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Revision History

Issued Report No.	Issued Date	Revisions	Effect Section
ICRT-TR-E241967-0A	2024. 07. 22	Initial Issue	All



1. Applicant & Manufacturer & Test Laboratory Information

1.1 Applicant information

Applicant	AURES TECHNOLOGIES S.A.
Address	24 bis rue Léonard de Vinci, 91090 Lisses FRANCE

1.2 Manufacturer Information

Applicant	AURES TECHNOLOGIES S.A.
Address	24 bis rue Léonard de Vinci, 91090 Lisses FRANCE

1.3 Test Laboratory Information

Laboratory	ICR Co., Ltd.
Address	112, Hwanggeum 3-ro 7beon-gil, Hagun-ri, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea
Telephone No.	+82-2-6351-9002
Fax No.	+82-2-6351-9007
KOLAS No.	KT652
KC & FCC	KR0165

1.4 Measurement Uncertainty

Parameter	Uncertainty	Limit
Occupied Channel Bandwidth	2.75%	±5 %
RF output power, conducted	1.39 dB	±1.5 dB
Power Spectral Density, conducted	1.65 dB	±3 dB
Unwanted Emissions, conducted	1.82 dB	±3 dB
Supply voltages	0.06%	±3 %
Time	1.17%	±5 %
All emissions, radiated (Under the 1 GHz)	3.22 dB	±6 dB
All emissions, radiated (Above the 1 GHz)	3.67 dB	±6 dB



2. Equipment under Test(EUT) Information

2.1 General Information

Product Name	POS SYSTEM
Model Name	EKO
Additional Model Name	-
FCC ID	2AUQF-EKO
Power Supply	DC 12.0 V

2.2 Additional Information

Equipment Class	NII - National Information Infrastructure	
Device Type	Stand-alone	
Operating Frequency	802.11n(20 MHz BW)	5 180 MHz ~ 5 240 MHz
		5 745 MHz ~ 5 825 MHz
	802.11n(40 MHz BW)	5 190 MHz ~ 5 230 MHz
		5 755 MHz ~ 5 795 MHz
RF Output Power	802.11n(20 MHz BW)	14.68 dBm
	802.11n(40 MHz BW)	14.57 dBm
Number of Channel	802.11n(20 MHz BW)	9
	802.11n(40 MHz BW)	4
Modulation Type	OFDM	
Antenna Type	FPCB Antenna	
Antenna Gain	0.60 dBi	

2.3 Operating frequency and channel

UNII - 1	802.11n(20 MHz BW)	ch 36	ch 44	ch 48
		5 180 MHz	5 220 MHz	5 240 MHz
	802.11n(40 MHz BW)	ch 38	ch 46	-
		5 190 MHz	5 230 MHz	-
UNII - 3	802.11n(20 MHz BW)	ch 149	ch 157	ch 165
		5 745 MHz	5 785 MHz	5 825 MHz
	802.11n(40 MHz BW)	ch 151	ch 159	-
		5 755 MHz	5 795 MHz	-

※The EUT is continuous transmission mode during the test with set to each of the Low Channel, Middle Channel, and High Channel at the worst case data rate.

The worst case data rate for each modulation is determined MCS0 for HT20, HT40.



3. Test Summary

3.1 Test standards and results

FCC Part 15 Subpart E			
Clause	Test items	Applied	Results
§15.407(a)	26 dB Bandwidth	■	PASS
§15.407(a)	Maximum Conducted Output Power	■	PASS
§15.407(a)	Power Spectral Density	■	PASS
§15.407(e)	6 dB Bandwidth	■	PASS
§15.407(b), 15.205(a),15.209(a)	Radiated Spurious Emission	■	PASS
§15.207	Power Line Conducted Emission	■	PASS
§15.203	Antenna Requiremen	■	PASS

3.2 Purpose of the test

- To determine whether the equipment under test fulfills the requirements of the standards stated in section 3.1 and the provision of Article 3.2 of Directive 2014/53/EU

3.3 Test Methodology

- Both conducted and radiated testing was performed according to the procedures in ANSI C63.10: 2013. Radiated testing was performed at a distance of 3 m from EUT to the antenna.

3.4 Configuration of Test System

- Both conducted and radiated testing was performed according to the procedures in ANSI C63.10: 2013. Radiated testing was performed at a distance of 3 m from EUT to the antenna.

3.4.1 Radiated emission test

- Preliminary radiated emissions test were conducted using the procedure in ANSI C63.10: 2013 to determine the worse operating conditions. Final radiated emission tests were conducted at 3 m Semi Anechoic Chamber.

The turntable was rotated through 360 degrees and the EUT was tested by positioned three orthogonal planes to obtain the highest reading on the field strength meter. Once maximum reading was determined, the search antenna was raised and lowered in both vertical and horizontal polarization.



3.5 Antenna requirement

- According to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section.

The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

And according to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi.

Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Result: Pass

The transmitter has a **FPCB Antenna**. The directional gain of the antenna is **0.60 dBi**.



4. Test Result

4.1 Duty cycle

4.1.1 Test procedure

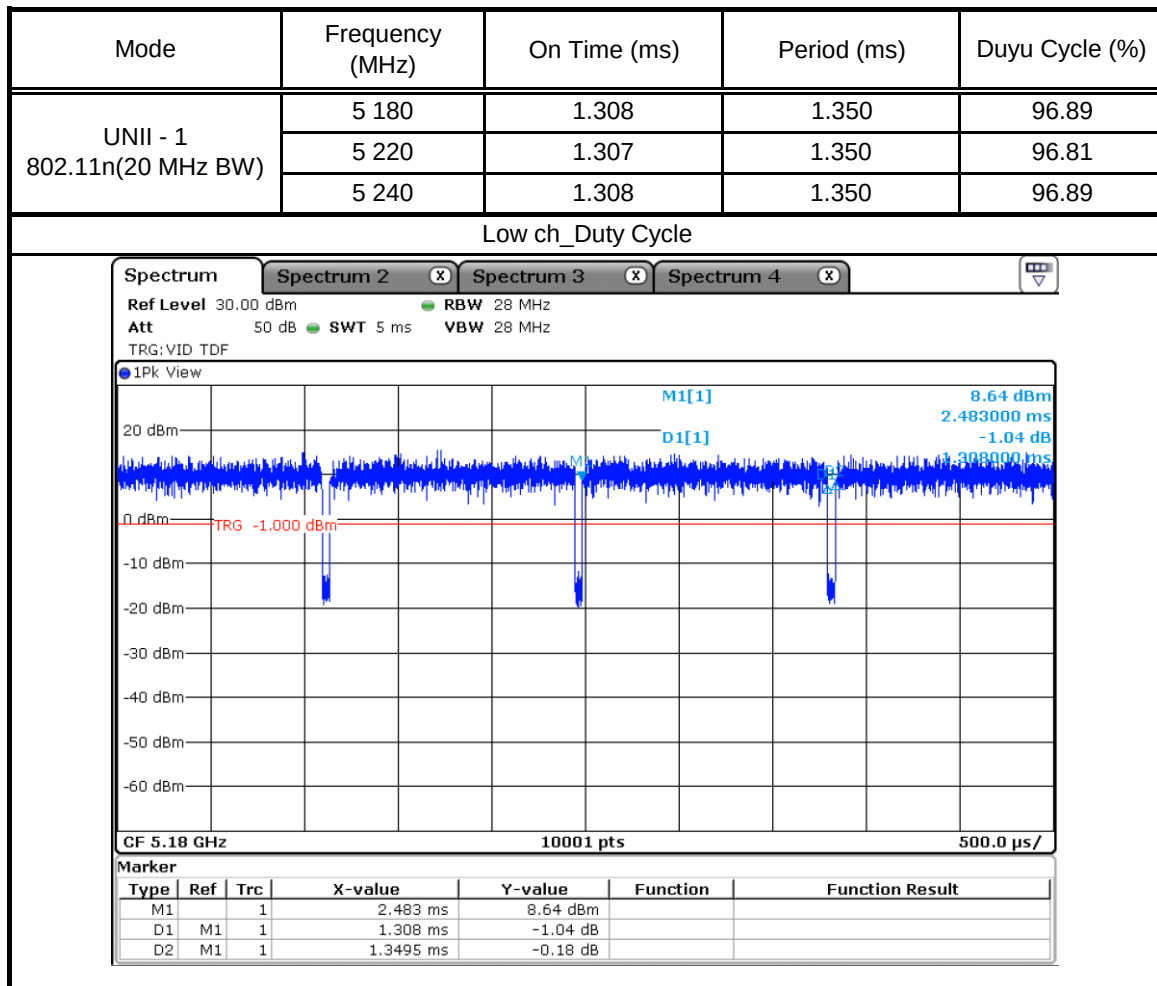
ANSI C63.10-2013 Clause 12.2

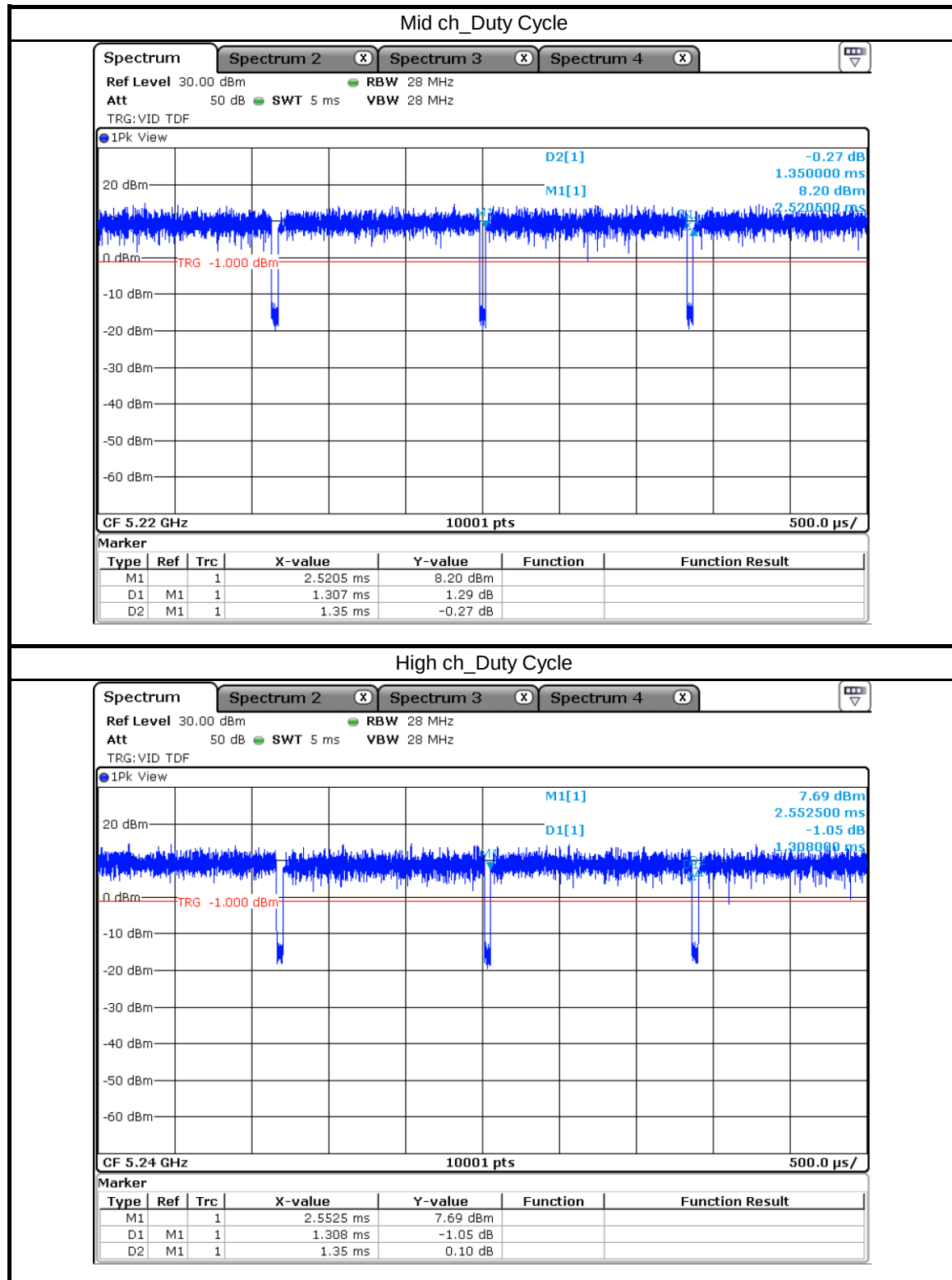
4.1.2 Limit

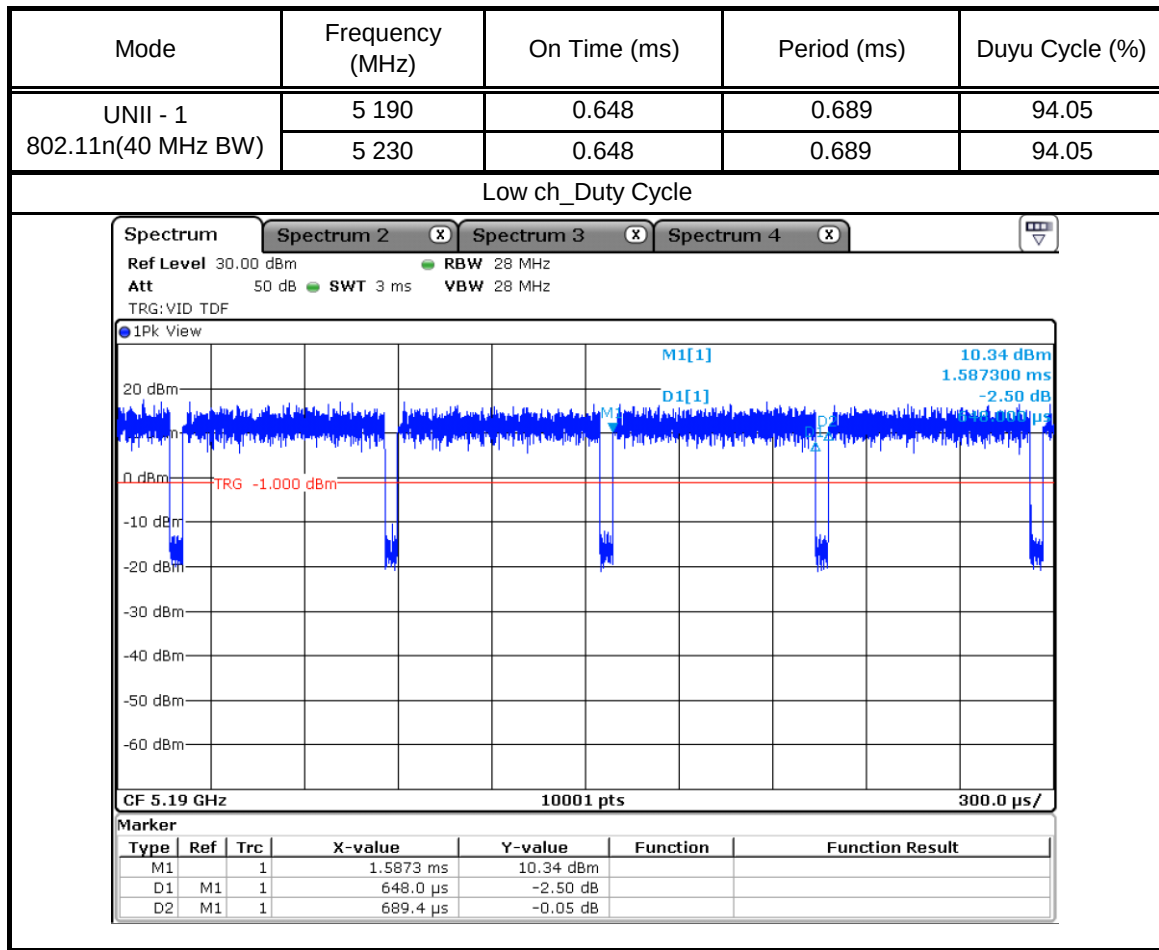
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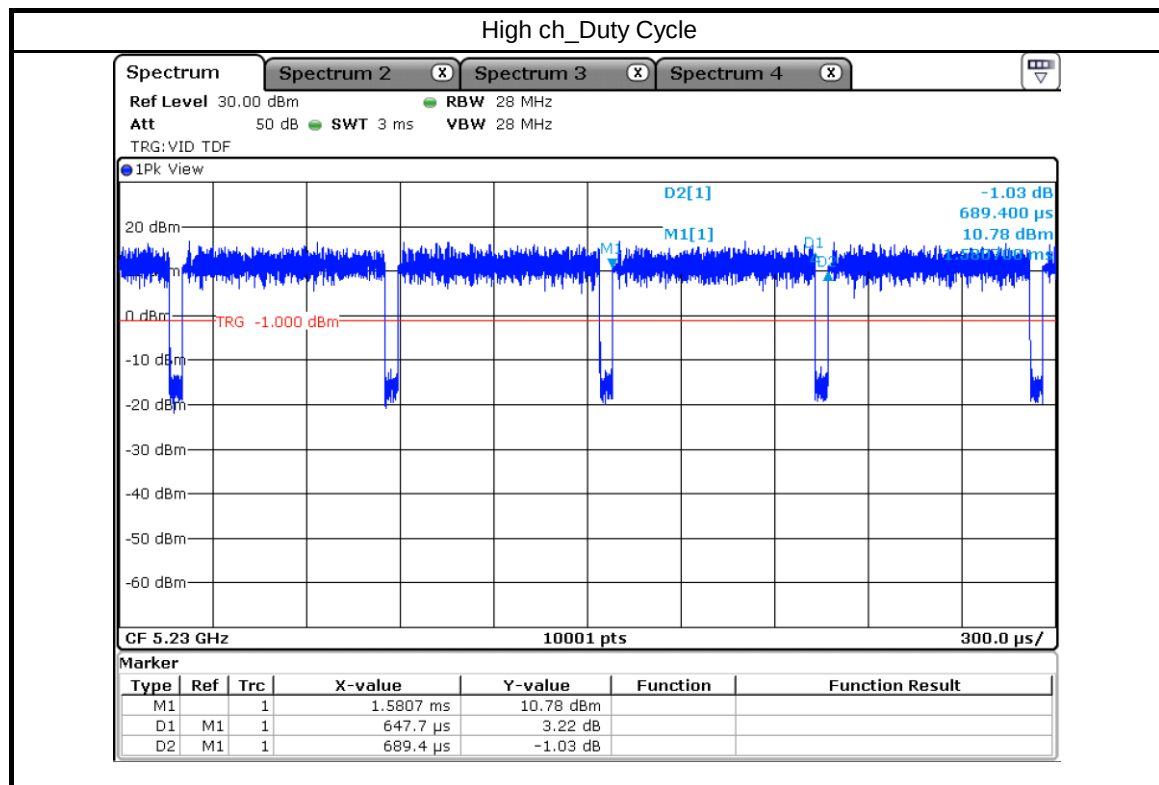
4.1.3 Test data

