



시험 성적서

TEST REPORT

페이지(page) : (1) / 총(Total) (55)

성적서 번호 Report No.		ICRT-TR-E241966-0A	
신청자 Client	기관명 Name	AURES TECHNOLOGIES S.A.	
	주 소 Address	24 bis rue Léonard de Vinci, 91090 Lisses FRANCE	
시험대상품목 Sample description		POS SYSTEM	
모델명 Type description		EKO	
정 격 Ratings		DC 12.0 V	
시험장소 Place of test		☒ 고정시험실(Permanent Testing Lab) ☐ 현장시험(On Site Testing) 주소지(Address): 112, 113 Hwanggeum 3-ro 7beon-gil, Hagun-ri, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea	
시험기간 Date of test		05. Jul. 2024 ~ 12. Jul. 2024	
시험방법/항목 Test Method/Item		FCC Part 15 Subpart C	
시험결과 Test Results		Refer to 3. Test Summary	
확 인 Affirmation	작성자 Tested by	기술책임자 Technical Manager	
	성명 Name Eun-Hye, Kwak (Signature)	성명 Name Tae-Yang, Yoon (Signature)	
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경기도 김포시 양촌읍 황금3로7번길 112 / Tel: 02-6351-9001 ~ 6

112, Hwanggeum3-ro 7beon-gil, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea / Tel: 02-6351-9001 ~ 6



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Revision History

Issued Report No.	Issued Date	Revisions	Effect Section
ICRT-TR-E241966-0A	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	DTS-Digital Transmission System	
Device Type	Stand-alone	
Operating Frequency	802.11n(20 MHz BW)	2 412 MHz ~ 2 462 MHz
	802.11n(40 MHz BW)	2 422 MHz ~ 2 452 MHz
	Bluetooth LE 1M	2 402 MHz ~ 2 480 MHz
RF Output Power	802.11n(20 MHz BW)	17.02 dBm
	802.11n(40 MHz BW)	15.94 dBm
	Bluetooth LE 1M	4.23 dBm
Number of Channel	802.11n(20 MHz BW)	11
	802.11n(40 MHz BW)	7
	Bluetooth LE 1M	40
Modulation Type	OFDM /GFSK	
Antenna Type	FPCB Antenna	
Antenna Gain	2.63 dBi	

※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.

2.3 Modifications of EUT

- None



3. Test Summary

3.1 Test standards and results

FCC Part 15 Subpart C			
Clause	Test items	Applied	Results
§15.247 (a) (2)	6 dB Bandwidth	■	PASS
§15.247 (b) (3)	Maximum Conducted Output Power	■	PASS
§15.247 (e)	Power Spectral Density	■	PASS
§15.247 (d)	Conducted Spurious Emission & band Edge	■	PASS
§15.247 (d) & §15.209 & §15.205	Radiated Spurious Emission	■	PASS
§15.207	Power Line Conducted Emission	■	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 **2.63 dBi**.



4. Test Result

4.1. 6 dB Bandwidth

4.1.1 Test procedure

ANSI C63.10-2013 Clause 11.8

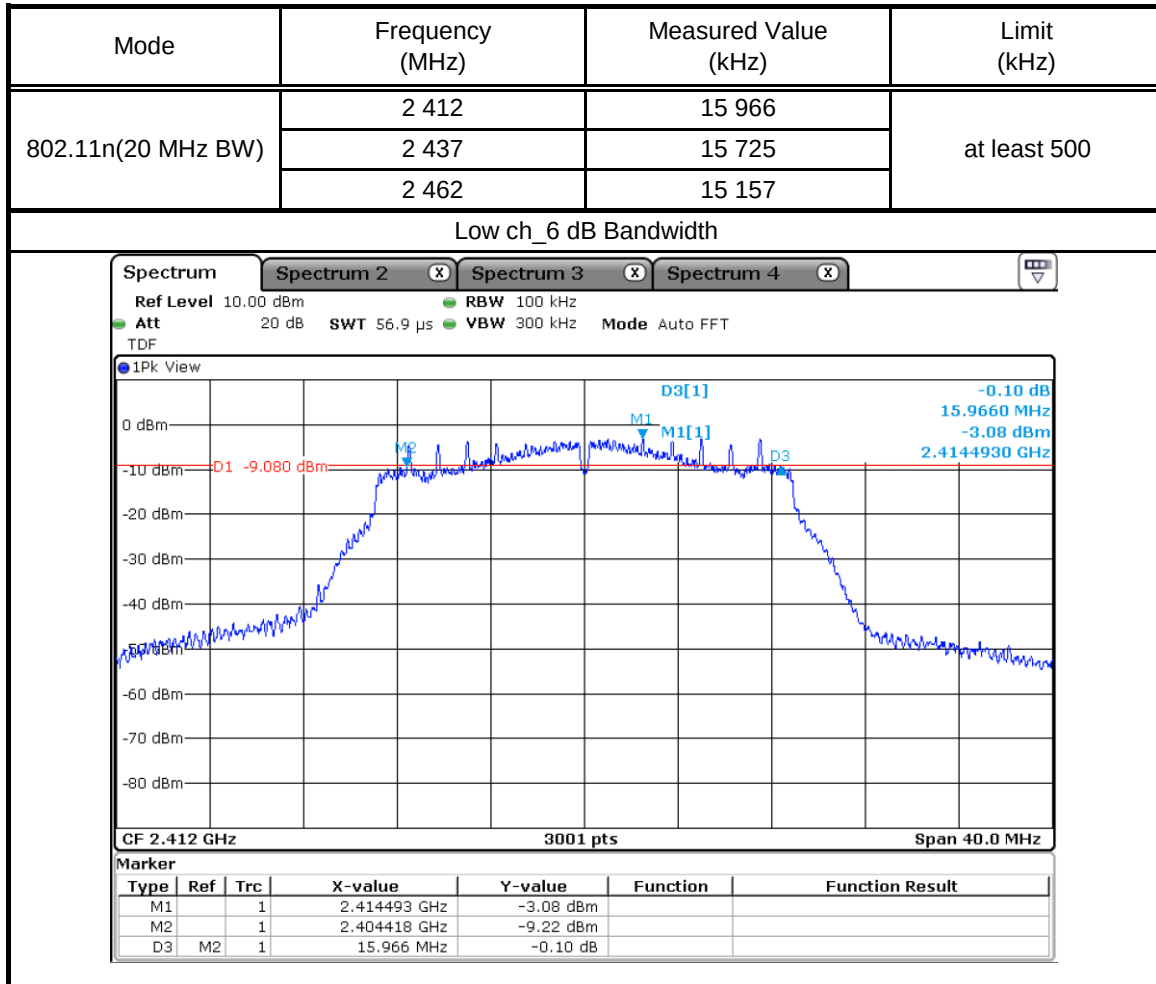
4.1.2 Limit

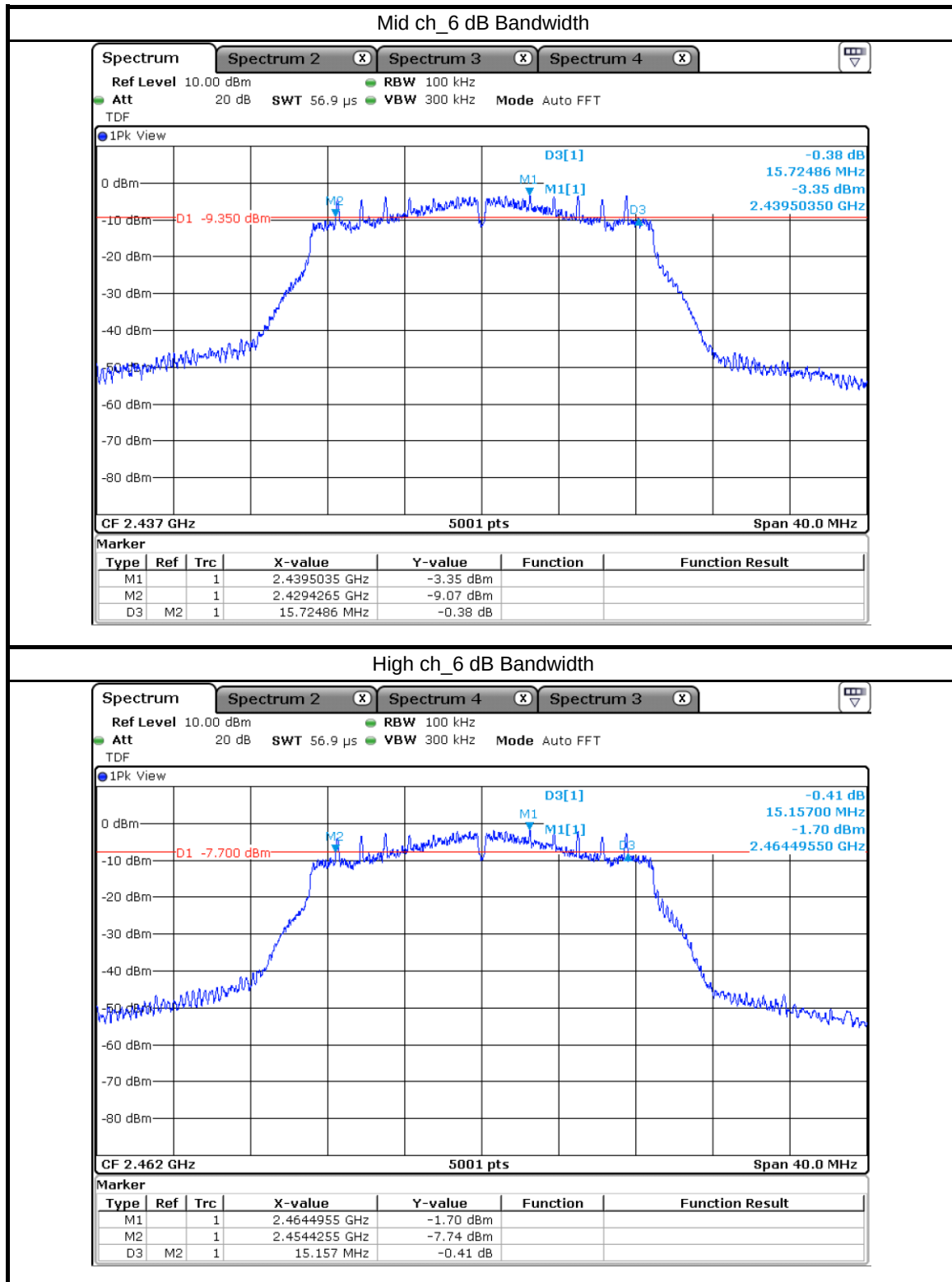
§15.247 (a) (2)

