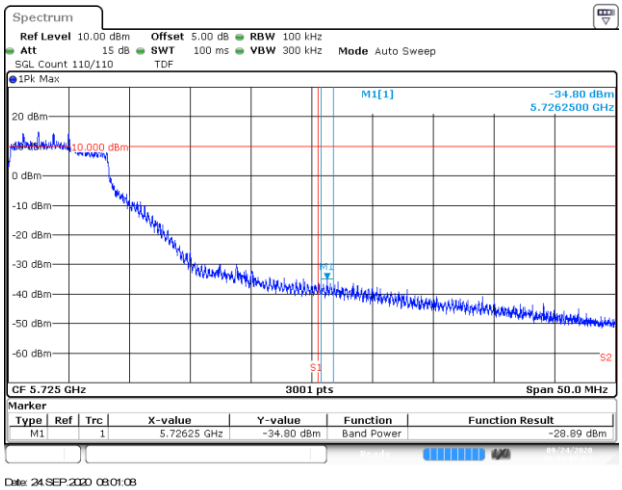
SISO A



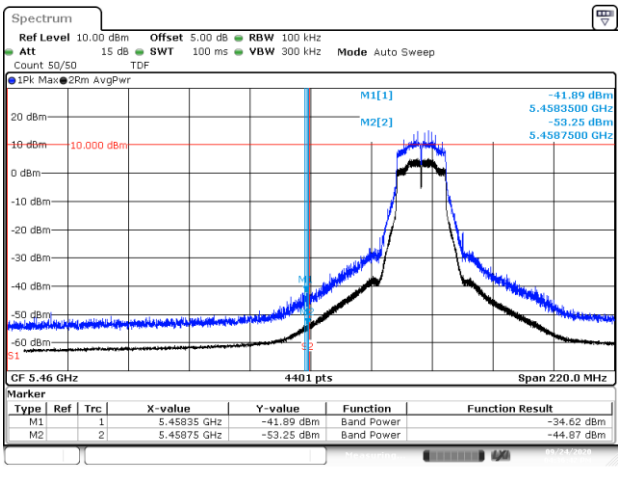
BE-R-LOW, SISO-A, 802.11a20-6Mbps, Ch100



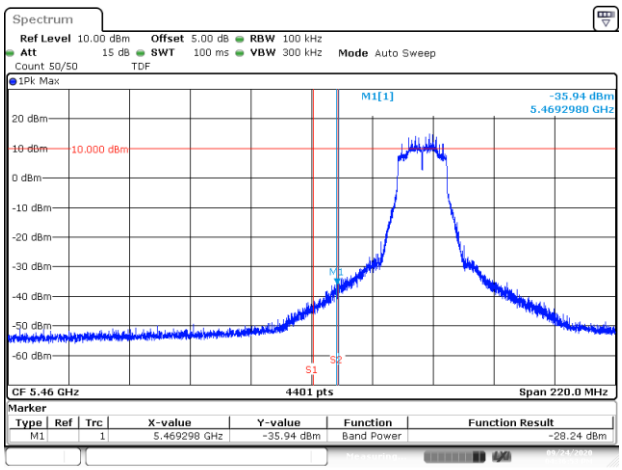
BE-NR-LOW, SISO-A, 802.11a20-6Mbps, Ch100



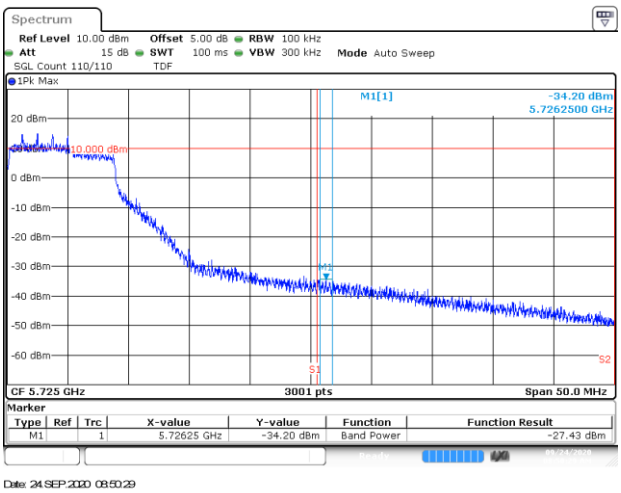
BE-NR-HIGH, SISO-A, 802.11a20-6Mbps, Ch140



