

TEST REPORT

EUT Description	WLAN and BT, 1x1 PCIe M.2 2230 adapter card
Brand Name	Intel® Wi-Fi AX101
Model Name	AX101NGW
FCC ID / IC ID	FCCID: PD9AX101NG/ IC 1000M-AX101NG
Date of Test Start/End	2020-11-04 / 2020-11-24
Features	802.11ax, Dual Band, 1x1 Wi-Fi + Bluetooth® 5.1 Diversity Antenna (see section 5)

Applicant	Intel Mobile Communications
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Contact Person	Steven Hackett
Telephone/Fax/ Email	steven.c.hackett@intel.com

Reference Standards	FCC CFR Title 47 Part 15 E RSS-247 issue 2, RSS-Gen issue 5 - A1 (see section 1)
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Test Report identification	200928-03.TR03
Revision Control	Rev. 00 This test report revision replaces any previous test report revision (see section 8)

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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. FCC OET KDB 662911 D01 v02r01 - Emissions Testing of Transmitters with Multiple Outputs in the Same Band. 5. 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. FCC OET KDB 662911 D01 v02r01 - Emissions Testing of Transmitters with Multiple Outputs in the Same Band. 5. 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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3. Environmental Conditions

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

Temperature	22.6°C ± 4.0°C
Humidity	48.4% ± 9.1%

4. Test samples

Sample	Control #	Description	Model	Serial #	Date of receipt	Note
#1	200928-03.S01	RF Module	AX101NGW	WFM: 17B8587EA1	2020-10-02	RF Conducted
	170000-01.S19	Laptop	Latitude E5450	4TXV562	2020-02-04	
	180326-01.S03	Extender	PCB00651_01	6510818-198	2018-03-27	
#2	200928-03.S03	RF Module	AX101NGW	WFM:BC17B8587EDD	2020-10-02	Used for 1 GHz – 6.4 GHz Radiated Spurious Emissions tests
	170000-01.S16	Laptop	Latitude E5470	C2HTPF2	2017-06-13	
	180717-03.S13	Extender	HrP Extender db	6510818-131	2018-08-21	
	200611-03.S28	Main Antenna	Skycross	-	2020-07-01	
	200611.03-S29	Aux Antenna	Skycross	-	2020-07-01	
#3	200928-03.S04	RF Module	AX101NGW	WFM:BC17B8587C30	2020-10-02	Used for 30 MHz – 1 GHz and 6.4 GHz – 18 GHz Radiated Spurious Emissions tests
	170801-01.S42	Laptop	Latitude E5450	GTXV562	2018-01-18	
	180717-03.S18	Extender	HrP Extender db	6510818-133	2018-08-21	
	200611-03.S11	Main Antenna	Skycross	-	2020-07-15	
	200611.03-S12	Aux Antenna	Skycross	-	2020-07-15	
#4	200928-03.S04	RF Module	AX101NGW	WFM:BC17B8587C30	2020-10-02	Used for 18 GHz – 40 GHz Radiated Spurious Emissions tests
	170801-01.S42	Laptop	Latitude E5450	GTXV562	2018-01-18	
	180717-03.S18	Extender	HrP Extender db	6510818-133	2018-08-21	
	200928-03.S08	Main Antenna	Skycross	-	2020-09-01	
	200928-03.S09	Aux Antenna	Skycross	-	2020-09-01	

5. EUT Features

The herein information is provided by the customer

Brand Name	Intel® Wi-Fi AX101		
Model Name	AX101NGW		
Software Version	DRTU 01594_99_3500_51W		
Driver Version	99.0.58.2		
Prototype / Production	Production		
Supported Radios	802.11b/g/n/ax2.4GHz (2400.0 – 2483.5 MHz) 802.11a/n/ac/ax5.2GHz (5150.0 – 5350.0 MHz) 5.6GHz (5470.0 – 5725.0 MHz) 5.8GHz (5725.0 – 5850.0 MHz) Bluetooth 5.12.4GHz (2400.0 – 2483.5 MHz)		
Antenna Information	Transmitter	Main (CHAIN A DIV1)	Aux (CHAIN A DIV2)
	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

- 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- 3

FCC part	RSS clause	Test name	Verdict
15.407 (a) (3)	RSS-247 Clause 6.2.4.1	Power Limits. Maximum output power	P
15.407 (a) (3)	RSS-247 Clause 6.2.4.1	Power spectral density	P
15.407 (b) (3)	RSS-247 Clause 6.2.4.2	Undesirable emissions limits: out of band (conducted)	P
15.407 (b) (3) 15.209	RSS-247 Clause 6.2.4.2 RSS-GEN A1 Clause 8.9	Undesirable emissions limits: Spurious emissions (radiated)	P

8. Document Revision History

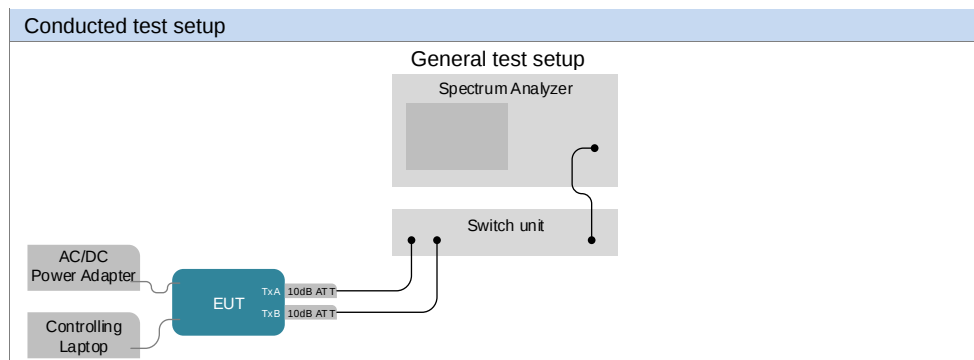
Revision #	Modified by	Revision Details
Rev. 00	C.Requin	First Issue

Annex A. Test & System Description

A.1 Measurement System

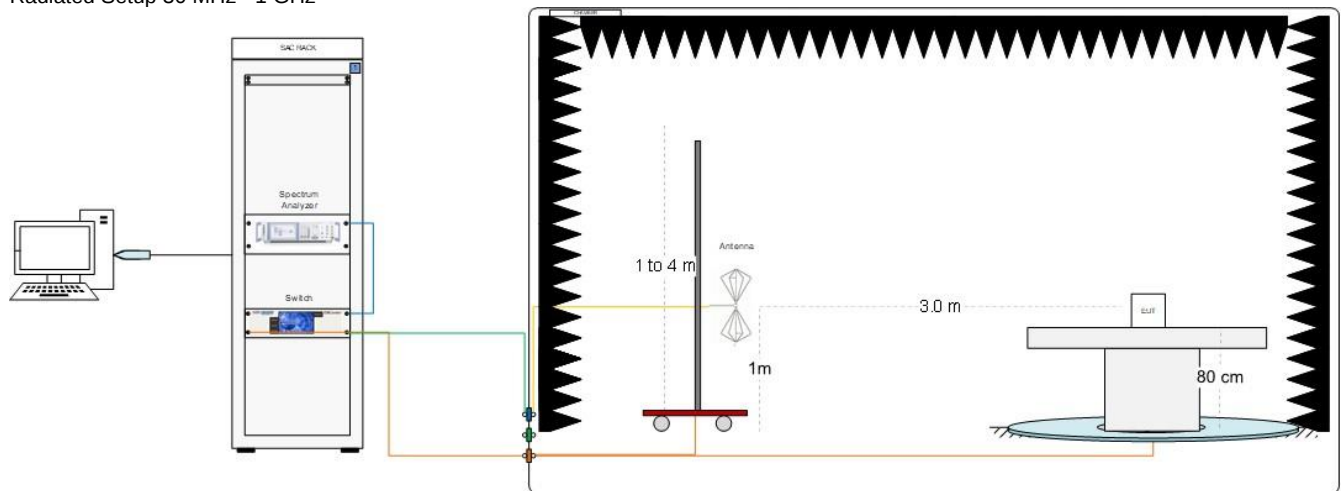
Measurements were performed using the following setup, made in accordance to the general provisions of FCC OET KDB 789033 D02 General UNII Test Procedures.