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

4.1.3 Test data

Result : Pass

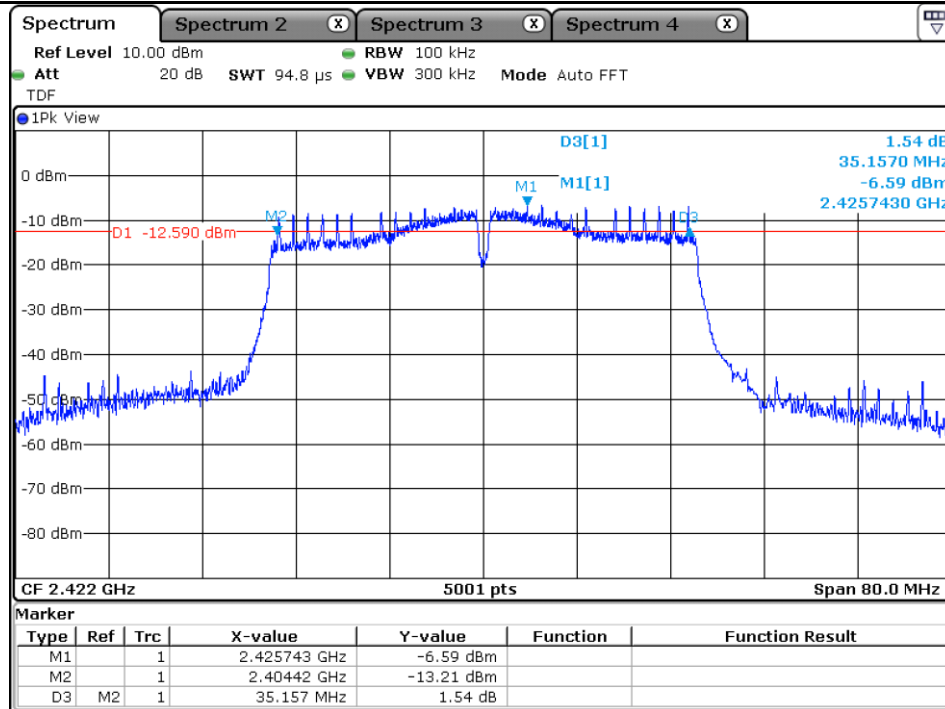


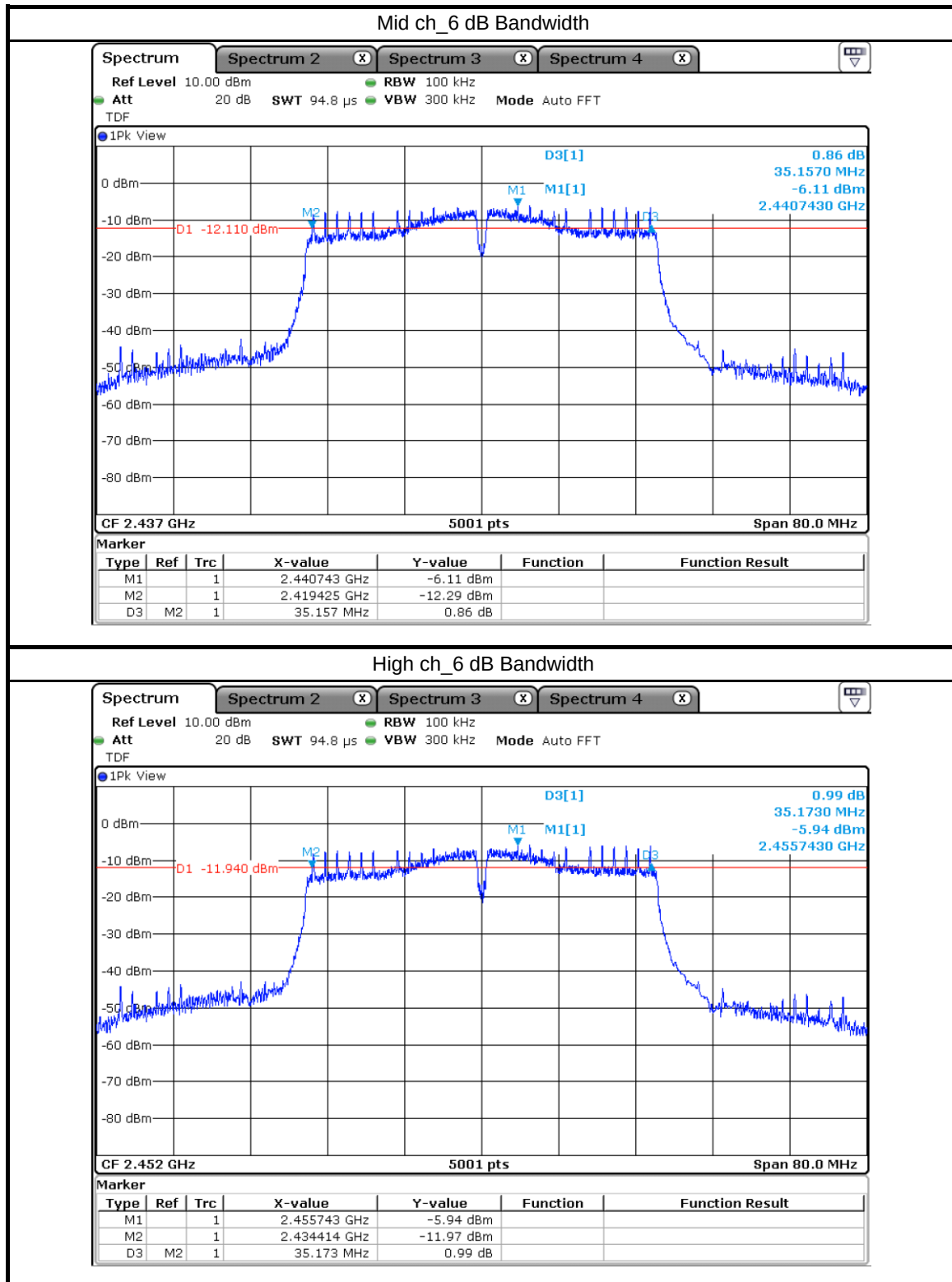


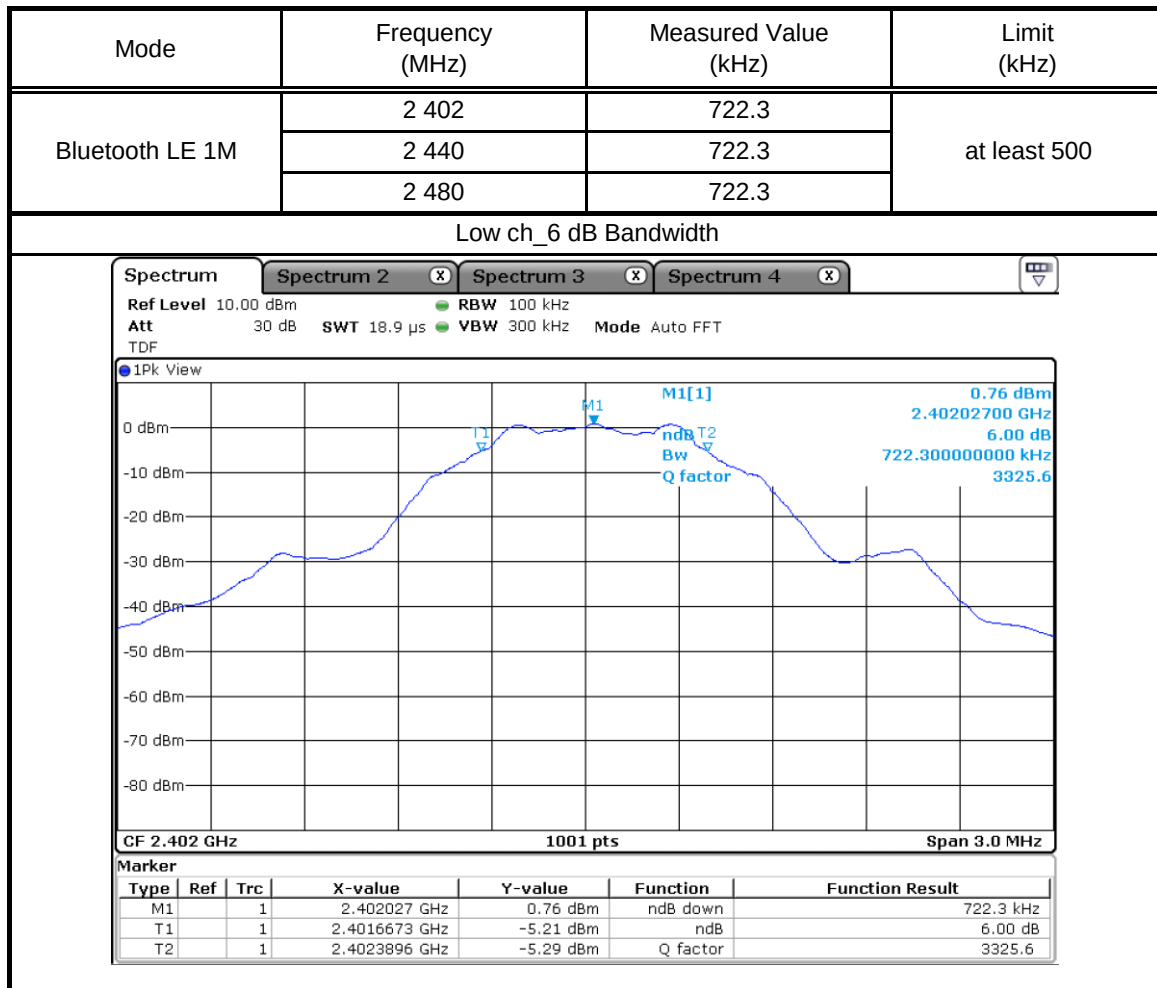


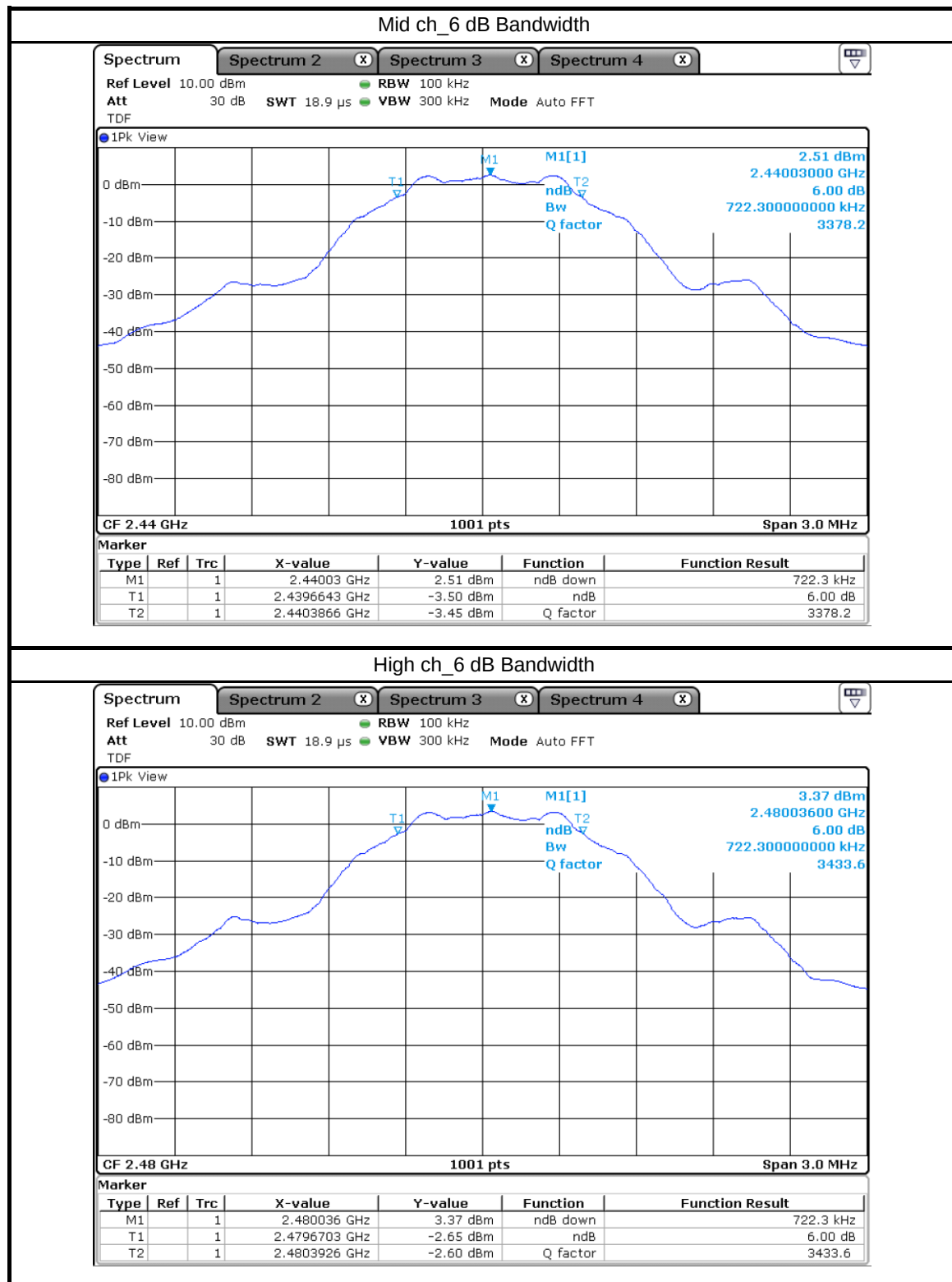
Mode	Frequency (MHz)	Measured Value (kHz)	Limit (kHz)
802.11n(40 MHz BW)	2 422	35 157	at least 500
	2 437	35 157	
	2 452	35 173	

Low ch_6 dB Bandwidth











4.2 Maximum Conducted Output Power

4.2.1 Test procedure

ANSI C63.10-2013 Clause 11.9

4.2.2 Limit

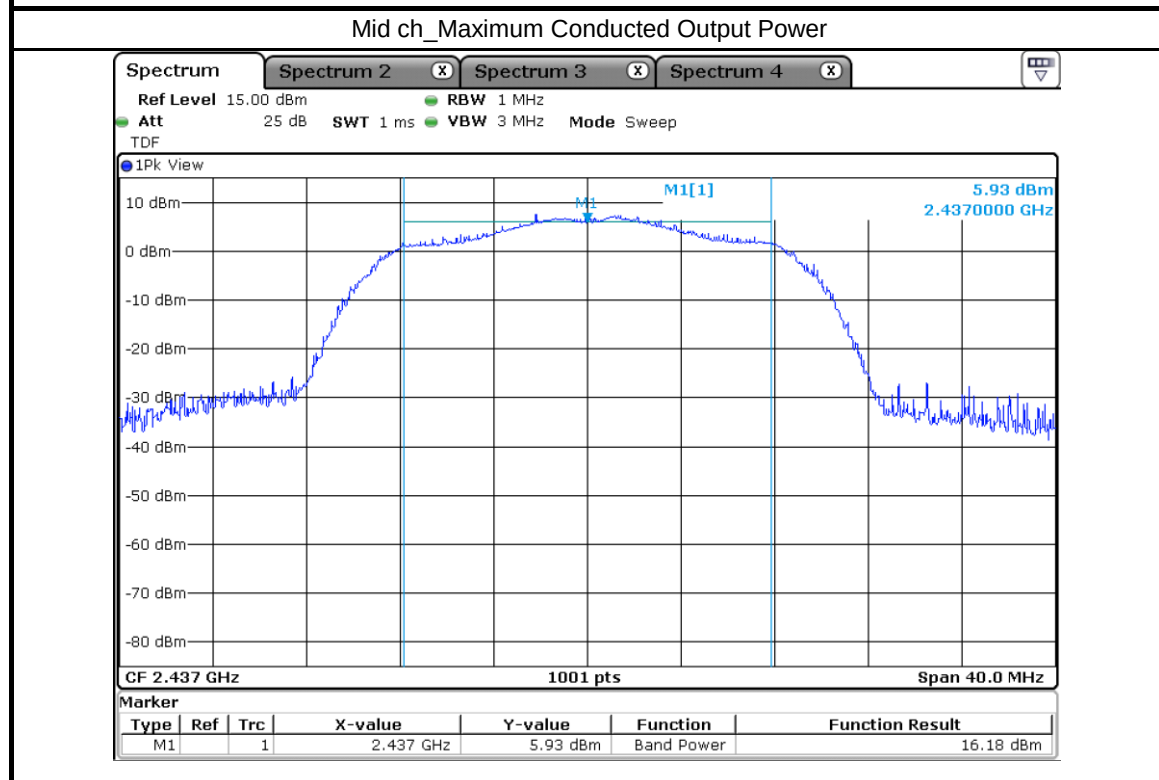
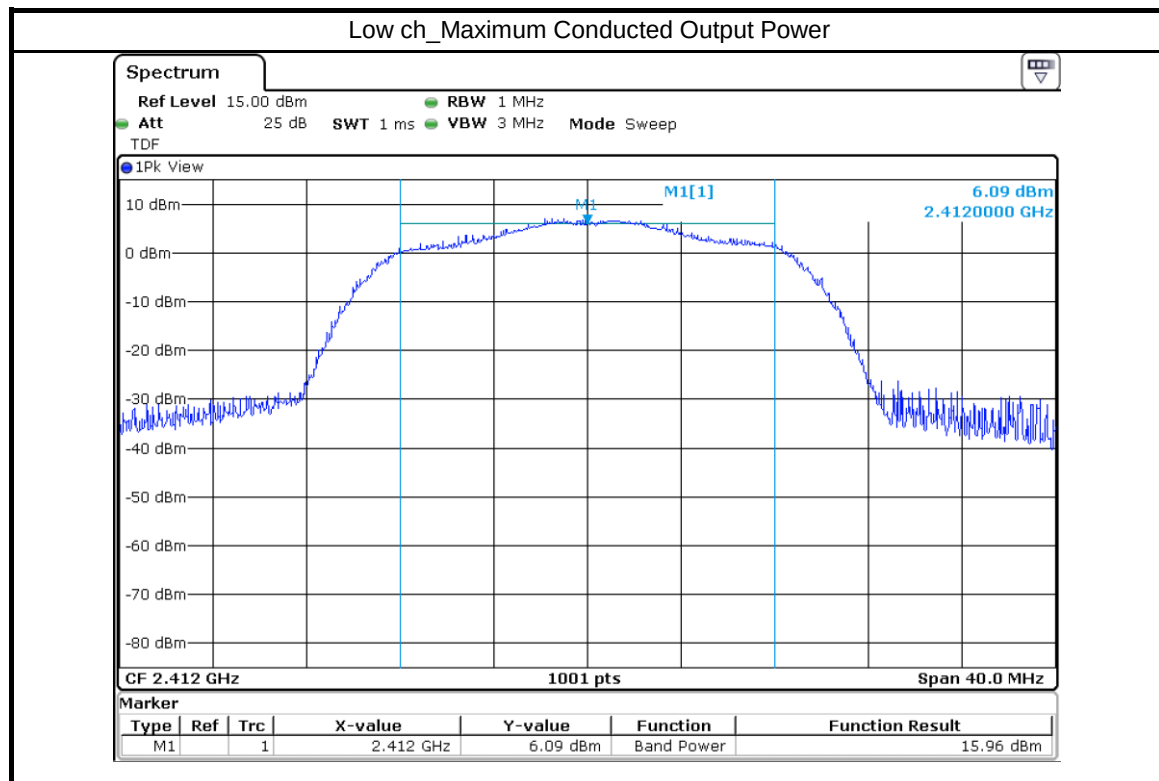
§15.247 (b) (3)

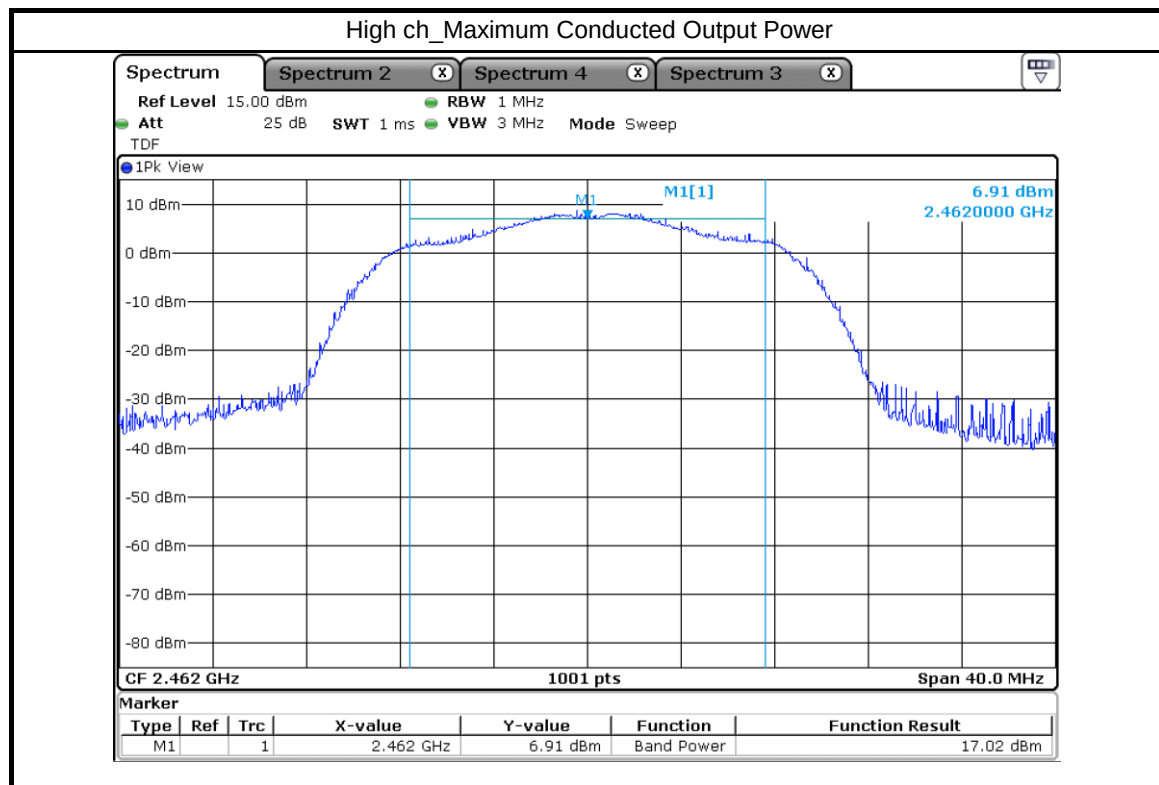
For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

4.2.3 Test data

Result : Pass

Mode	Frequency (MHz)	Measured Value (dBm)	Limit (dBm)
802.11n(20 MHz BW)	2 412	15.96	30
	2 437	16.18	
	2 462	17.02	