Result : -





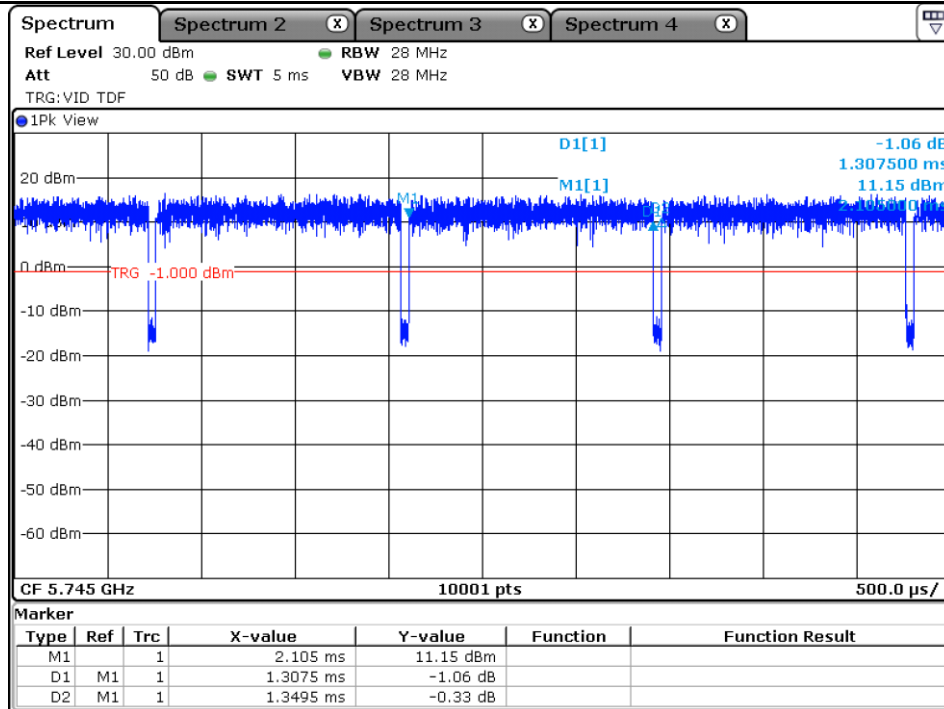


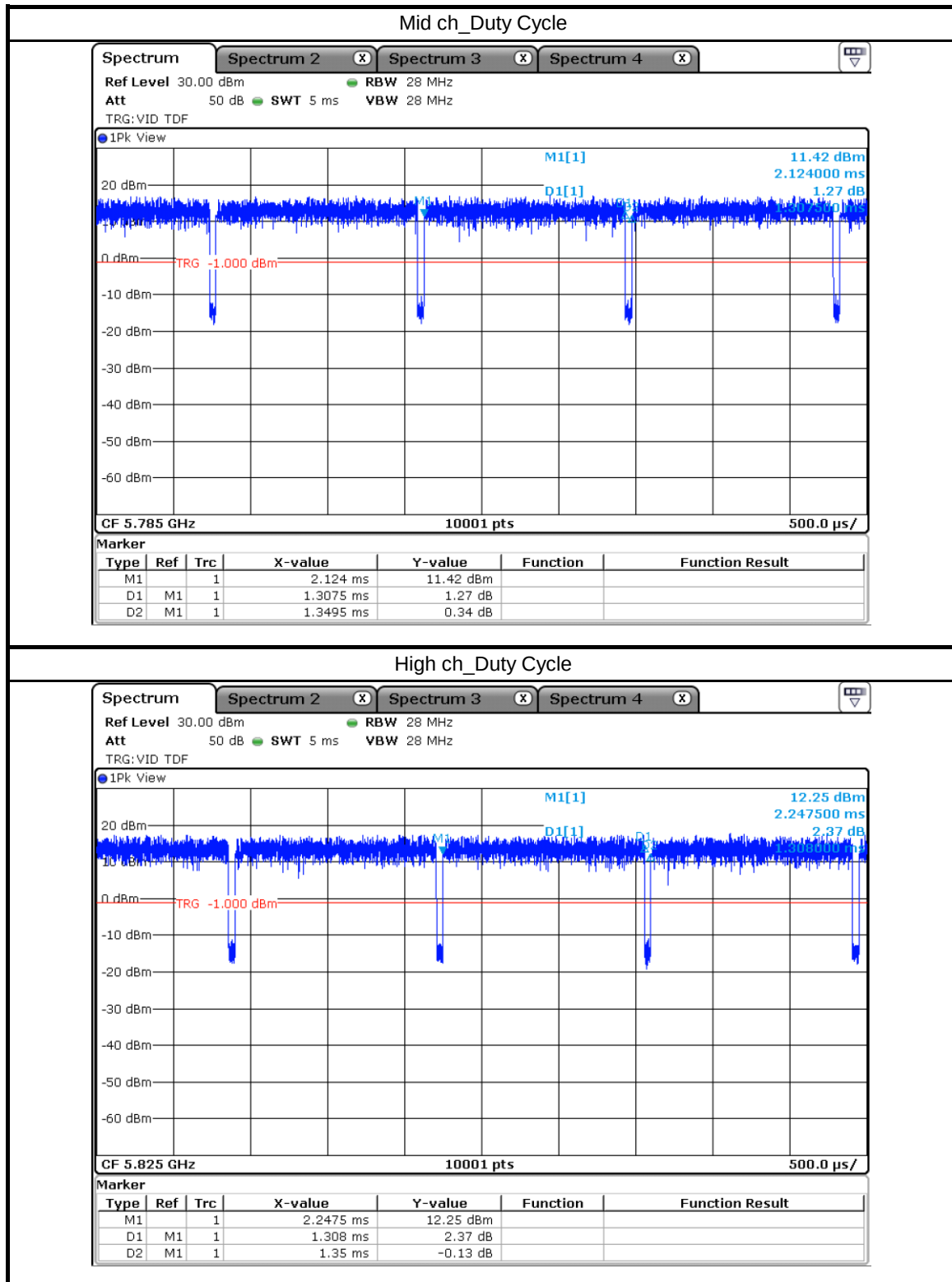


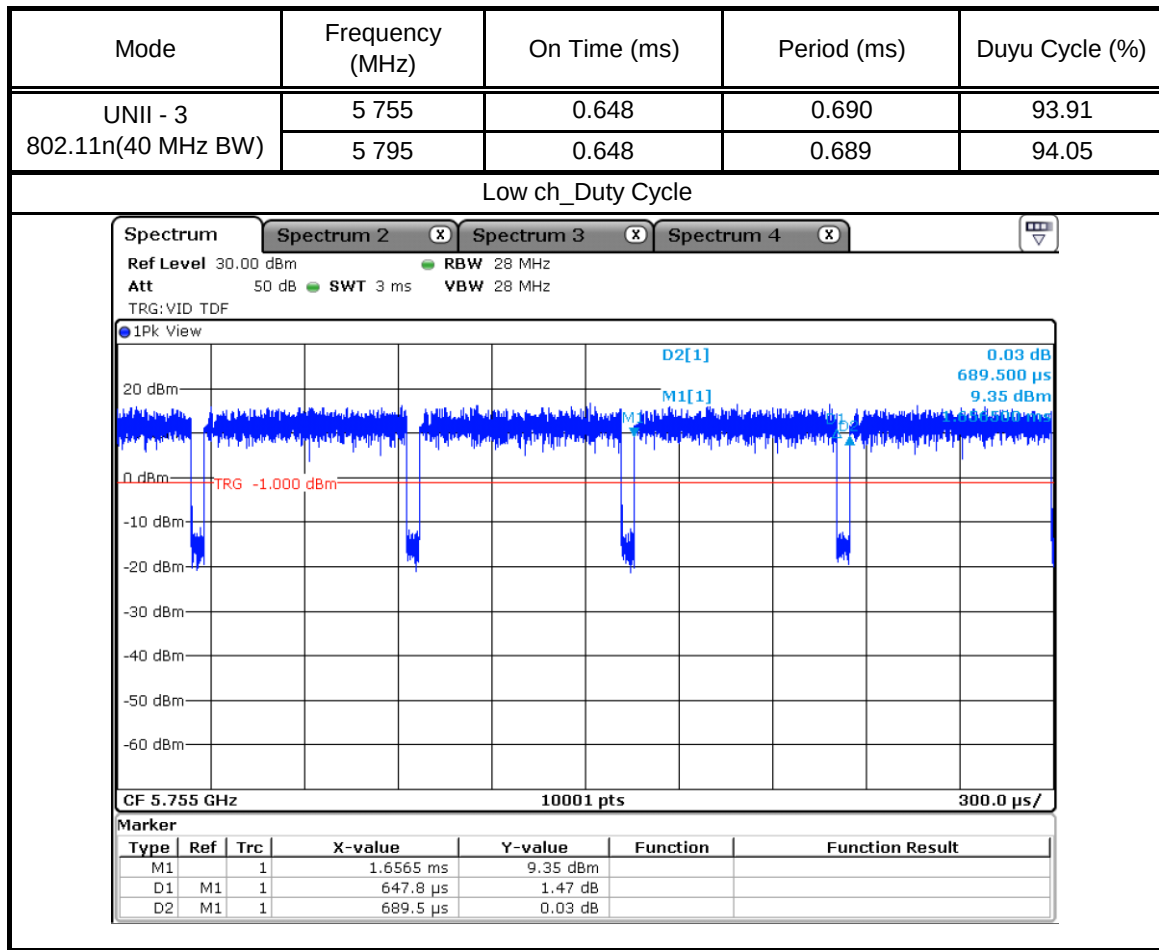


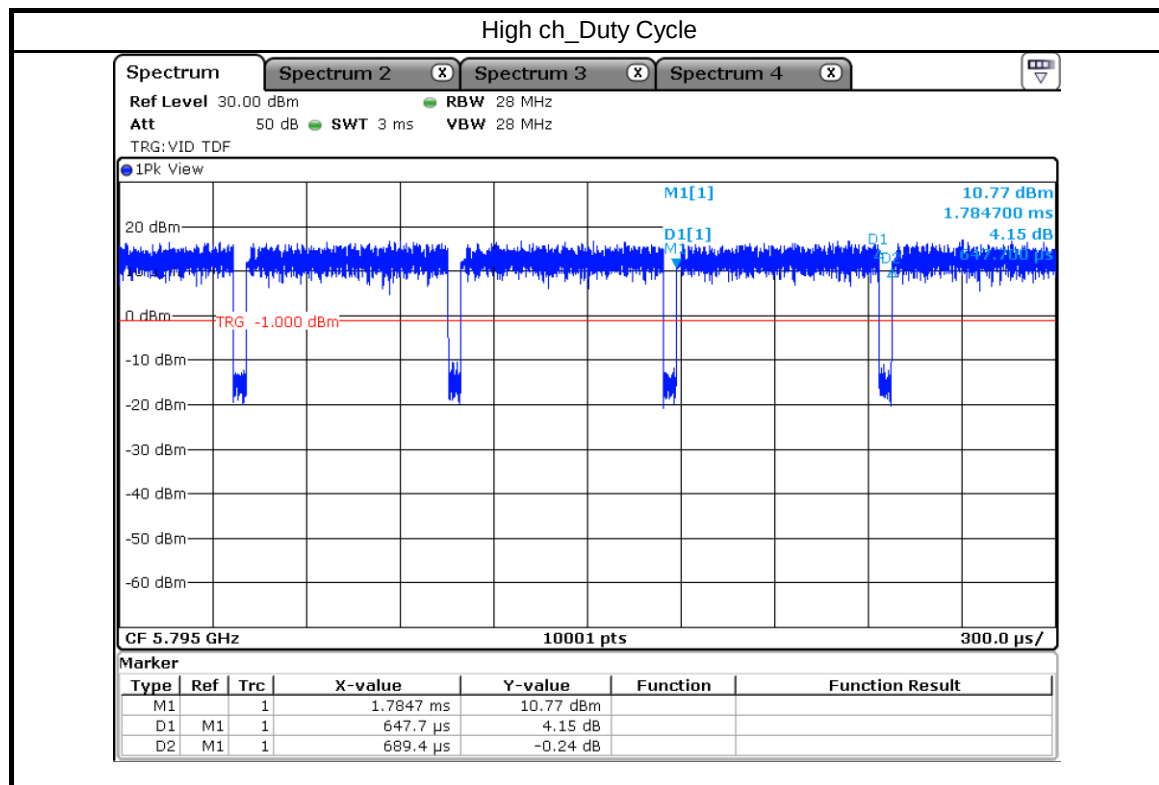
Mode	Frequency (MHz)	On Time (ms)	Period (ms)	Duty Cycle (%)
UNII - 3 802.11n(20 MHz BW)	5 745	1.308	1.350	96.89
	5 785	1.308	1.350	96.89
	5 825	1.308	1.350	96.89

Low ch_Duty Cycle











4.2. 6 dB Bandwidth

4.2.1 Test procedure

KDB 789033 D02 C.2

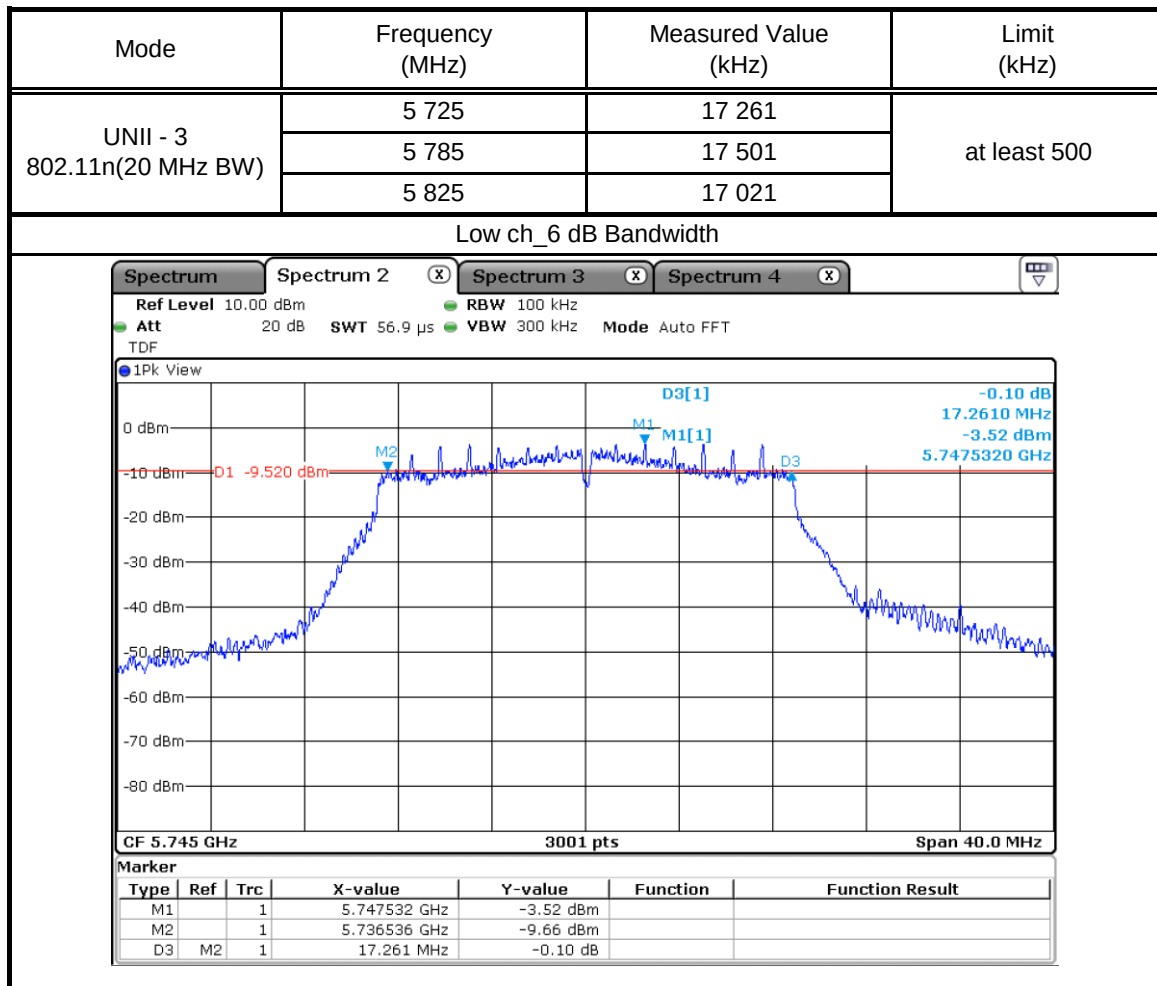
4.2.2 Limit

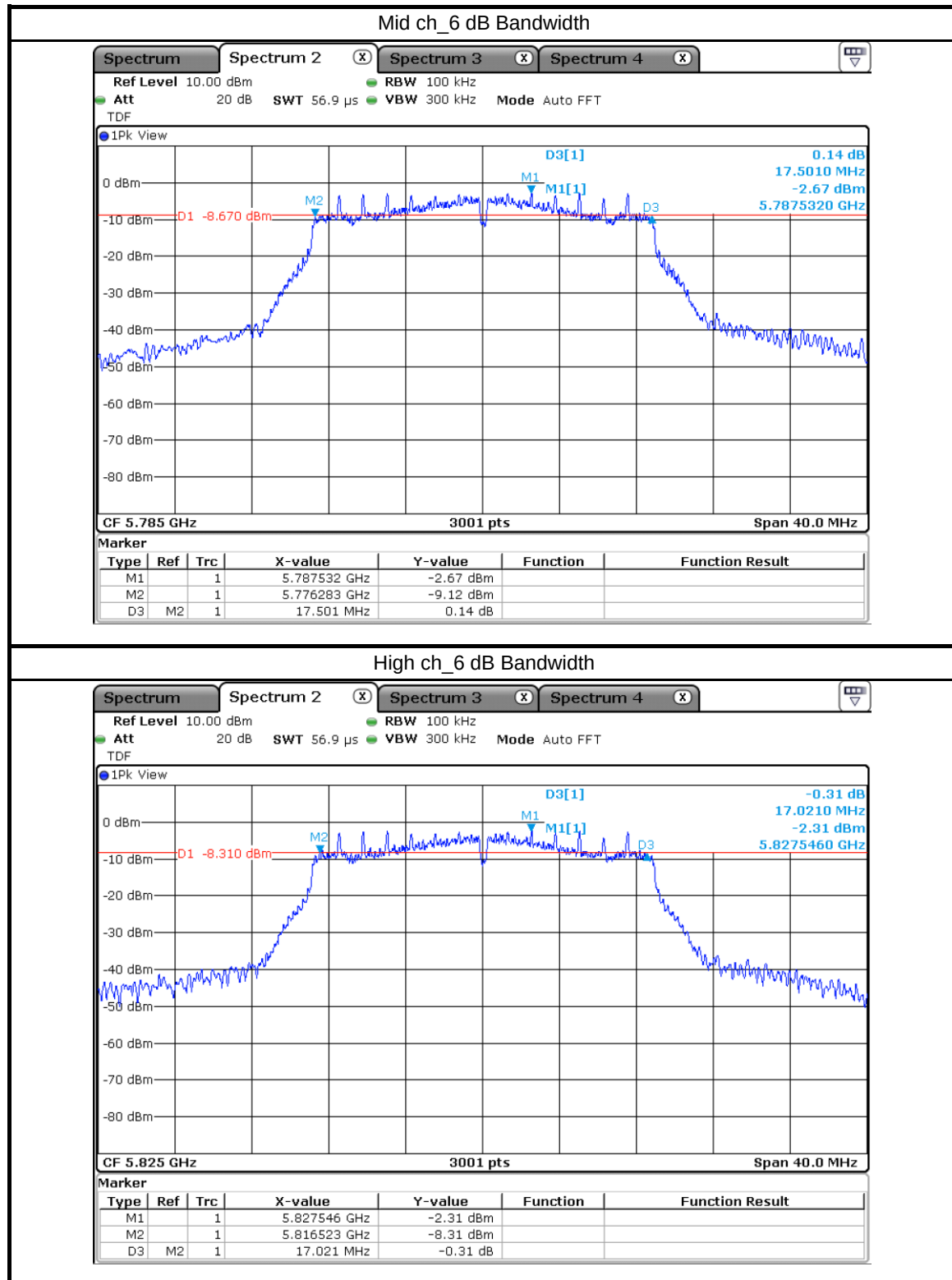
§15.407 (e)

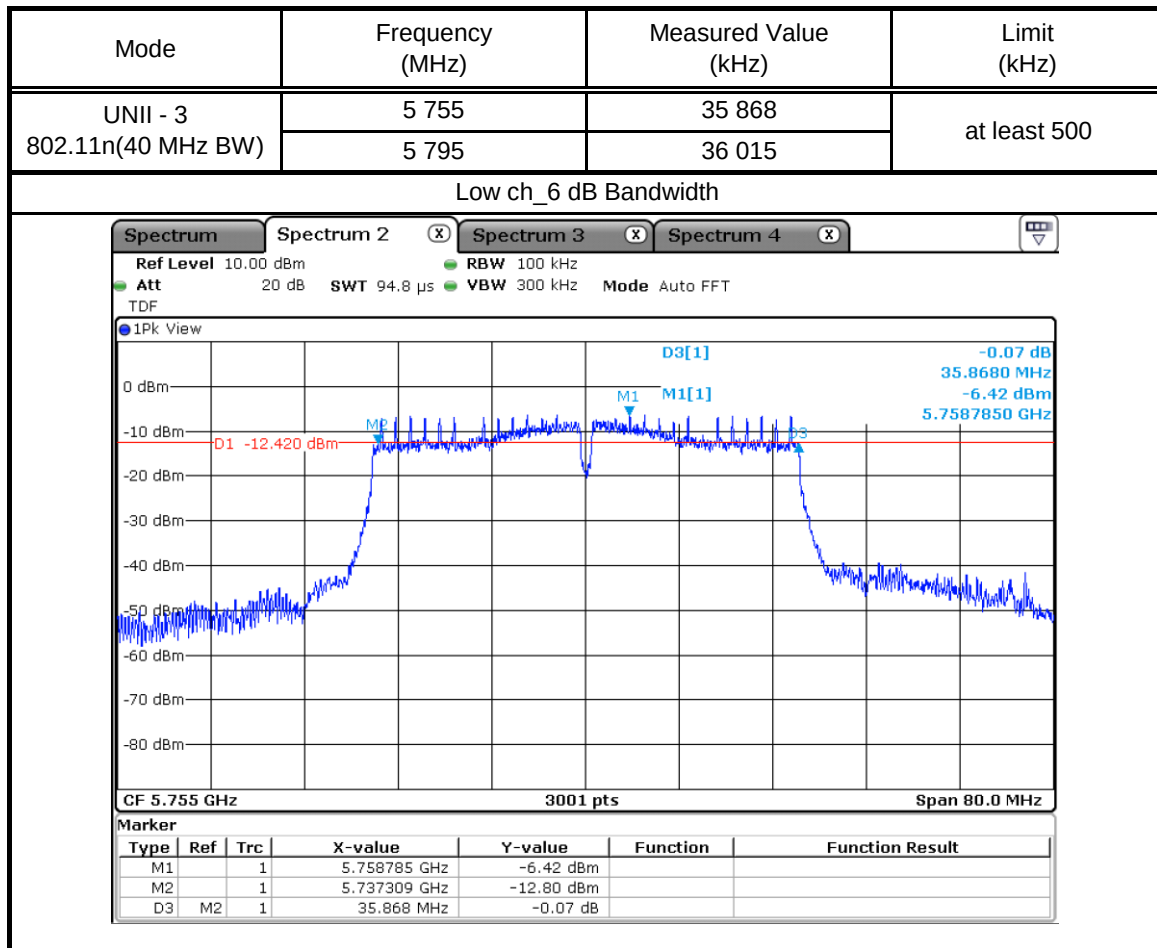
Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