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

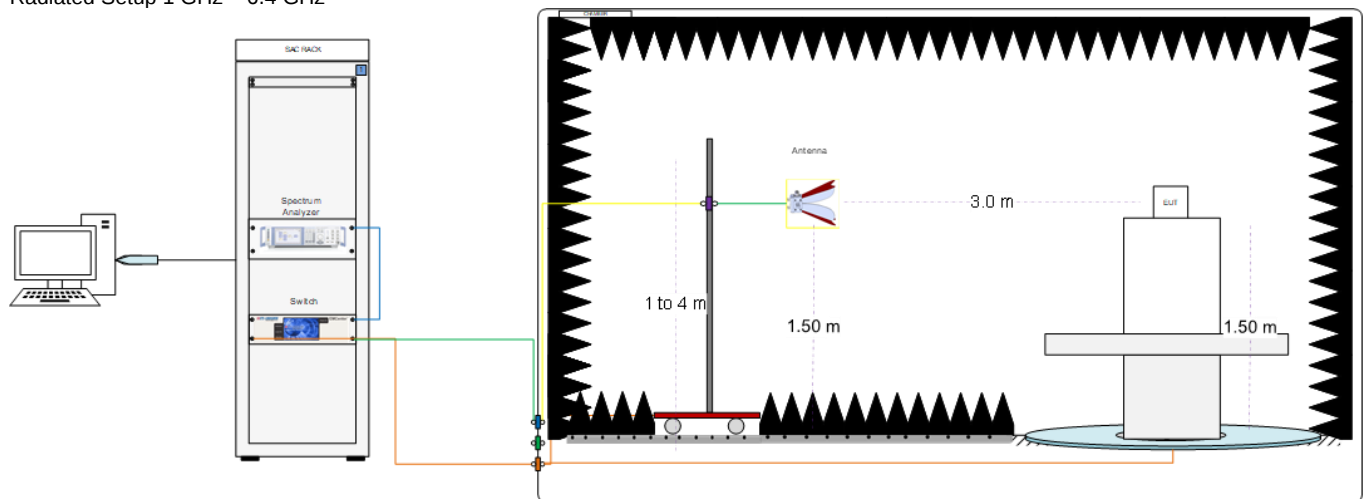


Radiated test setup

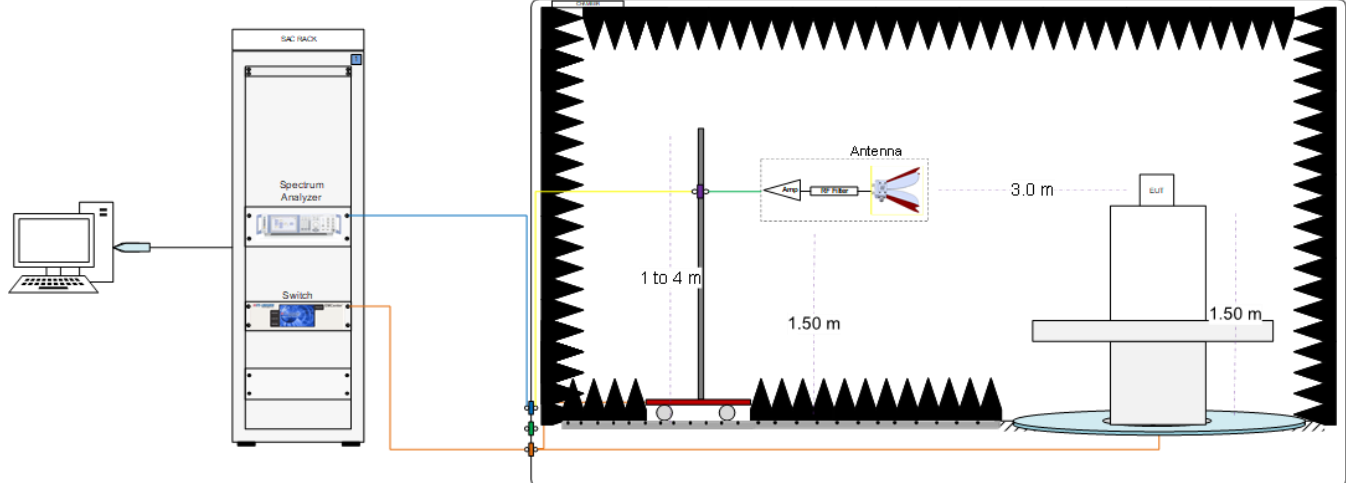
Radiated Setup 30 MHz - 1 GHz



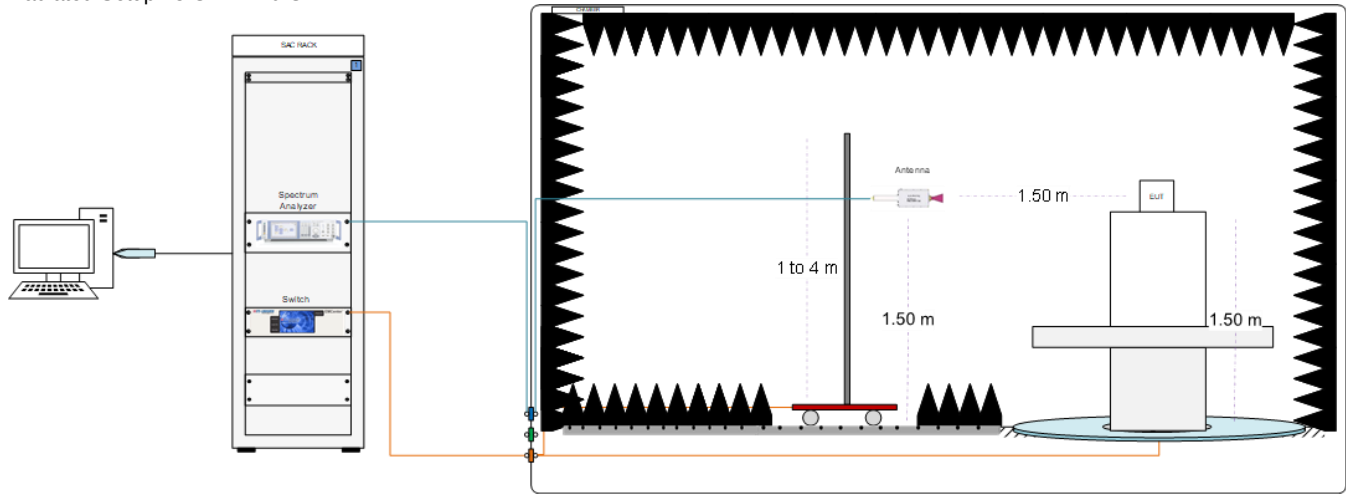
Radiated Setup 1 GHz – 6.4 GHz



Radiated Setup 6.4 GHz - 18 GHz



Radiated Setup 18 GHz – 40 GHz



Sample Calculation

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

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

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

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

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

where

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

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

D_{Meas} is the measurement distance, in m

$D_{\text{SpecLimit}}$ is the distance specified by the limit, in m

A.2 Test Equipment List

Conducted setup

ID#	Device	Type/Model	Serial Number	Manufacturer	Cal. Date	Cal. Due Date
0318	Spectrum analyzer	FSV30	103310	Rohde & Schwarz	2020-06-03	2022-06-03
0581	Temp & Humidity Logger	RA12E-TH1-RAS	RA12-B89BE3	Avtech	2020-01-23	2022-01-23
0056	Switch unit	OSP 120	100945	Rohde & Schwarz	2020-04-21	2022-04-21
0991	RF Cable 2m + 10dB ATT	0900670672000P J	1936949	Radiall	2020-08-26	2021-02-26
0992	RF Cable 2m + 10dB ATT	0900670672000P J	1936947	Radiall	2020-08-26	2021-02-26
0869	Cable SMA Male to ML51-P	HRMP-ML51LP	DTR178-100RS	Hirose	2020-08-26	2021-02-26
0870	Cable SMA Male to ML51-P	HRMP-ML51LP	DTR178-100RS	Hirose	2020-08-26	2021-02-26
0847	RF Cable 0.5m	PE3CA1039	-	Pasternack	2020-08-26	2021-02-26
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	N/A	N/A
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	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 + 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

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 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	± 5.26	dB
Radiated tests on 1-40GHz	± 4.85	dB

Annex B. Test Results U-NII-3

The herein test results were performed by:

Test case measurement	Test Engineer
6dB and 99% Bandwidth	G.Roustan
Maximum output power & Maximum PSD	G.Roustan
Undesirable emission limits: out of band	G.Roustan
Radiated spurious emissions	A.Lounes. N.Nachabe, N.Bui

B.1 Test Conditions

For all modes, the EUT transmits at both CHAIN A DIV1 and CHAIN A DIV2 RF outputs individually, but not 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
CHAIN A – DIV 1/ DIV 2	802.11a	20	6Mbps
	802.11n	20	HT0
		40	HT0
	802.11ac	80	VHT0
	802.11ax	20	HE0
		40	HE0
		80	HE0

B.2 Test Results Tables

B.2.1 6dB & 99% Bandwidth

Test limits

FCC part	RSS clause	Limits
15.407 (e)	RSS-247 Clause 6.2.4.1	For equipment operating in the band 5725-5850 MHz, the minimum 6 dB bandwidth shall be at least 500 kHz.

Test procedure

The conducted setup shown in section *Test & System Description* was used to measure the 6dB & 99% Bandwidth. The antenna terminal of the EUT is connected to the spectrum analyzer through an attenuator and a switch unit(OSP120). 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 KDB 789033 D02, the boundary frequency between the bands is used as one edge for defining the portion of the 6dB bandwidth that falls within a particular U-NII band. This rule is only applicable for the 6dB bandwidth and for those channels marked as overlapped.

Results tables

U-NII-3 channels

Mode	Rate	Antenna	Channel	Freq [MHz]	6dB BW [MHz]	99% BW [MHz]
802.11a	6Mbps	CHAIN A DIV 1	149	5745	15.26	23.16
			157	5785	15.12	19.80
			165	5825	16.25	23.56
		CHAIN A DIV 2	149	5745	15.12	20.92
			157	5785	15.37	20.04
			165	5825	16.30	22.88
802.11n20	HT0	CHAIN A DIV 1	149	5745	15.65	23.52
			157	5785	15.53	23.24
			165	5825	16.35	23.56
		CHAIN A DIV 2	149	5745	15.33	21.60
			157	5785	16.43	23.76
			165	5825	15.91	23.88
802.11n40	HT0	CHAIN A DIV 1	151	5755	33.82	49.36
			159	5795	33.83	47.28
		CHAIN A DIV 2	151	5755	35.00	43.92
			159	5795	33.78	42.96
802.11ac80	VHT0	CHAIN A DIV 1	155	5775	73.87	75.24
		CHAIN A DIV 2			68.87	75.24

Max Value

Mode	Rate	Antenna	Channel	Freq [MHz]	RU config.	6dB BW [MHz]	99% BW [MHz]
802.11ax20	HE0	CHAIN A DIV 1	149	5745	Full	16.89	20.28
					26/0	2.03	18.68
					52/37	17.00	18.36
					106/53	17.03	18.48
			157	5785	Full	16.93	22.44
		165	5825	Full	18.46	21.96	
		26/0	2.03	18.56			
		52/37	14.52	18.28			
		106/53	17.12	18.80			
		157	5785	Full	16.49	21.96	
		165	5825	Full	17.28	22.12	
		802.11ax40	HE0	CHAIN A DIV 1	151	5755	Full
242/61	18.31						20.32
159	5795			Full	35.38	40.40	
242/61	17.65			19.36			
159	5795			Full	35.08	39.84	
802.11ax80	HE0			CHAIN A DIV 1	155	5775	Full
		484/65	35.50				37.56
		CHAIN A DIV 2	Full	76.03			76.68
			484/65	35.67			37.44

Max Value

See Section C.1.1 for the screenshot results

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

Mode	Channel	Frequency (MHz)	Antenna	Chain	6dB BW [MHz]	26dB BW UNII-3 [MHz]
802.11n20	144	5720	CHAIN A	DIV 1	3.40	9.88
				DIV 2	3.50	9.03
802.11n40	142	5710	CHAIN A	DIV 1	3.19	19.61
				DIV 2	3.19	21.59
802.11ac80	138	5690	CHAIN A	DIV 1	3.25	12.41
				DIV 2	3.19	12.98
802.11ax20	144	5720	CHAIN A	DIV 1	4.13	8.83
				DIV 2	3.40	8.77
802.11ax40	142	5710	CHAIN A	DIV 1	4.03	13.85
				DIV 2	3.99	10.52
802.11ax80	138	5690	CHAIN A	DIV 1	4.03	8.23
				DIV 2	4.03	7.85

Max Value

Note, the 26dB bandwidth of the overlapped channels falling in U-NII-3 band is shown in the above table. These values were used to measure the maximum output power in the U-NII-3 band as specified in chapter B.2.2.

See Section C1.2 for the screenshot results

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

Test limits

FCC part	RSS clause	Limits
15.407 (a) (3)	RSS-247 Clause 6.2.4.1	For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band

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 KDB 789033 D02

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

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 a switch unit(OSP120). 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 KDB 789033 D02, the power is computed based on the portion of the emission bandwidth (26dB) contained within that band. This rule is only applicable for those channels marked as overlapped.

Results tables

Duty cycle

Mode	Rate	Antenna	Duty Cycle [%]
802.11a	6Mbps	CHAIN A DIV1	97.9%
		CHAIN A DIV2	97.9%
802.11n20	HT0	CHAIN A DIV1	98.9%
		CHAIN A DIV2	98.9%
802.11ax20	HE0	CHAIN A DIV1	98.9%
		CHAIN A DIV2	98.9%
802.11n40	HT0	CHAIN A DIV1	98.9%
		CHAIN A DIV2	98.9%
802.11ax40	HE0	CHAIN A DIV1	98.9%
		CHAIN A DIV2	98.9%
802.11ac80	VHT0	CHAIN A DIV1	98.9%
		CHAIN A DIV2	98.9%
802.11ax80	HE0	CHAIN A DIV1	98.9%
		CHAIN A DIV2	98.9%

Maximum output power – U-NII-3 Channels

Mode	Rate	Channel	Freq [MHz]	Antenna	Average Conducted Output Power [dBm]	Avg Max* Conducted Output Power [dBm]	Avg Max*. EIRP [dBm]	Avg Max* Conducted Power [mW]
802.11a	6Mbps	149	5745	CHAIN A DIV 1	21.64	21.73	26.73	148.94
				CHAIN A DIV 2	20.97	21.06	26.06	127.64
		157	5785	CHAIN A DIV 1	21.10	21.19	26.19	131.52
				CHAIN A DIV 2	21.01	21.10	26.10	128.82
		165	5825	CHAIN A DIV 1	21.61	21.70	26.70	147.91
				CHAIN A DIV 2	21.51	21.60	26.60	144.54
802.11n20	HT0	149	5745	CHAIN A DIV 1	21.60	21.60	26.60	144.54
				CHAIN A DIV 2	20.92	20.92	25.92	123.59
		157	5785	CHAIN A DIV 1	21.47	21.47	26.47	140.28
				CHAIN A DIV 2	21.36	21.36	26.36	136.77
		165	5825	CHAIN A DIV 1	21.46	21.46	26.46	139.96
				CHAIN A DIV 2	21.39	21.39	26.39	137.72
802.11n40	HT0	151	5755	CHAIN A DIV 1	21.67	21.67	26.67	146.89
				CHAIN A DIV 2	21.25	21.25	26.25	133.35
		159	5795	CHAIN A DIV 1	21.43	21.43	26.43	139.00
				CHAIN A DIV 2	21.22	21.22	26.22	132.43
802.11ac80	VHT0	155	5775	CHAIN A DIV 1	18.09	18.09	23.09	64.42
				CHAIN A DIV 2	17.72	17.72	22.72	59.16