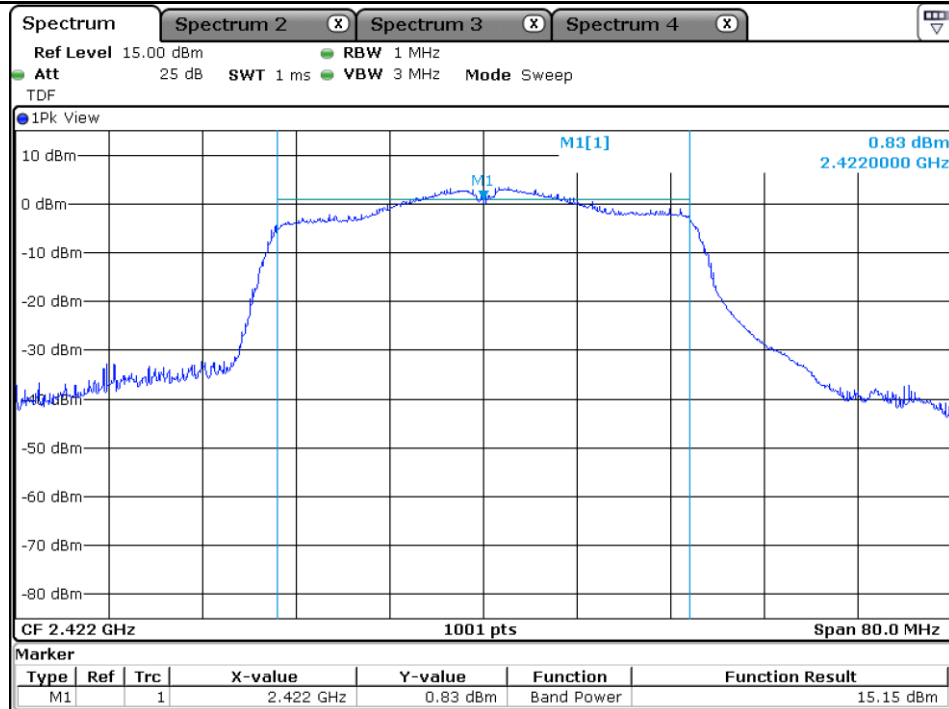


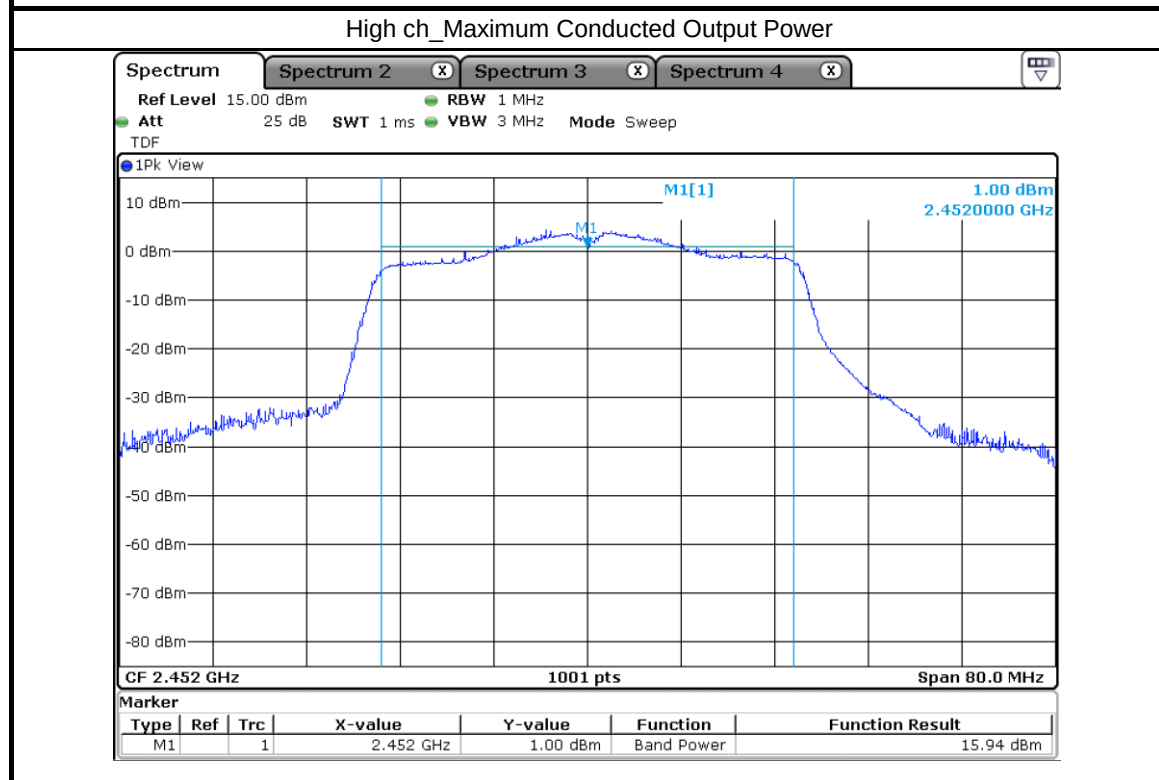
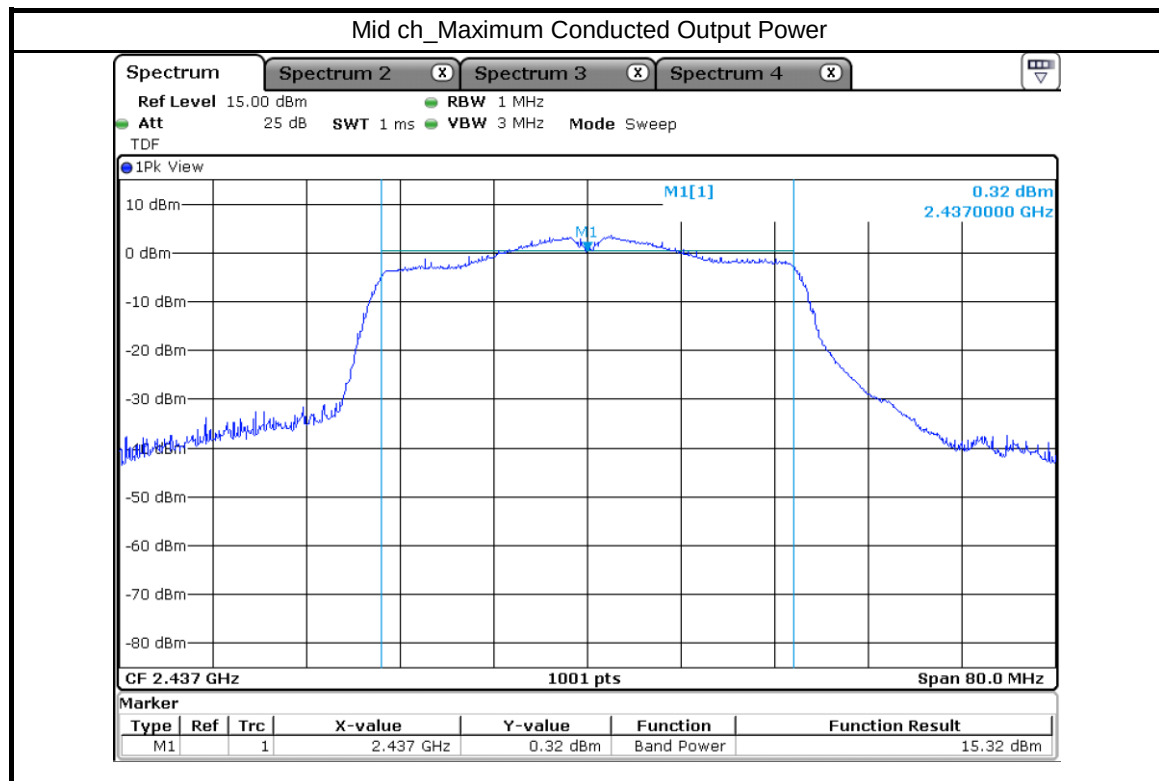




Mode	Frequency (MHz)	Measured Value (dBm)	Limit (dBm)
802.11n(40 MHz BW)	2 422	15.15	30
	2 437	15.32	
	2 452	15.94	

Low ch_ Maximum Conducted Output Power

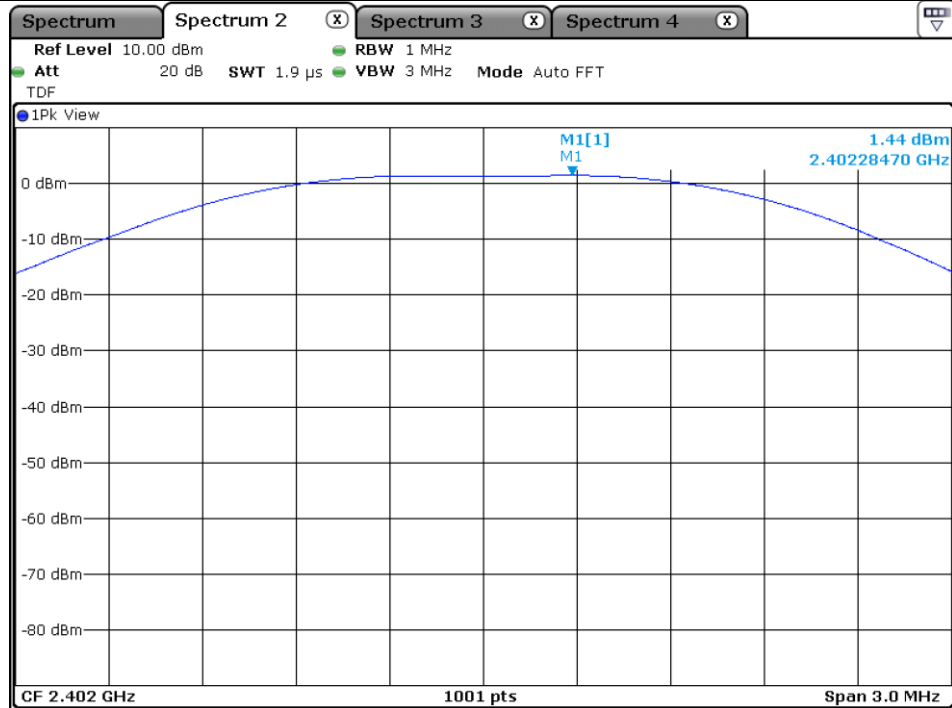


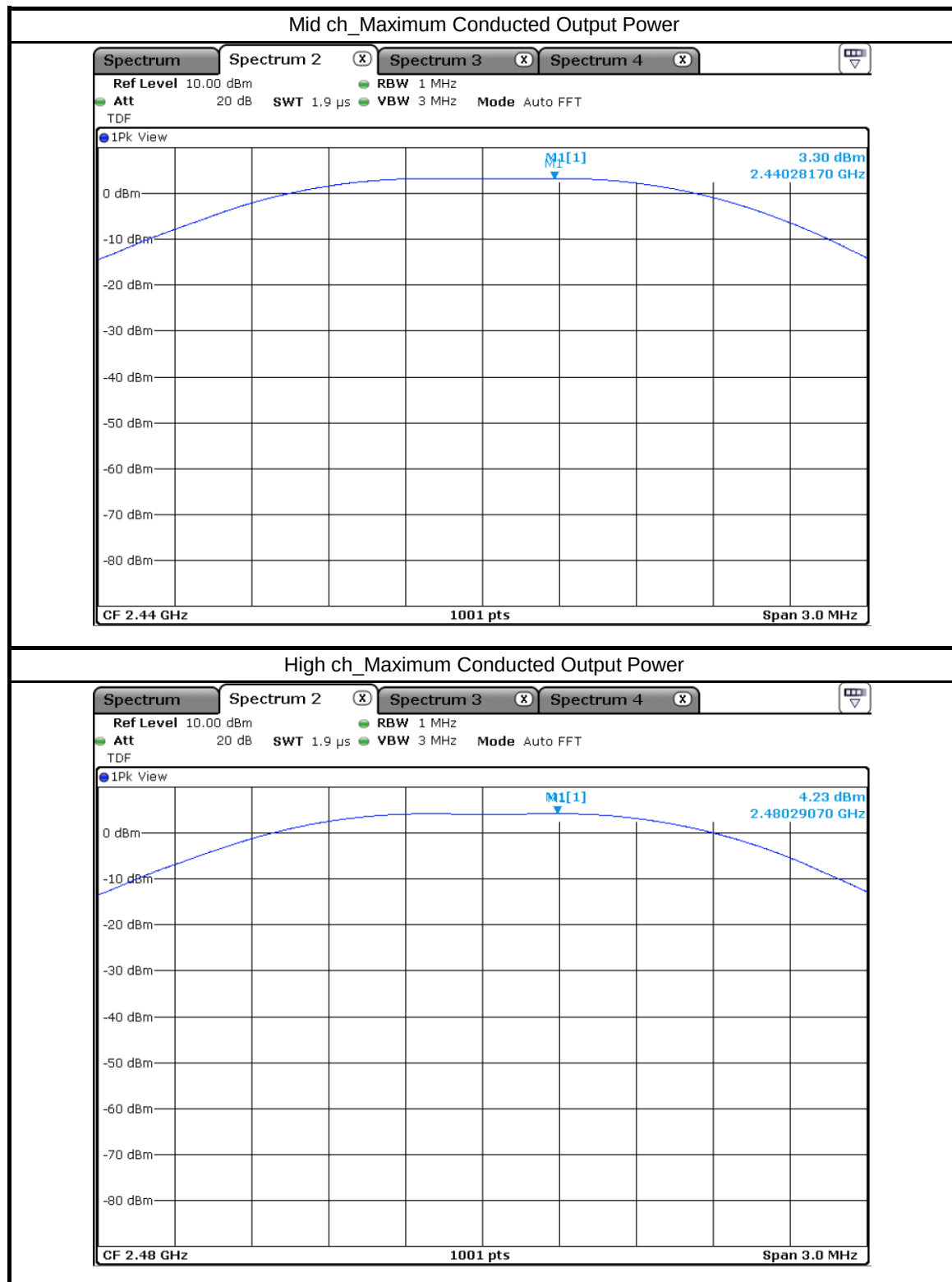




Mode	Frequency (MHz)	Measured Value (dBm)	Limit (dBm)
Bluetooth LE 1M	2 402	1.44	30
	2 440	3.30	
	2 480	4.23	

Low ch_ Maximum Conducted Output Power







4.3 Power Spectral Density

4.3.1 Test procedure

ANSI C63.10-2013 Clause 11.10

4.3.2 Limit

§15.247 (e)

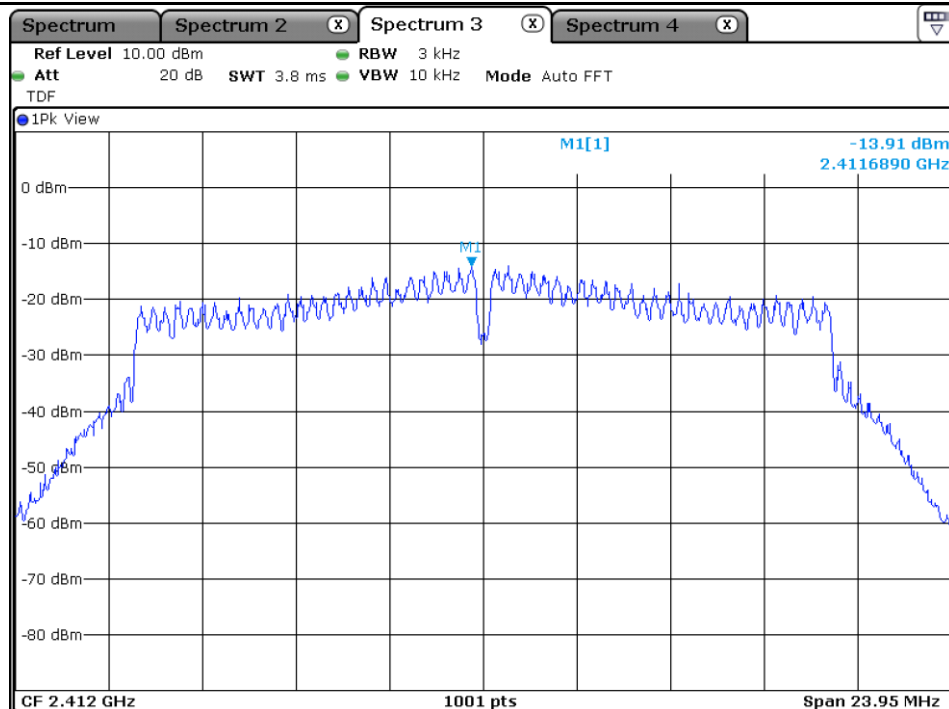
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

