



Test report

REP160305-3R2TRFWL

Date of issue: September 21, 2026

Applicant:

Avira Health Incorporated

Product description:

Smart Feeding Pump

Model:

F01

Product marketing name(s):

N/A

FCC ID:

2BV4YF01A

Specifications:

- ◆ FCC 47 CFR Part 15, Subpart C – §15.247

Operation within the bands 902 – 928 MHz, 2400 – 2483.5 MHz, 5727 – 5850 MHz

Lab and test locations

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FCC Site Number	Test Firm Registration Number: 392943; Designation Number: US5058
ISED Test Site	2040B-3
Tested by	Chenhao Ma, Wireless Test Technician
Reviewed by	James Cunningham, EMC/WL Manager
Review date	September 21, 2026
Reviewer signature	James.Cunningham Digitally signed by James.Cunningham DN: cn=James.Cunningham, email=James.Cunningham@nemko.com Reason: I am approving this document Date: 2026.09.21 13:16:52 -07'00

Limits of responsibility

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025. All results contain in this report are within Nemko USA's ISO/IEC 17025 accreditation.

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Section 1 Report summary

1.1 Test specifications

FCC 47 CFR Part 15, Subpart C – §15.247

Operation within the bands 902 – 928 MHz, 2400 – 2483.5 MHz, 5727 – 5850 MHz

1.2 Exclusions

None.

1.3 Statement of compliance

Testing was performed against all relevant requirements of the test standard(s).

Results obtained indicate that the product under test complies in full with the tested requirements.

The test results relate only to the item(s) tested.

See “Section 2 Summary of test results” for full details.

1.4 Test report revision history

Table 1.4-1: Test report revision history

Revision #	Issue Date	Details of changes made to test report
REP160305-3TRFWL	May 21, 2026	Original report issued
REP160305-3R1TRFWL	July 31, 2026	Update transmit information, antenna requirement reference standard and test equipment
REP160305-3R2TRFWL	Sept 21, 2026	Update data with BLE 2Mbps

Section 2 Summary of test results

2.1 Sample information

Receipt date	20-Apr-2026
Nemko sample ID number	REP160305

2.2 Testing period

Test start date	11-May-26
Test end date	09-Sep-26

2.3 Test results

Table 2.3-1: FCC 47 CFR Part 15, Subpart B & C, general requirements

Part	Test description	Verdict
§15.207(a)	Conducted limits	Not applicable ¹
§15.31(e)	Variation of power source	Not applicable
§15.203	Antenna requirement	Pass
§15.231(c)	20 dB bandwidth	Pass

Notes: ¹ EUT is DC powered from dedicated DC source or battery powered

Table 2.3-2: FCC 47 CFR Part 15, Subpart C, §15.247 requirements

Part	Test description	Verdict
§15.247(a)(1)(i)	Frequency hopping systems operating in the 902–928 MHz band	Not applicable
§15.247(a)(1)(ii)	Frequency hopping systems operating in the 5725–5850 MHz band	Not applicable
§15.247(a)(1)(iii)	Frequency hopping systems operating in the 2400–2483.5 MHz band	Not applicable
§15.247(a)(2)	Minimum 6 dB bandwidth for systems using digital modulation techniques	Pass
§15.247(b)(1)	Maximum peak output power of frequency hopping systems operating in the 2400–2483.5 MHz band and 5725–5850 MHz band	Not applicable
§15.247(b)(2)	Maximum peak output power of Frequency hopping systems operating in the 902–928 MHz band	Not applicable
§15.247(b)(3)	Maximum peak output power of systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands	Pass
§15.247(b)(4)	Transmitting antennas of directional gain greater than 6 dBi	Pass
§15.247(c)(1)	Fixed point-to-point operation with directional antenna gains greater than 6 dBi	Not applicable
§15.247(c)(2)	Transmitters operating in the 2400–2483.5 MHz band that emit multiple directional beams	Not applicable
§15.247(d)	Spurious emissions	Pass
§15.247(e)	Power spectral density for digitally modulated devices	Pass
§15.247(f)	Time of occupancy for hybrid systems	Not applicable

Section 3 Equipment under test (EUT) details

3.1 Disclaimer

This section contains information provided by the applicant and has been utilized to support the test plan. Inaccurate information provided by the applicant can affect the validity of the results within this test report. Nemko accepts no responsibility for the information contained within this section and the impact it may have on the test plan and resulting measurements.