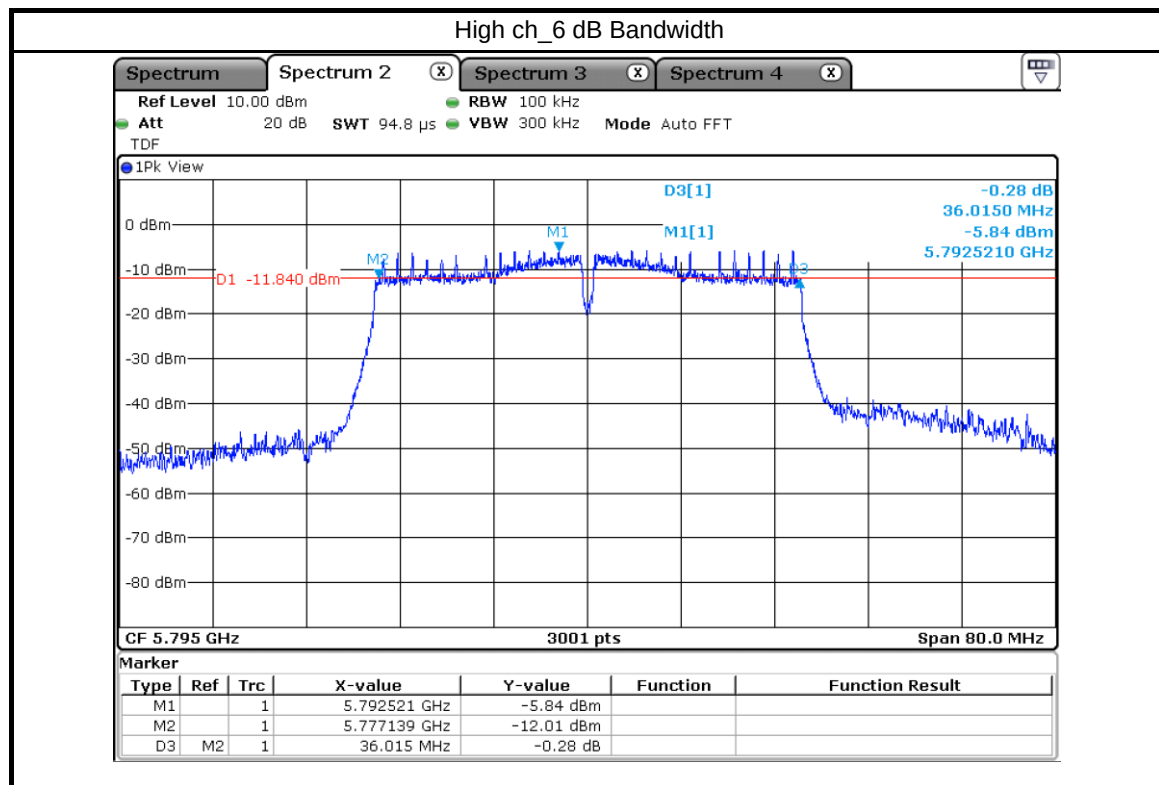
4.2.3 Test data

Result : Pass











4.3. 26 dB Bandwidth / Occupied bandwidth

4.3.1 Test procedure

ANSI C63.10-2013 Clause 12.4

4.3.2 Limit

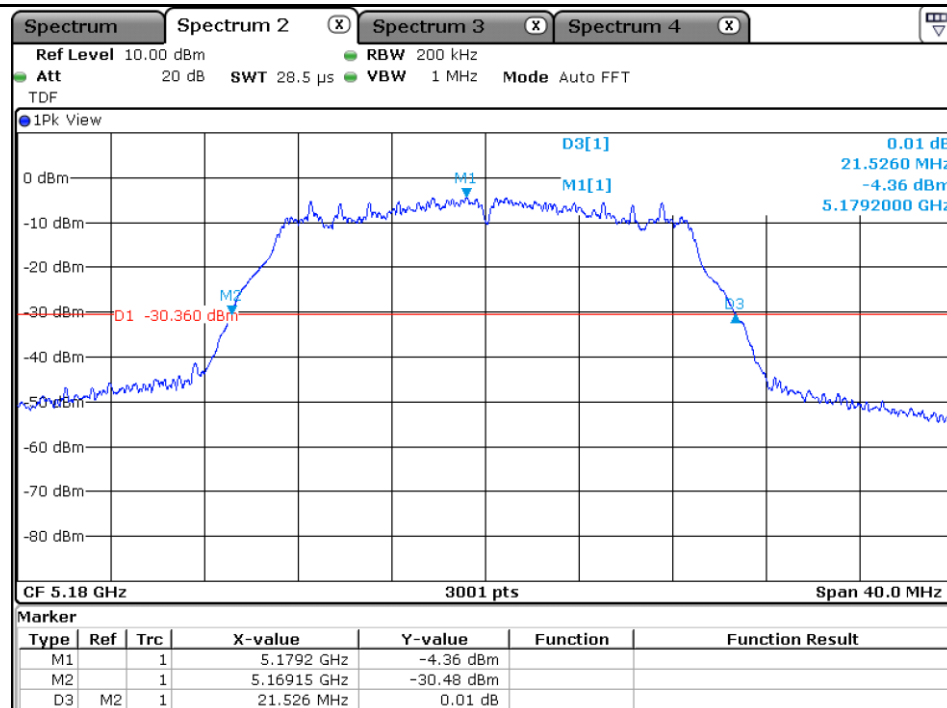
-

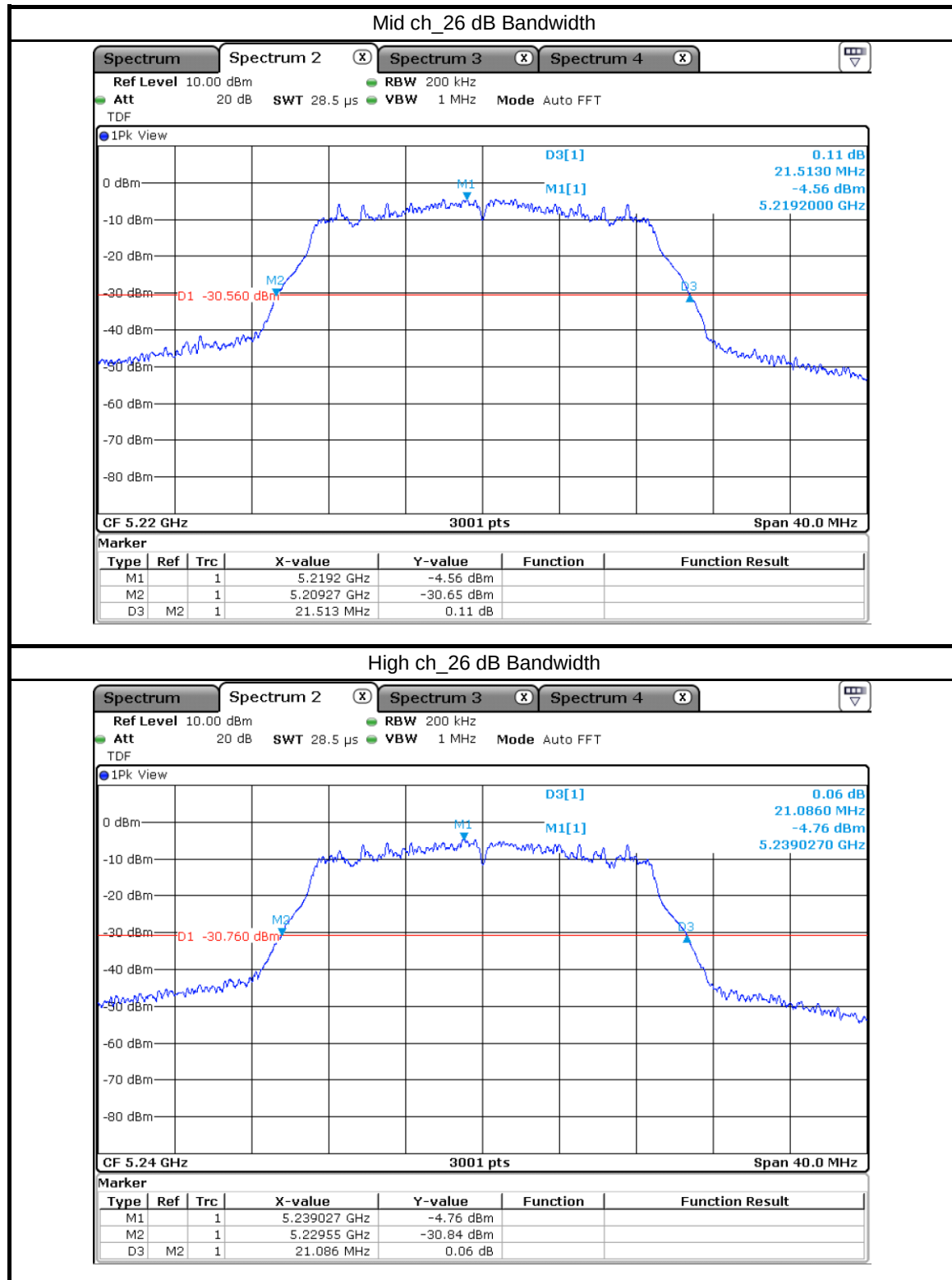
4.3.3 Test data

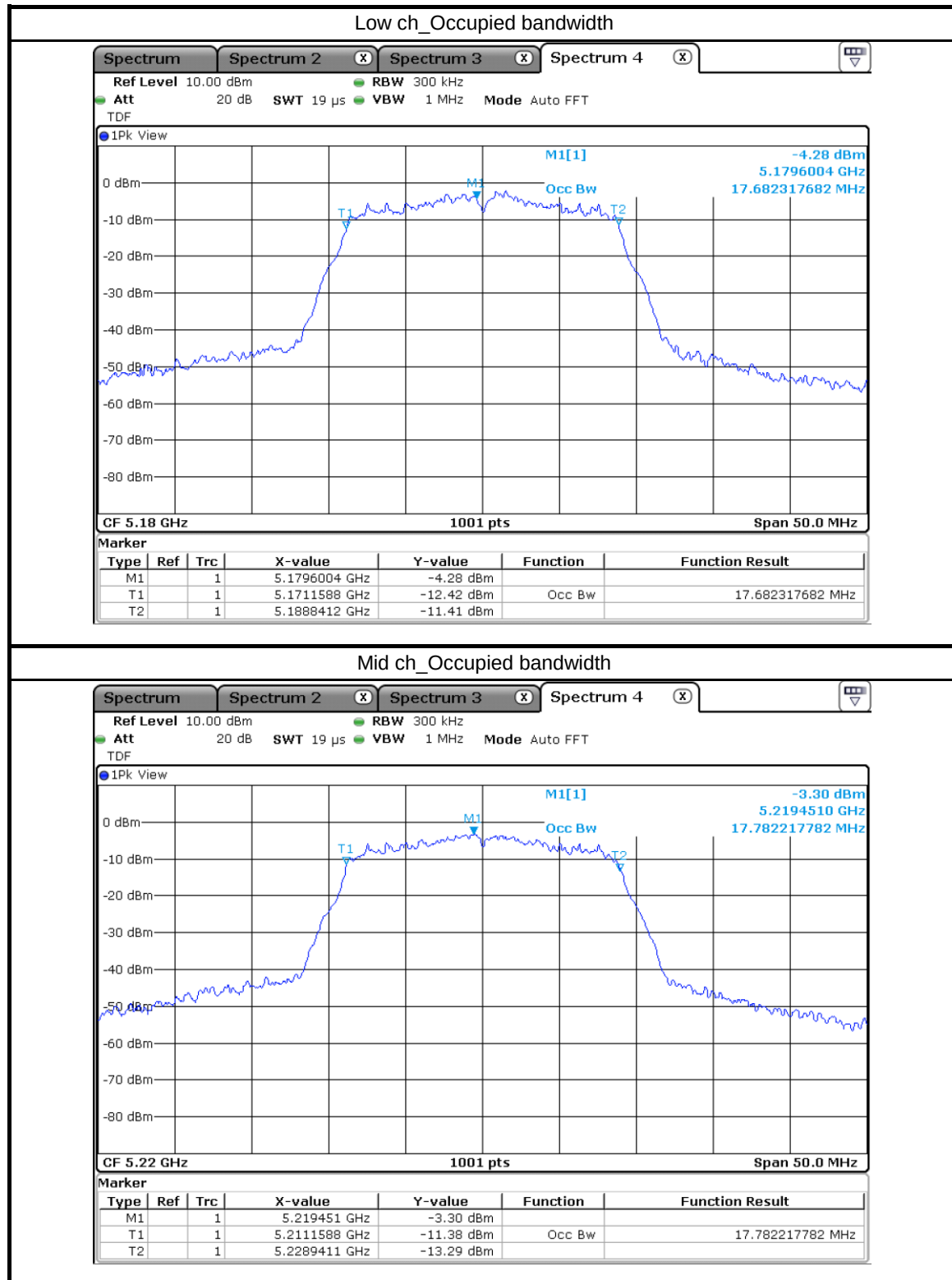
Result : Pass

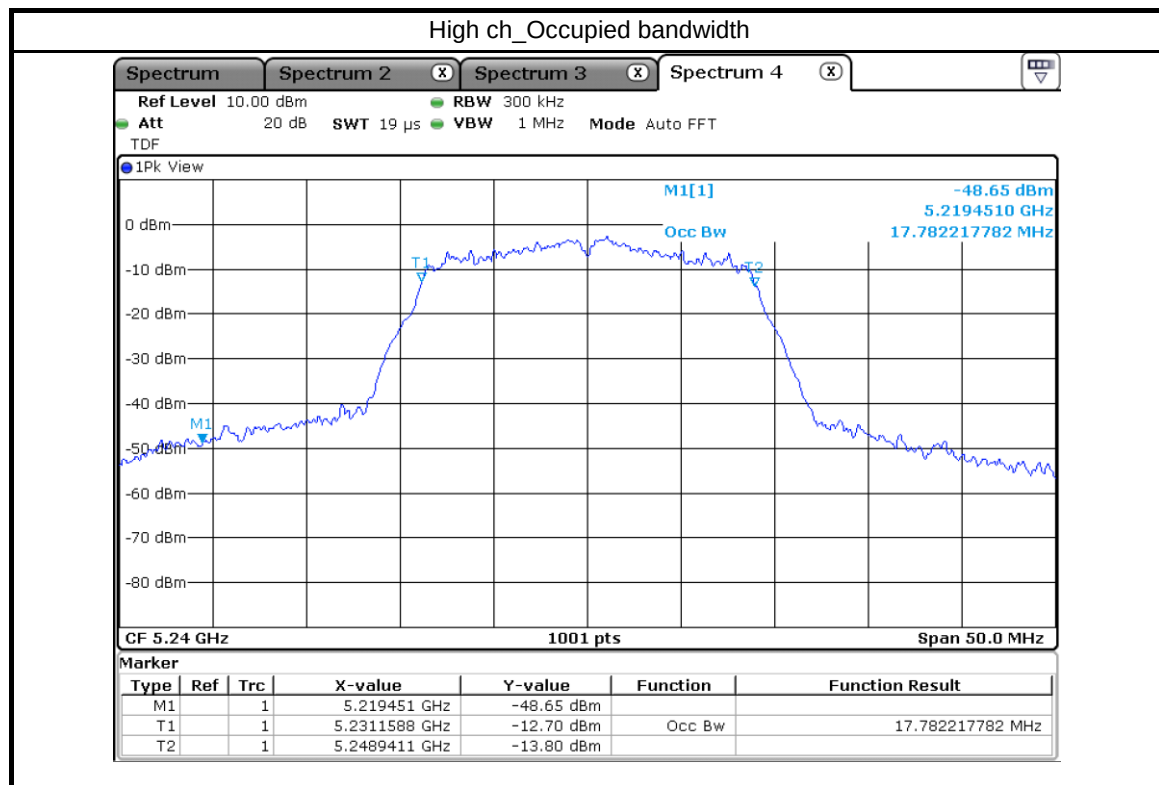
Mode	Frequency (MHz)	26 dB Bandwidth Measured Value (MHz)	Occupied bandwidth Measured Value (MHz)
UNII - 1 802.11n(20 MHz BW)	5 180	21.526	17.682
	5 220	21.513	17.782
	5 240	21.086	17.782