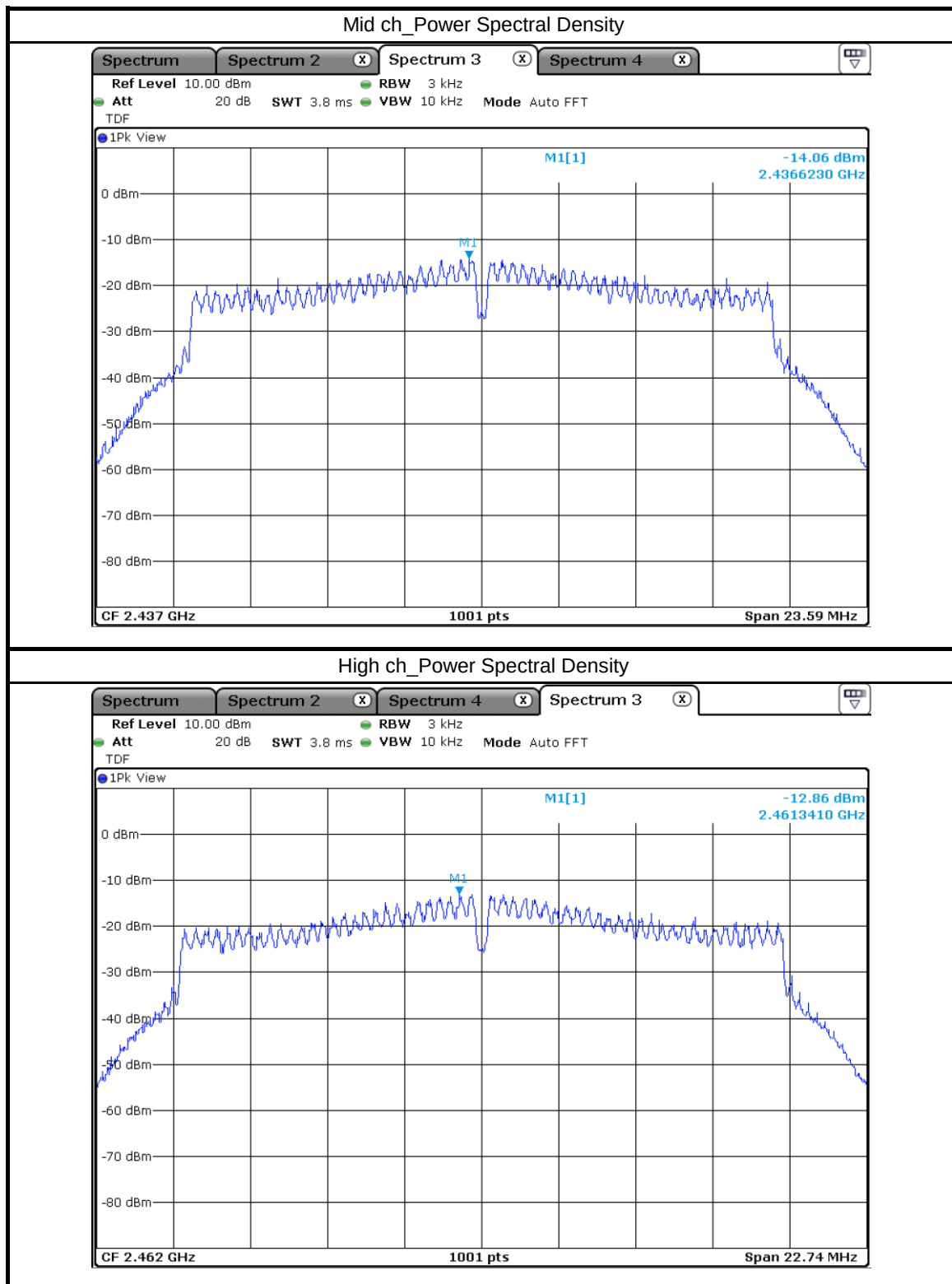
4.3.3 Test data

Result : Pass

Mode	Frequency (MHz)	Measured Value (dBm)	Limit (dBm/3 kHz)
802.11n(20 MHz BW)	2412	-13.91	8
	2437	-14.06	
	2462	-12.86	

Low ch_Power Spectral Density

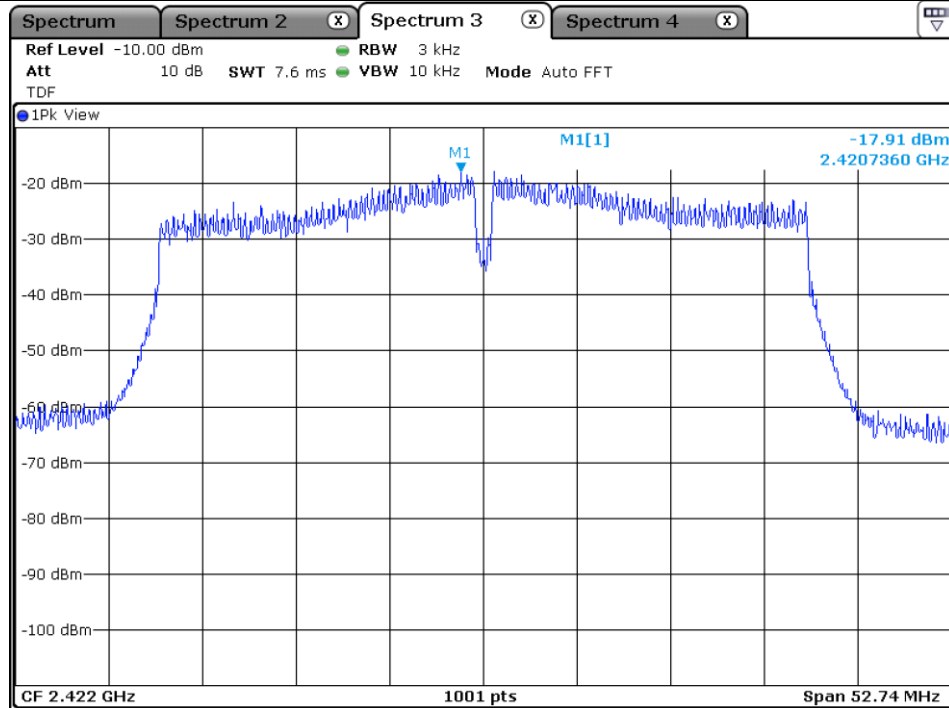


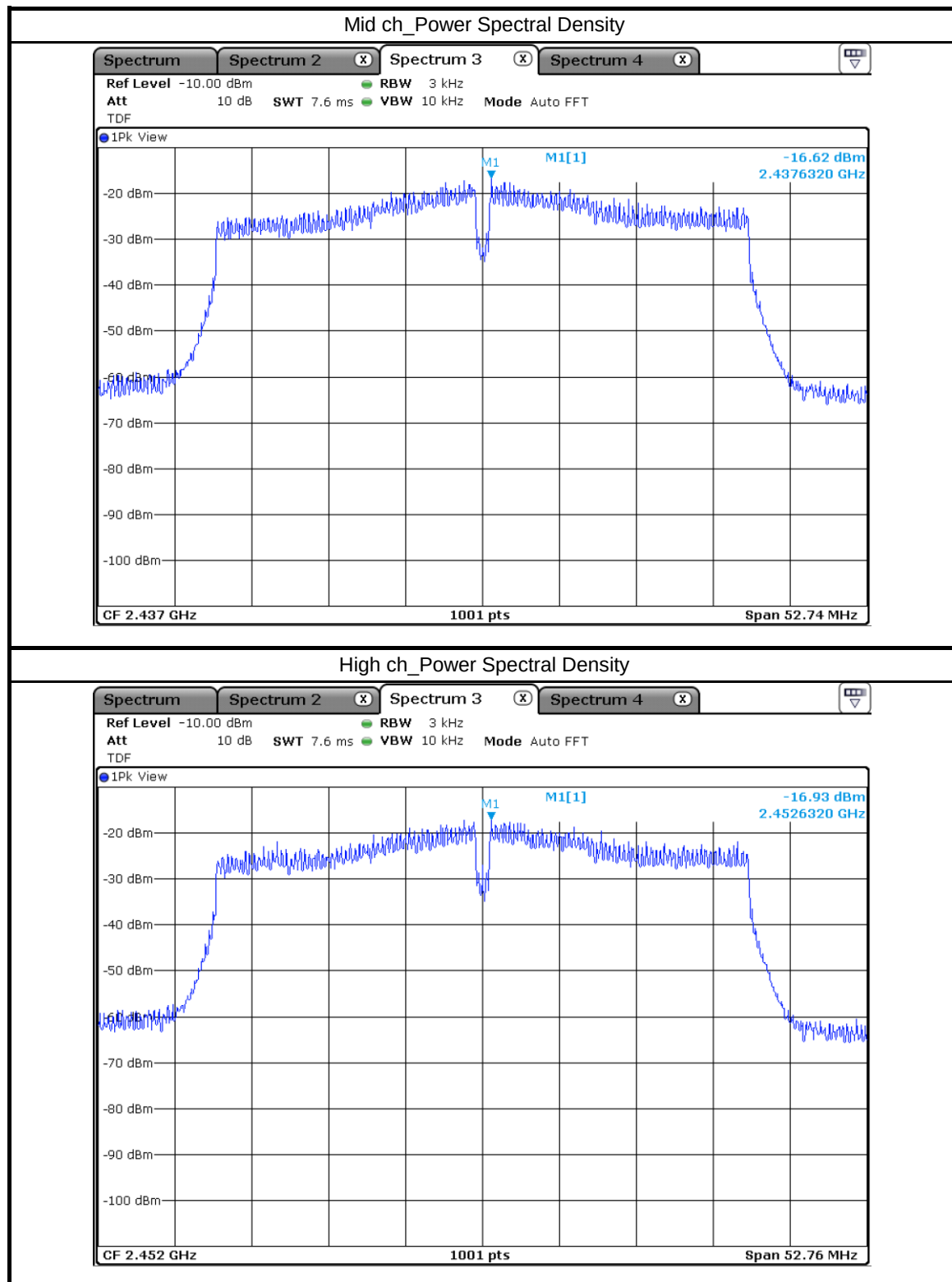




Mode	Frequency (MHz)	Measured Value (dBm)	Limit (dBm/3 kHz)
802.11n(40 MHz BW)	2422	-17.91	8
	2437	-16.62	
	2452	-16.93	

Low ch_Power Spectral Density

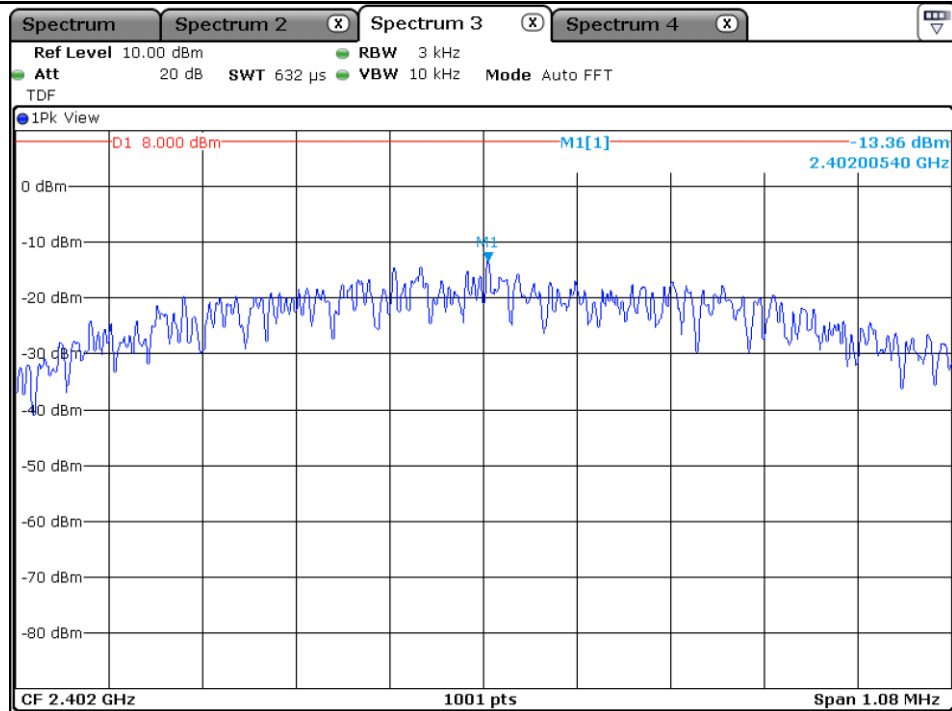


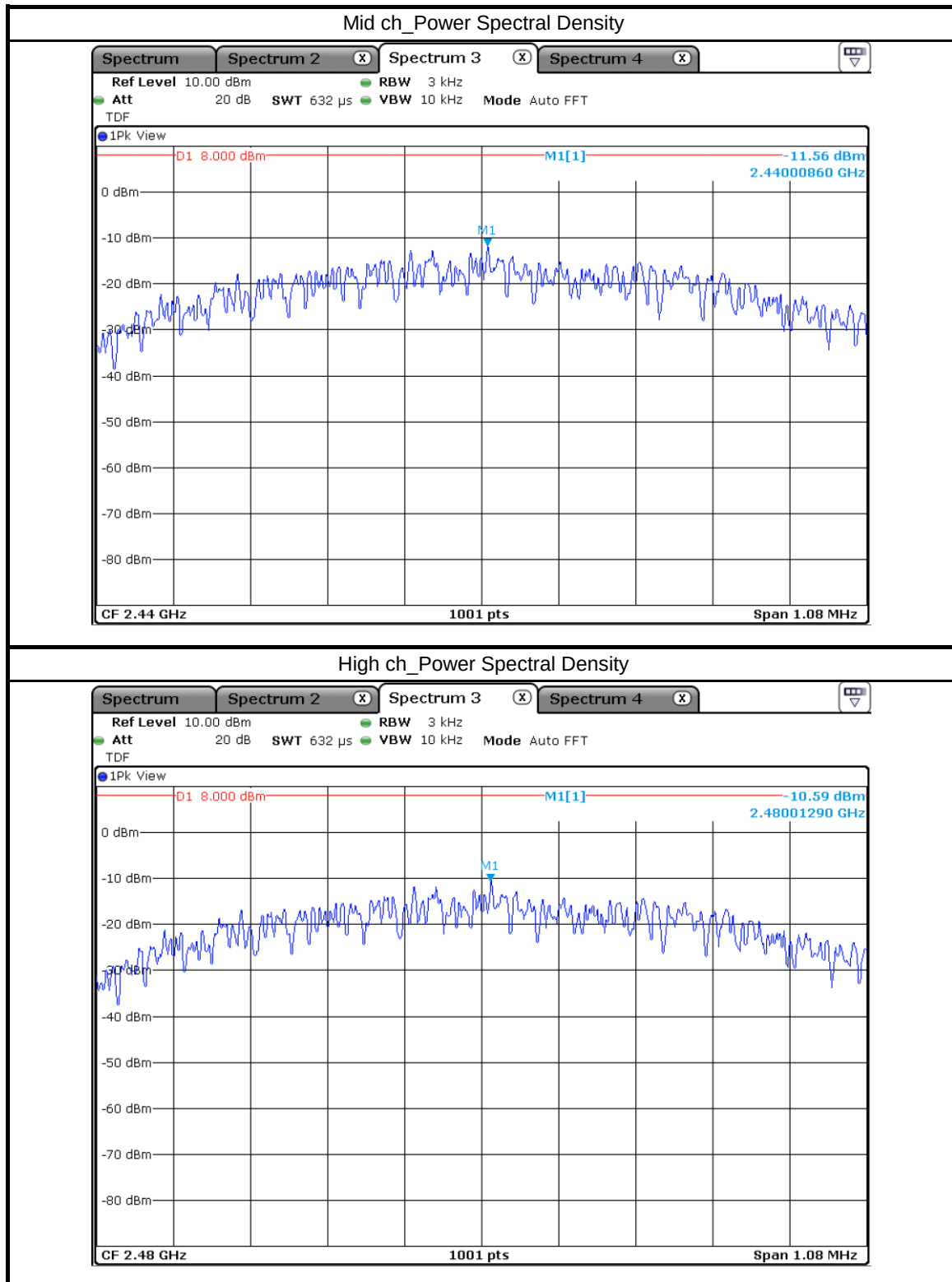




Mode	Frequency (MHz)	Measured Value (dBm)	Limit (dBm/3 kHz)
Bluetooth LE 1M	2 402	-13.36	8
	2 440	-11.56	
	2 480	-10.59	