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

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]
802.11ax20	HE0	149	5745	CHAIN A DIV 1	Full	21.24	21.24	26.24	133.05
					26/0	15.12	15.12	20.12	32.51
					52/37	18.02	18.02	23.02	63.39
					106/53	20.51	20.51	25.51	112.46
				CHAIN A DIV 2	Full	21.32	21.32	26.32	135.52
					26/0	14.96	14.96	19.96	31.33
					52/37	18.06	18.06	23.06	63.97
					106/53	20.59	20.59	25.59	114.55
		157	5785	CHAIN A DIV 1	Full	21.40	21.40	26.40	138.04
				CHAIN A DIV 2	Full	21.27	21.27	26.27	133.97
		165	5825	CHAIN A DIV 1	Full	21.40	21.40	26.40	138.04
				CHAIN A DIV 2	Full	21.32	21.32	26.32	135.52
802.11ax40	HE0	151	5755	CHAIN A DIV 1	Full	20.95	20.95	25.95	124.45
					242/61	21.12	21.12	26.12	129.42
				CHAIN A DIV 2	Full	20.43	20.43	25.43	110.41
					242/61	20.41	20.41	25.41	109.90
		159	5795	CHAIN A DIV 1	Full	21.17	21.17	26.17	130.92
				CHAIN A DIV 2	Full	21.08	21.08	26.08	128.23
802.11ax80	HE0	155	5775	CHAIN A DIV 1	Full	18.09	18.09	23.09	64.42
					484/65	19.14	19.14	24.14	82.04
				CHAIN A DIV 2	Full	17.68	17.68	22.68	58.61
					484/65	18.63	18.63	23.63	72.95

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

Max Value/Min Value

See Section C.1.3 for the screenshot results

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

Mode	Channel	Freq (MHz)	Antenna	Chain	Average Cond. Output Power UNII-3 [dBm]	Max.* Cond. Output Power UNII-3 [dBm]	Max.* EIRP UNII-3 [dBm]	Max.* Cond. Output Power UNII-3 [mW]
802.11n20	144	5720	CHAIN A	DIV 1	12.43	12.49	17.49	17.74
				DIV 2	12.92	12.98	17.98	19.86
802.11n40	142	5710	CHAIN A	DIV 1	8.37	8.43	13.43	6.96
				DIV 2	8.59	8.65	13.65	7.33
802.11ac80	138	5690	CHAIN A	DIV 1	4.00	4.06	9.06	2.55
				DIV 2	4.31	4.37	9.37	2.73
802.11ax20	144	5720	CHAIN A	DIV 1	13.11	13.17	18.17	20.74
				DIV 2	13.24	13.30	18.30	21.37
802.11ax40	142	5710	CHAIN A	DIV 1	9.30	9.36	14.36	8.63
				DIV 2	8.87	8.93	13.93	7.82
802.11ax80	138	5690	CHAIN A	DIV 1	5.15	5.21	10.21	3.32
				DIV 2	4.97	5.03	10.03	3.18

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

Maximum Power Spectral Density (PSD) – U-NII-3 channels

Mode	Rate	Channel	Freq [MHz]	Antenna	Average conducted PSD [dBm/500kHz]	Max.* conducted PSD [dBm/500kHz]
802.11a	6Mbps	149	5745	CHAIN A DIV 1	7.71	7.80
				CHAIN A DIV 2	7.03	7.12
		157	5785	CHAIN A DIV 1	7.17	7.26
				CHAIN A DIV 2	7.10	7.19
		165	5825	CHAIN A DIV 1	7.67	7.76
				CHAIN A DIV 2	7.62	7.71
802.11n20	HT0	149	5745	CHAIN A DIV 1	7.44	7.44
				CHAIN A DIV 2	6.79	6.79
		157	5785	CHAIN A DIV 1	7.33	7.33
				CHAIN A DIV 2	7.21	7.21
		165	5825	CHAIN A DIV 1	7.33	7.33
				CHAIN A DIV 2	7.28	7.28
802.11n40	HT0	151	5755	CHAIN A DIV 1	4.19	4.19
				CHAIN A DIV 2	3.70	3.70
		159	5795	CHAIN A DIV 1	3.92	3.92
				CHAIN A DIV 2	3.67	3.67
802.11ac80	VHT0	155	5775	CHAIN A DIV 1	-2.31	-2.31
				CHAIN A DIV 2	-2.72	-2.72

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

Mode	Rate	Channel	Freq [MHz]	Antenna	RU config.	Average conducted PSD [dBm/500kHz]	Max.* conducted PSD [dBm/500kHz]
802.11ax20	HE0	149	5745	CHAIN A DIV 1	Full	6.91	6.91
					26/0	9.50	9.50
					52/37	9.23	9.23
					106/53	8.64	8.64
				CHAIN A DIV 2	Full	7.02	7.02
					26/0	9.25	9.25
					52/37	9.26	9.26
					106/53	8.69	8.69
		157	5785	CHAIN A DIV 1	Full	7.09	7.09
				CHAIN A DIV 2	Full	6.98	6.98
		165	5825	CHAIN A DIV 1	Full	7.09	7.09
				CHAIN A DIV 2	Full	7.03	7.03
802.11ax40	HE0	151	5755	CHAIN A DIV 1	Full	3.31	3.31
					242/61	6.75	6.75
				CHAIN A DIV 2	Full	2.78	2.78
					242/61	6.02	6.02
		159	5795	CHAIN A DIV 1	Full	3.55	3.55
				CHAIN A DIV 2	Full	3.40	3.40
802.11ax80	HE0	155	5775	CHAIN A DIV 1	Full	-2.47	-2.47
					484/65	1.47	1.47
				CHAIN A DIV 2	Full	-2.82	-2.82
					484/65	0.99	0.99

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

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

Mode	Channel	Freq (MHz)	Antenna	Chain	Average conducted PSD UNII-3 [dBm/MHz]	Maximum* conducted PSD UNII-3 [dBm/MHz]
802.11n20	144	5720	CHAIN A	DIV 1	5.54	5.60
				DIV 2	5.89	5.95
802.11n40	142	5710	CHAIN A	DIV 1	0.29	0.35
				DIV 2	0.48	0.54
802.11ac80	138	5690	CHAIN A	DIV 1	-3.94	-3.88
				DIV 2	-3.58	-3.52
802.11ax20	144	5720	CHAIN A	DIV 1	5.60	5.66
				DIV 2	5.66	5.72
802.11ax40	142	5710	CHAIN A	DIV 1	0.47	0.53
				DIV 2	0.09	0.15
802.11ax80	138	5690	CHAIN A	DIV 1	-3.62	-3.56
				DIV 2	-3.81	-3.75

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

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

FCC part	RSS clause	Limits
15.407 (b) (4)	RSS-247 Clause 6.2.4.2	For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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 a switch unit(OSP120). The spectrum analyzer reading is compensated to include the RF path loss and the declared antenna gain.

See Section C1.4 for the screenshot results.

B.2.4 Radiated spurious emission

Standard references

FCC part	RSS clause	Limits																				
15.407 (b) (4)	RSS-247 Clause 6.2.4.2	For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.																				
15.209	RSS-GEN A1, Clause 8.9	Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a): <table><tr><th>Freq Range (MHz)</th><th>Field Strength (μV/m)</th><th>Field Strength (dBμV/m)</th><th>Meas. Distance (m)</th></tr><tr><td>30-88</td><td>100</td><td>40</td><td>3</td></tr><tr><td>88-216</td><td>150</td><td>43.5</td><td>3</td></tr><tr><td>216-960</td><td>200</td><td>46</td><td>3</td></tr><tr><td>Above 960</td><td>500</td><td>54</td><td>3</td></tr></table> The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. For average radiated emission measurements above 1000 MHz, there is also a limit specified when measuring with peak detector function, corresponding to 20 dB above the indicated values in the table.	Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)	30-88	100	40	3	88-216	150	43.5	3	216-960	200	46	3	Above 960	500	54	3
Freq Range (MHz)	Field Strength (μV/m)	Field Strength (dBμV/m)	Meas. Distance (m)																			
30-88	100	40	3																			
88-216	150	43.5	3																			
216-960	200	46	3																			
Above 960	500	54	3																			

Test procedure

The radiated 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 chapter B.1 and using the low, middle and high channels.

Test Results**Radiated spurious - 30 MHz – 1 GHz****Radiated Spurious – All modes**

Frequency	Quasi-Peak	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dB	---
37.5	31.3	40.0	8.7	V
38.1	30.4	40.0	9.7	V
400.3	23.8	46.0	22.2	H

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

802.11a**1GHz – 40 GHz, 802.11a, 6Mbps, Chain A DIV1****Radiated Spurious – CH149**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3387.0	58.5	---	68.2	9.7	H
11490.0	49.7	---	74.0	24.3	H
11490.0	---	40.8	54.0	13.2	H
22979.6	---	41.0	54.0	13.0	V
22979.6	49.2	---	74.0	24.8	V
34491.0	58.4	---	68.2	9.8	V

Radiated Spurious – CH157

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3396.0	58.5	---	68.2	9.7	V
11569.2	51.3	---	74.0	22.7	H
11569.2	---	42.0	54.0	12.0	H
23140.1	51.0	---	68.2	17.2	V
34700.3	61.4	---	68.2	6.8	V

Radiated Spurious – CH165

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3399.5	58.1	---	68.2	10.1	H
11648.0	51.4	---	74.0	22.6	V
11648.0	---	41.3	54.0	12.7	V
23307.8	53.5	---	68.2	14.7	V
34945.7	55.5	---	68.2	12.7	V

1 GHz - 40 GHz, 802.11a, 6Mbps, Chain A DIV2**Radiated Spurious – CH149**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3390.5	58.8	---	68.2	9.4	H
11489.0	49.3	---	74.0	24.7	V
11489.0	---	40.1	54.0	13.9	H
22980.1	49.7	---	74.0	24.3	V
22980.1	---	41.1	54.0	12.9	V
34461.1	65.2	---	68.2	3.0	V
34482.8	61.6	---	68.2	6.6	V

Radiated Spurious – CH157

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3369.0	58.6	---	68.2	9.6	H
11569.7	53.3	---	74.0	20.7	H
11569.7	---	43.8	54.0	10.2	H
23140.1	52.4	---	68.2	15.8	V
34695.0	57.5	---	68.2	10.8	V

Radiated Spurious – CH165

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3398.0	57.7	---	68.2	10.5	V
11649.0	59.3	---	74.0	14.7	H
11649.0	---	47.9	54.0	6.1	H
23304.9	51.8	---	68.2	16.4	V
34938.5	57.8	---	68.2	10.4	V

802.11n**1 GHz - 40 GHz, 802.11n20, HT0, Chain A DIV1****Radiated Spurious – CH149**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3379.0	57.7	---	68.2	10.5	H
11488.5	50.4	---	74.0	23.6	H
11494.3	---	39.8	54.0	14.2	H
22980.5	---	40.6	54.0	13.4	V
22983.8	50.4	---	74.0	23.6	V
34486.2	57.4	---	68.2	10.8	V

Radiated Spurious – CH157

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3387.0	57.5	---	68.2	10.7	V
11573.1	51.8	---	74.0	22.2	V
11573.6	---	41.4	54.0	12.6	H
17336.9	54.1	---	68.2	14.1	H
23140.1	52.7	---	68.2	15.5	V
34711.9	57.1	---	68.2	11.1	V

Radiated Spurious – CH165

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3372.0	58.8	---	68.2	9.4	H
11644.2	53.0	---	74.0	21.0	V
11647.5	---	41.7	54.0	12.3	V
23306.8	54.5	---	68.2	13.7	V
34945.2	61.9	---	68.2	6.3	V