3.2 Applicant

Company name	Avira Health Incorporated
Address	16095 Big Springs Way
City	San Diego
State	CA
Postal/Zip code	92127
Country	United States

3.3 Manufacturer

Company name	Avira Health Incorporated
Address	16095 Big Springs Way
City	San Diego
State	CA
Postal/Zip code	92127
Country	United States

3.4 EUT information

Product name	Smart Feeding Pump
Model	F01
Variant(s)	N/A
Serial number	F2604 R0001N, F2604 R0002O
Part number	N/A
Power requirements	Internally battery-powered (3.7 V)
Description/theory of operation	The Avira Health Inc. Smart Feeding Pump is a household, indoor, wearable, internally powered, rechargeable, wireless breast pump with integrated feeding capability. The device is controlled via three front-facing buttons and one side button. The central Action Button powers the device on/off, while the flanking Increment and Decrement buttons enable mode selection and pumping intensity adjustment. The side button toggles the device's lighting, intended for use in low-light environments. The device is also operable through a companion mobile application, which provides an additional user interface for pump control.
Operational frequencies	Bluetooth (BLE 5.4): 2402-2480 MHz Wireless Charging (Qi): 100-205 kHz (Qi wireless charging frequency)
Software details	30-AVR-151200: Version 1.0.0

3.5 Transmitter Information

Frequency band	2400 – 2483.5 MHz
Transmitter type	☐ Frequency hopping spread spectrum (FHSS) ☒ Digital transmission system (DTS) ☐ Hybrid FHSS / DTS
Minimum frequency (MHz)	2402
Maximum frequency (MHz)	2480
Type of modulation	GFSK
Data rate	☐ 125 kbps operation ☐ 500 kbps operation ☒ 1 Mbps operation ☒ 2 Mbps operation
Tested frequencies	2402 MHz (low), 2440 MHz (middle), and 2480 MHz (high)
Antenna type	Integral
Antenna peak gain	0.5 dBi

3.6 EUT setup details

Table 3.6-1: EUT sub assemblies

Description	Brand name	Model/Part number	Serial number	Rev.
N/A				

Table 3.6-2: EUT interface ports

Description	Qty.
USB-C	1

Table 3.6-3: Support equipment

Description	Brand name	Model/Part number	Serial number	Rev.
Laptop	DELL	Latitude 7480	N/A	N/A

Table 3.6-4: Inter-connection cables

Cable description	From	To	Length (m)
UART	Laptop	EUT	0.2

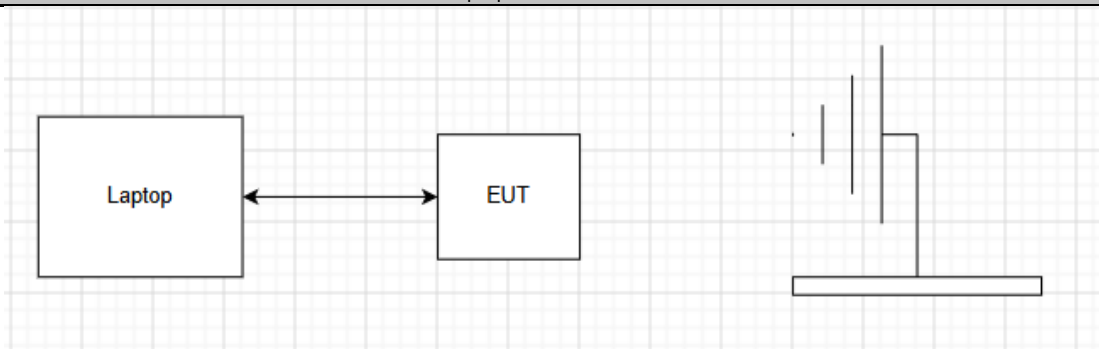


Figure 3.6-1: Test setup diagram

Section 4 Engineering considerations

4.1 Modifications incorporated in the EUT

None.

4.2 Technical judgement

None.

4.3 Deviations from laboratory test procedures

None.

Section 5 Test conditions

5.1 Atmospheric conditions

Temperature	15–30 °C
Relative humidity	20–75 %
Air pressure	86–106 kPa

When it is impracticable to carry out tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests shall be recorded and stated.

5.2 Power supply range

The normal test voltage for equipment to be connected to the mains shall be the nominal mains voltage. For the purpose of the present document, the nominal voltage shall be the declared voltage, or any of the declared voltages ± 5 %, for which the equipment was designed.

Section 6 Measurement uncertainty

6.1 Uncertainty of measurement

Nemko USA Inc. has calculated measurement uncertainty and is documented in EMC/MUC/001 "Uncertainty in EMC measurements." Measurement uncertainty was calculated using the methods described in CISPR 16-4-2 Specification for radio disturbance and immunity measuring apparatus and methods – Part 4-2: Uncertainties, statistics, and limit modelling – Measurement instrumentation uncertainty. The expression of Uncertainty in EMC testing. Measurement uncertainty calculations assume a coverage factor of K=2 with 95% certainty.