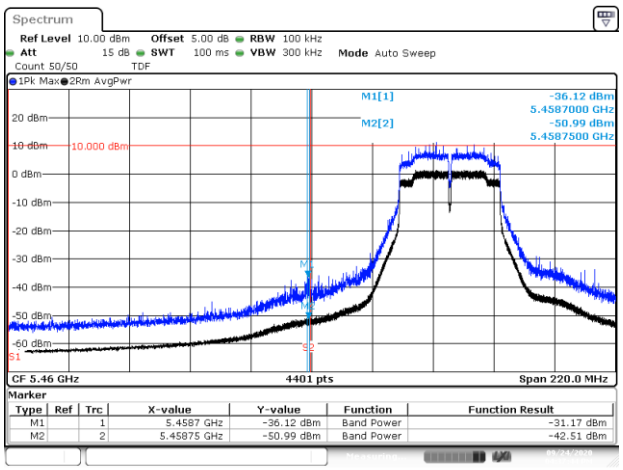
BE-R-LOW, SISO-A, 802.11n20-HT0, Ch100



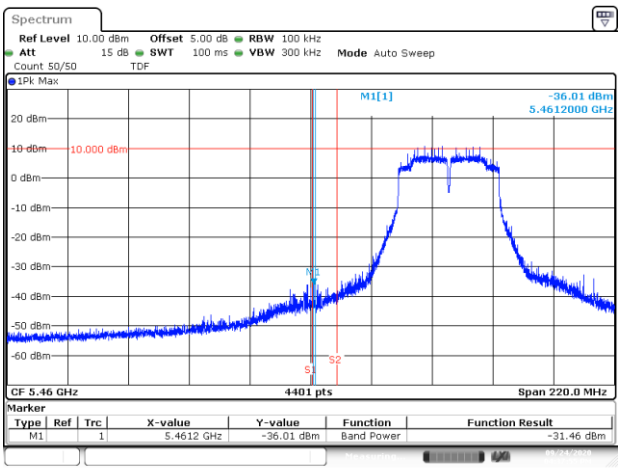
BE-NR-LOW, SISO-A, 802.11n20-HT0, Ch100



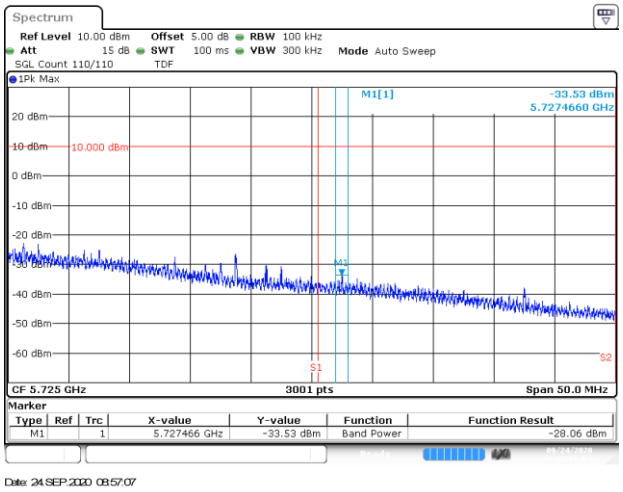
BE-NR-HIGH, SISO-A, 802.11n20-HT0, Ch140