1 GHz - 40 GHz, 802.11n20, HT0, Chain A DIV2**Radiated Spurious – CH149**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3372.0	58.4	---	68.2	9.8	H
11490.5	---	39.8	54.0	14.2	H
11491.4	49.9	---	74.0	24.1	H
22980.1	---	40.8	54.0	13.2	V
22986.2	50.9	---	74.0	23.1	V
34462.1	57.6	---	68.2	10.6	V

Radiated Spurious – CH157

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3297.0	59.1	---	68.2	9.1	H
11567.8	---	42.2	54.0	11.8	H
11567.8	53.9	---	74.0	20.1	H
23144.4	52.1	---	68.2	16.1	V
34705.6	56.6	---	68.2	11.6	V

Radiated Spurious – CH165

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3364.0	58.5	---	68.2	9.7	V
11650.0	56.7	---	74.0	17.3	H
11650.0	---	46.6	54.0	7.4	H
23290.8	53.4	---	68.2	14.8	V
34938.0	57.1	---	68.2	11.1	V

1 GHz - 40 GHz, 802.11n40, HT0, Chain A DIV1**Radiated Spurious – CH151**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3390.0	58.2	---	68.2	10.0	H
11505.5	49.7	---	74.0	24.3	H
11509.8	---	39.7	54.0	14.3	V
23015.5	49.6	---	74.0	24.4	V
23019.7	---	40.0	54.0	14.0	V
34539.7	55.0	---	68.2	13.2	V

Radiated Spurious – CH159

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3296.5	59.1	---	68.2	9.1	V
11589.5	---	40.2	54.0	13.8	V
11592.0	50.5	---	74.0	23.5	H
23187.4	51.4	---	68.2	16.8	V
34775.5	56.0	---	68.2	12.2	V

1 GHz - 40 GHz, 802.11n40, HT0, Chain A DIV2**Radiated Spurious – CH151**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3179.0	58.9	---	68.2	9.3	V
11506.4	50.5	---	74.0	23.5	H
11509.8	---	39.9	54.0	14.1	H
23011.2	50.5	---	74.0	23.5	V
23020.2	---	40.2	54.0	13.8	V
34549.4	55.5	---	68.2	12.7	V

Radiated Spurious – CH159

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3394.5	58.0	---	68.2	10.2	V
11591.5	---	42.2	54.0	11.8	H
11595.8	53.2	---	74.0	20.8	H
23176.0	50.4	---	68.2	17.8	V
34767.3	54.3	---	68.2	13.9	V

802.11ac**1 GHz - 40 GHz, 802.11ac80, VHT0, Chain A DIV1****Radiated Spurious – CH155**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3218.0	59.0	---	68.2	9.2	H
17833.7	52.2	---	74.0	21.8	V
17833.7	---	42.1	54.0	11.9	V
34638.6	52.1	---	68.2	16.1	V

1 GHz - 40 GHz, 802.11ac80, VHT0, Chain A DIV2

Radiated Spurious – CH155

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3375.0	59.1	---	68.2	9.1	V
17936.7	---	41.6	54.0	12.4	V
17936.7	53.5	---	74.0	20.5	V
34653.0	54.3	---	68.2	13.9	V

802.11ax

1 GHz - 40 GHz, 802.11ax20, HE0, Chain A DIV1

Radiated Spurious – CH149

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3292.5	58.8	---	68.2	9.4	H
11473.1	---	48.2	54.0	5.8	V
11474.5	54.7	---	74.0	19.3	H
17207.8	55.0	---	68.2	13.2	V
39683.2	59.2	---	74.0	14.8	H
39683.7	---	46.9	54.0	7.1	V

Radiated Spurious – CH157

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3371.5	58.5	---	68.2	9.7	V
11553.3	---	49.7	54.0	4.3	H
11553.8	55.9	---	74.0	18.1	H
17330.6	55.3	---	68.2	12.9	V
23140.1	46.2	---	68.2	22.0	H

Radiated Spurious – CH165

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3397.5	59.7	---	68.2	8.5	H
11633.0	---	51.0	54.0	3.0	V
11634.0	55.9	---	74.0	18.1	V
17449.0	52.8	---	68.2	15.4	V
23267.6	47.6	---	68.2	20.6	V
23302.1	47.3	---	68.2	20.9	H

1 GHz - 40 GHz, 802.11ax20, HE0, Chain A DIV2**Radiated Spurious – CH149**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3392.0	58.5	---	68.2	9.8	V
11473.1	---	49.7	54.0	4.3	H
11474.0	55.9	---	74.0	18.1	H
11486.1	48.7	---	74.0	25.3	V
11490.0	---	38.5	54.0	15.5	V
17209.8	53.2	---	68.2	15.0	V
22980.1	45.3	---	74.0	28.7	H
22980.1	---	35.4	54.0	18.6	V

Radiated Spurious – CH157

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBµV/m	dBµV/m	dBµV/m	dB	---
3201.5	59.5	---	68.2	8.7	V
11552.8	---	48.9	54.0	5.2	H
11553.3	56.0	---	74.0	18.1	H
17329.1	52.9	---	68.2	15.3	H
23139.7	46.1	---	68.2	22.1	H

Radiated Spurious – CH165

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3398.0	58.5	---	68.2	9.7	H
11633.0	48.5	---	74.0	25.5	H
11633.0	---	40.8	54.0	13.2	H
23265.3	46.8	---	68.2	21.4	V
23299.8	46.5	---	68.2	21.8	V

1 GHz - 40 GHz, 802.11ax40, HE0, Chain A DIV1**Radiated Spurious – CH151**

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3096.5	59.8	---	68.2	8.4	H
11474.0	---	47.8	54.0	6.2	H
11474.5	55.1	---	74.0	18.9	H
11509.8	---	38.0	54.0	16.0	H
11510.8	48.2	---	74.0	25.8	H
17210.7	55.3	---	68.2	12.9	V
23020.2	45.2	---	74.0	28.8	V
23020.2	---	36.2	54.0	17.8	V

Radiated Spurious – CH159

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3089.5	59.5	---	68.2	8.7	V
11553.8	---	49.8	54.0	4.2	H
11554.8	55.9	---	74.0	18.1	H
17332.5	56.2	---	68.2	12.0	V
23180.3	47.4	---	68.2	20.8	V

1 GHz - 40 GHz, 802.11ax40, HE0, Chain A DIV2

Radiated Spurious – CH151

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3198.0	59.1	---	68.2	9.1	V
11474.0	---	49.4	54.0	4.6	H
11474.5	55.1	---	74.0	18.9	H
11509.8	---	38.3	54.0	15.7	V
11511.7	48.9	---	74.0	25.1	V
17210.7	52.6	---	68.2	15.6	V
23019.2	45.8	---	74.0	28.2	V
23019.7	---	35.9	54.0	18.1	V

Radiated Spurious – CH159

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3285.0	59.3	---	68.2	8.9	V
11554.3	---	49.1	54.0	4.9	H
11554.8	55.8	---	74.0	18.2	H
17327.7	52.6	---	68.2	15.6	V
23179.8	46.5	---	68.2	21.7	V

1 GHz - 40 GHz, 802.11ax80, HE0, Chain A DIV1

Radiated Spurious – CH155

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3374.0	58.7	---	68.2	9.5	V
11473.5	55.3	---	74.0	18.7	V
11474.0	---	48.7	54.0	5.3	V
17210.7	55.7	---	68.2	12.5	V
23100.0	45.8	---	74.0	28.2	V
23100.0	---	36.8	54.0	17.2	V

1 GHz - 40 GHz, 802.11ax80, HE0, Chain A DIV2

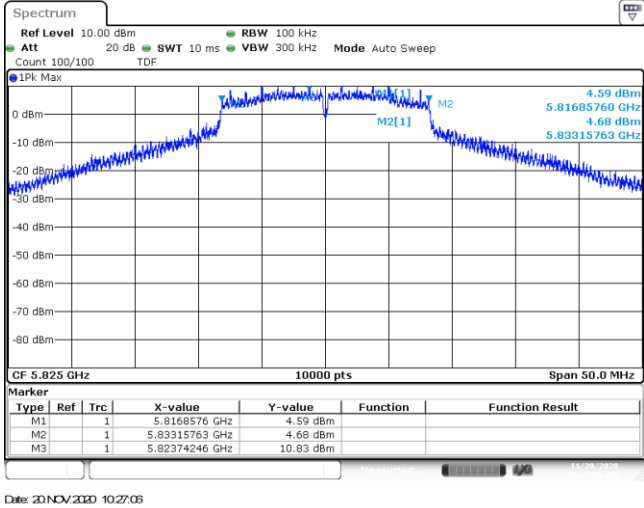
Radiated Spurious – CH155

Frequency	MaxPeak	Average	Limit	Margin	Polar
MHz	dBμV/m	dBμV/m	dBμV/m	dB	---
3367.5	58.9	---	68.2	9.3	V
11474.0	---	50.6	54.0	3.4	H
11475.0	55.9	---	74.0	18.1	H
17210.7	52.2	---	68.2	16.0	V
23100.0	45.5	---	74.0	28.5	V
23100.0	---	36.1	54.0	17.9	V