Table 6.1-1: Measurement uncertainty calculations

Measurement		U_{cispr} dB	U_{lab} dB
Conducted disturbance at AC mains and other port power using a V-AMN	9 kHz to 150 kHz	3.8	2.9
	150 kHz to 30 MHz	3.4	2.3
Conducted disturbance at telecommunication port using AAN	150 kHz to 30 MHz	5.0	4.3
Conducted disturbance at telecommunication port using CVP	150 kHz to 30 MHz	3.9	2.9
Conducted disturbance at telecommunication port using CP	150 kHz to 30 MHz	2.9	1.4
Conducted disturbance at telecommunication port using CP and CVP	150 kHz to 30 MHz	4.0	3.1
Radiated disturbance (electric field strength in a SAC)	30 MHz to 1 GHz	6.3	5.5
Radiated disturbance (electric field strength in a FAR)	1 GHz to 6 GHz	5.2	4.7
Radiated disturbance (electric field strength in a FAR)	6 GHz to 18 GHz	5.5	5.0

- Notes:
- Compliance assessment:
 - If U_{lab} is less than or equal to U_{cispr} then:
 - compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
 - non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit
 - If U_{lab} is greater than U_{cispr} then:
 - compliance is deemed to occur if no measured disturbance level, increased by $(U_{\text{lab}} - U_{\text{cispr}})$, exceeds the disturbance limit;
 - non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{\text{lab}} - U_{\text{cispr}})$, exceeds the disturbance limit

V-AMN: V type artificial mains network
 AAN: Asymmetric artificial network
 CP: Current probe
 CVP: Capacitive voltage probe
 SAC: Semi-anechoic chamber
 FAR: Fully anechoic room

Section 7 Test equipment

7.1 Test equipment list

Table 7.1-1: Test Equipment List

Equipment	Manufacturer	Model no.	Asset no.	Cal cycle	Next cal.
Signal and spectrum analyzer	Rohde & Schwarz	FSW43	E1302	19-Jun-2026	19-Jun-2027
Turntable/mast controller	Sunol Science	SC104V	E1129	NCR	NCR
EMC Test Receiver	Rohde & Schwarz	ESU 40	E1121	07-Jan-2026	07-Jan-2027
Antenna, Bilog, 30-1000 MHz	Schaffner-Chase	CBL6111C	1763	16-Jul-2024	16-Jul-2026
Antenna, Horn, 1-18 GHz	ETS	3117-PA	E1160	17-May-2024	17-May-2026
Antenna, Horn, 18-26.5 GHz	Sage Millimeter	SAZ-2410-42-S1	EW107	VBU	VBU
SMA cable	None	None	None	VBU	VBU
Pre-amplifier	Eravant	SBL-1834034038-KFKF-E3	None	NCR	NCR

Notes: NCR: no calibration required
VBU: verify before use

7.2 Test software list

Table 7.2-1: Test Software

Manufacturer	Details
Rohde & Schwarz	EMC 32 V10.60.10 (AC conducted emissions)
Rohde & Schwarz	EMC 32 V10.60.15 (radiated emissions)

Section 8 Testing data

8.1 Variation of power source

8.1.1 References and limits

- FCC 47 CFR Part 15, Subpart A: §15.31(e)
- Test method: ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024.

§15.31(e):

For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

8.1.2 Test summary

Verdict	Pass		
Test date	May 11, 2026	Temperature	22.1 °C
Test engineer	Chenhao Ma, Wireless Test Technician	Air pressure	1001.2 mbar
Test location	☒ Wireless bench ☐ Other:	Relative humidity	56.7 %

8.1.3 Notes

Testing was performed with the transmitter operating on a fixed channel (middle) at maximum output power.

8.1.4 Setup details

EUT power input during test	EUT is battery powered and with charging cable
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8.1.5 Test data

☒	EUT is battery operated. Therefore, all tests performed with a new fully charged battery
☐	EUT power supply voltage varied across supported range. No variation in transmitter output power observed therefore all tests performed at nominal power supply voltage.
☐	EUT power supply voltage varied across supported range. Transmitter output power variation was observed. All tests performed with the EUT operated at the worst-case operating voltage with respect to transmitter output power: V.

8.2 Antenna requirement

8.2.1 References and limits

- FCC 47 CFR Part 15, Subpart C: §15.203

§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. Test summary

Verdict	Pass		
Test date	May 11, 2026	Temperature	22.1 °C
Test engineer	Chenhao Ma, Wireless Test Technician	Air pressure	1001.2 mbar
Test location	☒ Wireless bench ☐ Other:	Relative humidity	56.7 %

8.2.2 Notes

None

8.2.3 Test data

Antenna part number:	See attachment
Technical description:	See attachment
Peak gain (dBi):	0.5 dBi
	☐ Declared by client
Source of gain data:	☒ Antenna data sheet or specification. Document name: Attachment 9.2 Antenna Spec Sheet 2450AT18A100E-AEC ☐ Antenna gain test report. Document name:

8.3 20 dB bandwidth

8.3.1 References and limits

- FCC 47 CFR Part 15, Subpart C: §15.215(c)
- Test method: ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024. §6.9.2

§15.215:

- (c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

8.3.2 Test summary

Verdict	Pass		
Test date	May 11, 2026 September 9, 2026	Temperature	22.1 °C 23.1 °C
Test engineer	Chenhao Ma, Wireless Test Technician	Air pressure	1001.2 mbar 1003.2 mbar
Test location	☒ Wireless bench ☐ Other:	Relative humidity	56.7 % 55.3 %

8.3.3 Notes

Testing was performed with the transmitter operating on a fixed channel (lowest, middle, and highest)

The spectral plots within this section have been corrected with all relevant transducer factors.