Low ch_Power Spectral Density







4.4 Conducted Spurious Emission & Band Edge

4.4.1 Test procedure

ANSI C63.10-2013 Clause 11.11, 11.13

4.4.2 Limit

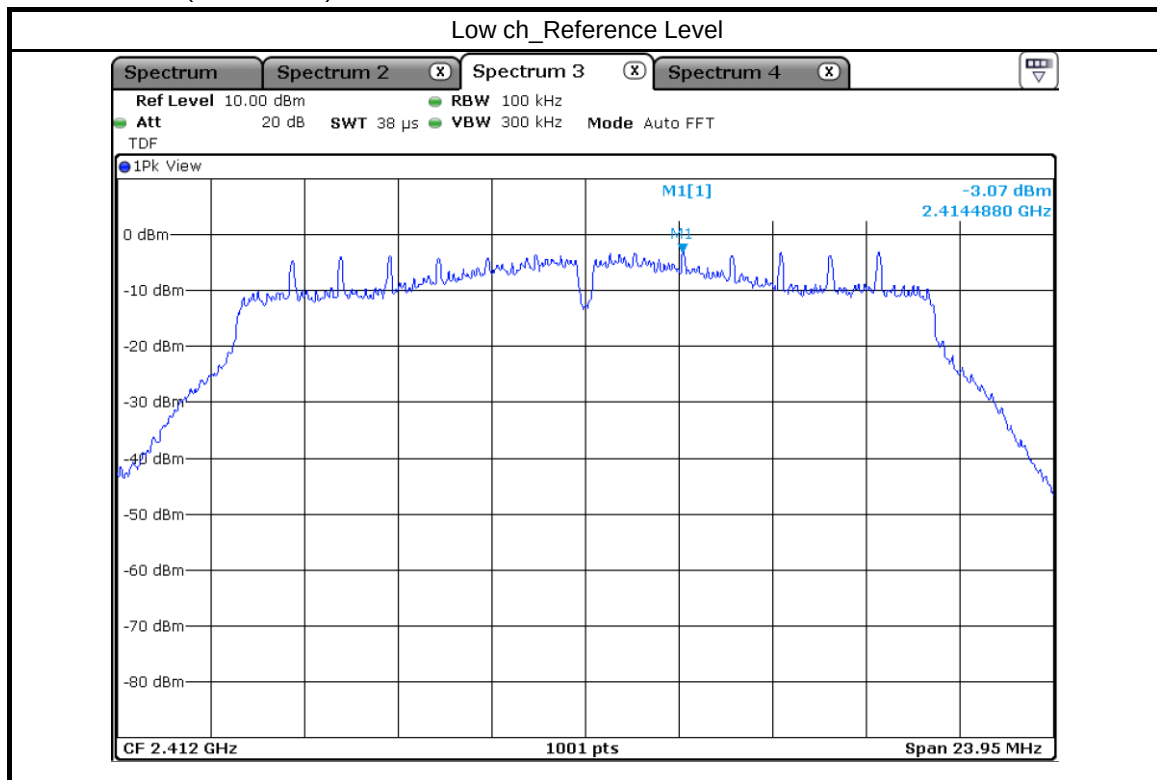
§15.247 (d)

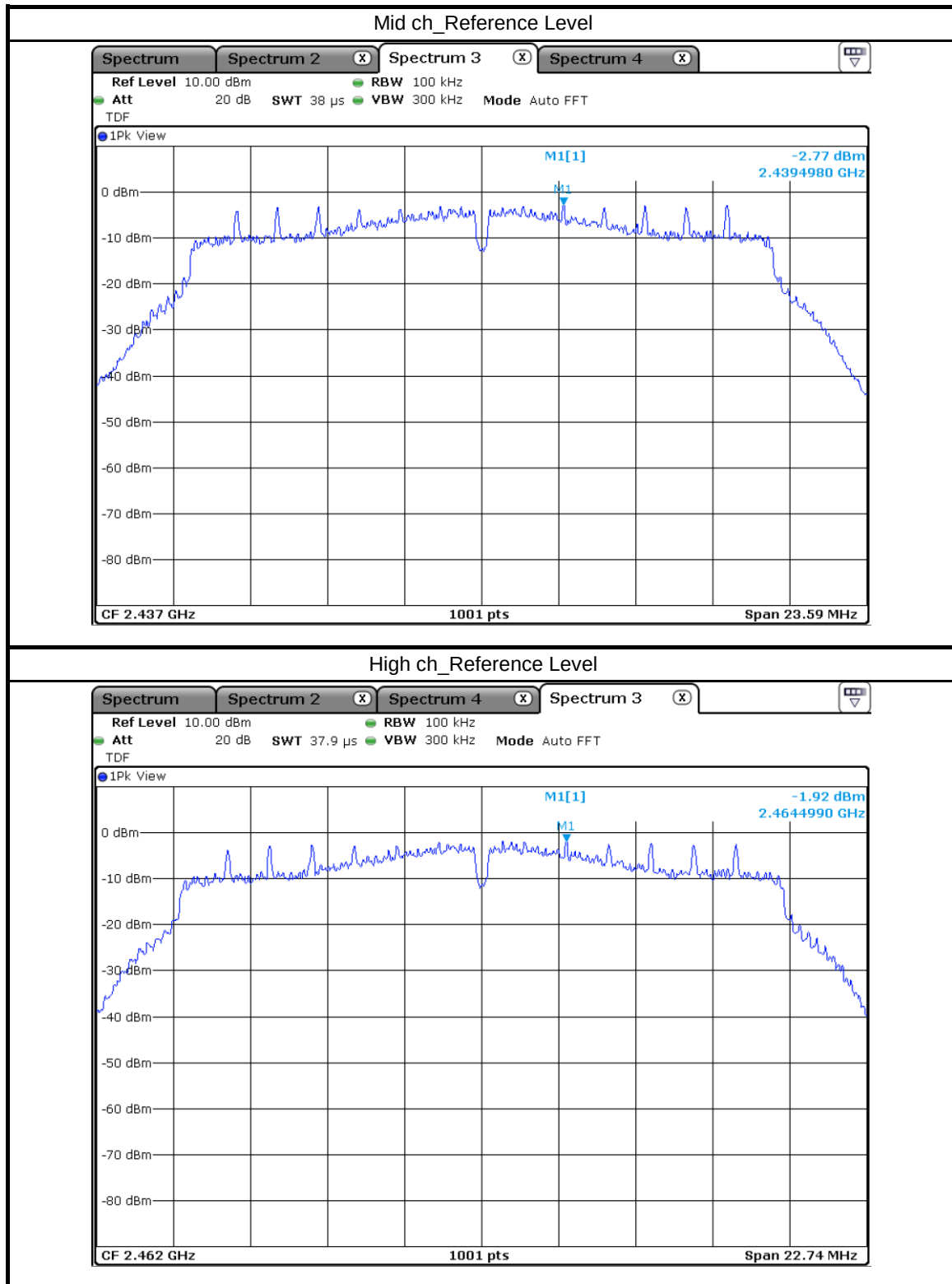
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, 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) (see § 15.205(c)).

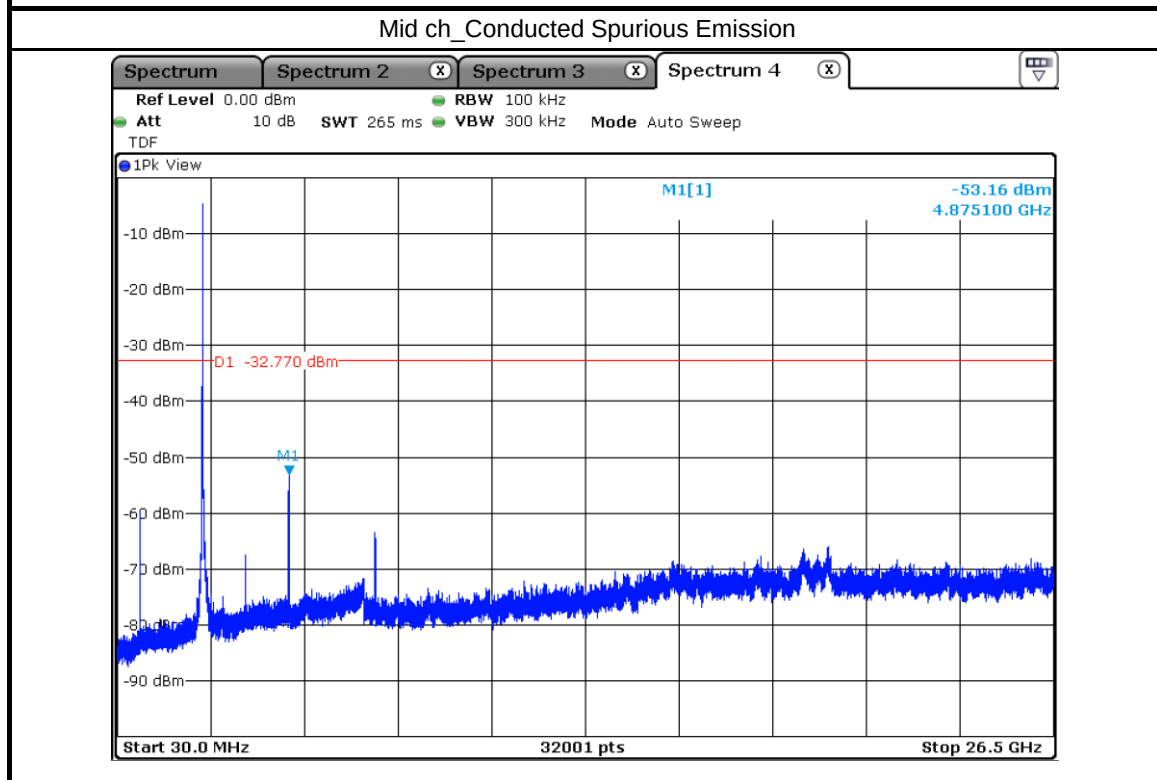
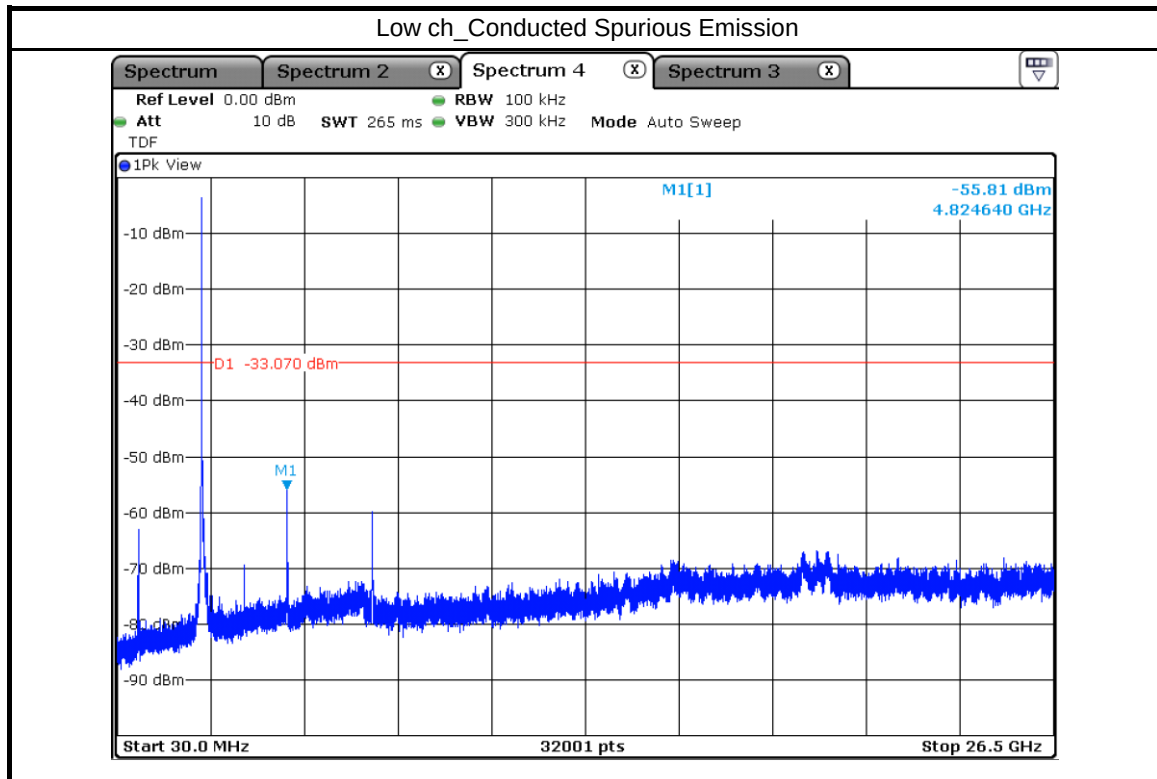
4.4.3 Test data