Annex C. System Plots

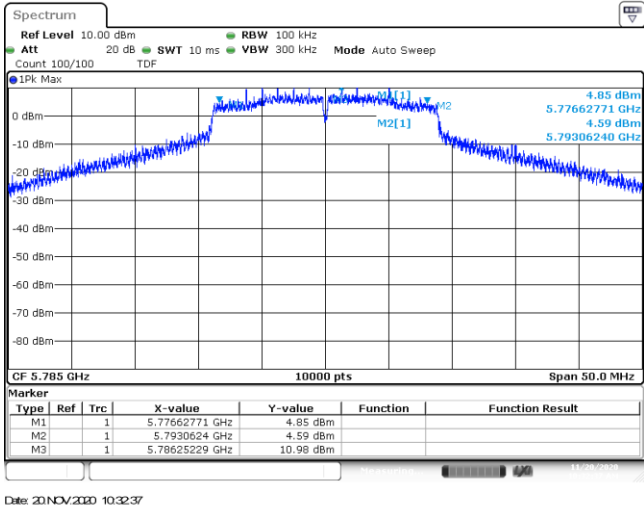
C.1.1 6dB Bandwidth

CHAIN A DIV 2, 802.11a, 6Mbps



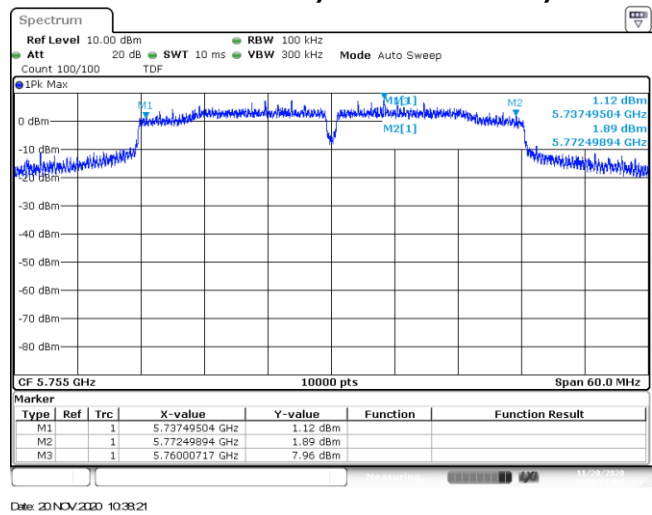
Channel 165

CHAIN A DIV 2, 802.11n20, HT0



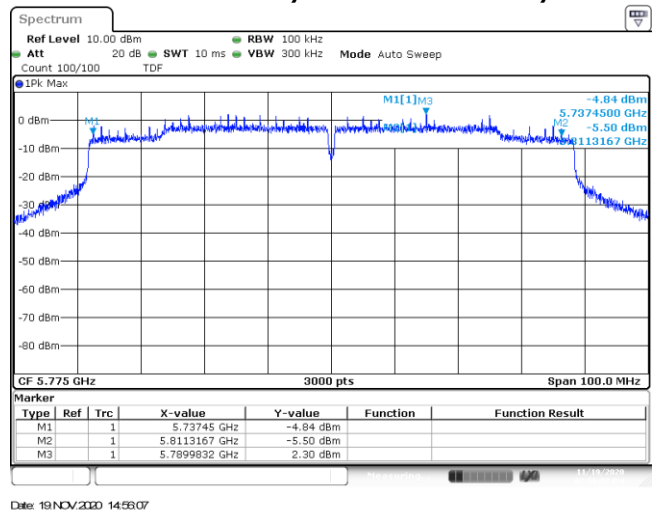
Channel 157

CHAIN A DIV 2, 802.11n40, HT0



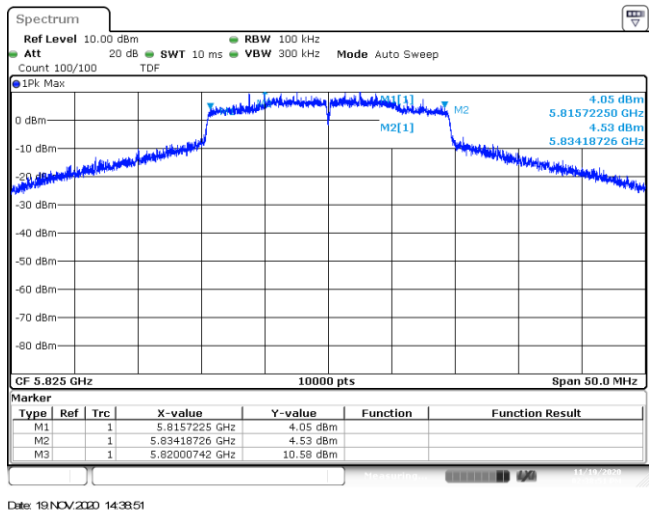
Channel 151

CHAIN A DIV 1, 802.11ac80, VHT0



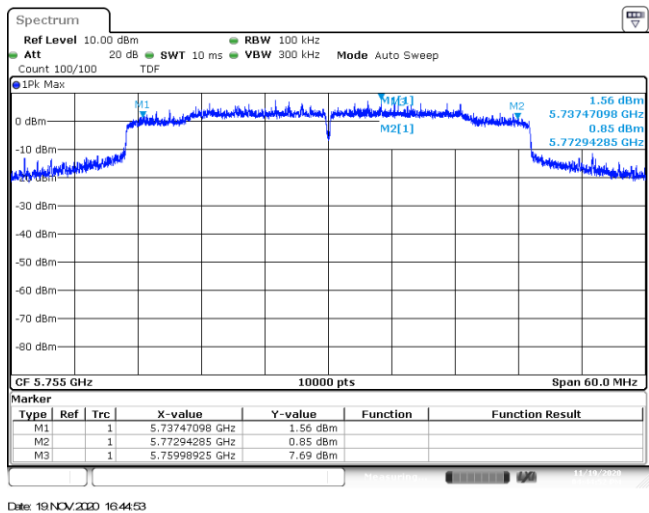
Channel 155

CHAIN A DIV 1, 802.11ax20, HE0



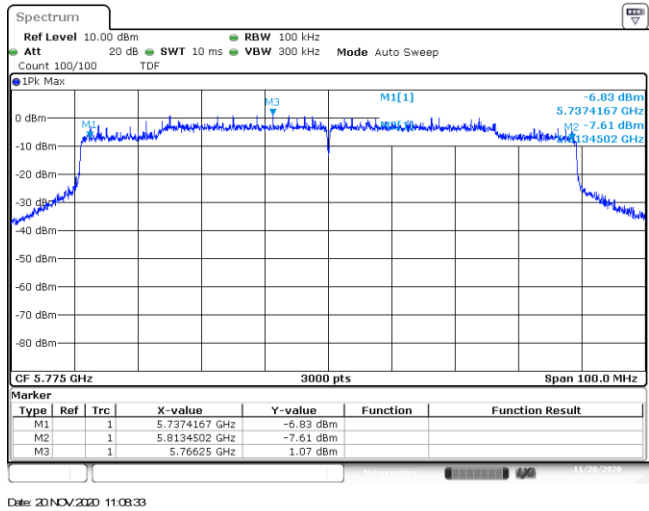
Channel 165

CHAIN A DIV 1, 802.11ax40, HE0



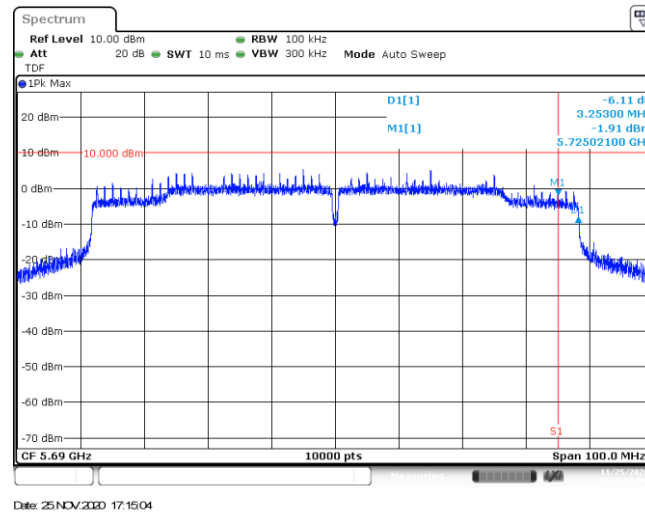
Channel 151

CHAIN A DIV 2, 802.11ax80, HE0

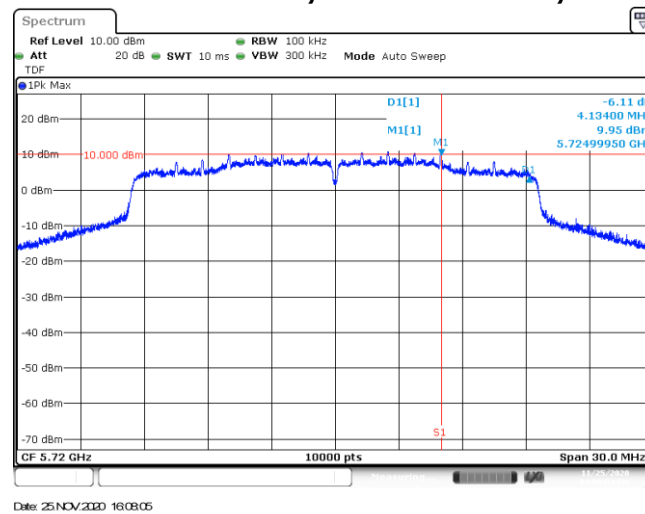


Channel 155

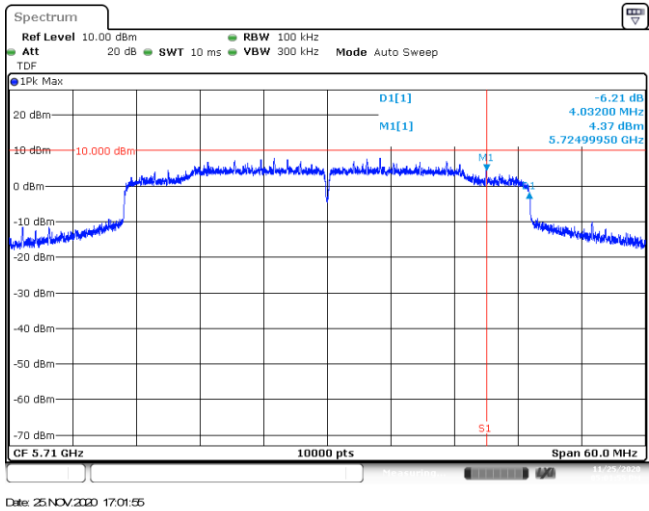
CHAIN A DIV 1, 802.11ac80, VHT0



CHAIN A DIV 1, 802.11ax20, HE0

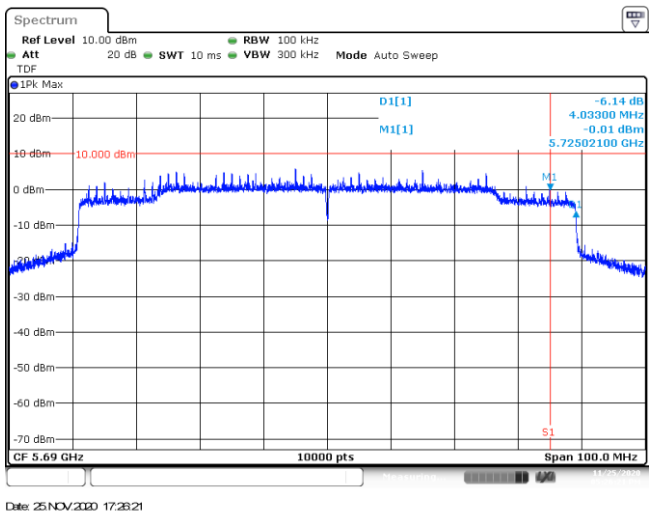


CHAIN A DIV 1, 802.11ax40, HE0



Channel 142 (Overlapped Channel)

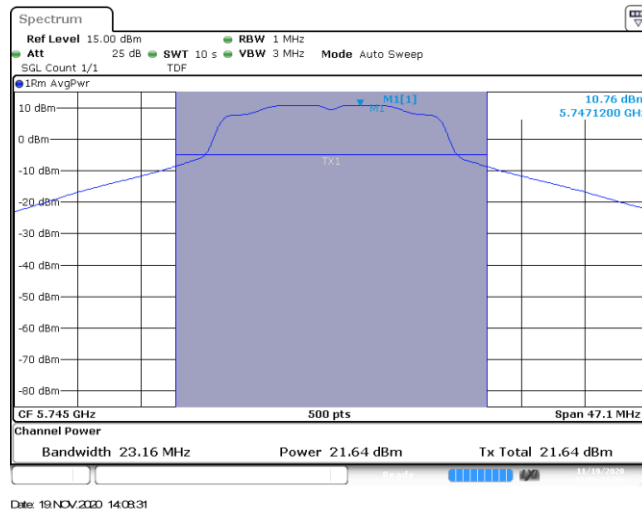
CHAIN A DIV 1, 802.11ax80, HE0



Channel 138 (Overlapped Channel)