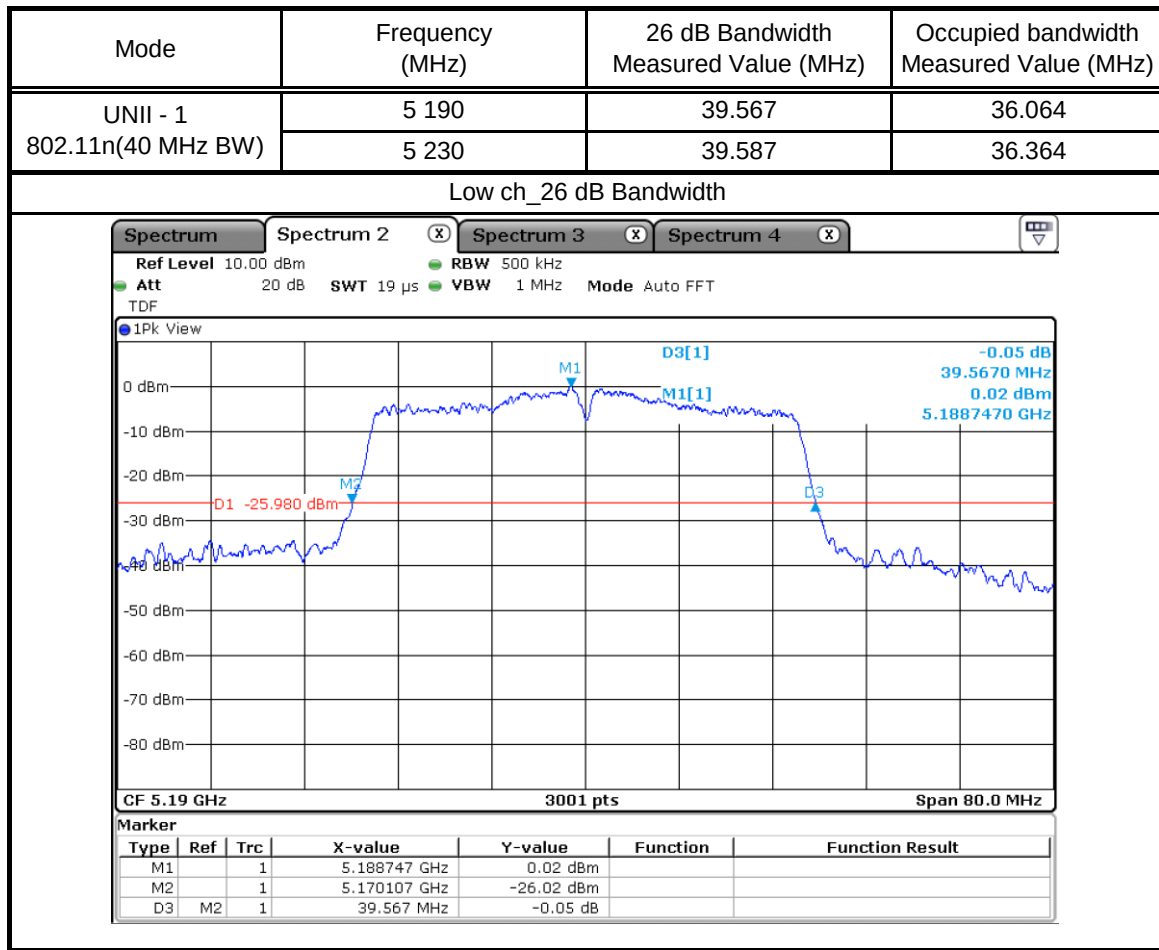
Low ch_26 dB Bandwidth

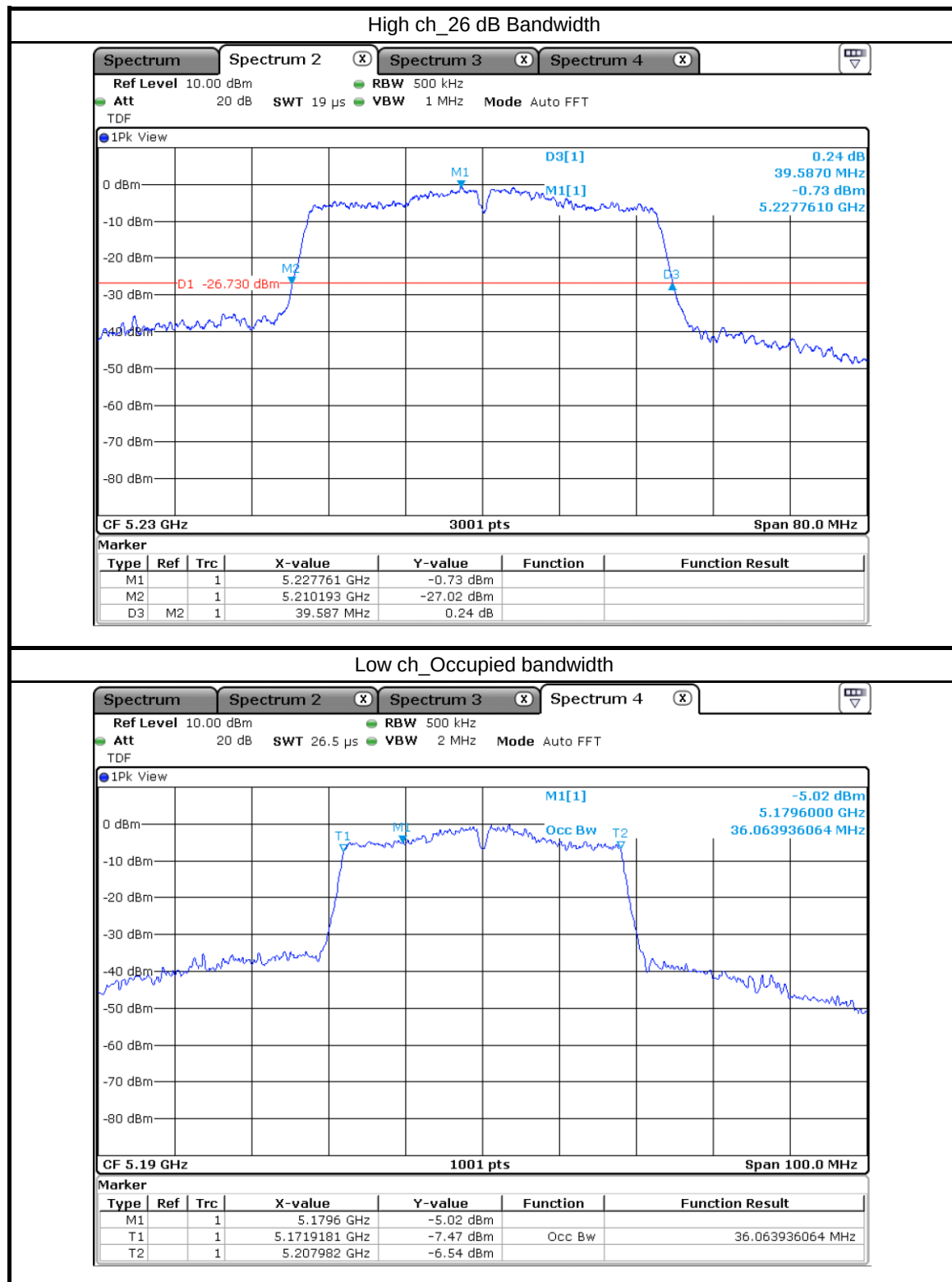


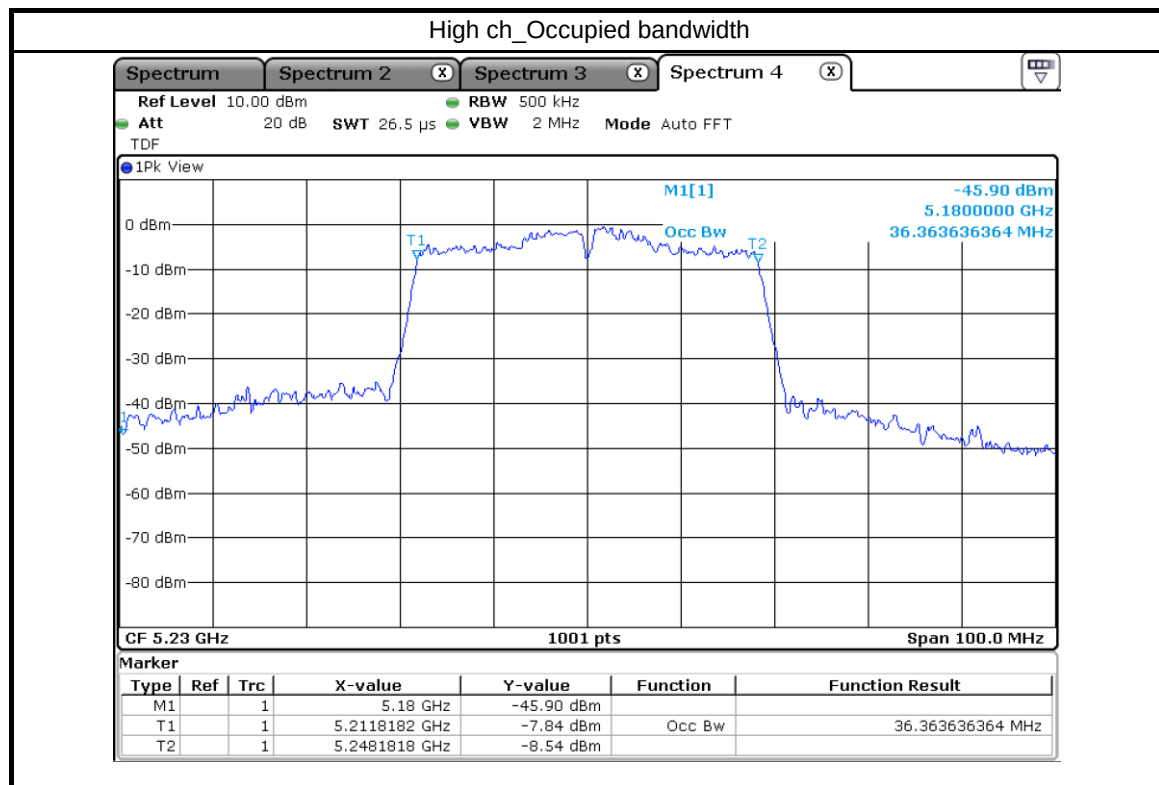








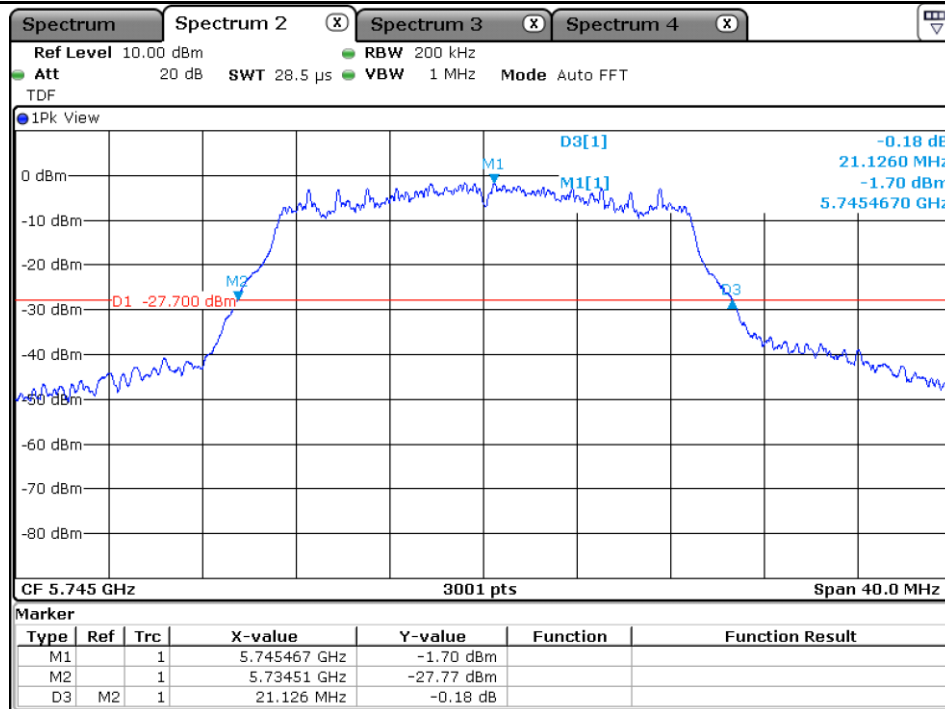


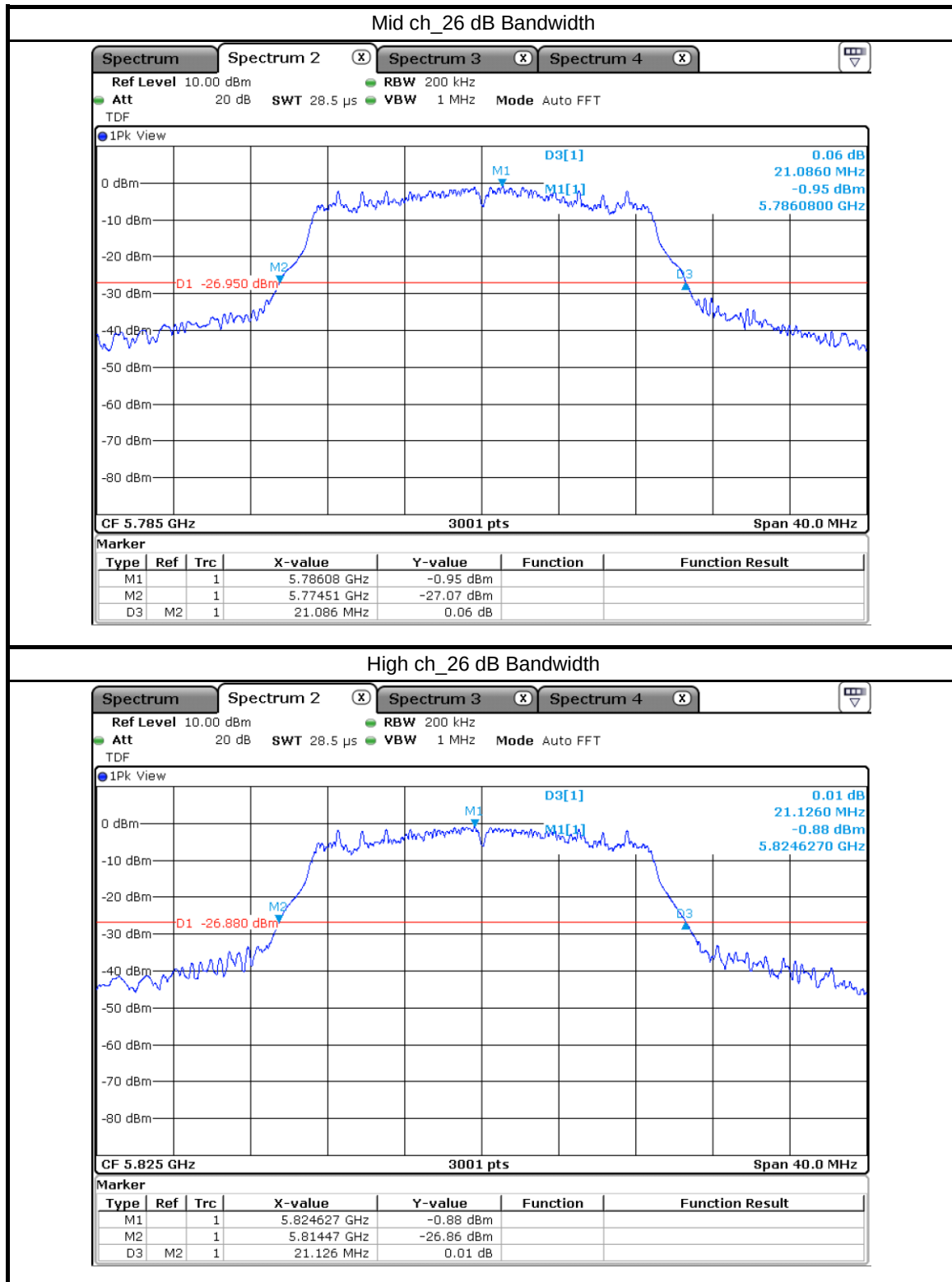


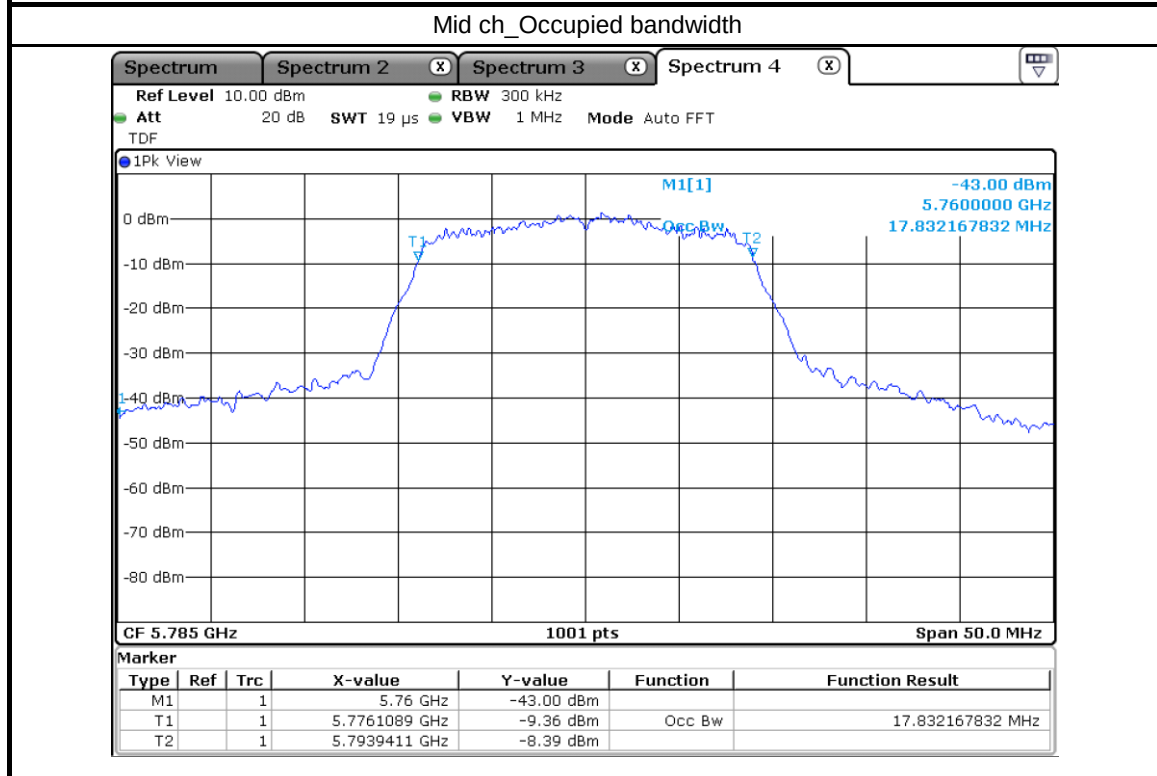
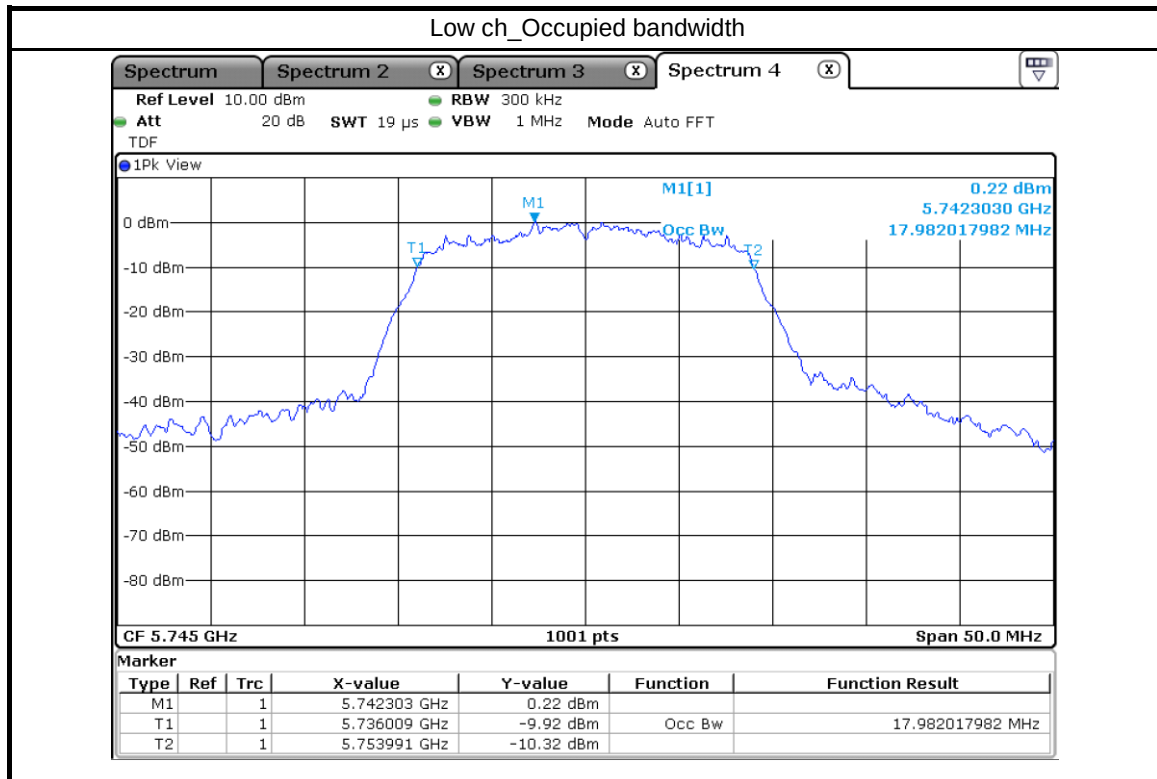


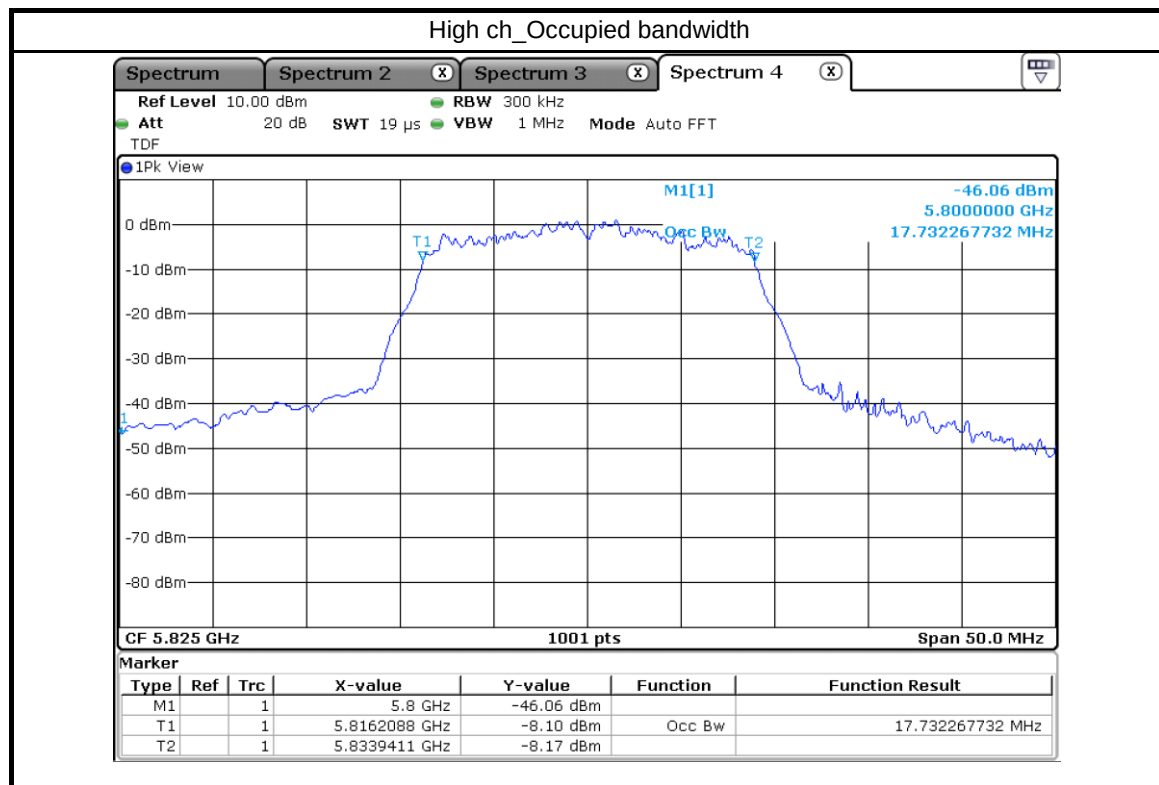
Mode	Frequency (MHz)	26 dB Bandwidth Measured Value (MHz)	Occupied bandwidth Measured Value (MHz)
UNII - 3 802.11n(20 MHz BW)	5 725	21.126	17.982
	5 785	21.086	17.832
	5 825	21.126	17.732