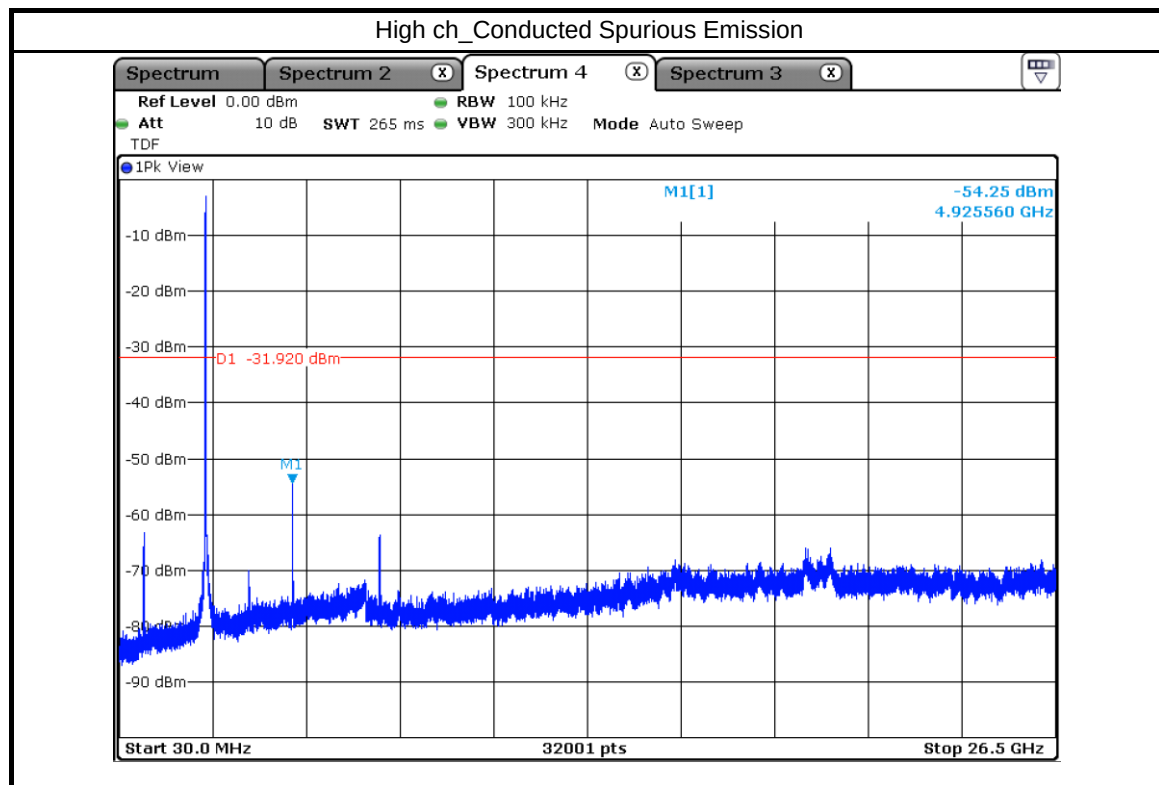
Result : Pass

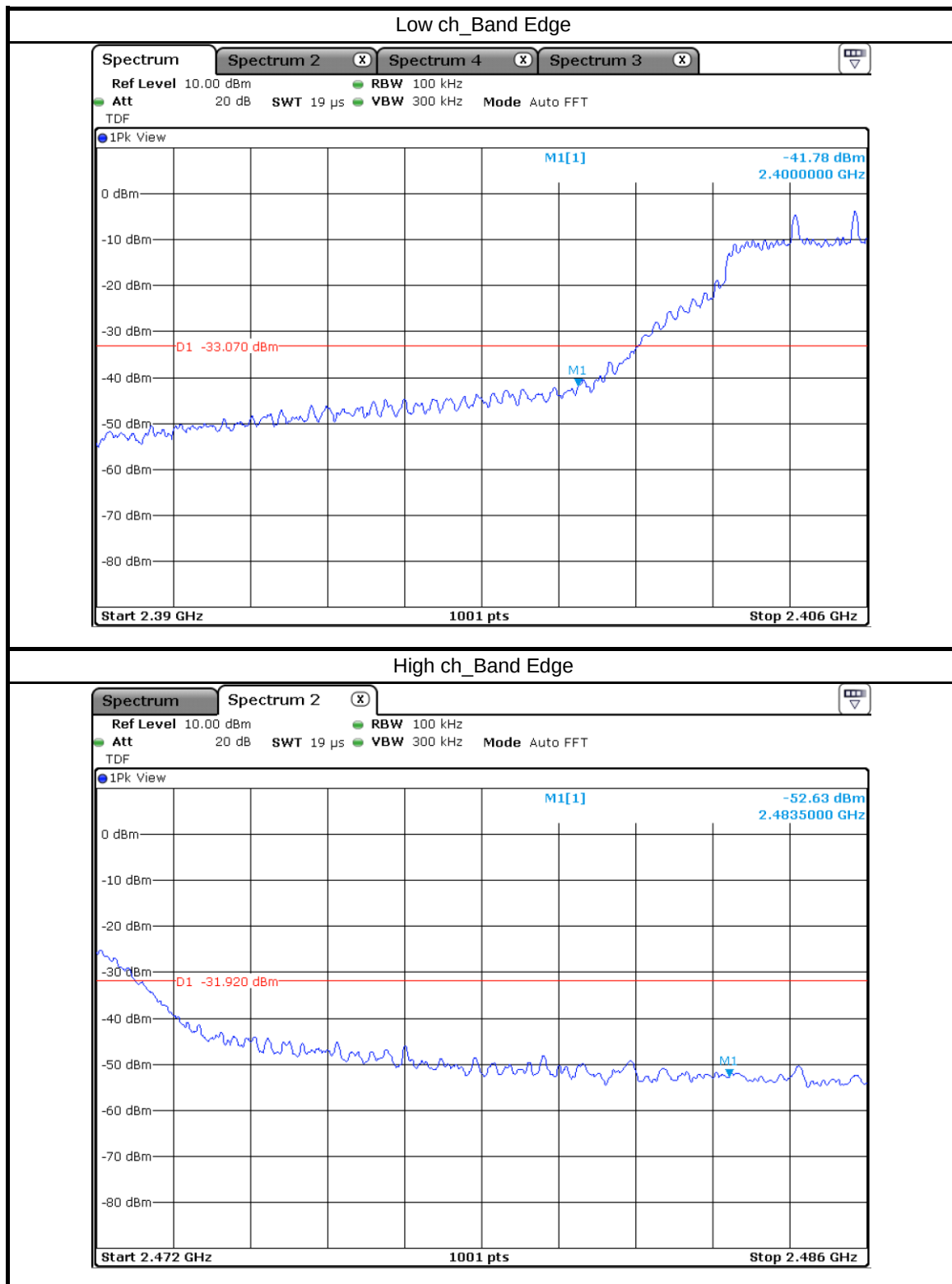
Mode : 802.11n(20 MHz BW)





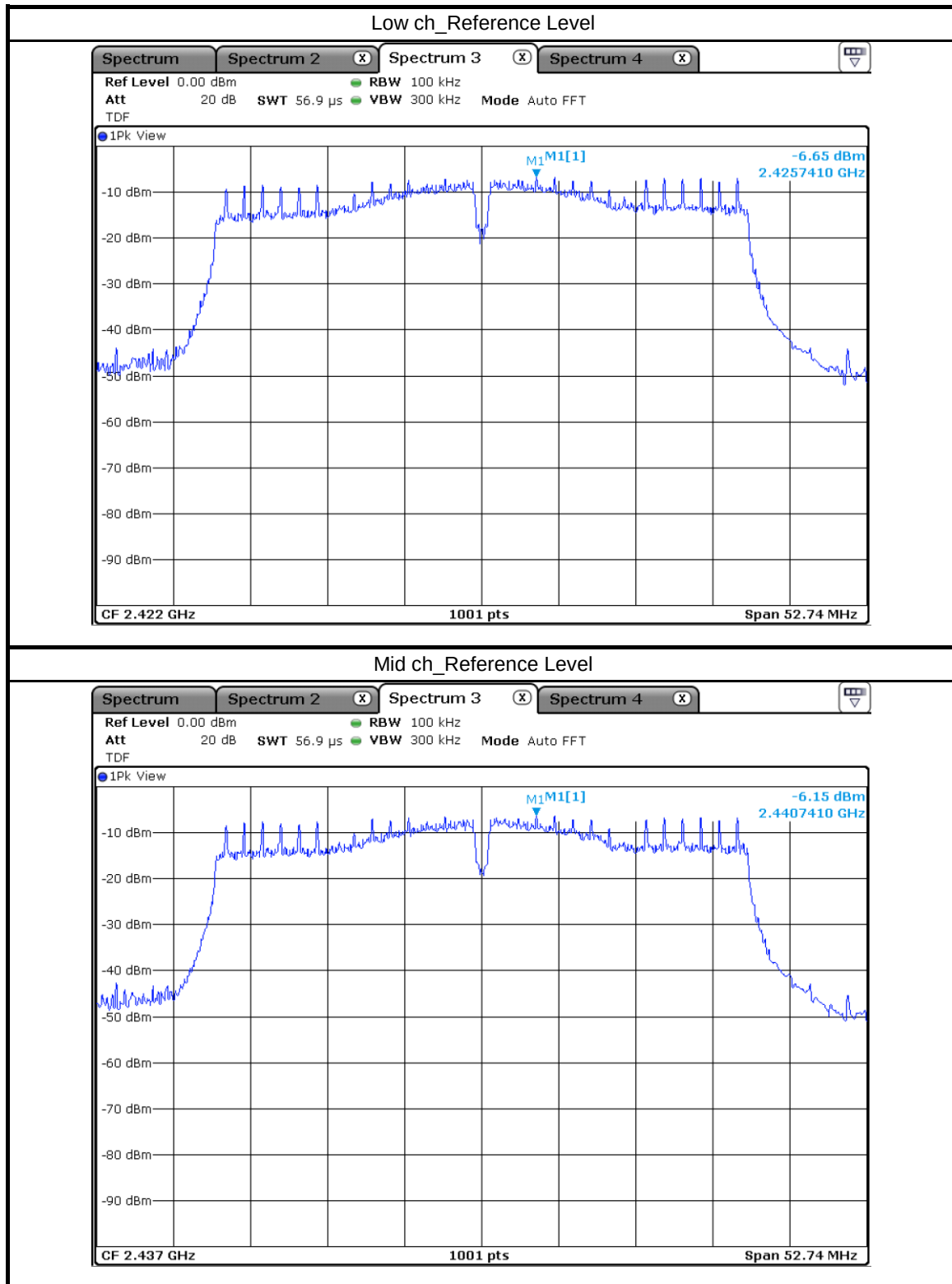


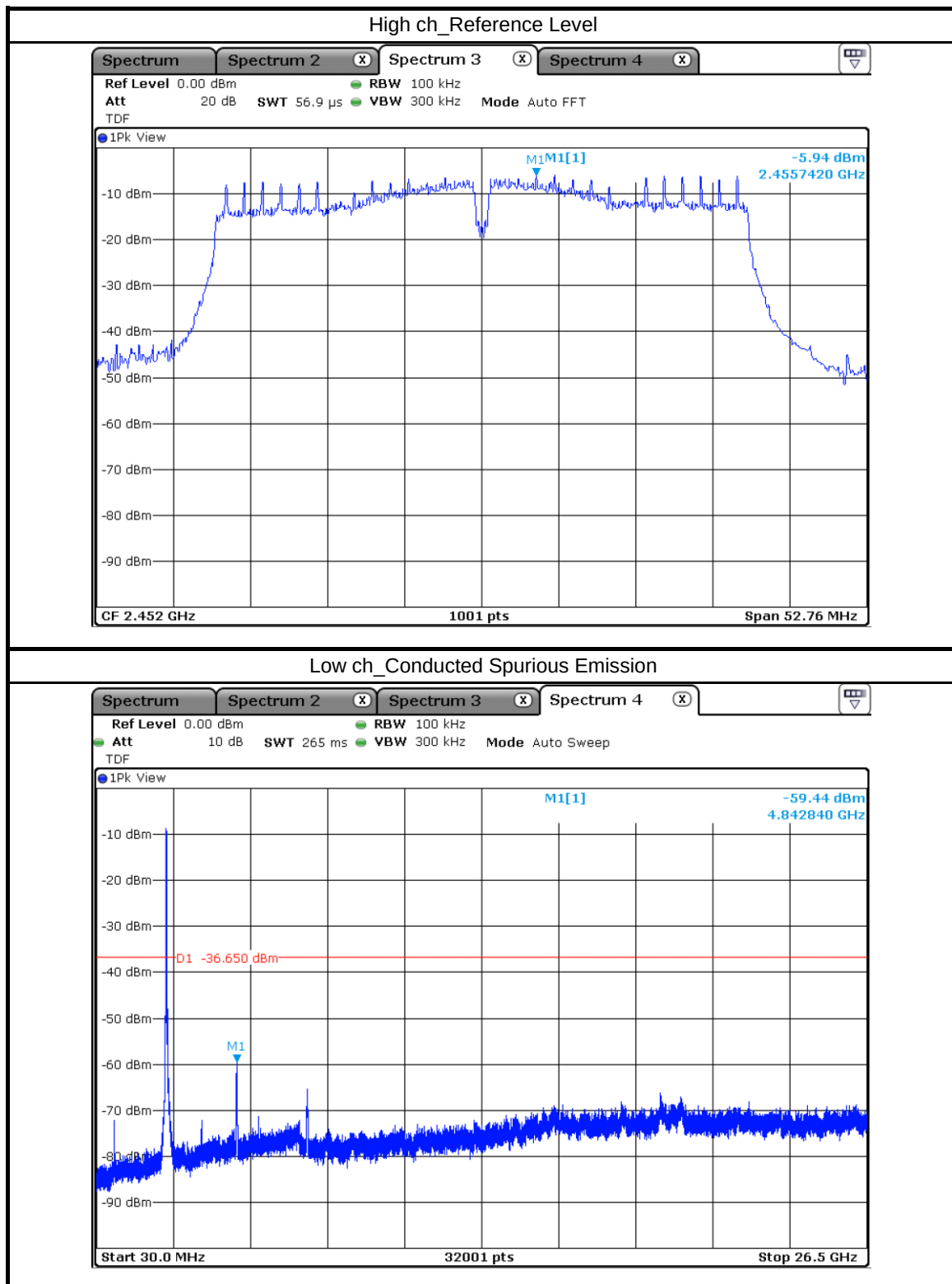


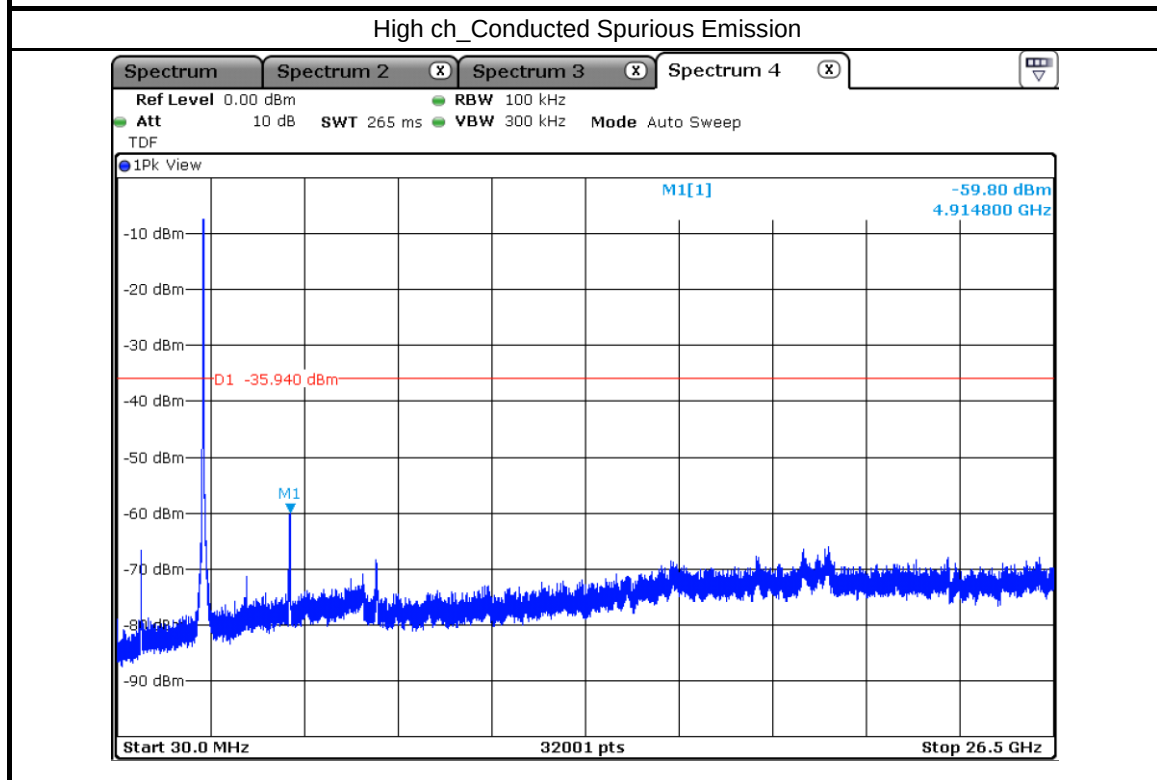
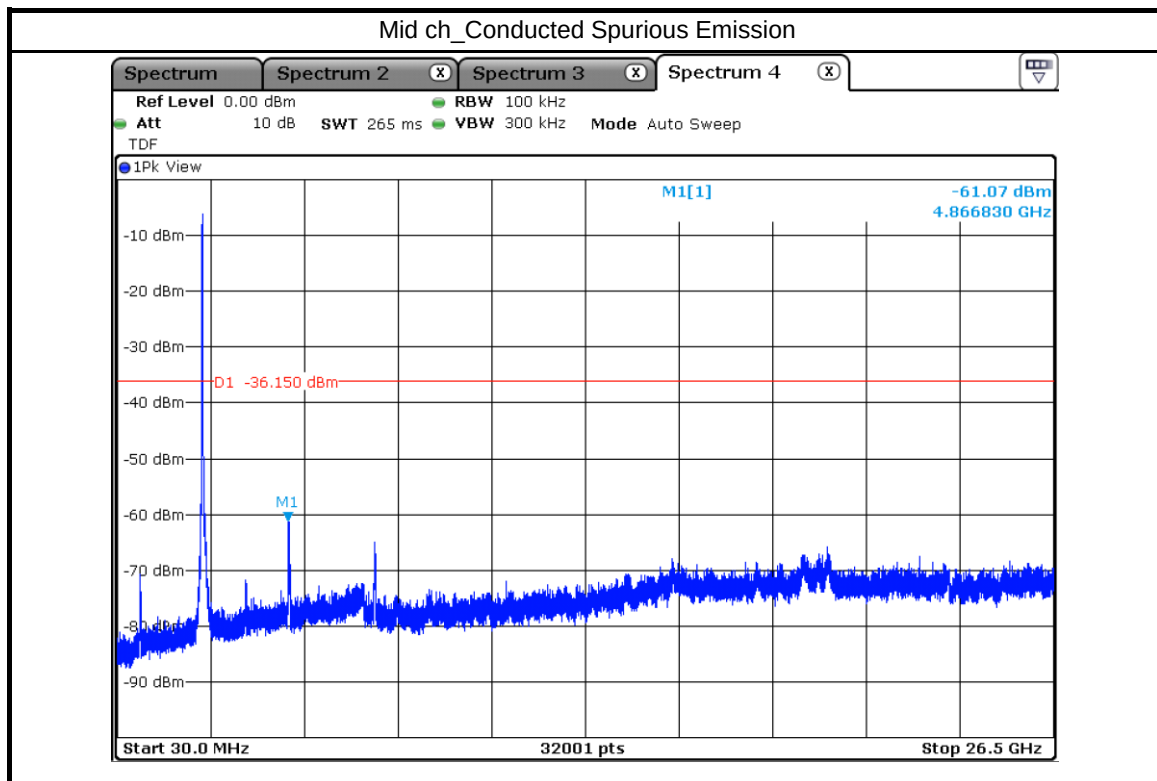