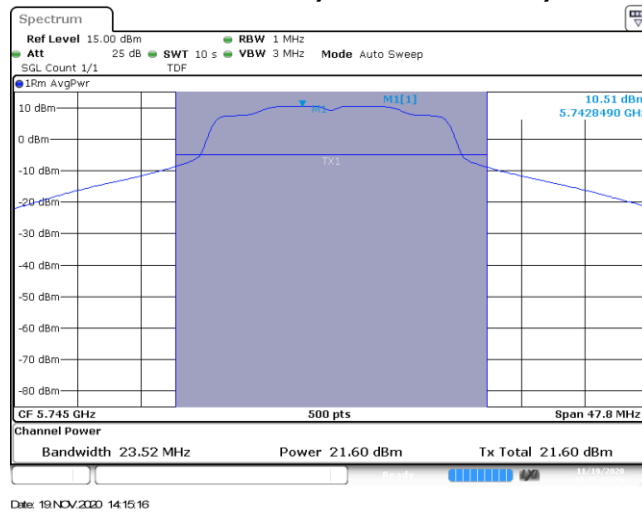
C.1.3 Maximum output power

CHAIN A DIV 1, 802.11a, 6Mbps



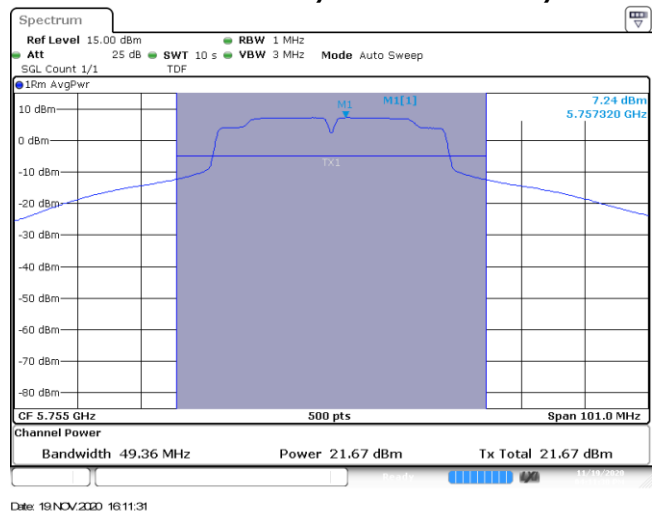
Channel 149

CHAIN A DIV 1, 802.11n20, HT0



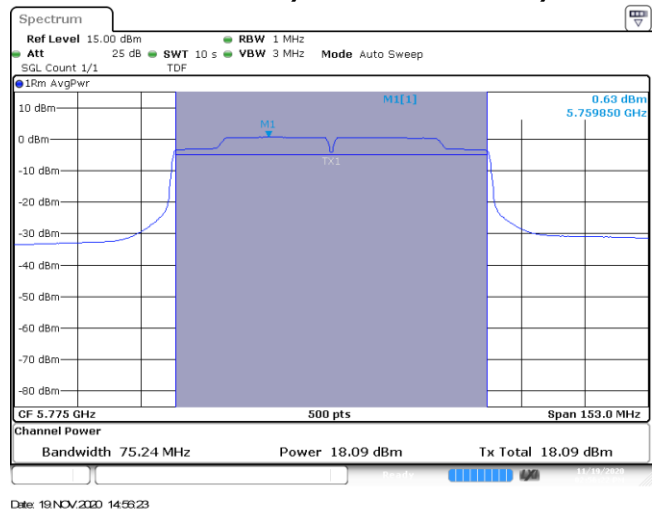
Channel 149

CHAIN A DIV 1, 802.11n40, HT0



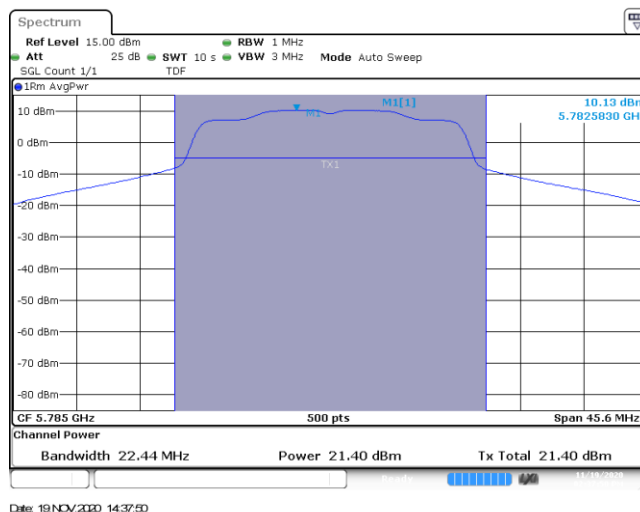
Channel 151

CHAIN A DIV 1, 802.11ac80, VHT0



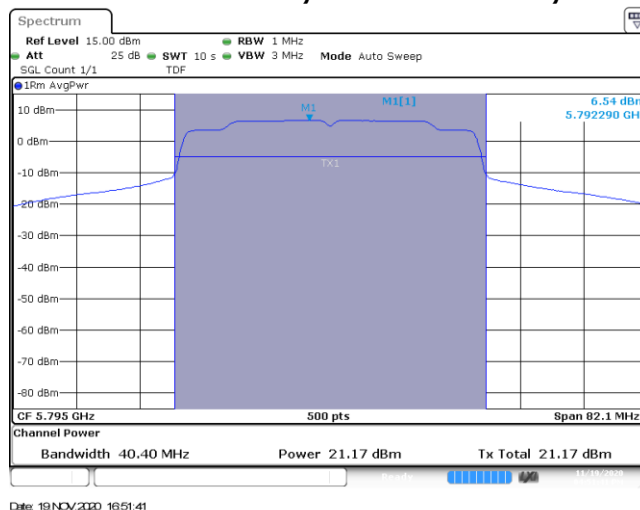
Channel 155

CHAIN A DIV 1, 802.11ax20, HE0



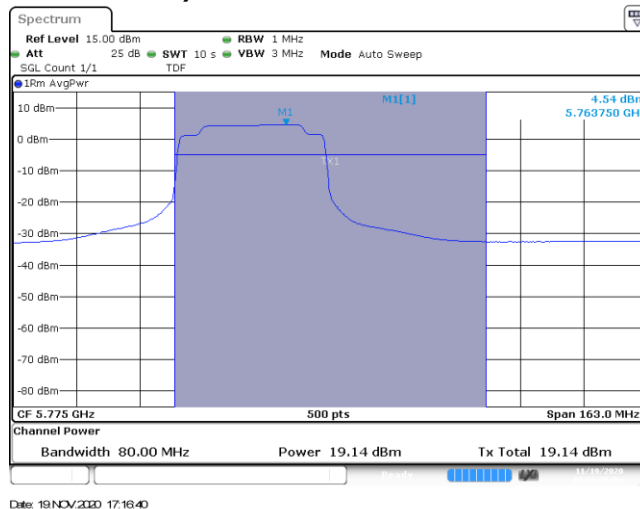
Channel 157

CHAIN A DIV 1, 802.11ax40, HE0



Channel 159

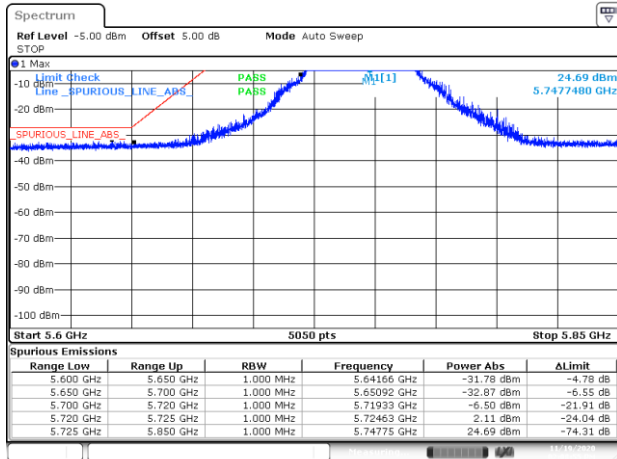
CHAIN A DIV 1, 802.11ax80 – RU484/65, HE0



Channel 155

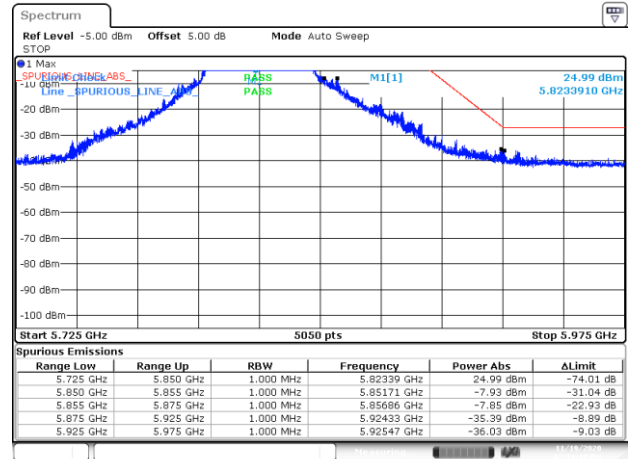
C.1.4 Undesirable emission limits : out of band (Conducted)