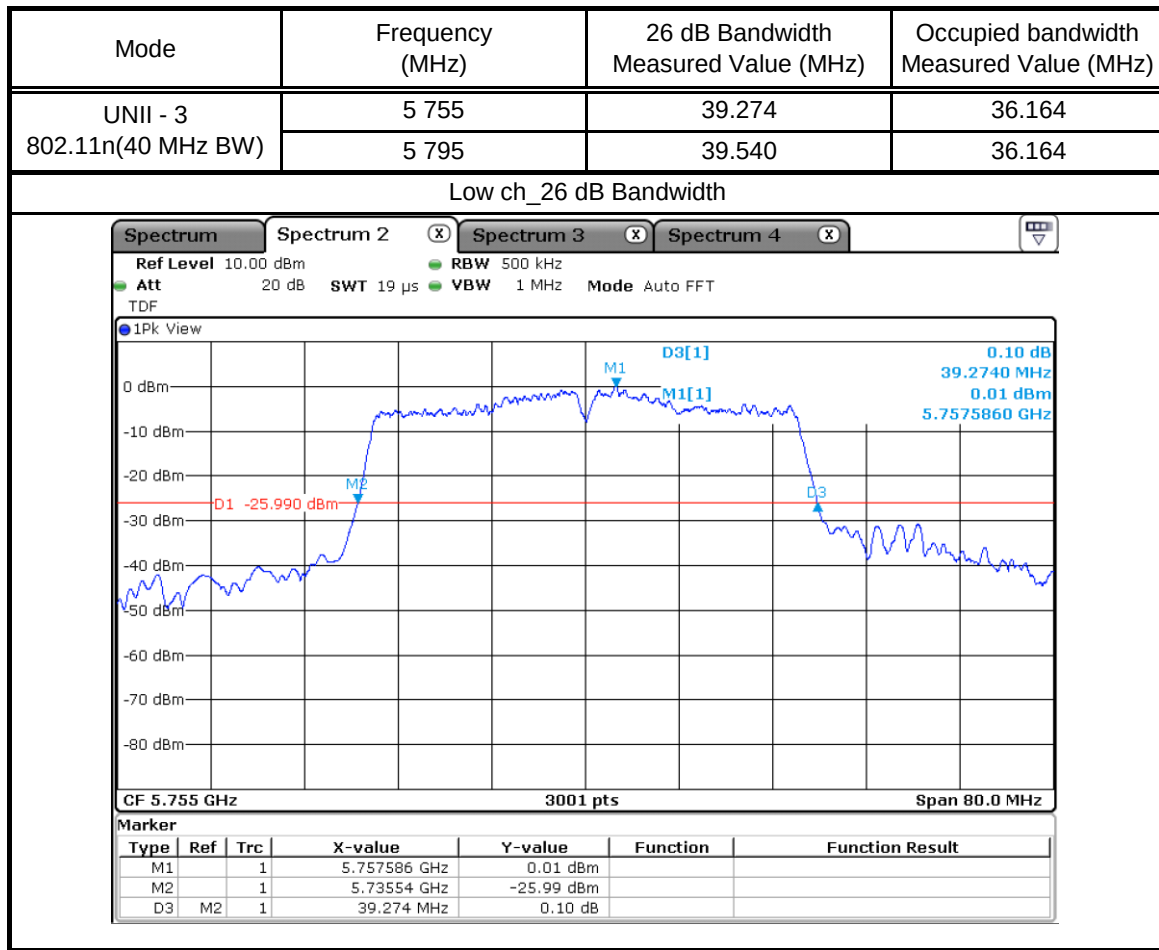
Low ch_26 dB Bandwidth

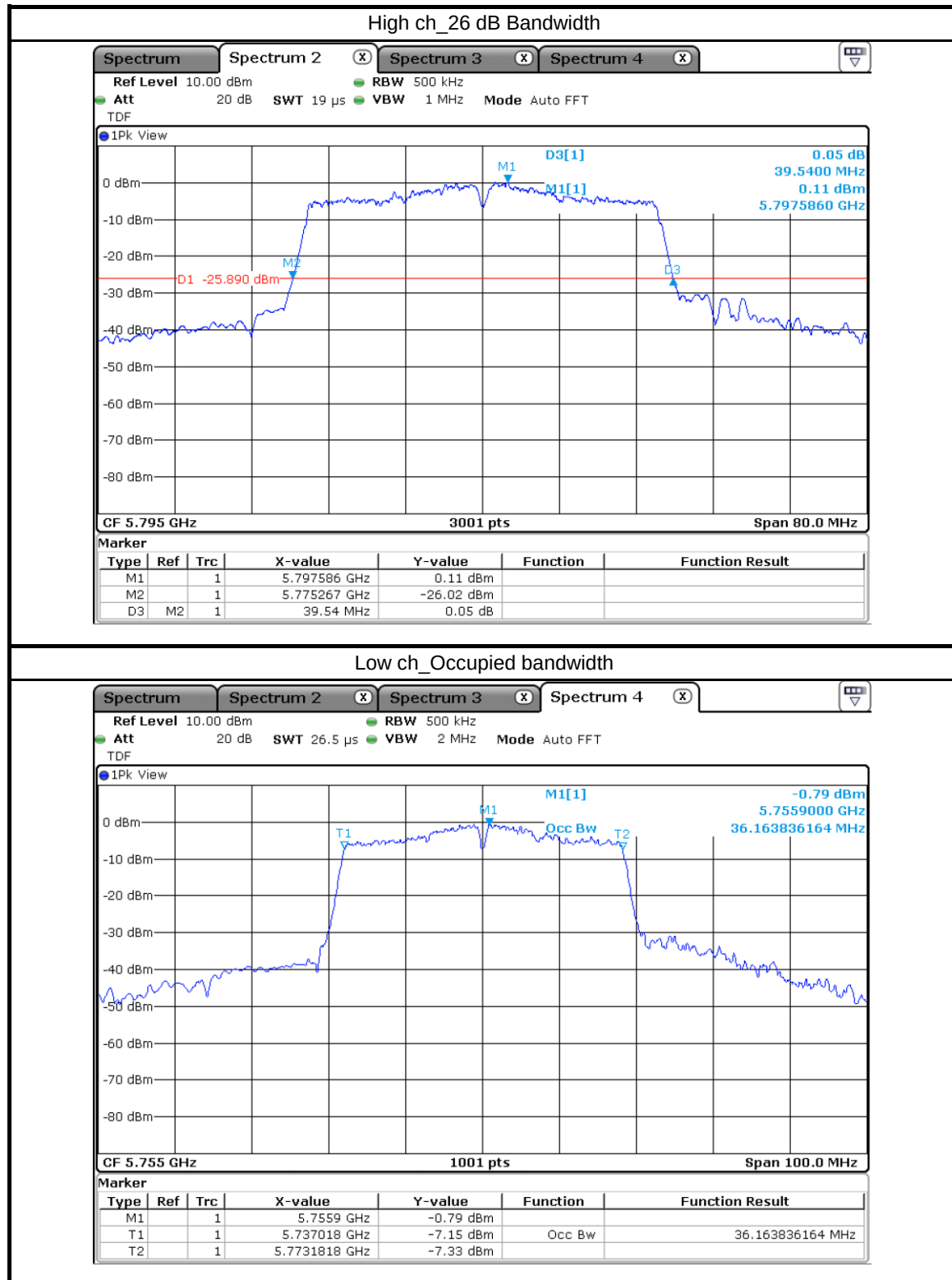


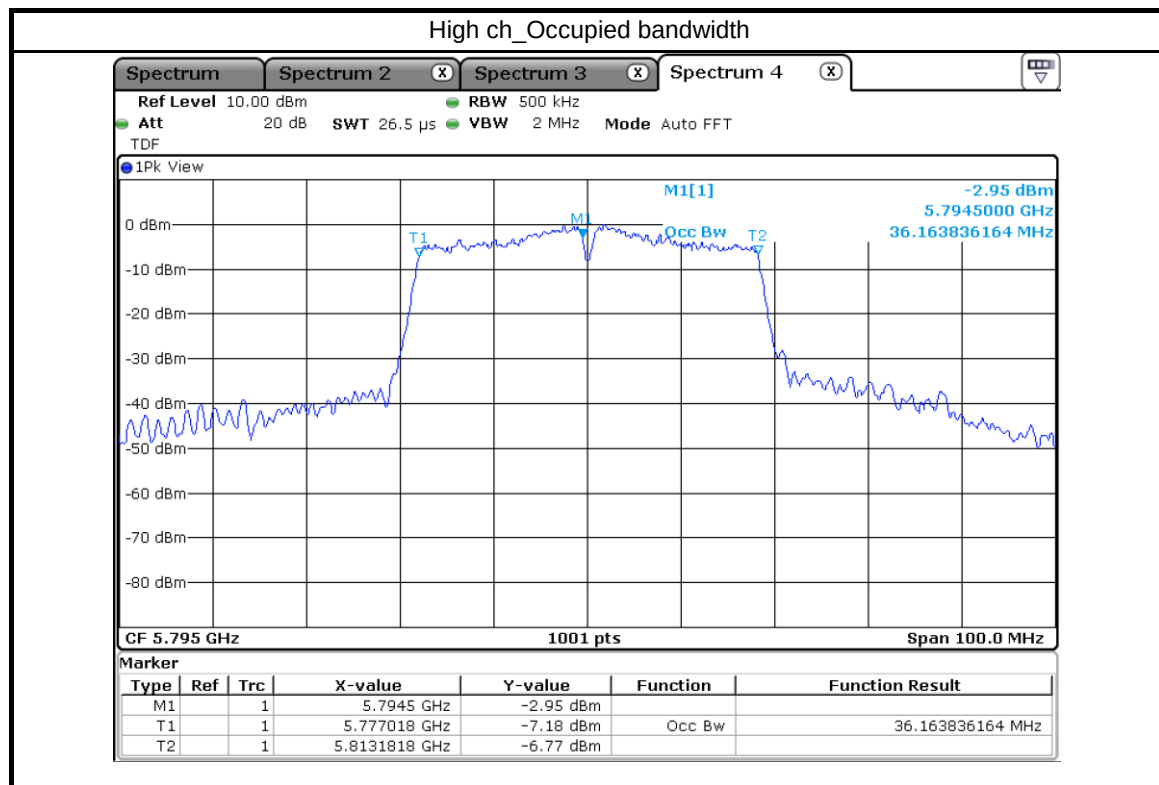














4.4 Maximum Conducted Output Power

4.4.1 Test procedure

ANSI C63.10-2013 Clause 12.3

4.4.2 Limit

§15.407 (a) (1) (iv)

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

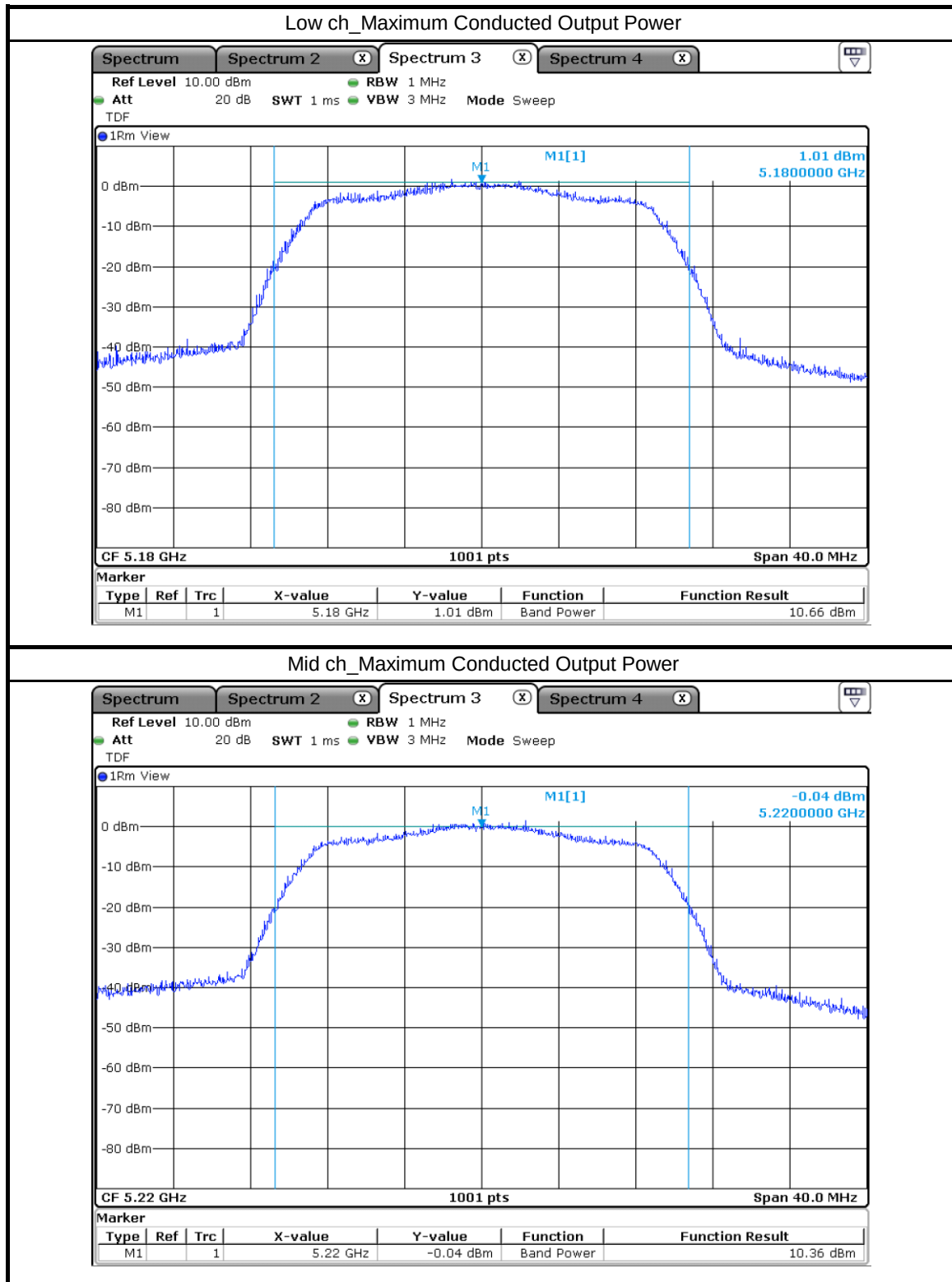
§15.407 (a) (3) (i)

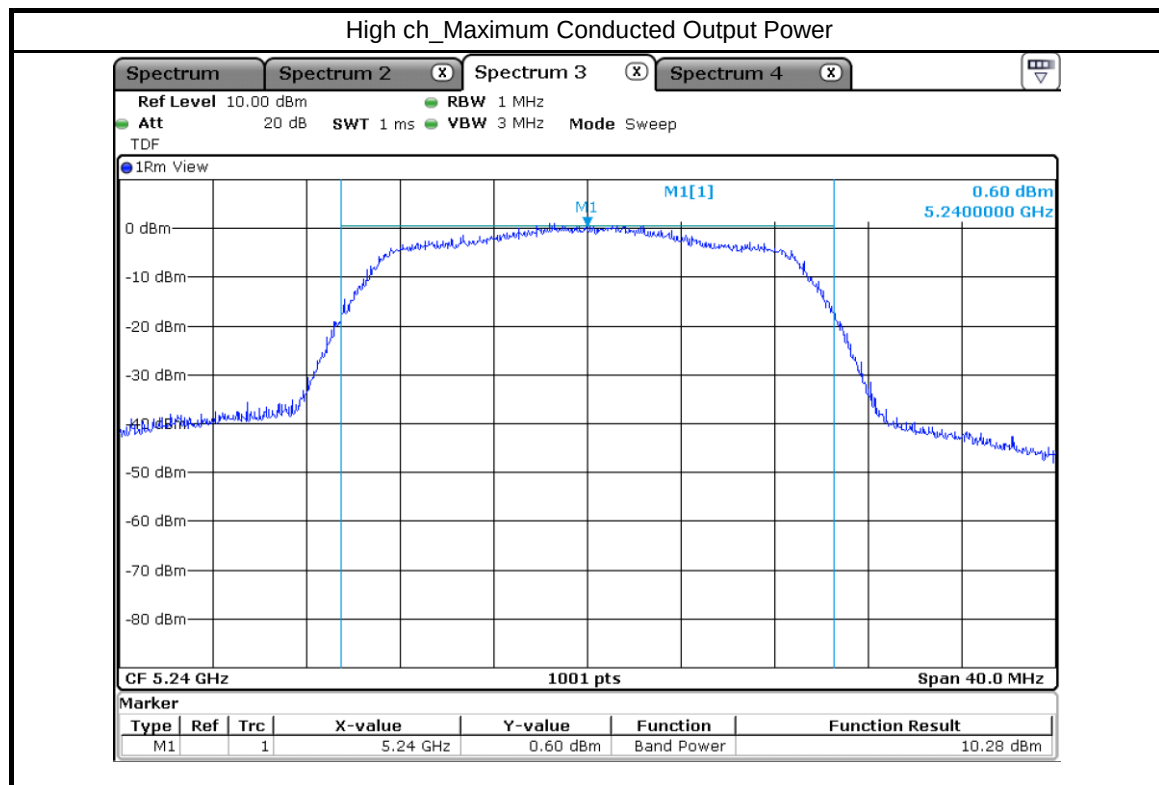
For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1W.

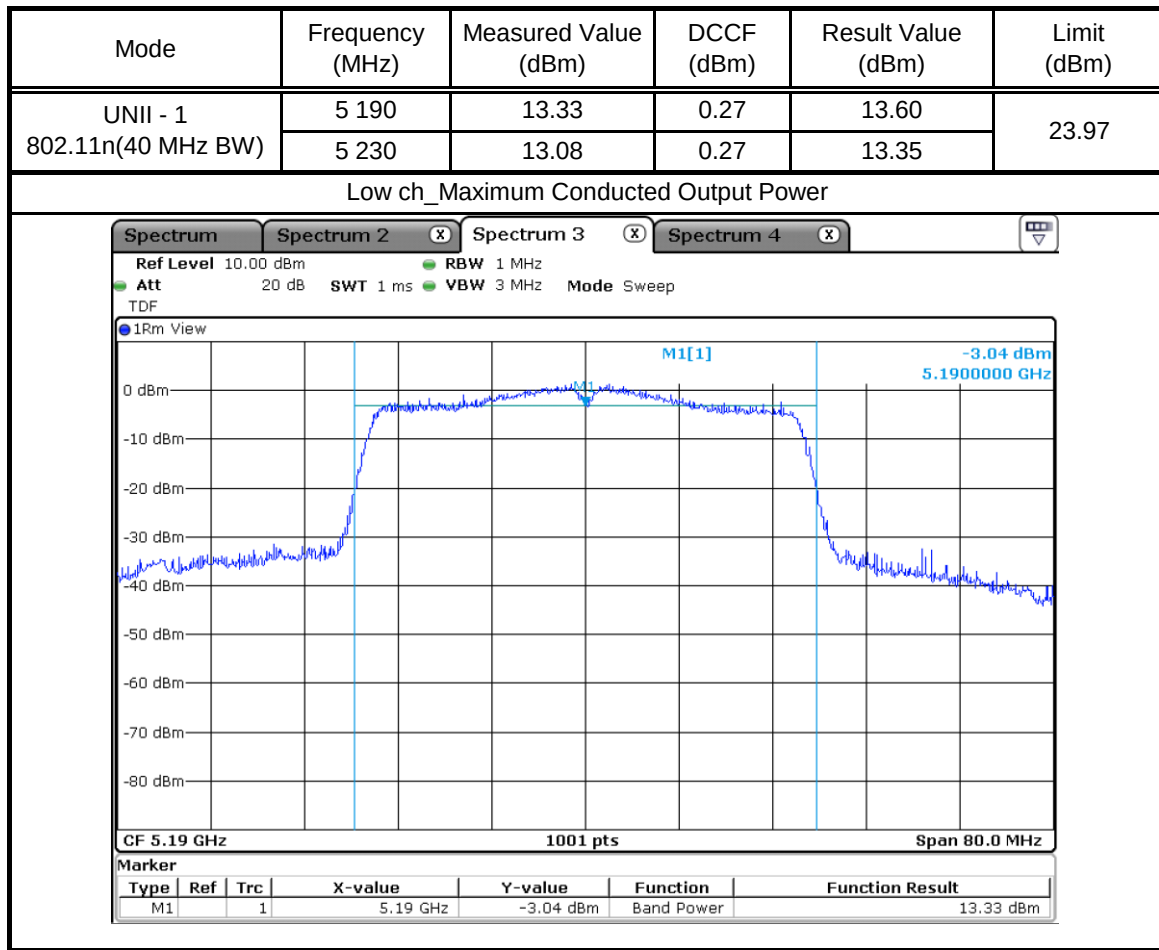
4.4.3 Test data

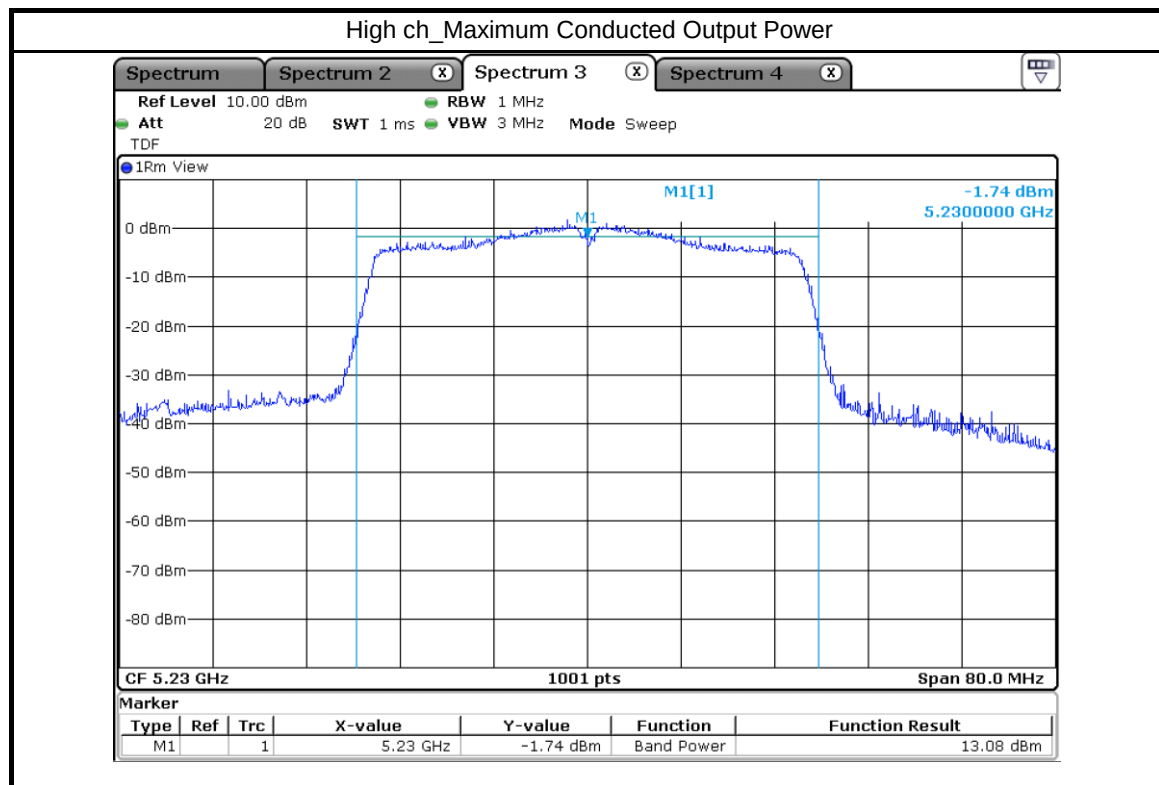
Result : Pass

Mode	Frequency (MHz)	Measured Value (dBm)	DCCF (dBm)	Result Value (dBm)	Limit (dBm)
UNII - 1 802.11n(20 MHz BW)	5 180	10.66	0.14	10.80	23.97
	5 220	10.36	0.14	10.50	
	5 240	10.28	0.14	10.42	