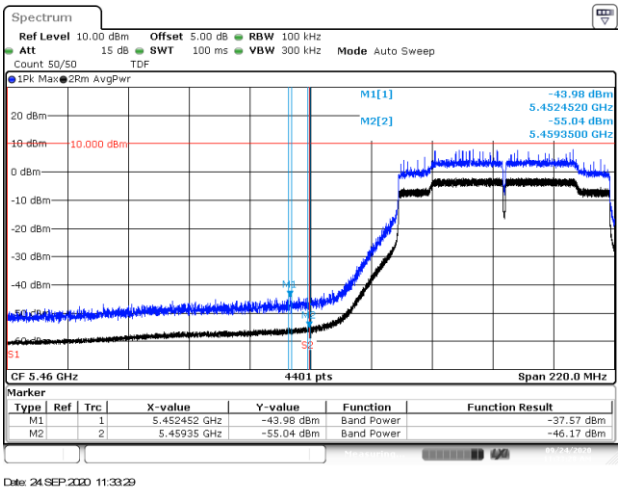
BE-R-LOW, SISO-A, 802.11n40-HT0, Ch102



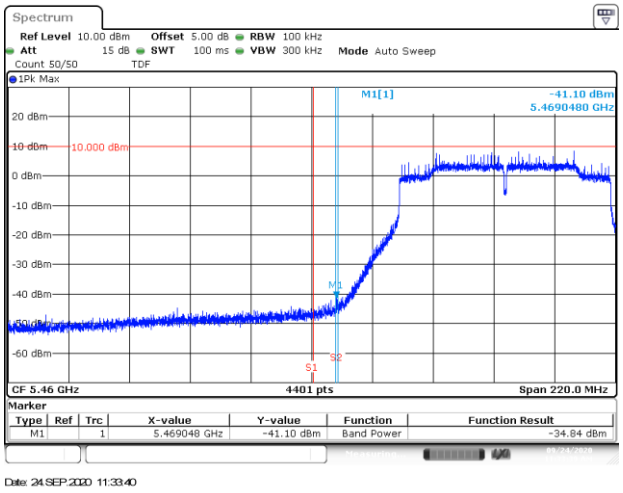
BE-NR-LOW, SISO-A, 802.11n40-HT0, Ch102



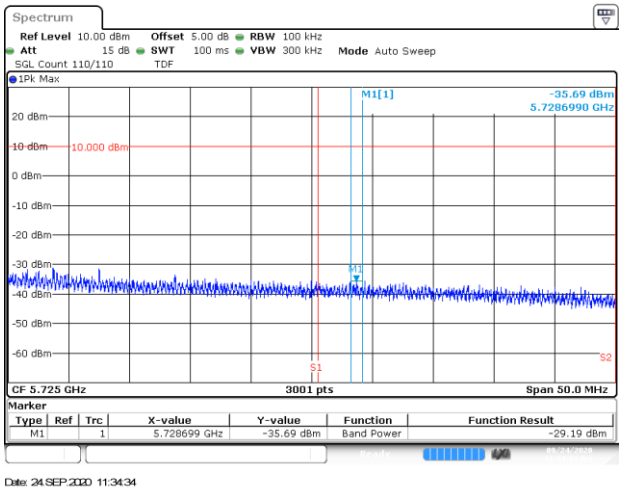
BE-NR-HIGH, SISO-A, 802.11n40-HT0, Ch134



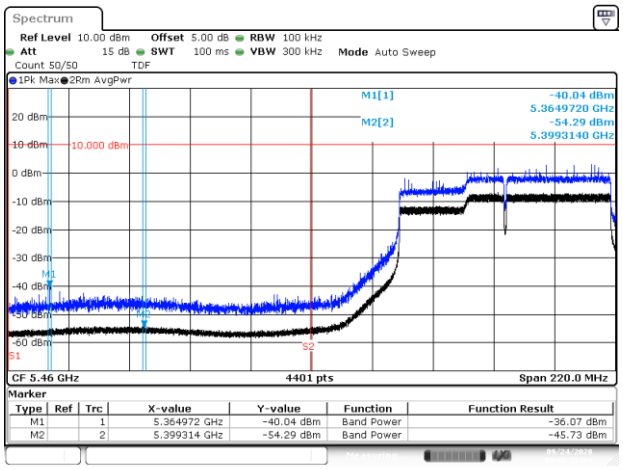
BE-R-LOW, SISO-A, 802.11ac80-VHT0, Ch106



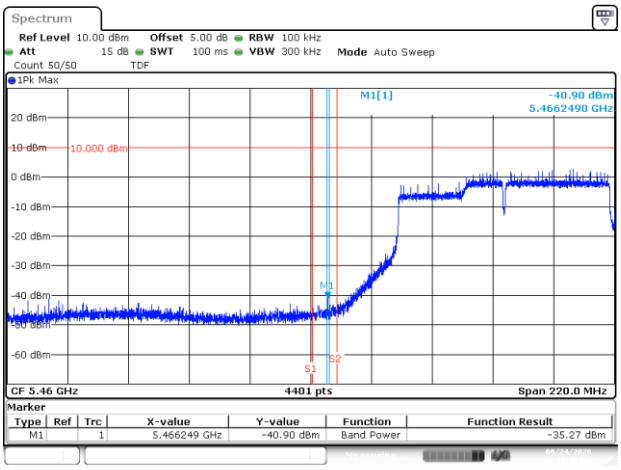
BE-NR-LOW, SISO-A, 802.11ac80-VHT0, Ch106



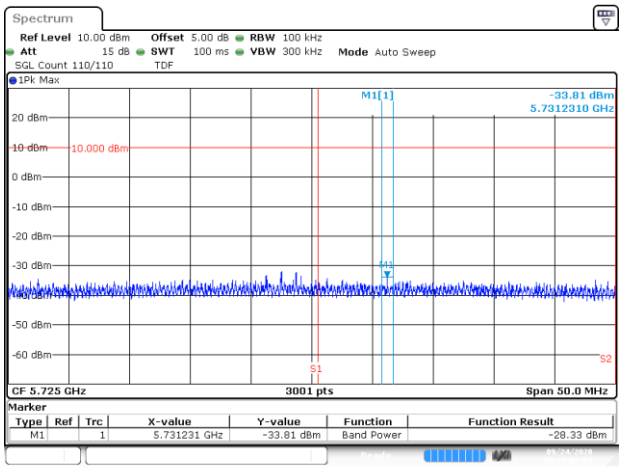
BE-NR-HIGH, SISO-A, 802.11ac80-VHT0, Ch122



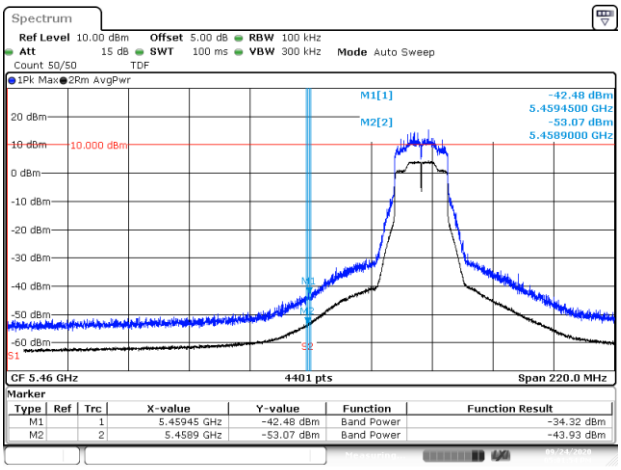
BE-R-LOW, SISO-A, 802.11ac160-VHT0, Ch114



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



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



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