CHAIN A DIV 1



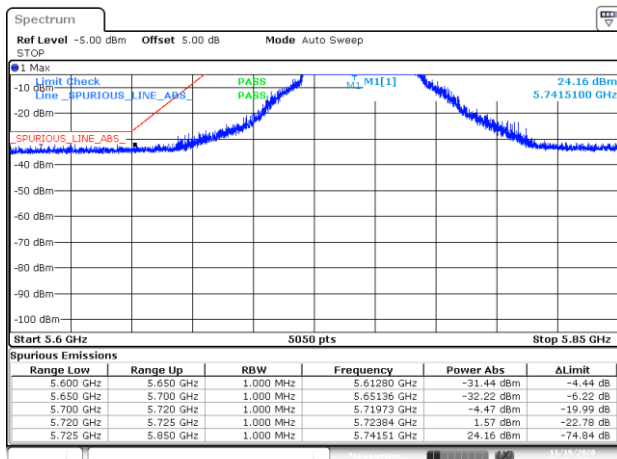
Date: 19/NOV/2020 14:08:55

BE-NR-LOW, DIV 1, 802.11a-6Mbps, Ch149



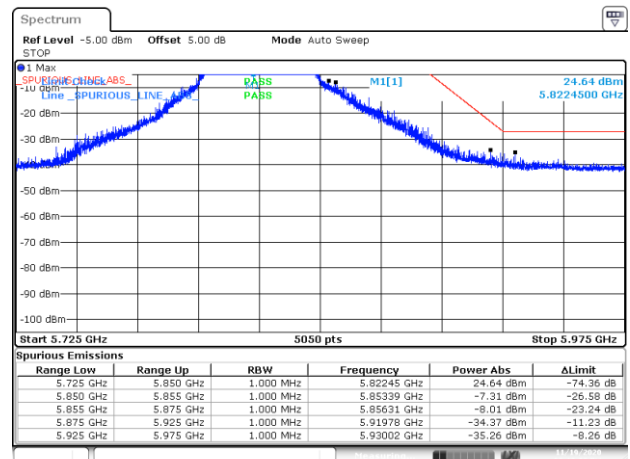
Date: 19/NOV/2020 14:11:18

BE-NR-HIGH, DIV 1, 802.11a-6Mbps, Ch165



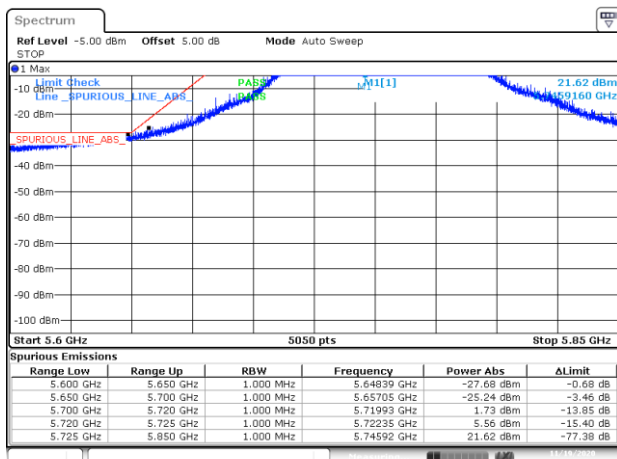
Date: 19/NOV/2020 14:15:41

BE-NR-LOW, DIV 1, 802.11n20-HT0, Ch149

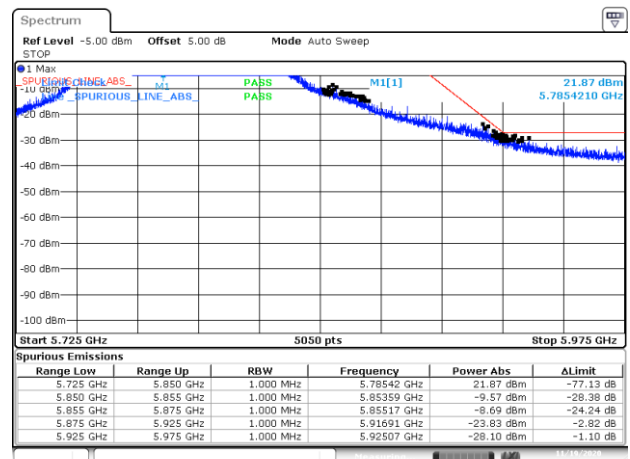


Date: 19/NOV/2020 14:18:02

BE-NR-HIGH, DIV 1, 802.11n20-HT0, Ch165

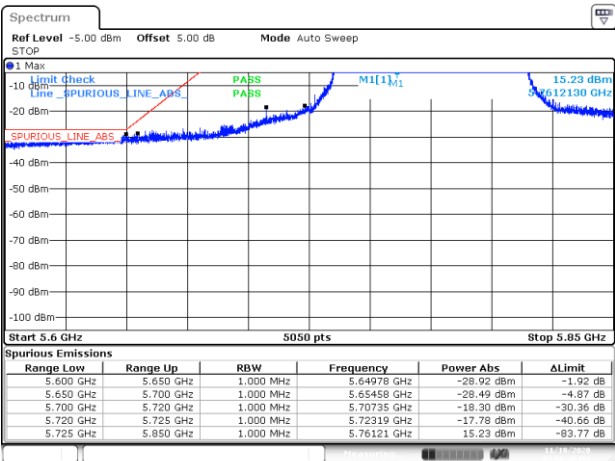


Date: 19/NOV/2020 16:11:55



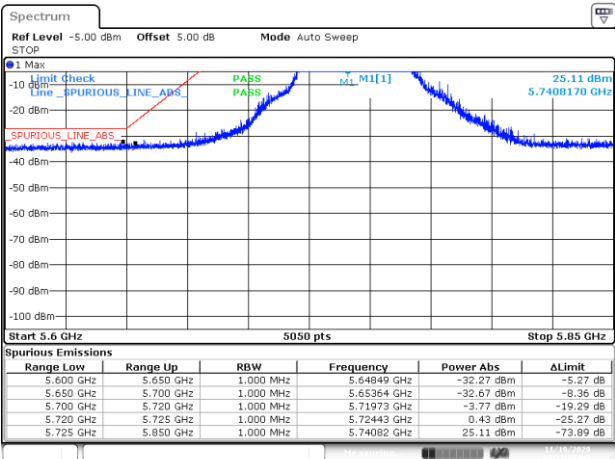
Date: 19/NOV/2020 14:23:31

BE-NR-LOW, DIV 1, 802.11n40-HT0, Ch151



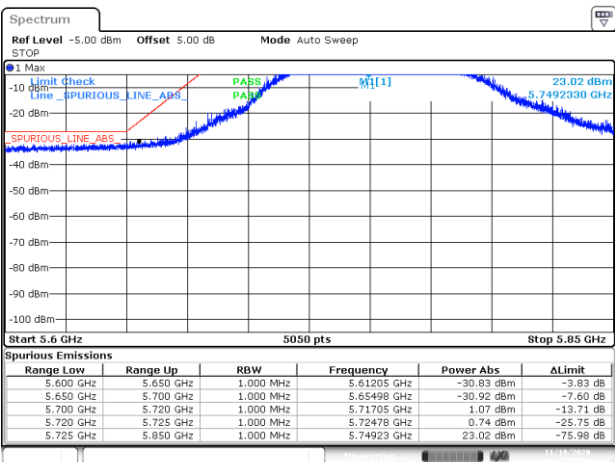
Date: 19 NOV 2020 14:58:47

BE-NR-LOW, DIV 1, 802.11ac80-VHT0, Ch155



Date: 19 NOV 2020 14:33:55

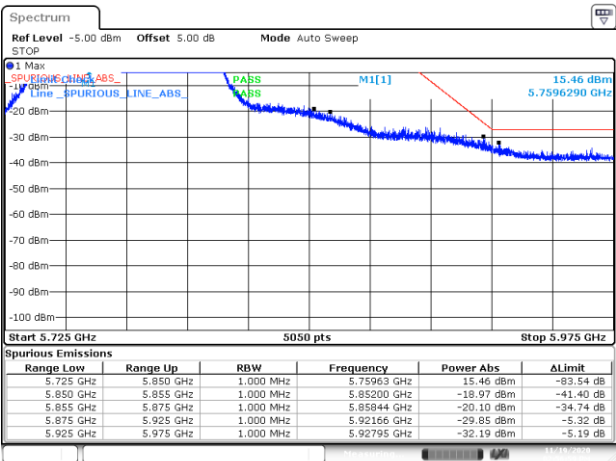
BE-NR-LOW, DIV 1, 802.11ax20-HE0, Ch149



Date: 19 NOV 2020 16:45:33

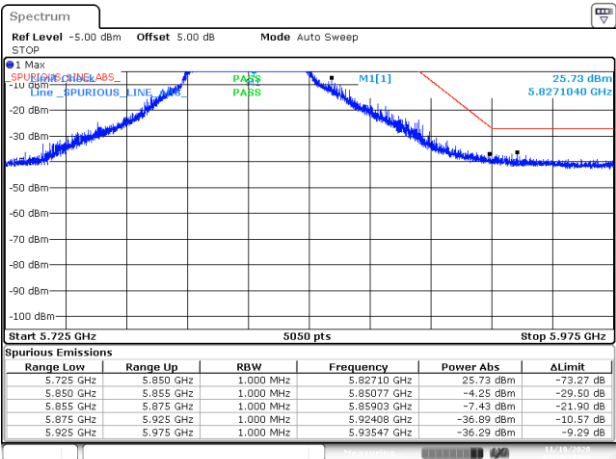
BE-NR-LOW, DIV 1, 802.11ax40-HE0, Ch151

BE-NR-HIGH, DIV 1, 802.11n40-HT0, Ch159



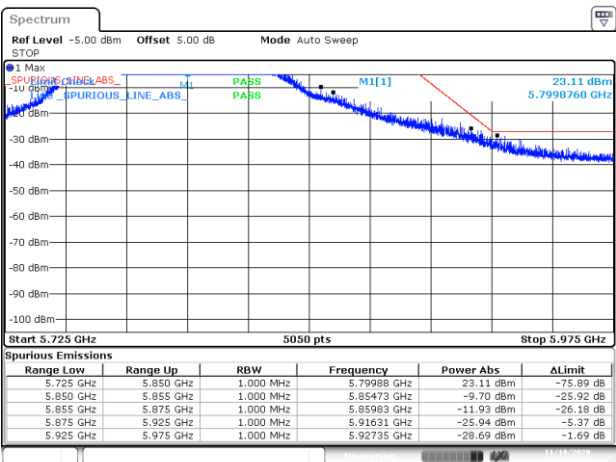
Date: 19 NOV 2020 14:55:59

BE-NR-HIGH, DIV 1, 802.11ac80-VHT0, Ch155



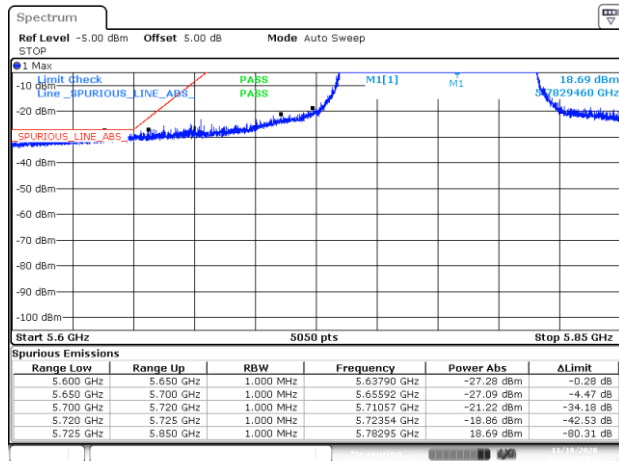
Date: 19 NOV 2020 14:39:32

BE-NR-HIGH, DIV 1, 802.11ax20-HE0, Ch165



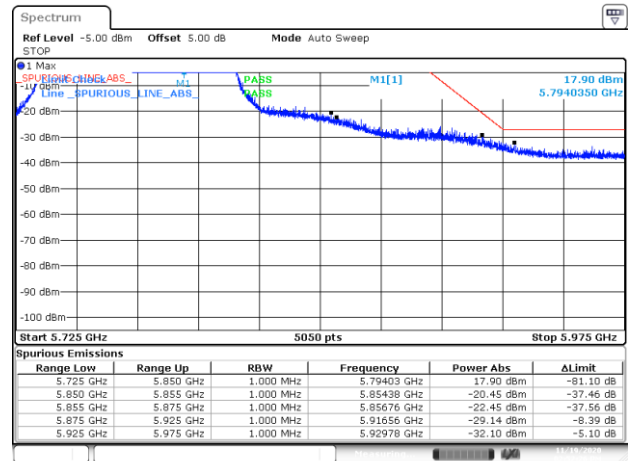
Date: 19 NOV 2020 16:52:05

BE-NR-HIGH, DIV 1, 802.11ax40-HE0, Ch159



Date: 19 NOV 2020 14:52:15

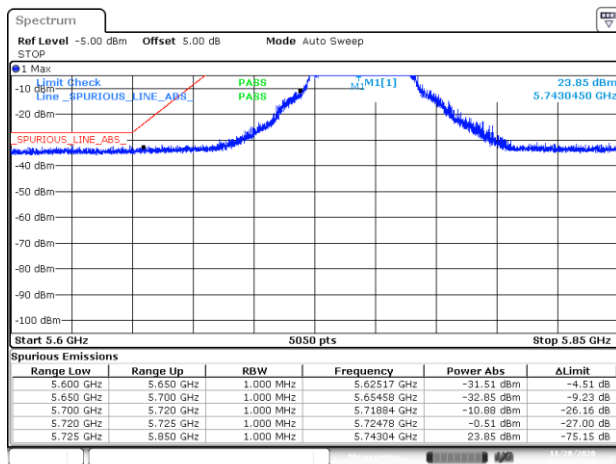
BE-NR-LOW, DIV 1, 802.11ac80-HE0, Ch155



Date: 19 NOV 2020 14:52:26

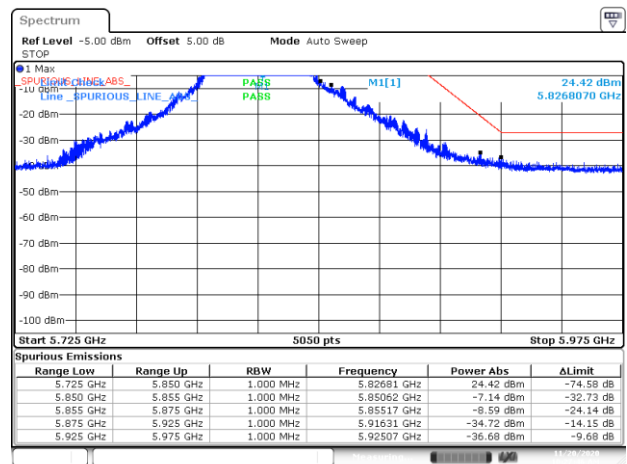
BE-NR-HIGH, DIV 1, 802.11ac80-HE0, Ch155