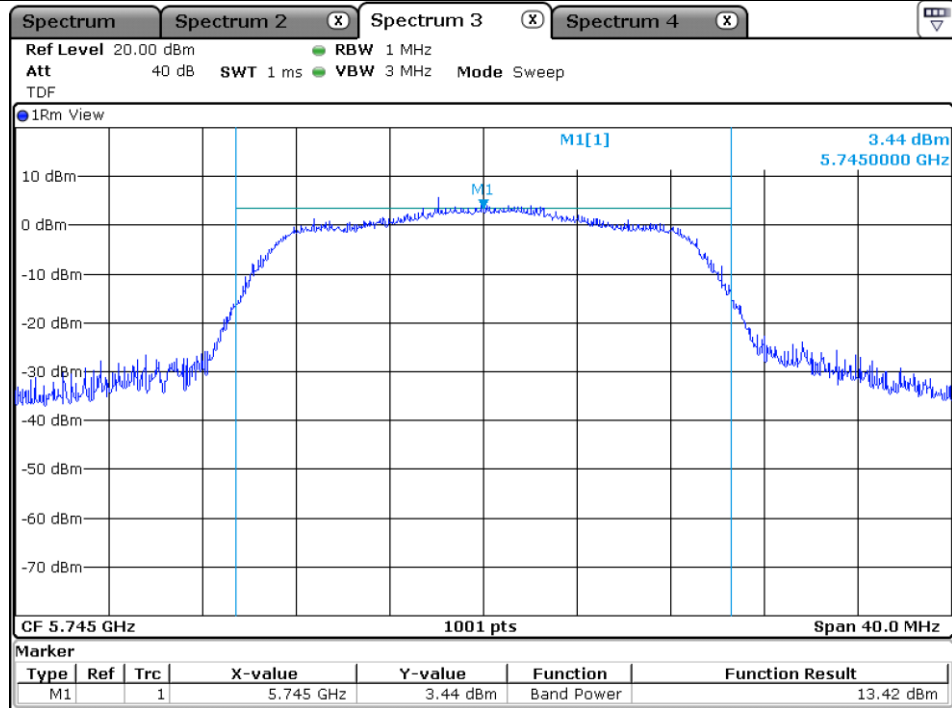


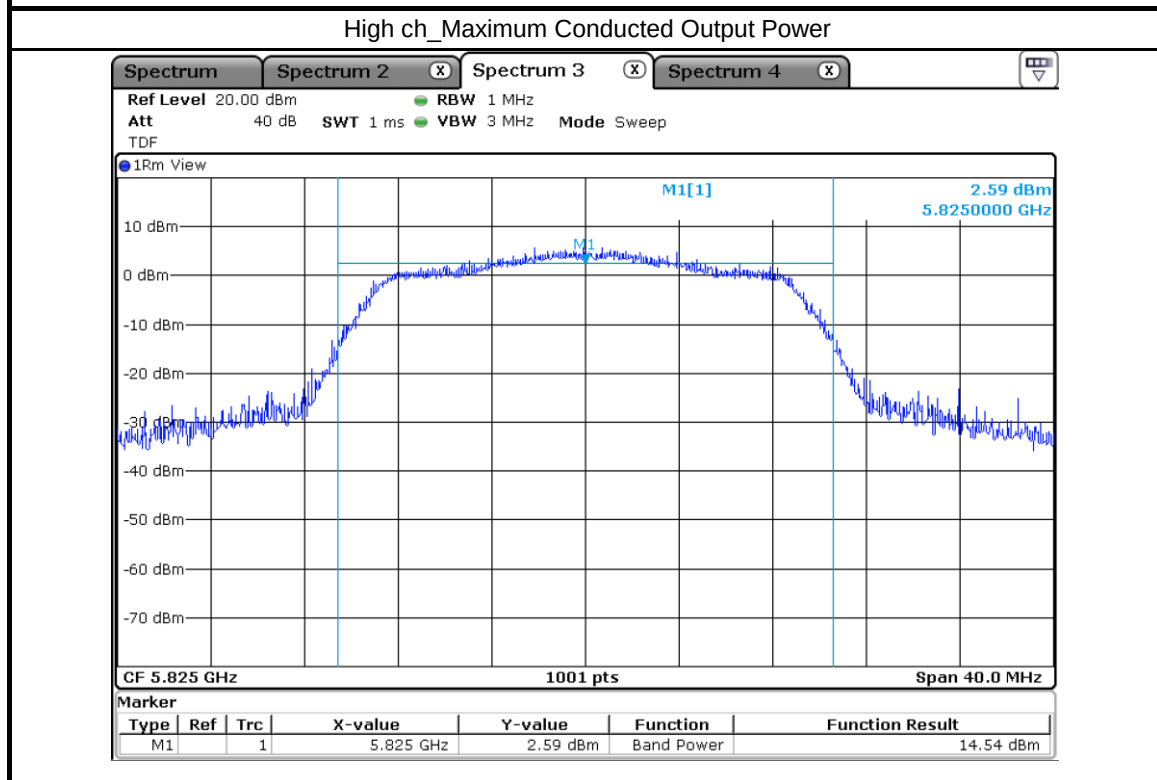
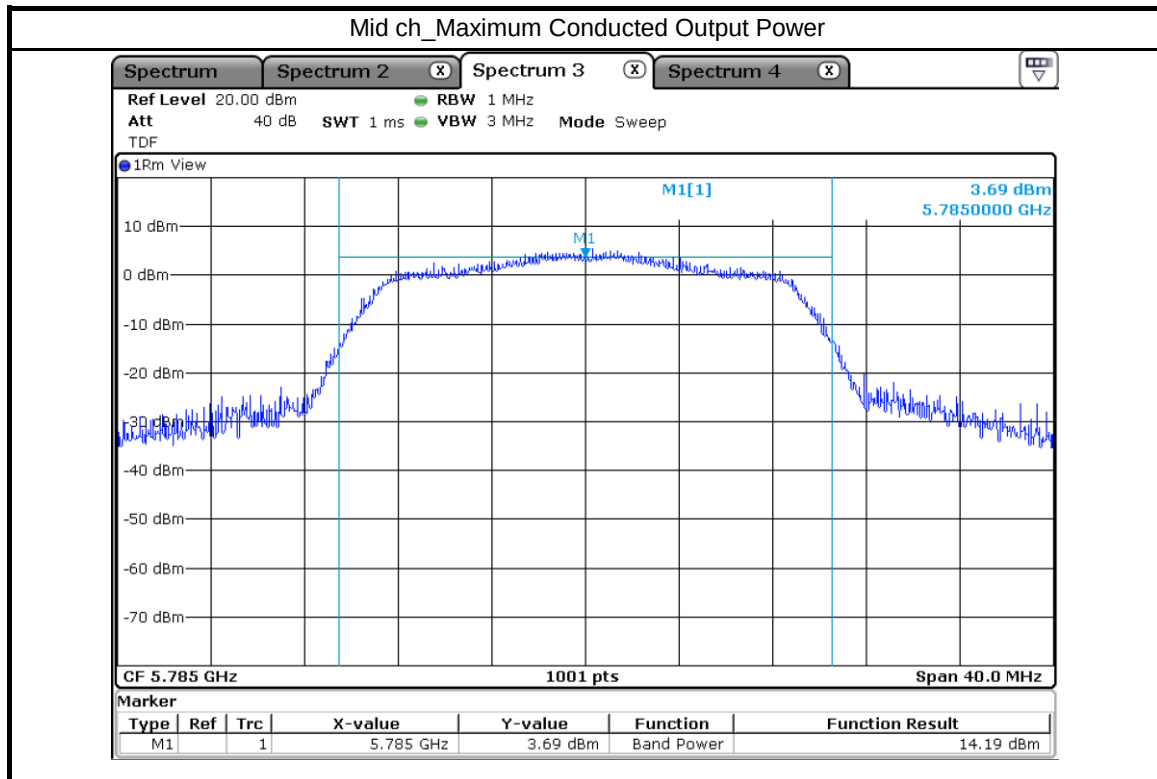


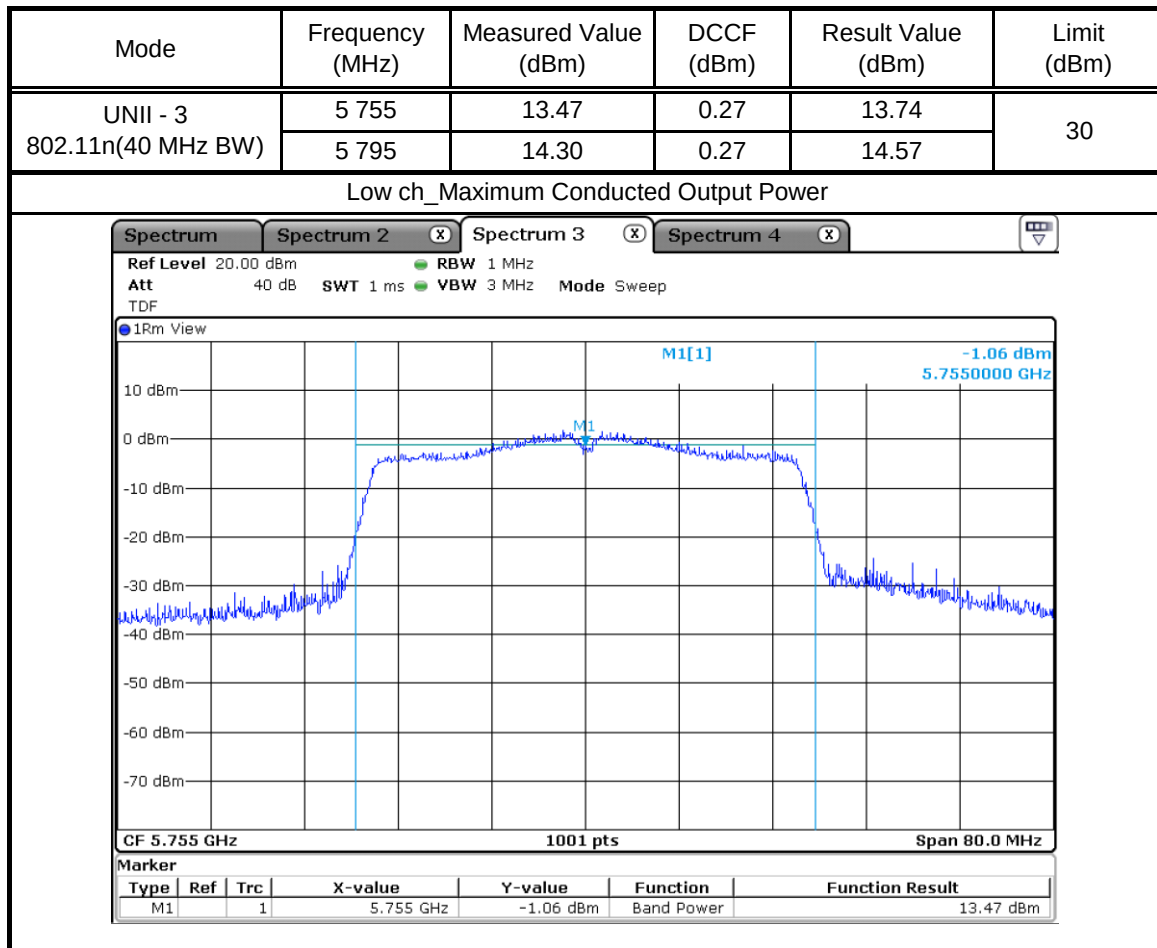


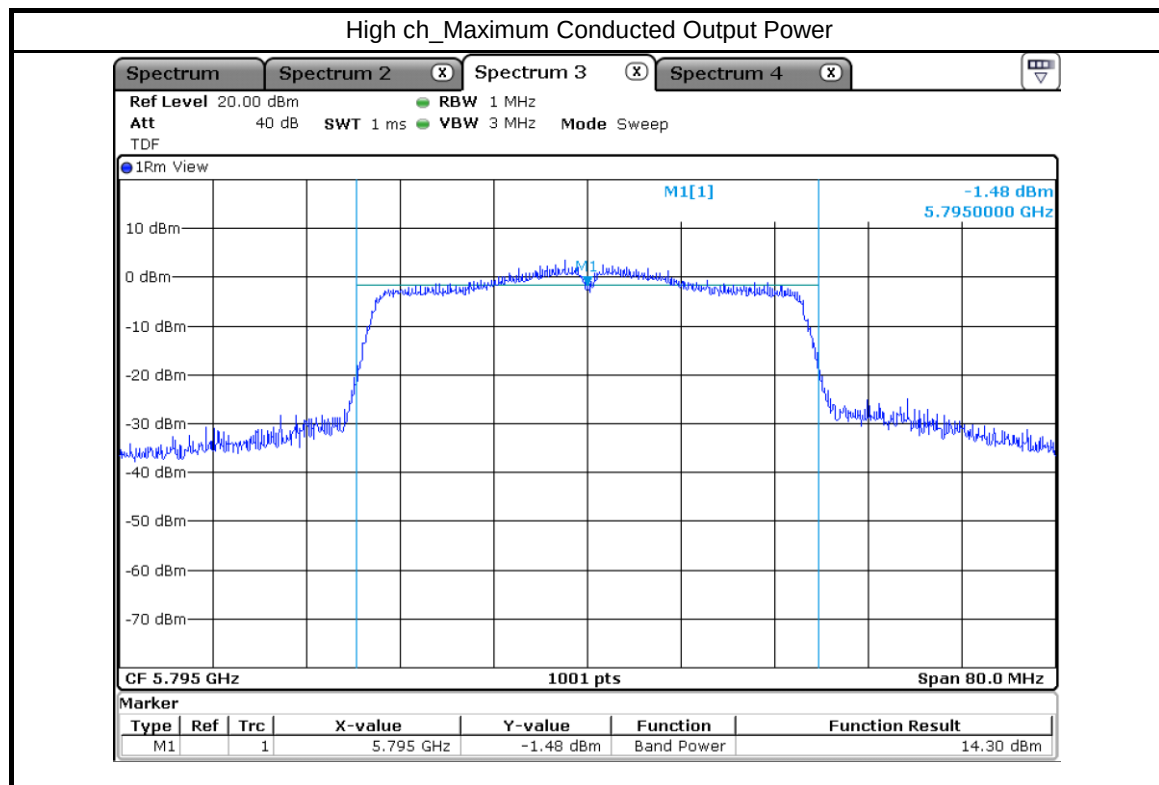
Mode	Frequency (MHz)	Measured Value (dBm)	DCCF (dBm)	Result Value (dBm)	Limit (dBm)
UNII - 3 802.11n(20 MHz BW)	5 745	13.42	0.14	13.56	30
	5 785	14.19	0.14	14.33	
	5 825	14.54	0.14	14.68	

Low ch_Maximum Conducted Output Power











4.5 Power Spectral Density

4.5.1 Test procedure

ANSI C63.10-2013 Clause 12.5

§15.407 (a) (12)

4.5.2 Limit

§15.407 (a) (1) (iv)

the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

§15.407 (a) (3) (i)

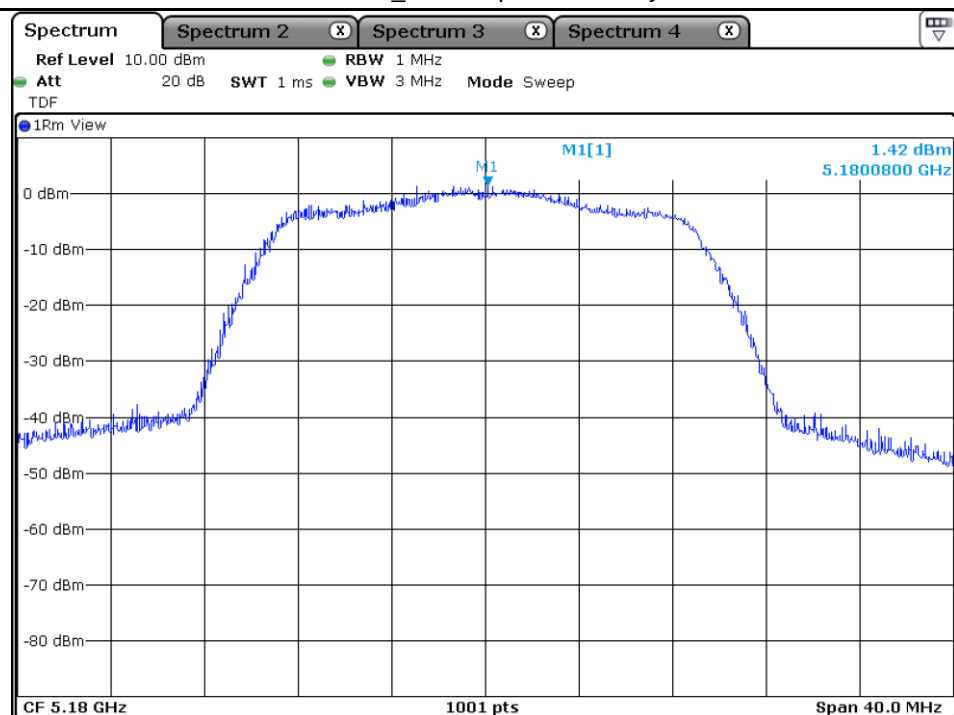
the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