8.3.4 Setup details

EUT power input during test	Battery powered
EUT setup configuration	☒ Table-top ☐ Floor standing ☐ Other:

Receiver/spectrum analyzer settings:

Resolution bandwidth	20kHz
Video bandwidth	100kHz
Detector mode	Peak
Trace mode	Max Hold
Measurement time	Long enough for trace to stabilize

8.3.5 Test data

Table 8.3-1: 20 dB bandwidth test data

Test frequency (MHz)	Modulation	Bandwidth (MHz)	Measured f_L (MHz)	Measured f_H (MHz)	Limit	Verdict
2402	GFSK, 1 Mbps	1.190	2401.416	2402.606	f_H and f_L within 2400 – 2483.5 MHz	PASS
2440	GFSK, 1 Mbps	1.183	2439.423	2440.606	f_H and f_L within 2400 – 2483.5 MHz	PASS
2480	GFSK, 1 Mbps	1.183	2479.419	2480.602	f_H and f_L within 2400 – 2483.5 MHz	PASS
2402	GFSK, 2 Mbps	1.958	2400.986	2402.944	f_H and f_L within 2400 – 2483.5 MHz	PASS
2440	GFSK, 2 Mbps	1.951	2438.986	2440.937	f_H and f_L within 2400 – 2483.5 MHz	PASS
2480	GFSK, 2 Mbps	1.993	2478.979	2480.972	f_H and f_L within 2400 – 2483.5 MHz	PASS

Section 8
Test name
Specification(s)