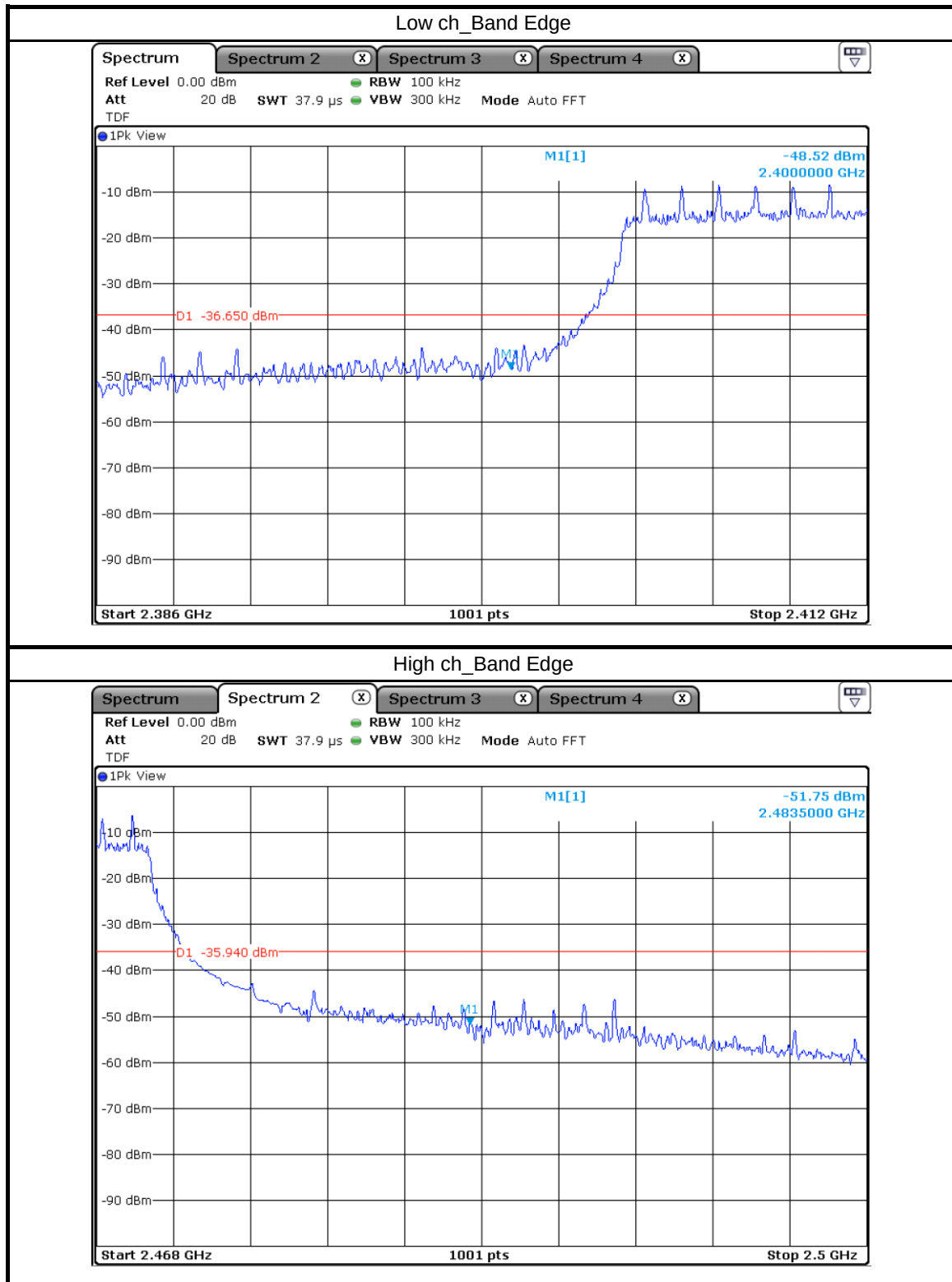


Mode : 802.11n(40 MHz BW)



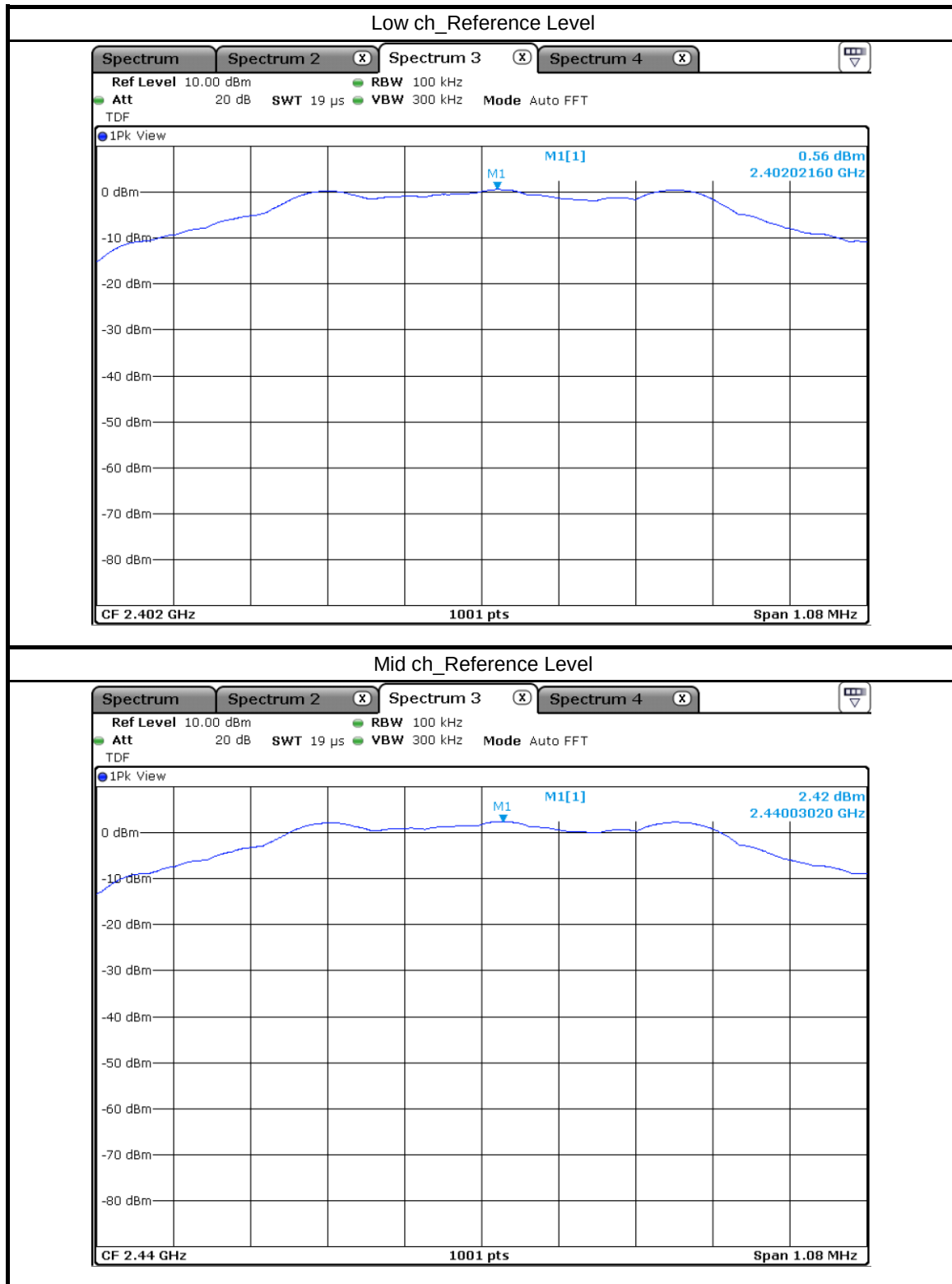


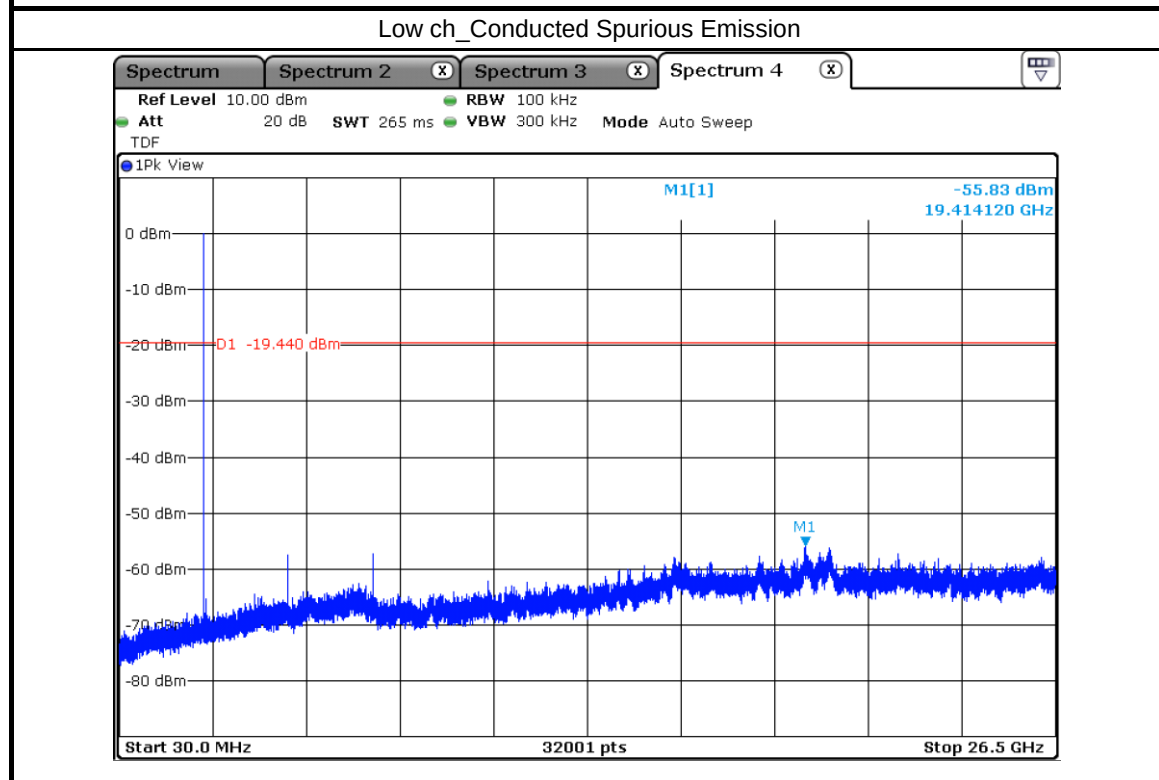
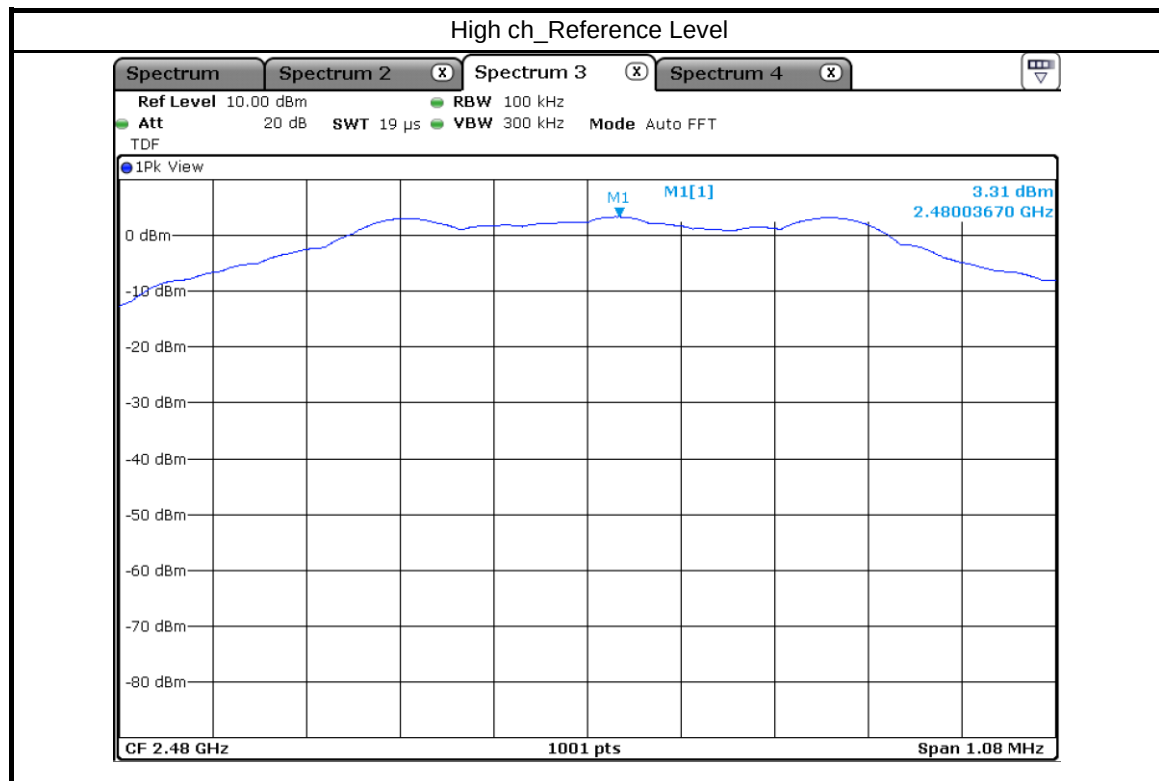


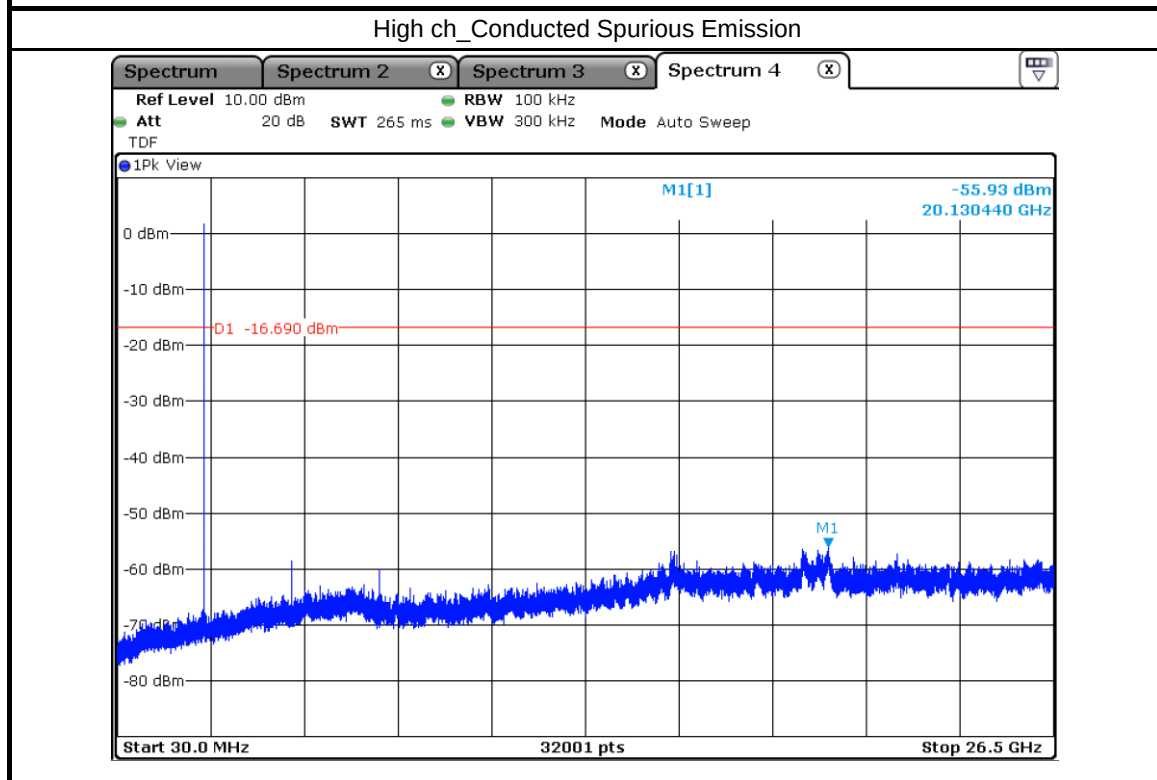
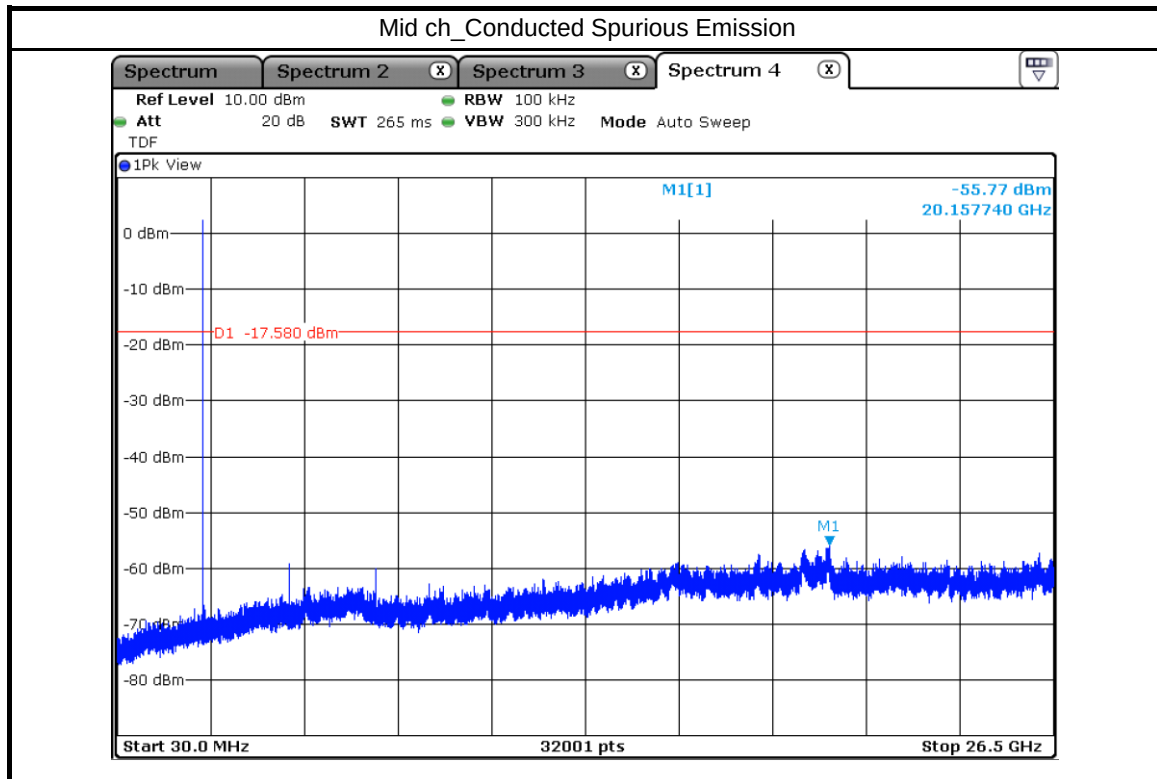