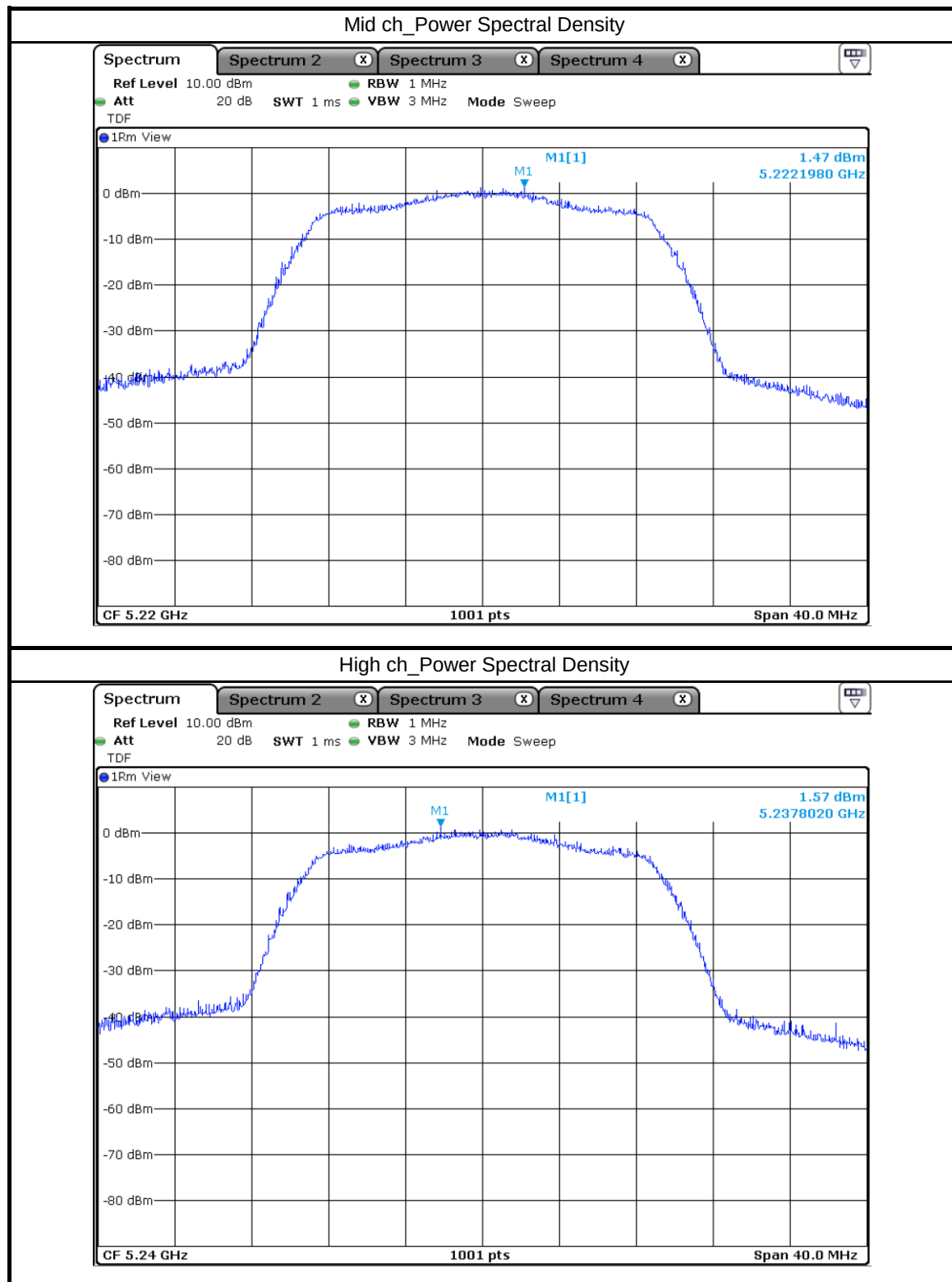
4.5.3 Test data

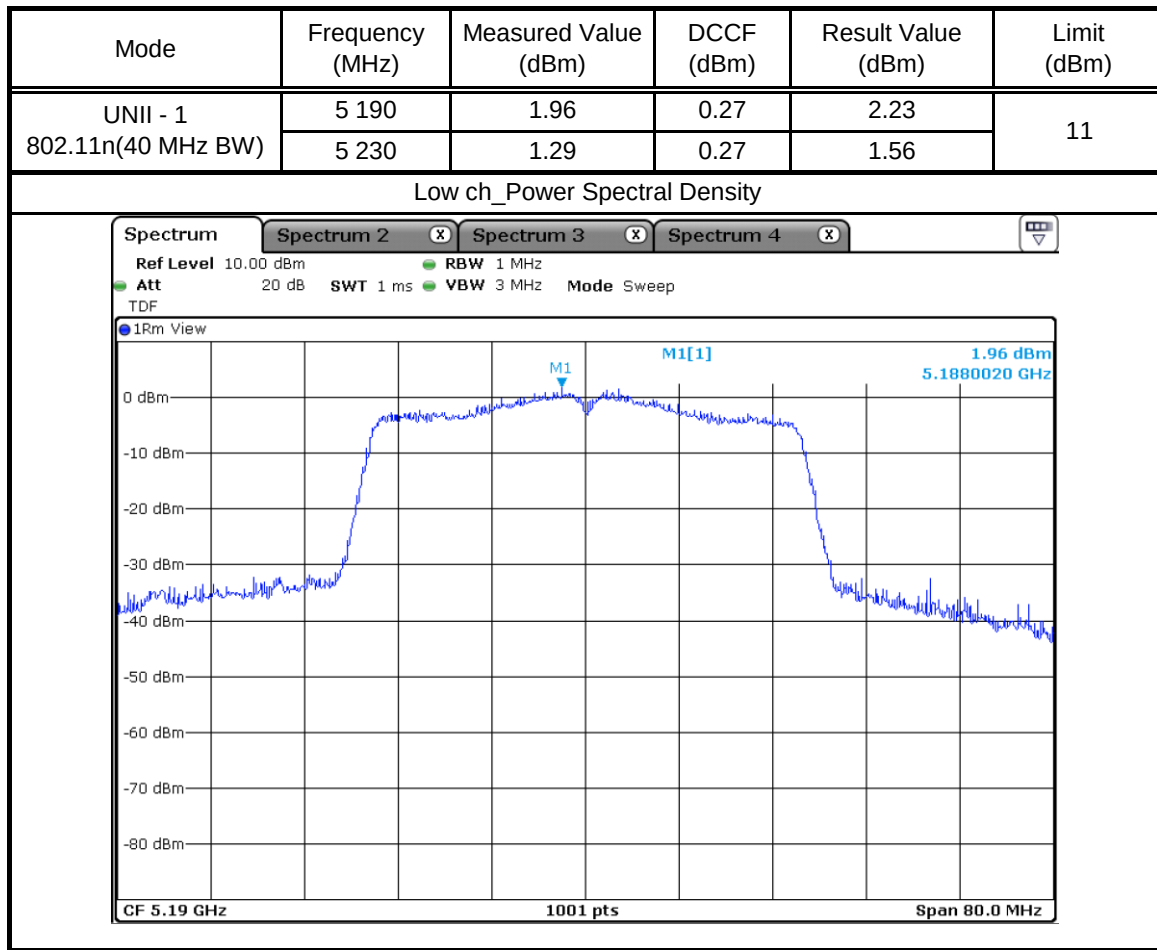
Result : Pass

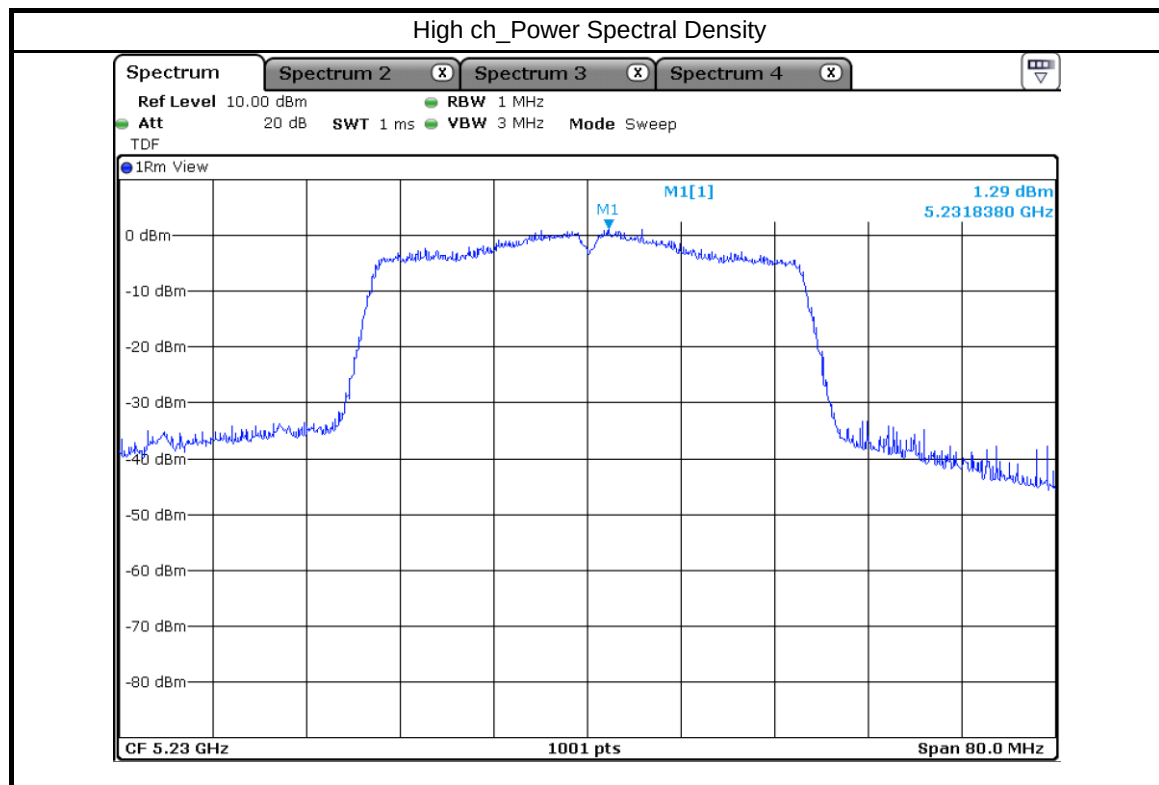
Mode	Frequency (MHz)	Measured Value (dBm)	DCCF (dBm)	Result Value (dBm)	Limit (dBm)
UNII - 1 802.11n(20 MHz BW)	5 180	1.42	0.14	1.56	11
	5 220	1.47	0.14	1.61	
	5 240	1.57	0.14	1.71	

Low ch_Power Spectral Density





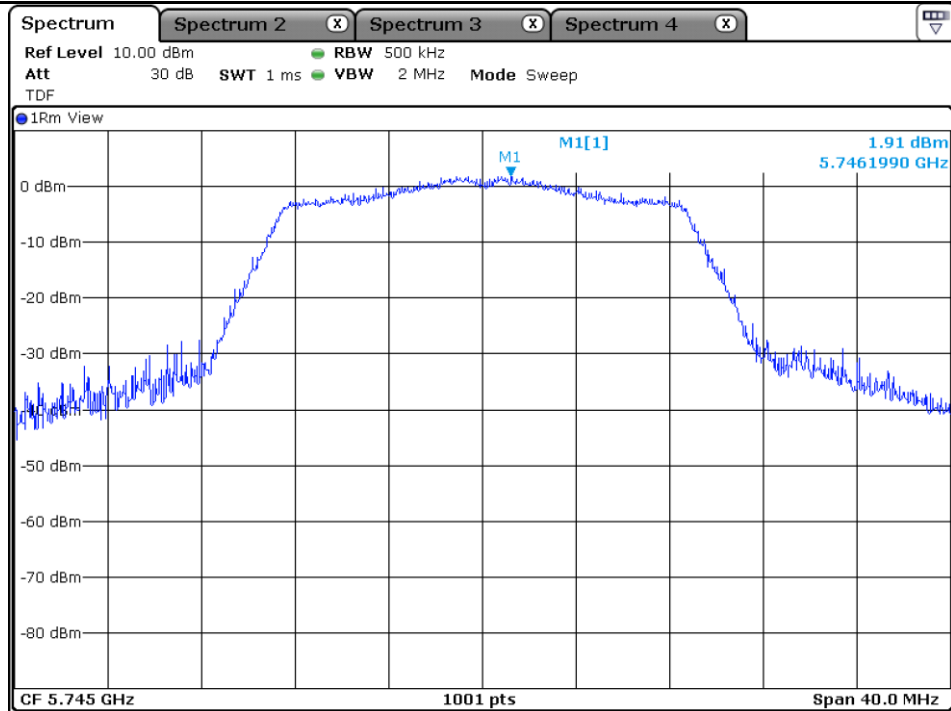


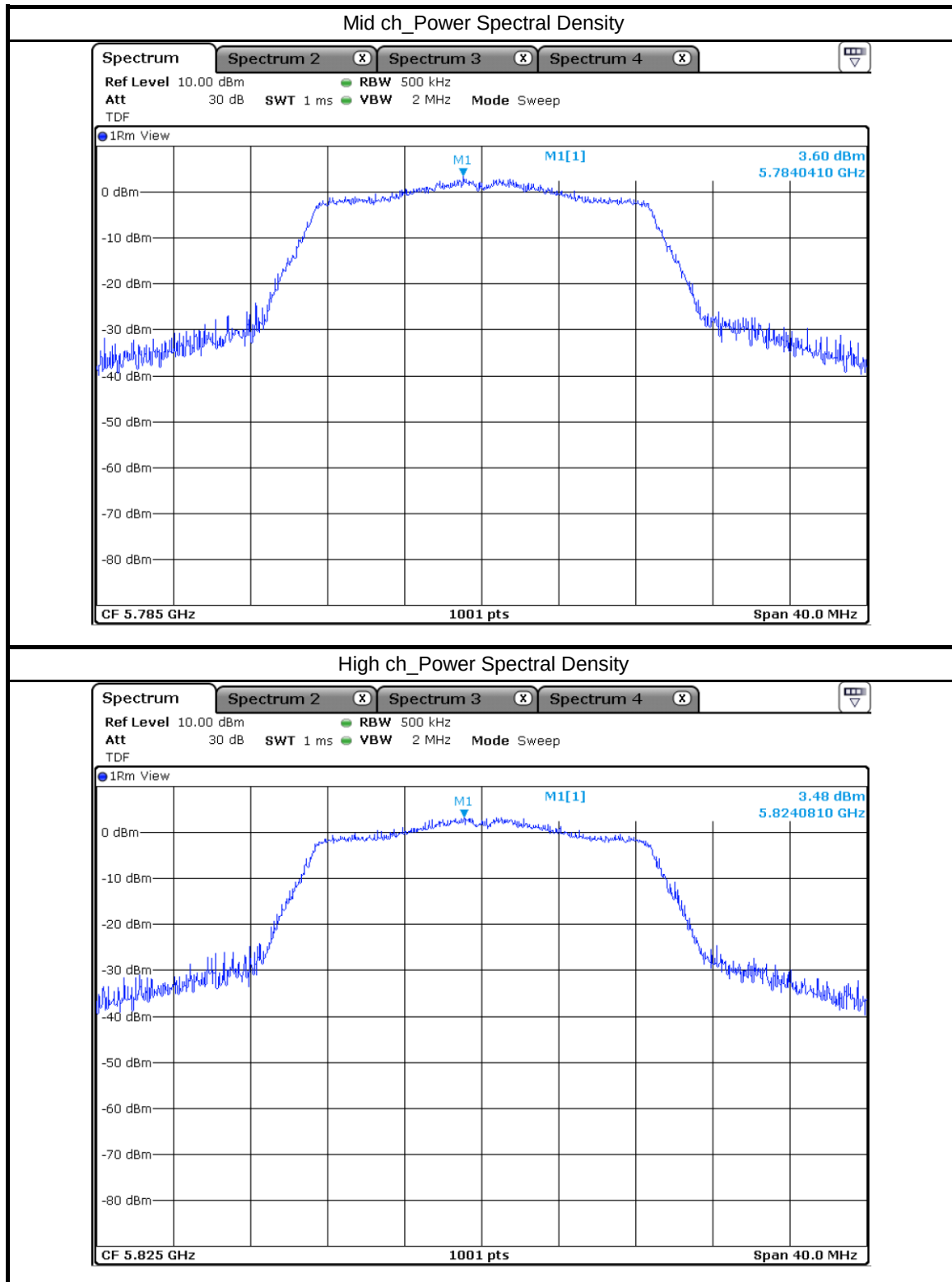


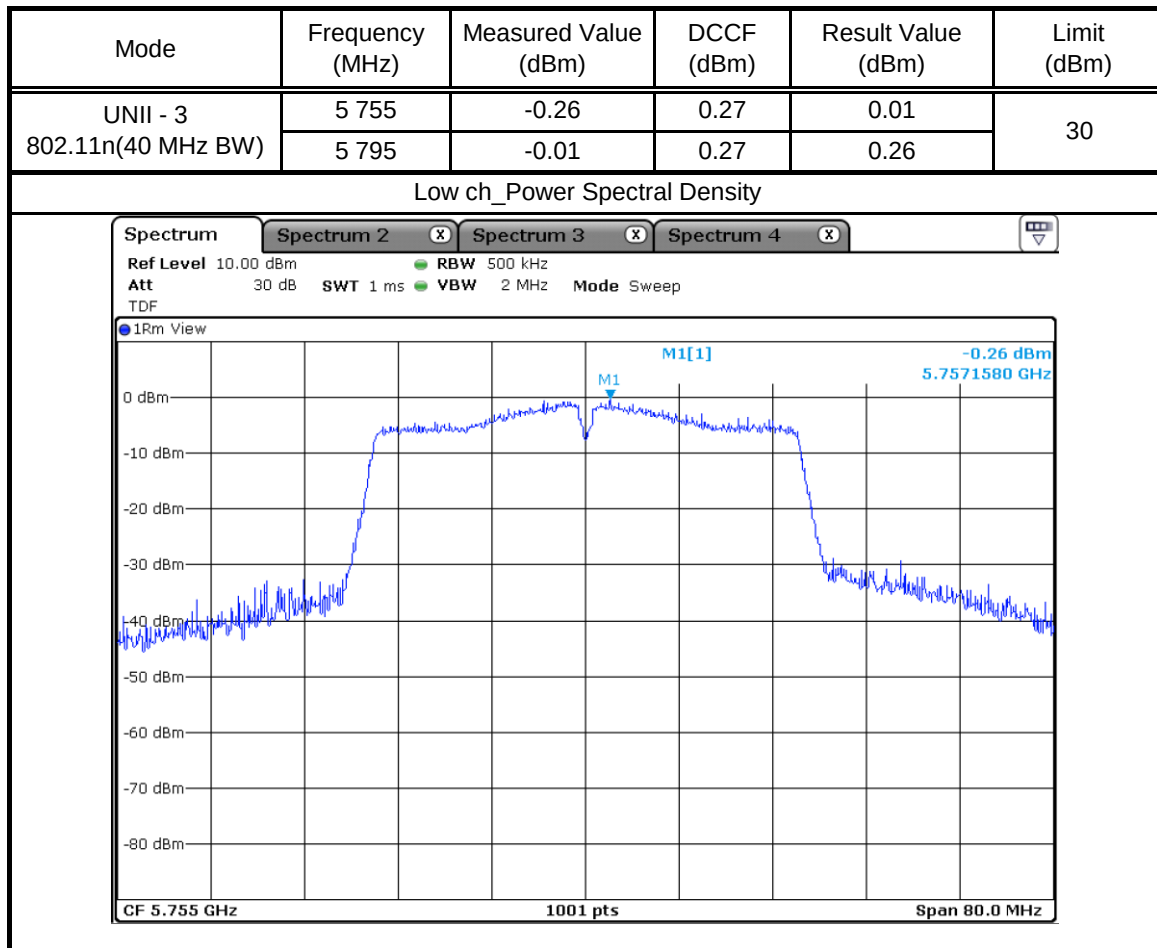


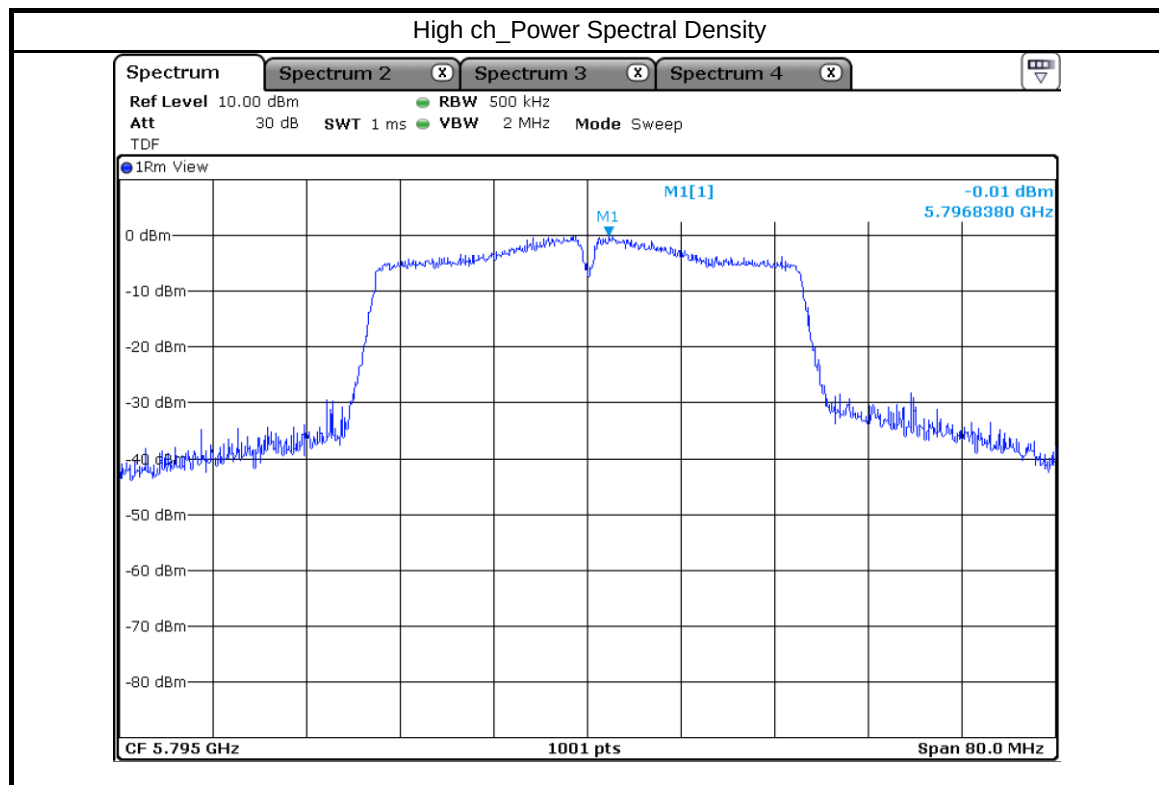
Mode	Frequency (MHz)	Measured Value (dBm)	DCCF (dBm)	Result Value (dBm)	Limit (dBm)
UNII - 3 802.11n(20 MHz BW)	5 745	1.91	0.14	2.05	30
	5 785	3.60	0.14	3.74	
	5 825	3.48	0.14	3.62	

Low ch_Power Spectral Density











4.6 Radiated Spurious Emission

4.6.1 Test procedure

ANSI C63.10-2013 Clause 12.7

4.6.2 Limit

§15.407 (b)

For transmitters operating in the 5.15-5.25 GHz band:

All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz

For transmitters operating solely in the 5.725-5.850 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.

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in § 15.207.

The provisions of § 15.205 apply to intentional radiators operating under this section.

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	100 **	3
88–216	150 **	3
216–960	200 **	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54–72 MHz, 76–88 MHz, 174–216 MHz or 470–806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.



§15.205 Restricted bands of operation.(a),(b)

MHz	MHz	MHz	GHz
0.090–0.110	16.42–16.423	399.9–410	4.5–5.15
¹ 0.495–0.505	16.69475–16.69525	608–614	5.35–5.46
2.1735–2.1905	16.80425–16.80475	960–1240	7.25–7.75
4.125–4.128	25.5–25.67	1300–1427	8.025–8.5
4.17725–4.17775	37.5–38.25	1435–1626.5	9.0–9.2
4.20725–4.20775	73–74.6	1645.5–1646.5	9.3–9.5
6.215–6.218	74.8–75.2	1660–1710	10.6–12.7
6.26775–6.26825	108–121.94	1718.8–1722.2	13.25–13.4
6.31175–6.31225	123–138	2200–2300	14.47–14.5
8.291–8.294	149.9–150.05	2310–2390	15.35–16.2
8.362–8.366	156.52475–156.52525	2483.5–2500	17.7–21.4
8.37625–8.38675	156.7–156.9	2690–2900	22.01–23.12
8.41425–8.41475	162.0125–167.17	3260–3267	23.6–24.0
12.29–12.293	167.72–173.2	3332–3339	31.2–31.8
12.51975–12.52025	240–285	3345.8–3358	36.43–36.5
12.57675–12.57725	322–335.4	3600–4400	(²)
13.36–13.41			

¹ Until February 1, 1999, this restricted band shall be 0.490–0.510 MHz.