Testing data
20 dB bandwidth
FCC 15.247 & RSS-247

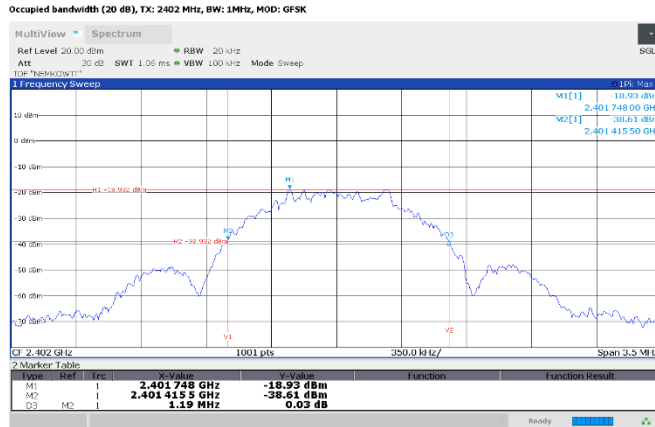


Figure 8.3-1: 20 dB bandwidth, GFSK, 1 Mbps, 2402 MHz

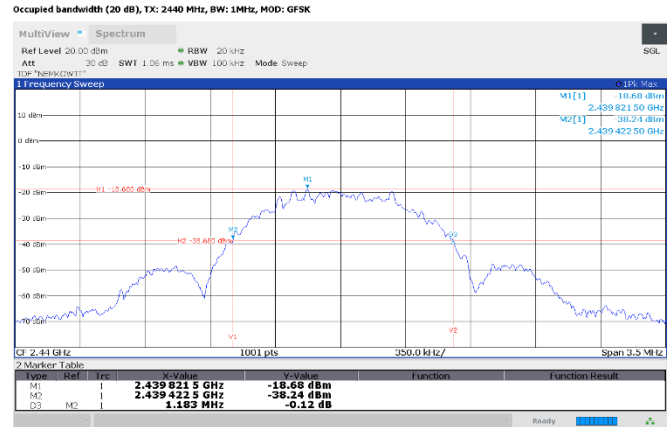


Figure 8.3-2: 20 dB bandwidth, GFSK, 1 Mbps, 2440 MHz

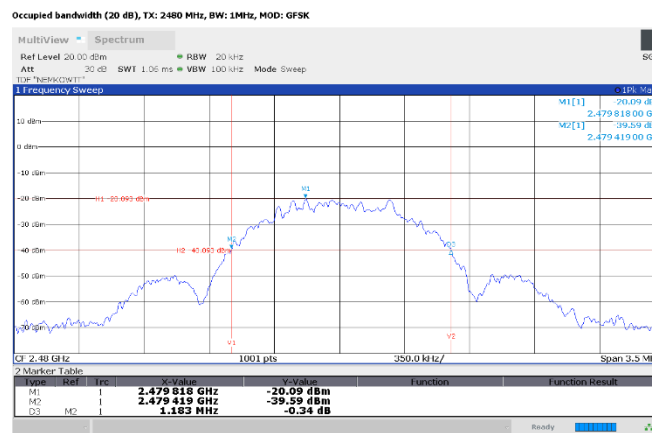


Figure 8.3-3: 20 dB bandwidth, GFSK, 1 Mbps, 2480 MHz

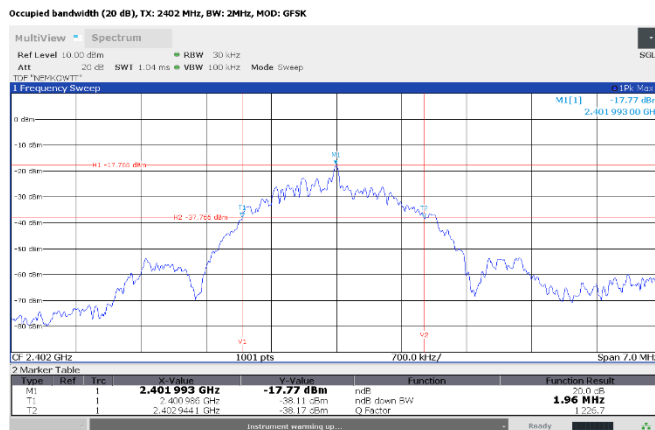


Figure 8.3-4: 20 dB bandwidth, GFSK, 2 Mbps, 2402 MHz

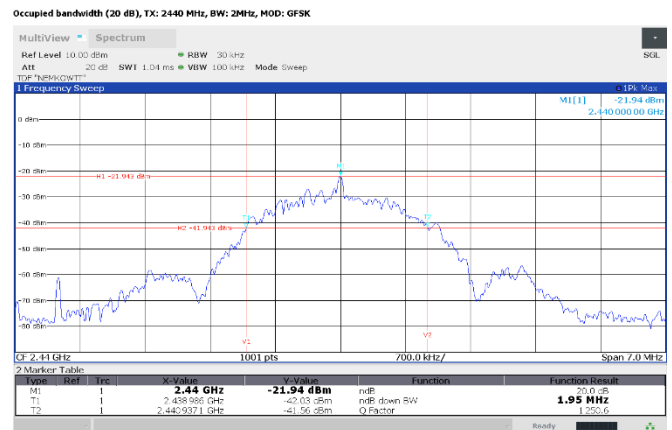


Figure 8.3-5: 20 dB bandwidth, GFSK, 2 Mbps, 2440 MHz

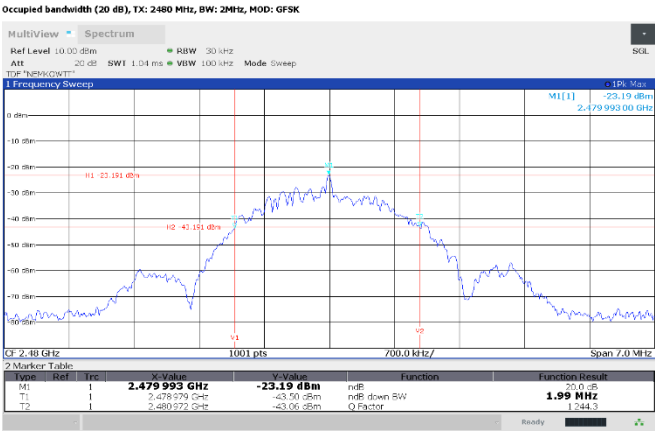


Figure 8.3-6: 20 dB bandwidth, GFSK, 2 Mbps, 2480 MHz

8.4 Minimum 6 dB bandwidth

8.4.1 References and limits

- FCC 47 CFR Part 15, Subpart C: §15.247(a)(2)
- Test method: ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024. §11.8.1

§15.247:

- (a) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:
- (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.

8.4.2 Test summary

Verdict	Pass		
Test date	May 11, 2026	Temperature	22.1 °C
	September 9, 2026		23.1 °C
Test engineer	Chenhao Ma, Wireless Test Technician	Air pressure	1001.2 mbar 1003.2 mbar
Test location	☒ Wireless bench	Relative humidity	56.7 %
	☐ Other:		55.3 %

8.4.3 Notes

Testing was performed with the transmitter operating on a fixed channel (lowest, middle, and highest)

The spectral plots within this section have been corrected with all relevant transducer factors.

8.4.4 Setup details

EUT power input during test	Battery powered
EUT setup configuration	☒ Table-top ☐ Floor standing ☐ Other:

Receiver/spectrum analyzer settings:

Resolution bandwidth	100 kHz
Video bandwidth	300 kHz
Detector mode	Peak
Trace mode	Max Hold
Measurement time	Long enough for trace to stabilize

8.4.5 Test data

Table 8.4-1: Minimum 6 dB bandwidth test data

Test Frequency (MHz)	Modulation	DTS Bandwidth (kHz)	Limit (kHz)	Margin (kHz)
2402	GFSK, 1 Mbps	687	≥ 500	187
2440	GFSK, 1 Mbps	687	≥ 500	187
2480	GFSK, 1 Mbps	667	≥ 500	167
2402	GFSK, 2 Mbps	1104	≥ 500	604
2440	GFSK, 2 Mbps	1140	≥ 500	640
2480	GFSK, 2 Mbps	1110	≥ 500	610

Section 8
Test name
Specification(s)