CHAIN A DIV 2



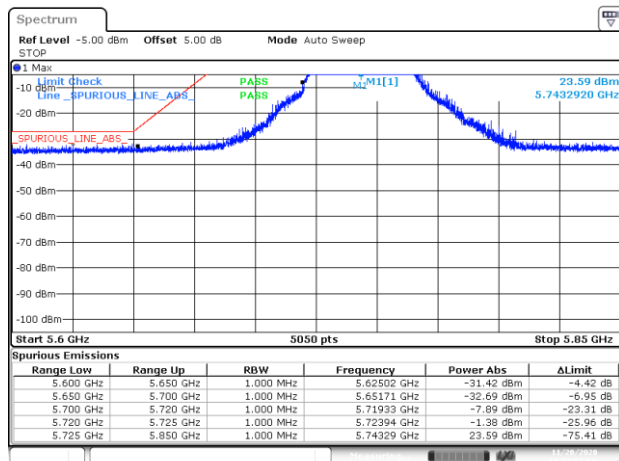
Date: 20 NOV 2020 10:25:23

BE-NR-LOW, DIV 2, 802.11a-6Mbps, Ch149



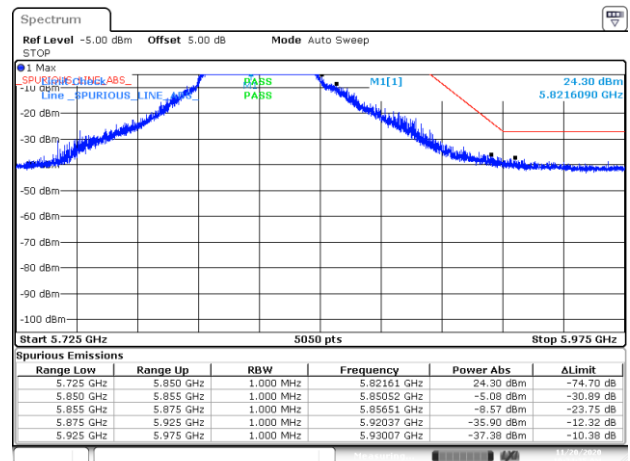
Date: 20 NOV 2020 10:27:46

BE-NR-HIGH, DIV 2, 802.11a-6Mbps, Ch165



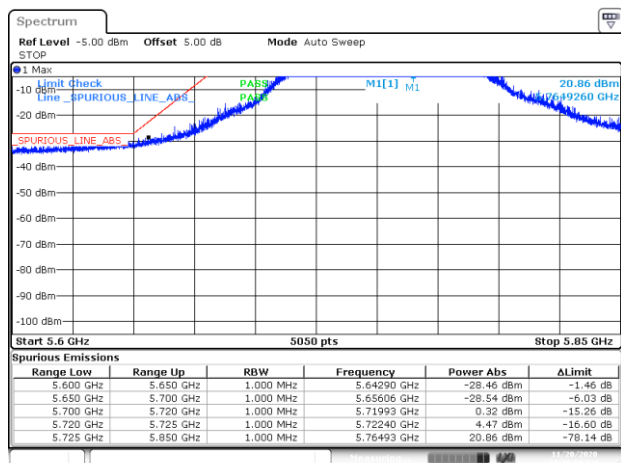
Date: 20 NOV 2020 10:32:12

BE-NR-LOW, DIV 2, 802.11n20-HT0, Ch149



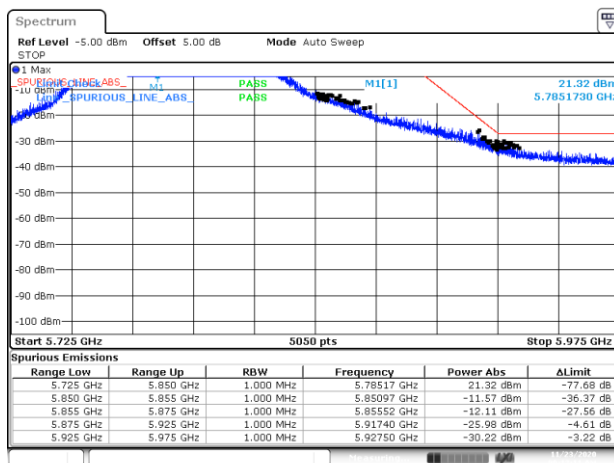
Date: 20 NOV 2020 10:34:36

BE-NR-HIGH, DIV 2, 802.11n20-HT0, Ch165



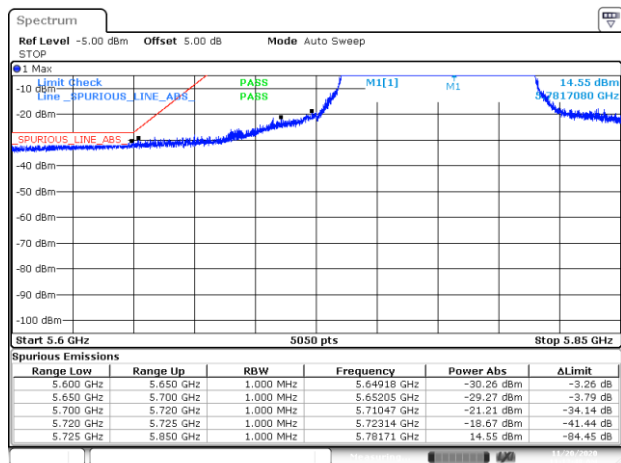
Date: 20/NOV/2020 10:39:01

BE-NR-LOW, DIV 2, 802.11n40-HT0, Ch151



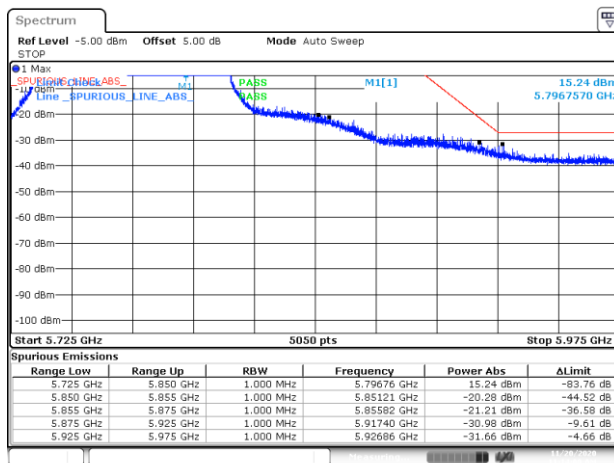
Date: 23/NOV/2020 09:12:11

BE-NR-HIGH, DIV 2, 802.11n40-HT0, Ch159



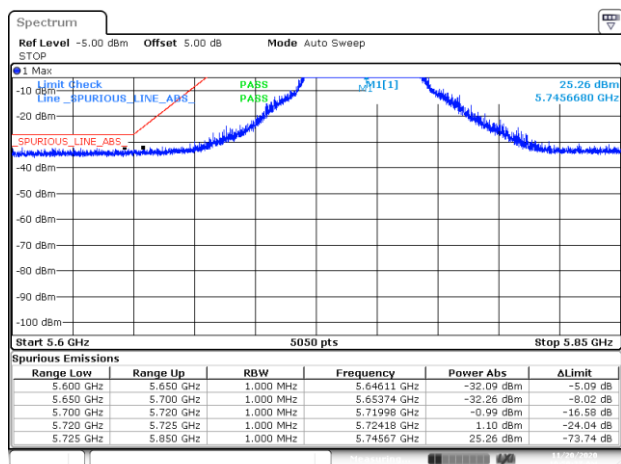
Date: 20/NOV/2020 11:13:49

BE-NR-LOW, DIV 2, 802.11ac80-VHT0, Ch155



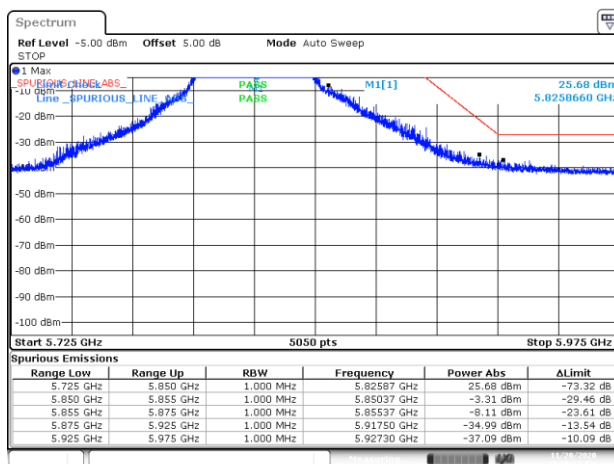
Date: 20/NOV/2020 11:14:01

BE-NR-HIGH, DIV 2, 802.11ac80-VHT0, Ch155



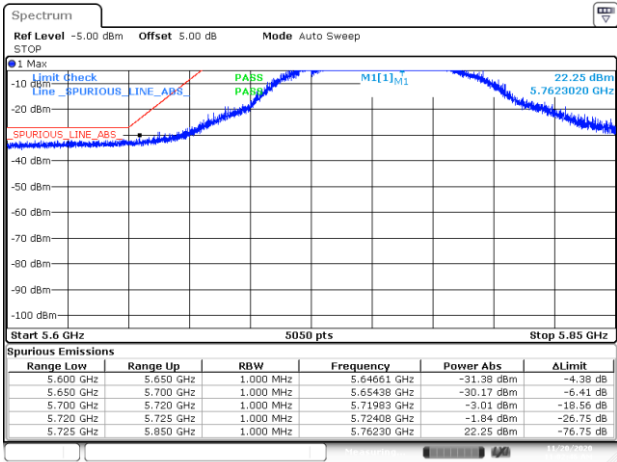
Date: 20/NOV/2020 10:50:37

BE-NR-LOW, DIV 2, 802.11ax20-HE0, Ch149



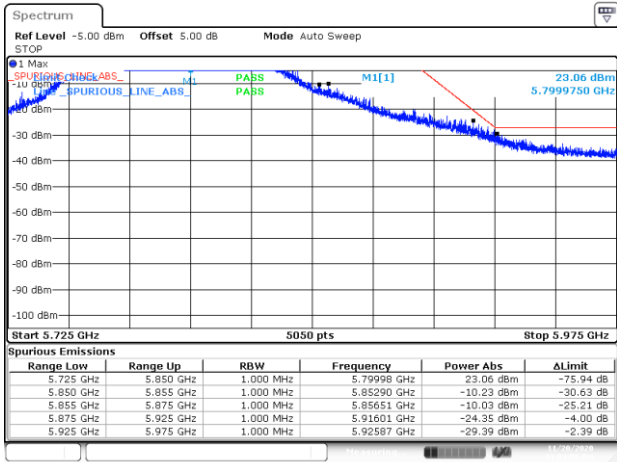
Date: 20/NOV/2020 10:58:18

BE-NR-HIGH, DIV 2, 802.11ax20-HE0, Ch165



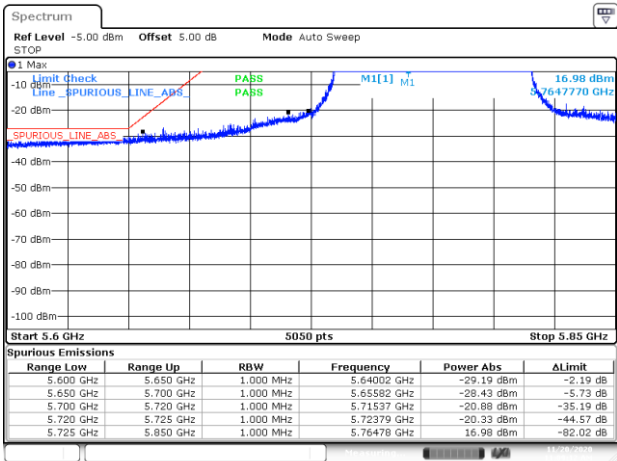
Date: 20 NOV 2020 11:02:46

BE-NR-LOW, DIV 2, 802.11ax40-HE0, Ch151



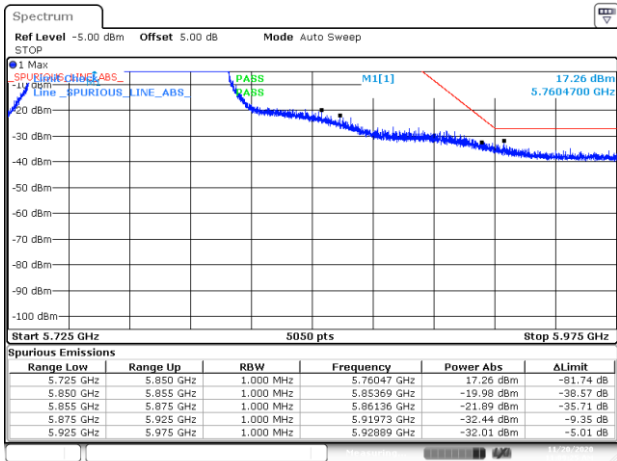
Date: 20 NOV 2020 11:04:58

BE-NR-HIGH, DIV 2, 802.11ax40-HE0, Ch159



Date: 20 NOV 2020 11:09:13

BE-NR-LOW, DIV 2, 802.11ac80-HE0, Ch155



Date: 20 NOV 2020 11:09:25

BE-NR-HIGH, DIV 2, 802.11ac80-HE0, Ch155