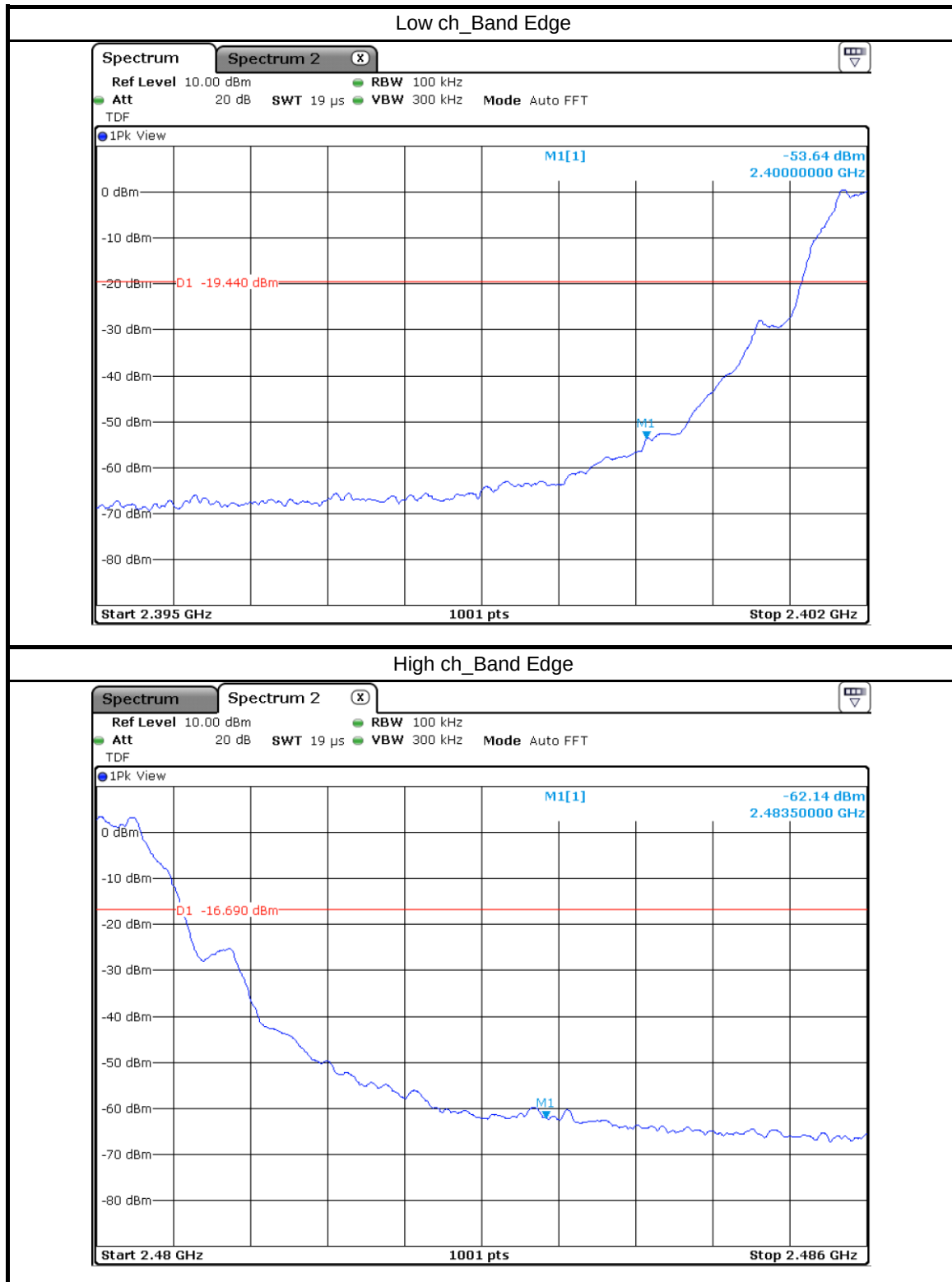


Mode : Bluetooth LE 1M











4.5 Radiated Spurious Emission

4.5.1 Test procedure

ANSI C63.10-2013 Clause 11.11, 11.12

4.5.2 Limit

§15.247 (d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, 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) (see § 15.205(c)).

§15.209 Radiated emission limits; general requirements.(a)

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

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.



4.5.3 Test data

Result : Pass

Mode : 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
0.009	46.42	QP	H	20.30	66.72	128.50	61.78	-
0.018	35.61	QP	V	19.60	55.21	126.40	71.19	-
0.246	14.96	QP	V	19.30	34.26	99.99	65.73	-
1.675	21.66	QP	H	19.40	41.06	63.13	22.07	-

Mode : Bluetooth LE 1M - 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
0.009	46.12	QP	V	20.30	66.42	128.50	62.08	-
0.019	35.71	QP	H	19.60	55.31	126.27	70.96	-
0.159	15.72	QP	H	19.30	35.02	104.06	69.04	-
0.604	28.08	QP	H	19.30	47.38	72.24	24.86	-



Mode : 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
119.24	55.58	QP	H	-26.60	28.98	43.50	14.52	-
157.56	58.91	QP	H	-27.90	31.01	43.50	12.49	-
244.95	55.96	QP	H	-22.90	33.06	46.00	12.94	-
856.15	41.64	QP	H	-10.60	31.04	46.00	14.96	-

Mode : 802.11n(40 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
40.96	55.09	QP	V	-23.90	31.19	40.00	8.81	-
63.56	59.25	QP	V	-25.00	34.25	40.00	5.75	-
237.68	56.18	QP	H	-23.20	32.98	46.00	13.02	-
856.15	41.30	QP	H	-10.60	30.70	46.00	15.30	-

Mode : Bluetooth LE 1M - 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
31.36	61.75	QP	V	-27.00	34.75	40.00	5.25	-
37.08	61.97	QP	V	-25.40	36.57	40.00	3.43	-
41.64	61.23	QP	V	-23.80	37.43	40.00	2.57	-
235.64	55.37	QP	H	-23.30	32.07	46.00	13.93	-



Mode : 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
2389.81	79.02	PK	H	-11.40	67.62	74.00	6.38	Restricted band
	58.15	AVG	H		46.75	54.00	7.25	
3424.20	54.08	PK	V	-5.90	48.18	74.00	25.82	Spurious Emission
	49.65	AVG	V		43.75	54.00	10.25	
4828.40	42.37	PK	H	-1.80	40.57	74.00	33.43	2nd Harmonic
	28.67	AVG	H		26.87	54.00	27.13	
7233.90	41.52	PK	H	2.50	44.02	74.00	29.98	3rd Harmonic
	27.52	AVG	H		30.02	54.00	23.98	

- 1 GHz Above_Mid ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
3424.20	52.84	PK	V	-5.90	46.94	74.00	27.06	Spurious Emission
	48.20	AVG	V		42.30	54.00	11.70	
4881.10	41.73	PK	V	-1.80	39.93	74.00	34.07	2nd Harmonic
	28.45	AVG	V		26.65	54.00	27.35	
7325.70	40.25	PK	V	2.40	42.65	74.00	31.35	3rd Harmonic
	26.62	AVG	V		29.02	54.00	24.98	

- 1 GHz Above_High ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
2484.13	74.70	PK	H	-10.90	63.80	74.00	10.20	Restricted band
	51.83	AVG	H		40.93	54.00	13.07	
3424.20	53.05	PK	V	-5.90	47.15	74.00	26.85	Spurious Emission
	48.63	AVG	V		42.73	54.00	11.27	
4935.50	41.49	PK	H	-1.80	39.69	74.00	34.31	2nd Harmonic
	28.49	AVG	H		26.69	54.00	27.31	
7402.20	39.92	PK	V	2.60	42.52	74.00	31.48	3rd Harmonic
	26.33	AVG	V		28.93	54.00	25.07	



Mode : 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
2388.80	78.59	PK	H	-11.40	67.19	74.00	6.81	Restricted band
	62.34	AVG	H		50.94	54.00	3.06	
3424.20	52.90	PK	V	-5.90	47.00	74.00	27.00	Spurious Emission
	48.15	AVG	V		42.25	54.00	11.75	
4847.10	42.42	PK	V	-1.90	40.52	74.00	33.48	2nd Harmonic
	28.76	AVG	V		26.86	54.00	27.14	
7262.80	39.83	PK	H	2.50	42.33	74.00	31.67	3rd Harmonic
	26.56	AVG	H		29.06	54.00	24.94	

- 1 GHz Above_Mid ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
3424.20	53.67	PK	V	-5.90	47.77	74.00	26.23	Spurious Emission
	49.37	AVG	V		43.47	54.00	10.53	
4877.70	41.49	PK	H	-1.80	39.69	74.00	34.31	2nd Harmonic
	28.33	AVG	H		26.53	54.00	27.47	
7312.10	39.74	PK	V	2.30	42.04	74.00	31.96	3rd Harmonic
	26.45	AVG	V		28.75	54.00	25.25	

- 1 GHz Above_High ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
2484.67	80.58	PK	H	-10.9	69.68	74.00	4.32	Restricted band
	62.36	AVG	H		51.46	54.00	2.54	
3424.20	53.18	PK	V	-5.9	47.28	74.00	26.72	Spurious Emission
	48.47	AVG	V		42.57	54.00	11.43	
4950.80	41.79	PK	V	-1.8	39.99	74.00	34.01	2nd Harmonic
	28.48	AVG	V		26.68	54.00	27.32	
7356.30	40.60	PK	H	2.5	43.10	74.00	30.90	3rd Harmonic
	26.86	AVG	H		29.36	54.00	24.64	



Mode : Bluetooth LE 1M

- 1 GHz Above_Low ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
2320.90	50.87	PK	V	-11.90	38.97	74.00	35.03	Restricted band
	36.82	AVG	V		24.92	54.00	29.08	
4802.90	52.21	PK	H	-1.80	50.41	74.00	23.59	2nd Harmonic
	40.33	AVG	H		38.53	54.00	15.47	
7205.00	54.36	PK	H	2.40	56.76	74.00	17.24	3rd Harmonic
	42.40	AVG	H		44.80	54.00	9.20	
12 009.20	42.32	PK	H	7.20	49.52	74.00	24.48	5nd Harmonic
	30.23	AVG	H		37.43	54.00	16.57	

- 1 GHz Above_Mid ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
4879.40	59.07	PK	H	-1.80	57.27	74.00	16.73	2nd Harmonic
	48.47	AVG	H		46.67	54.00	7.33	
7320.60	54.01	PK	H	2.30	56.31	74.00	17.69	3rd Harmonic
	42.71	AVG	H		45.01	54.00	8.99	
9761.80	40.86	PK	H	5.50	46.36	74.00	27.64	4nd Harmonic
	27.25	AVG	H		32.75	54.00	21.25	

- 1 GHz Above_High ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
2492.60	50.60	PK	V	-11.00	39.60	74.00	34.40	Restricted band
	35.45	AVG	V		24.45	54.00	29.55	
4961.00	61.40	PK	H	-1.80	59.60	74.00	14.40	2nd Harmonic
	49.27	AVG	H		47.47	54.00	6.53	
7441.30	56.96	PK	H	2.50	59.46	74.00	14.54	3rd Harmonic
	43.98	AVG	H		46.48	54.00	7.52	
9921.60	48.87	PK	H	5.40	54.27	74.00	19.73	4nd Harmonic
	35.41	AVG	H		40.81	54.00	13.19	



4.5.4 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.								



Mode : 802.11n(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
36.402	63.22	QP	V	-25.60	37.62	40.00	2.38	-
37.469	58.98	QP	V	-25.20	33.78	40.00	6.22	-
62.883	61.83	QP	V	-24.90	36.93	40.00	3.07	-
800.083	44.77	QP	H	-11.60	33.17	46.00	12.83	-

- 1 GHz Above

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
2 485.035	71.87	PK	H	-10.90	60.97	74.00	13.03	Restricted band
	55.48	AVG	H		44.58	54.00	9.42	
3 424.200	53.35	PK	V	-5.90	47.45	74.00	26.55	Spurious Emission
	47.37	AVG	V		41.47	54.00	12.53	
7 398.800	40.71	PK	V	2.60	43.31	74.00	30.69	Harmonic
	27.11	AVG	V		29.71	54.00	24.29	
7 444.700	41.12	PK	H	2.50	43.62	74.00	30.38	Harmonic
	27.61	AVG	H		30.11	54.00	23.89	
9 348.700	40.93	PK	V	4.70	45.63	74.00	28.37	Harmonic
	26.83	AVG	V		31.53	54.00	22.47	
9 909.700	39.56	PK	V	5.40	44.96	74.00	29.04	Harmonic
	26.11	AVG	V		31.51	54.00	22.49	

- 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.								



4.6 Power Line Conducted Emission

4.6.1 Test procedure

ANSI C63.10-2013 Clause 6.2

4.6.2 Limit

§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

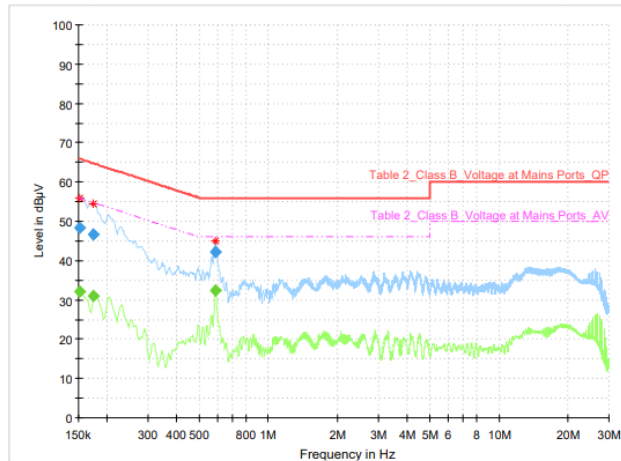
*Decreases with the logarithm of the frequency.



4.6.3 Test data

Result : Pass

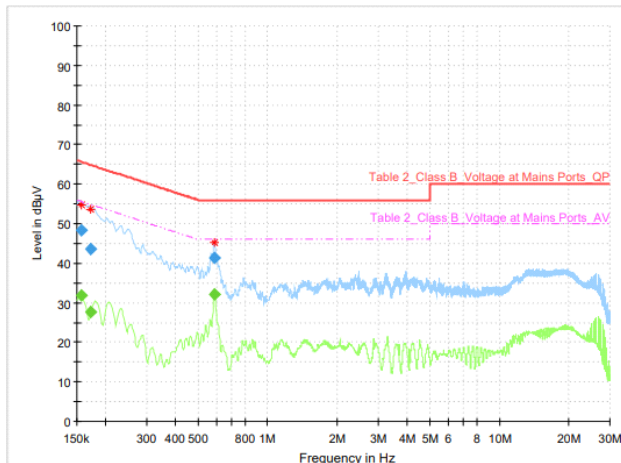
L-Line Conducted Emission



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
■	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
■	HIGH PASS FILTER	WT-A1698-HS	WT MICROWAVE	WT171201-6-4	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
■	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

- END OF REPORT.