Testing data
Minimum 6 dB bandwidth
FCC 15.247 & RSS-247

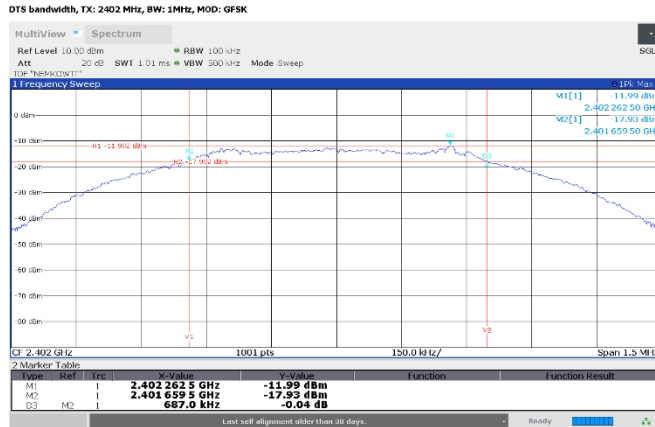


Figure 8.4-1: Minimum 6 dB bandwidth, GFSK, 1 Mbps, 2402 MHz

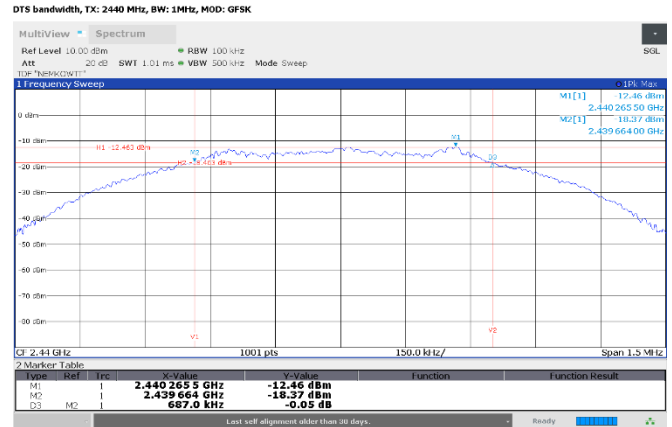


Figure 8.4-2: Minimum 6 dB bandwidth, GFSK, 1 Mbps, 2440 MHz

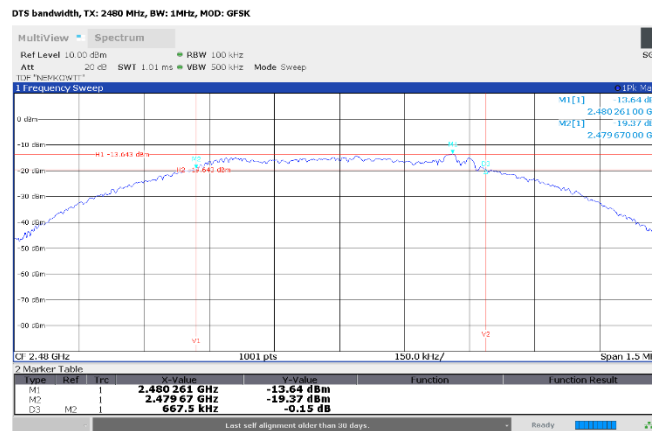


Figure 8.4-3: Minimum 6 dB bandwidth, GFSK, 1 Mbps, 2480 MHz

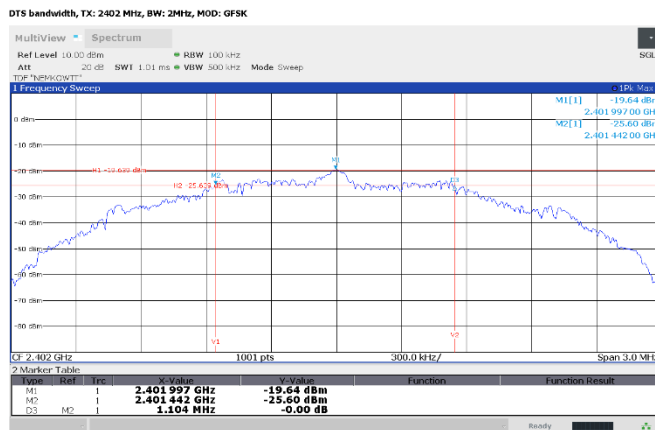


Figure 8.4-4: Minimum 6 dB bandwidth, GFSK, 2 Mbps, 2402 MHz

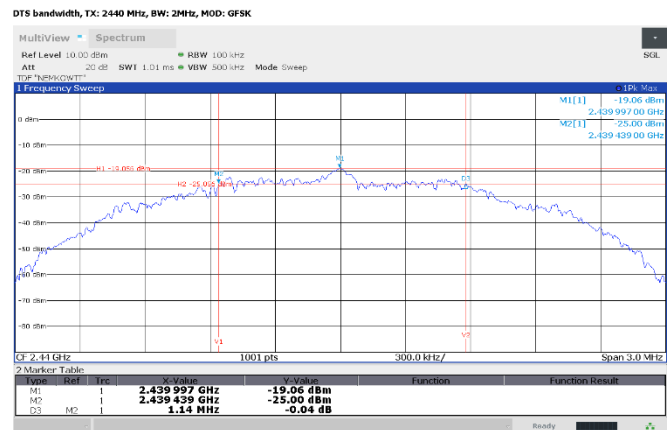


Figure 8.4-5: Minimum 6 dB bandwidth, GFSK, 2 Mbps, 2440 MHz

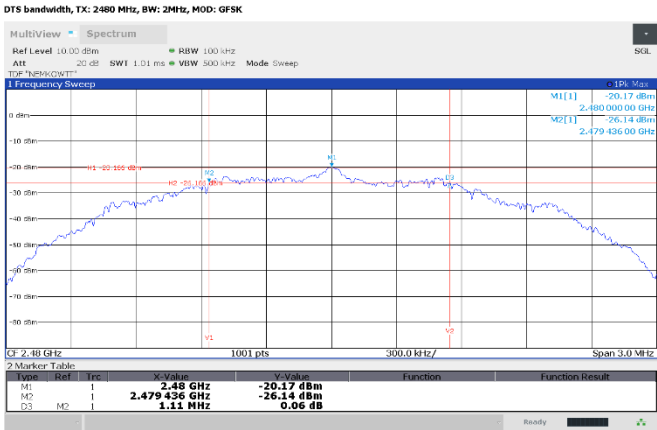


Figure 8.4-6: Minimum 6 dB bandwidth, GFSK, 2 Mbps, 2480 MHz

8.5 Maximum peak output power and antenna requirements

8.5.1 References and limits

- FCC 47 CFR Part 15, Subpart C: §15.247(b)(3) 15.247(b)(4)
- Test method: ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024. §11.9.1.1 (RBW ≥ DTS BW)

§15.247:

- (b) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:
- (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) The antenna gain should not exceed 6 dBi

8.5.2 Test summary

Verdict	Pass		
Test date	May 11, 2026 September 9, 2026	Temperature	22.1 °C 23.1 °C
Test engineer	Chenhao Ma, Wireless Test Technician	Air pressure	1001.2 mbar 1003.2 mbar