² Above 38.6

Except as provided in paragraphs (d) and (e) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in § 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in § 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35 apply to these measurements.



4.6.3 Test data

Result : Pass

Mode : UNII - 1 - 802.11n(40 MHz BW) - F1 (WORST CASE)

- Below 30 MHz

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
It was not found any emissions peaks found from the EUT.								

Mode : UNII - 3 - 802.11n(20 MHz BW) - F3 (WORST CASE)

- Below 30 MHz

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
It was not found any emissions peaks found from the EUT.								



Mode : UNII - 1 - 802.11n(20 MHz BW) - F1 (WORST CASE)

- 30 MHz ~ 1 GHz

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
37.081	60.52	QP	V	-25.40	35.12	40.00	4.88	-
41.737	58.51	QP	V	-23.80	34.71	40.00	5.29	-
63.659	57.25	QP	V	-25.10	32.15	40.00	7.85	-
239.229	55.97	QP	H	-23.20	32.77	46.00	13.23	-

Mode : UNII - 1 - 802.11n(40 MHz BW) - F1 (WORST CASE)

- 30 MHz ~ 1 GHz

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
36.305	61.29	QP	V	-25.70	35.59	40.00	4.41	-
36.693	62.48	QP	V	-25.50	36.98	40.00	3.02	-
41.252	62.08	QP	V	-23.90	38.18	40.00	1.82	-
800.083	47.28	QP	H	-11.60	35.68	46.00	10.32	-

Mode : UNII - 3 - 802.11n(20 MHz BW) - F3 (WORST CASE)

- 30 MHz ~ 1 GHz

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
31.067	61.76	QP	V	-26.90	34.86	40.00	5.14	-
36.887	62.46	QP	V	-25.50	36.96	40.00	3.04	-
41.349	61.01	QP	V	-23.90	37.11	40.00	2.89	-
63.756	60.46	QP	V	-25.10	35.36	40.00	4.64	-

Mode : UNII - 3 - 802.11n(40 MHz BW) - F2 (WORST CASE)

- 30 MHz ~ 1 GHz

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
37.081	62.01	QP	V	-25.40	36.61	40.00	3.39	-
41.058	60.05	QP	V	-23.90	36.15	40.00	3.85	-
63.853	61.06	QP	V	-25.10	35.96	40.00	4.04	-
800.083	46.65	QP	H	-11.60	35.05	46.00	10.95	-



Mode : UNII - 1 - 802.11n(20 MHz BW)

- 1 GHz Above_Low ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
5 149.935	52.95	PK	H	-1.10	51.85	68.20	16.35	Restricted/ Band Edge
	36.43	AVG	H		35.33	54.00	18.67	
16 437.70	39.07	PK	H	12.50	51.57	68.20	16.63	Spurious Emission
	25.97	AVG	H		38.47	54.00	15.53	
10 377.20	39.11	PK	H	5.80	44.91	68.20	23.29	2nd Harmonic
	25.84	AVG	H		31.64	54.00	22.36	
15 546.90	38.56	PK	H	12.30	50.86	68.20	17.34	3rd Harmonic
	25.24	AVG	H		37.54	54.00	16.46	

- 1 GHz Above_Mid ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
17 996.60	38.45	PK	V	15.40	53.85	68.20	14.35	Spurious Emission
	24.68	AVG	V		40.08	54.00	13.92	
10 465.60	39.32	PK	V	6.20	45.52	68.20	22.68	2nd Harmonic
	25.77	AVG	V		31.97	54.00	22.03	
15 676.10	38.15	PK	V	12.00	50.15	68.20	18.05	3rd Harmonic
	25.10	AVG	V		37.10	54.00	16.90	

- 1 GHz Above_High ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
5 400.25	41.58	PK	V	-0.80	40.78	68.20	27.42	Restricted band
	38.51	AVG	V		37.71	54.00	16.29	
5 250.03	67.06	PK	H	-1.00	66.06	68.20	2.14	Band Edge Emission
	43.31	AVG	H		42.31	54.00	11.69	
17 763.70	37.96	PK	V	14.80	52.76	68.20	15.44	Spurious Emission
	24.92	AVG	V		39.72	54.00	14.28	
10 537.00	38.73	PK	H	6.30	45.03	68.20	23.17	2nd Harmonic
	25.47	AVG	H		31.77	54.00	22.23	
15 727.10	38.47	PK	V	11.80	50.27	68.20	17.93	3rd Harmonic
	25.25	AVG	V		37.05	54.00	16.95	



Mode : UNII - 1 - 802.11n(40 MHz BW)

- 1 GHz Above_Low ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
5 150.00	62.46	PK	H	-1.10	61.36	68.20	6.84	Restricted/ Band Edge
	44.28	AVG	H		43.18	54.00	10.82	
16 378.20	38.64	PK	V	12.40	51.04	68.20	17.16	Spurious Emission
	25.78	AVG	V		38.18	54.00	15.82	
17 809.60	38.18	PK	V	14.70	52.88	68.20	15.32	Spurious Emission
	24.77	AVG	V		39.47	54.00	14.53	
10 397.60	39.40	PK	V	5.90	45.30	68.20	22.90	2nd Harmonic
	26.13	AVG	V		32.03	54.00	21.97	
15 572.40	38.65	PK	H	12.30	50.95	68.20	17.25	3rd Harmonic
	25.30	AVG	H		37.60	54.00	16.40	

- 1 GHz Above_High ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
5 350.00	42.37	PK	V	-1.00	41.37	68.20	26.83	Restricted band
	28.69	AVG	V		27.69	54.00	26.31	
5 250.00	65.47	PK	H	-1.00	64.47	68.20	3.73	Band Edge Emission
	44.71	AVG	H		43.71	54.00	10.29	
17 286.00	38.83	PK	H	14.10	52.93	68.20	15.27	Spurious Emission
	25.42	AVG	H		39.52	54.00	14.48	
10 467.30	39.24	PK	V	6.20	45.44	68.20	22.76	2nd Harmonic
	25.73	AVG	V		31.93	54.00	22.07	
15 706.70	38.67	PK	V	11.90	50.57	68.20	17.63	3rd Harmonic
	25.06	AVG	V		36.96	54.00	17.04	



Mode : UNII - 3 - 802.11n(20 MHz BW)

- 1 GHz Above_Low ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
5 725.02	60.47	PK	H	-0.30	60.17	130.00	69.83	Band Edge Emission
	39.92	AVG	H		39.62	54.00	14.38	
5 716.17	51.04	PK	H	-0.30	50.74	109.73	58.99	Spurious Emission
	30.71	AVG	H		30.41	54.00	23.59	
5 722.54	56.15	PK	H	-0.30	55.85	116.58	60.73	Spurious Emission
	36.39	AVG	H		36.09	54.00	17.91	
11 490.70	38.01	PK	H	7.20	45.21	68.20	22.99	2nd Harmonic
	24.36	AVG	H		31.56	54.00	22.44	
17 233.30	39.39	PK	H	14.10	53.49	68.20	14.71	3rd Harmonic
	25.40	AVG	H		39.50	54.00	14.50	

- 1 GHz Above_Mid ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
11 572.30	38.82	PK	H	7.10	45.92	68.20	22.28	2nd Harmonic
	24.62	AVG	H		31.72	54.00	22.28	
17 367.60	37.89	PK	H	14.00	51.89	68.20	16.31	3rd Harmonic
	24.70	AVG	H		38.70	54.00	15.30	

- 1 GHz Above_High ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
5 725.02	40.55	PK	V	-0.30	40.25	130.00	89.75	Band Edge Emission
	27.02	AVG	V		26.72	54.00	27.28	
11 676.00	38.49	PK	V	7.20	45.69	68.20	22.51	2nd Harmonic
	24.82	AVG	V		32.02	54.00	21.98	
17 474.70	37.88	PK	V	14.10	51.98	68.20	16.22	3rd Harmonic
	24.21	AVG	V		38.31	54.00	15.69	



Mode : UNII - 3 - 802.11n(40 MHz BW)

- 1 GHz Above_Low ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
5 725.02	61.60	PK	H	-0.30	61.30	130.00	68.70	Band Edge Emission
	40.37	AVG	H		40.07	54.00	13.93	
11 511.10	37.74	PK	V	7.20	44.94	68.20	23.26	2nd Harmonic
	24.28	AVG	V		31.48	54.00	22.52	
17 263.90	38.96	PK	V	14.10	53.06	68.20	15.14	3rd Harmonic
	25.41	AVG	V		39.51	54.00	14.49	

- 1 GHz Above_High ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
5 850.01	44.30	PK	H	0.40	44.70	122.19	77.49	Band Edge Emission
	29.22	AVG	H		29.62	54.00	24.38	
17 865.70	38.56	PK	H	14.70	53.26	68.20	14.94	Spurious Emission
	25.16	AVG	H		39.86	54.00	14.14	
11 601.20	38.76	PK	H	7.20	45.96	68.20	22.24	2nd Harmonic
	24.80	AVG	H		32.00	54.00	22.00	
17 379.50	38.24	PK	V	14.00	52.24	68.20	15.96	3rd Harmonic
	24.57	AVG	V		38.57	54.00	15.43	



Mode : UNII - 1 - 802.11n(40 MHz BW) - F1 (WORST CASE)

- 18 GHz Above

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
It was not found any emissions peaks found from the EUT.								

Mode : UNII - 3 - 802.11n(20 MHz BW) - F3 (WORST CASE)

- 18 GHz Above

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
It was not found any emissions peaks found from the EUT.								

Mode : UNII - 1 - 802.11n(40 MHz BW) - F1 (WORST CASE)

- 26.5 GHz Above

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
It was not found any emissions peaks found from the EUT.								

Mode : UNII - 3 - 802.11n(20 MHz BW) - F3 (WORST CASE)

- 26.5 GHz Above

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
It was not found any emissions peaks found from the EUT.								



4.6.4 Test data_Co - located

Result : Pass

Mode : 802.11n(20MHz BW)_F3 + UNII3(20MHz BW)_F3 + Bluetooth_F3 (WORST CASE)

- Below 30 MHz

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
It was not found any emissions peaks found from the EUT.								

- 30 MHz ~ 1 GHz

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
31.455	62.01	QP	V	-27.00	35.01	40.00	4.99	-
36.596	63.47	QP	V	-25.60	37.87	40.00	2.13	-
242.042	56.43	QP	H	-23.00	33.43	46.00	12.57	-
754.105	49.75	QP	H	-12.00	37.75	46.00	8.25	-

- 1 GHz Above

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
2 484.344	70.16	PK	H	-10.90	59.26	74.00	14.74	Restricted band
	48.76	AVG	H		37.86	54.00	16.14	
5 848.400	40.56	PK	H	0.40	40.96	68.20	27.24	Band Edge Emission
	27.04	AVG	H		27.44	54.00	26.56	
3 424.200	50.36	PK	V	-5.90	44.46	68.20	23.74	Spurious Emission
	43.84	AVG	V		37.94	54.00	16.06	
4 918.500	42.28	PK	V	-1.90	40.38	74.00	33.62	Harmonic
	28.64	AVG	V		26.74	54.00	27.26	
4 959.300	41.78	PK	V	-1.80	39.98	74.00	34.02	Harmonic
	28.35	AVG	V		26.55	54.00	27.45	
11 650.500	39.09	PK	H	7.20	46.29	68.20	21.91	Harmonic
	25.52	AVG	H		32.72	54.00	21.28	



- 18 GHz Above

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
It was not found any emissions peaks found from the EUT.								

- 26.5 GHz Above

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
It was not found any emissions peaks found from the EUT.								



Mode : 802.11n(20MHz BW)_F3 + UNII3(20MHz BW)_F3(WORST CASE)

- Below 30 MHz

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
It was not found any emissions peaks found from the EUT.								

- 30 MHz ~ 1 GHz

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
31.358	62.42	QP	V	-27.00	35.42	40.00	4.58	-
36.305	62.74	QP	V	-25.70	37.04	40.00	2.96	-
62.883	55.6	QP	V	-24.90	30.70	40.00	9.30	-
243.109	55.24	QP	H	-23.00	32.24	46.00	13.76	-

- 1 GHz Above

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
2 484.100	52.87	PK	V	-10.90	41.97	74.00	32.03	Restricted band
	37.46	AVG	V		26.56	54.00	27.44	
3 424.200	57.07	PK	V	-5.90	51.17	68.20	17.03	Spurious Emission
	53.63	AVG	V		47.73	54.00	6.27	
4 921.900	57.5	PK	H	-1.90	55.60	74.00	18.40	Harmonic
	40.44	AVG	H		38.54	54.00	15.46	
5 724.300	41.52	PK	V	-0.30	41.22	68.20	26.98	Spurious Emission
	27.75	AVG	V		27.45	54.00	26.55	
5 850.100	42.51	PK	H	0.40	42.91	68.20	25.29	Band Edge Emission
	28.43	AVG	H		28.83	54.00	25.17	
11 657.300	54.39	PK	H	7.20	61.59	68.20	6.61	Harmonic
	39.43	AVG	H		46.63	54.00	7.37	
17 473.000	51.32	PK	H	14.10	65.42	68.20	2.78	Harmonic
	38.24	AVG	H		52.34	54.00	1.66	



- 18 GHz Above

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
It was not found any emissions peaks found from the EUT.								

- 26.5 GHz Above

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
It was not found any emissions peaks found from the EUT.								

Mode : UNII3(20MHz BW)_F3 + Bluetooth_F3 (WORST CASE)

- Below 30 MHz

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
It was not found any emissions peaks found from the EUT.								

- 30 MHz ~ 1 GHz

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
30.970	61.48	QP	V	-26.90	34.58	40.00	5.42	-
36.402	60.11	QP	V	-25.60	34.51	40.00	5.49	-
62.689	59.46	QP	V	-24.90	34.56	40.00	5.44	-
244.079	56.36	QP	H	-22.90	33.46	46.00	12.54	-



- 1 GHz Above

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
2 484.100	53.60	PK	H	-10.90	42.70	74.00	31.30	Restricted band
	37.44	AVG	H		26.54	54.00	27.46	
2 992.400	52.09	PK	V	-7.20	44.89	74.00	29.11	Spurious Emission
	36.29	AVG	V		29.09	54.00	24.91	
3 424.200	48.92	PK	V	-5.90	43.02	68.20	25.18	Spurious Emission
	39.39	AVG	V		33.49	54.00	20.51	
4 959.300	63.76	PK	H	-1.80	61.96	74.00	12.04	Harmonic
	51.53	AVG	H		49.73	54.00	4.27	
5 850.100	41.07	PK	H	0.40	41.47	68.20	26.73	Band Edge Emission
	26.74	AVG	H		27.14	54.00	26.86	
7 439.600	65.08	PK	H	2.50	67.58	74.00	6.42	Harmonic
	47.59	AVG	H		50.09	54.00	3.91	
11 648.800	48.62	PK	H	7.20	55.82	68.20	12.38	Harmonic
	39.32	AVG	H		46.52	54.00	7.48	
17 479.800	48.82	PK	H	14.10	62.92	68.20	5.28	Harmonic
	35.32	AVG	H		49.42	54.00	4.58	

- 18 GHz Above

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
It was not found any emissions peaks found from the EUT.								

- 26.5 GHz Above

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
It was not found any emissions peaks found from the EUT.								



4.7 Power Line Conducted Emission

4.7.1 Test procedure

§15.407 (b) (9)

4.7.2 Limit

§15.407 (b) (9)

any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in § 15.207.

§15.207 (a)

Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15–0.5	66 to 56*	56 to 46*
0.5–5	56	46
5–30	60	50

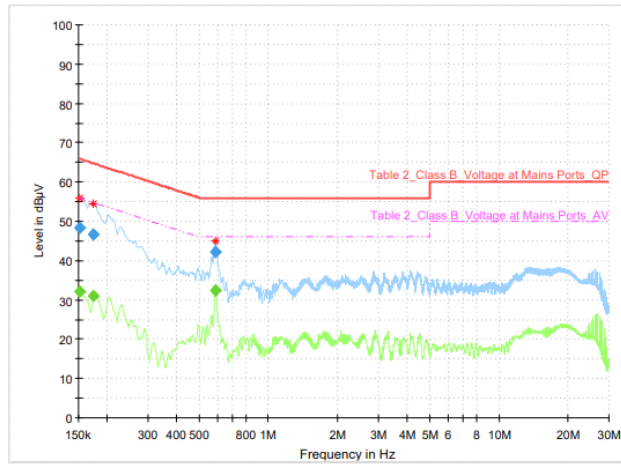
*Decreases with the logarithm of the frequency.



4.7.3 Test data

Result : Pass

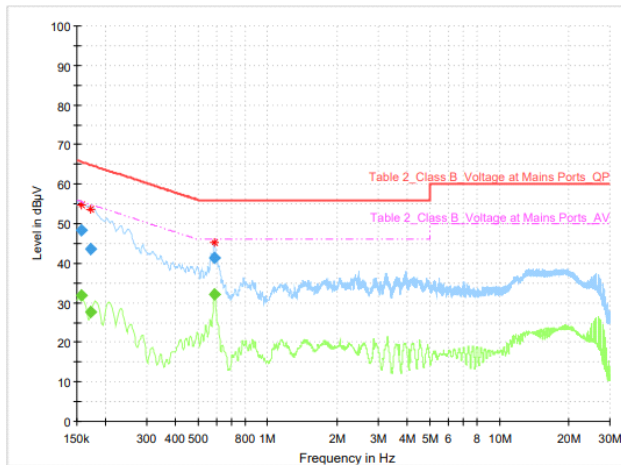
L-Line Conducted Emission



Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.152250	---	32.12	55.88	23.76	5000.0	9.000	L1	9.7
0.152250	48.20	---	65.88	17.67	5000.0	9.000	L1	9.7
0.174750	---	31.06	54.73	23.67	5000.0	9.000	L1	9.9
0.174750	46.74	---	64.73	17.99	5000.0	9.000	L1	9.9
0.588750	---	32.47	46.00	13.53	5000.0	9.000	L1	9.8
0.588750	42.09	---	56.00	13.91	5000.0	9.000	L1	9.8

N-Line Conducted Emission



Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.156750	---	31.98	55.63	23.66	5000.0	9.000	N	9.7
0.156750	48.21	---	65.63	17.42	5000.0	9.000	N	9.7
0.172500	---	27.54	54.84	27.30	5000.0	9.000	N	9.9
0.172500	43.56	---	64.84	21.28	5000.0	9.000	N	9.9
0.586500	---	32.06	46.00	13.94	5000.0	9.000	N	9.8
0.586500	41.24	---	56.00	14.76	5000.0	9.000	N	9.8



5. Used equipment

	Description	Model Name	Manufacturer	Serial Number	Next Cal
■	SIGNAL GENERATOR	SMB100A	ROHDE & SCHWARZ	180607	2025-02-27
■	DOUBLE RIDGED HORN ANTENNA	HF907	ROHDE & SCHWARZ	102556	2024-08-04
■	HORN ANTENNA	LB-42-10-C-KF	A-INFOMW	J202024625	2025-03-12
■	HORN ANTENNA	LB-28-10-C-KF	A-INFOMW	J202024626	2025-03-12
■	SPECTRUM ANALYZER	FSV40-N	ROHDE & SCHWARZ	101303	2025-02-27
■	DC BLOCK	PDCB-00012650-SMSF-2	PSATEK INC.	-	2025-03-06
■	RF PRE AMPLIFIER	AMF-4F-18265-35-8P-1	MITEQ	771846	2025-03-06
■	RF PRE AMPLIFIER	AMF-4D-260400-45-6P	MITEQ	779918	2025-03-06
■	HIGH PASS FILTER	WT-A1699-HS	WT MICROWAVE	WT171201-6-5	2025-02-26
■	DC POWER SUPPLY	XDL35-5P	XANTREX	J00385373	2025-02-27
■	LOOP ANTENNA	HFH2-Z2	ROHDE & SCHWARZ	100271	2025-03-08
■	BI-Log ANTENNA	VULB 9162	SCHWARZBECK	120	2024-12-26
■	EMI TEST RECEIVER	ESR26	ROHDE & SCHWARZ	101462	2025-03-28
■	SIGNAL CONDITIONING UNIT	SCU 08	ROHDE & SCHWARZ	100746	2025-03-28
■	SIGNAL CONDITIONING UNIT	SCU 18	ROHDE & SCHWARZ	102342	2025-03-28
■	EMI TEST RECEIVER	ESR26	ROHDE & SCHWARZ	101461	2025-03-28
■	EMI TEST RECEIVER	ESW44	ROHDE & SCHWARZ	101615	2025-02-28
■	TWO LINE V-NETWORK	ENV216	ROHDE & SCHWARZ	102195	2024-09-22
■	EMI TEST RECEIVER	ESR3	ROHDE & SCHWARZ	102119	2025-03-29
■	EMI TEST RECEIVER	ESR7	ROHDE & SCHWARZ	102034	2025-03-28

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