Test location	☒ Wireless bench ☐ Other:	Relative humidity	56.7 % 55.3 %

8.5.3 Notes

Testing was performed with the transmitter operating on a fixed channel (lowest, middle, and highest)

The spectral plots within this section have been corrected with all relevant transducer factors. (Antenna gain and cable loss)

For antenna gain result see part 8.2 antenna requirement.

8.5.4 Setup details

EUT power input during test	Battery powered
EUT setup configuration	☒ Table-top ☐ Floor standing ☐ Other:

Receiver/spectrum analyzer settings:

Resolution bandwidth	2 MHz
Video bandwidth	10 MHz
Detector mode	Peak
Trace mode	Max Hold
Measurement time	Long enough for trace to stabilize

8.5.5 Test data

Table 8.5-1: Maximum peak output power and antenna requirements test data

Test Frequency (MHz)	Modulation	Conducted Power (dBm)	Limit (dBm)	Margin (dB)
2402	GFSK, 1 Mbps	-11.90	≤ 36	47.90
2440	GFSK, 1 Mbps	-12.31	≤ 36	48.31
2480	GFSK, 1 Mbps	-13.62	≤ 36	49.62
2402	GFSK, 2 Mbps	-19.34	≤ 36	55.34
2440	GFSK, 2 Mbps	-18.96	≤ 36	54.96
2480	GFSK, 2 Mbps	-19.92	≤ 36	55.92

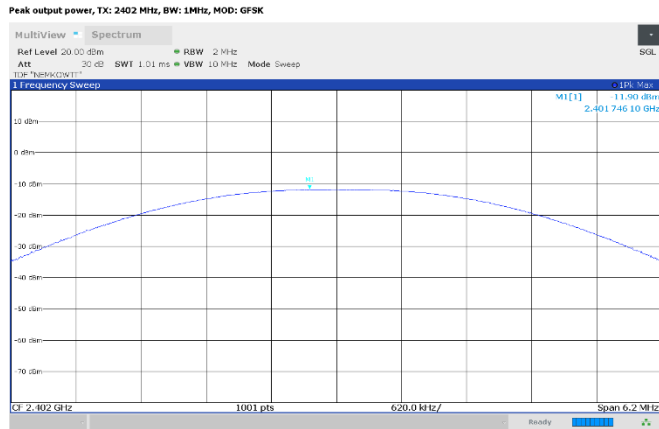


Figure 8.5-1: Maximum peak output power and antenna requirements, GFSK, 1 Mbps, 2402 MHz

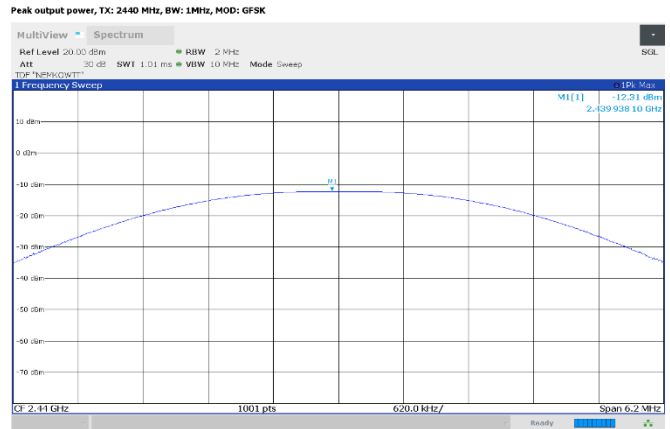


Figure 8.5-2: Maximum peak output power and antenna requirements, GFSK, 1 Mbps, 2440 MHz

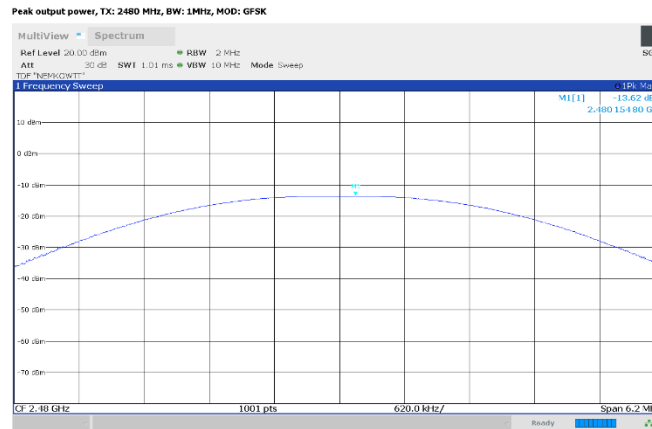


Figure 8.5-3: Maximum peak output power and antenna requirements, GFSK, 1 Mbps, 2480 MHz

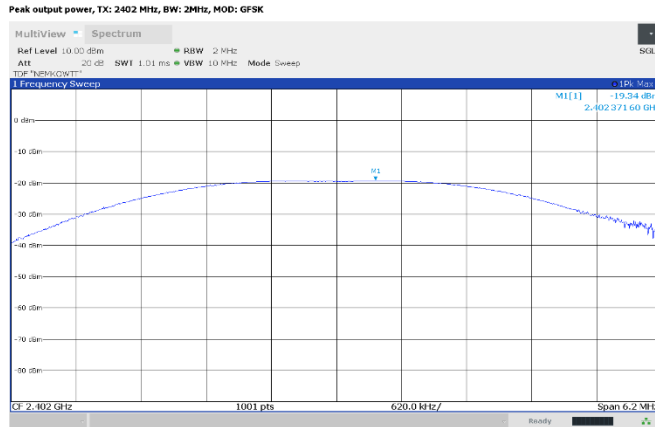


Figure 8.5-4: Maximum peak output power and antenna requirements, GFSK, 2 Mbps, 2402 MHz

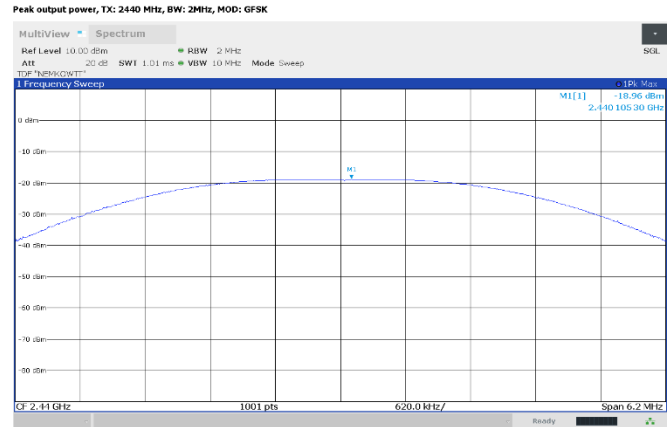


Figure 8.5-5: Maximum peak output power and antenna requirements, GFSK, 2 Mbps, 2440 MHz

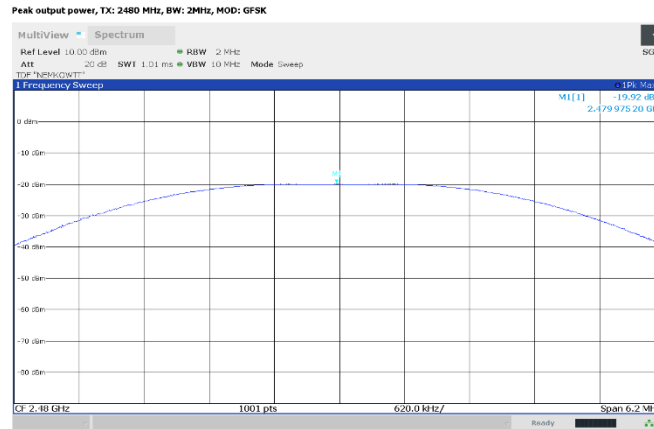


Figure 8.5-6: Maximum peak output power and antenna requirements, GFSK, 2 Mbps, 2480 MHz

8.6 Spurious emissions

8.6.1 References and limits

- FCC 47 CFR Part 15, Subpart C: §15.247(d)
- Test method: ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024. §6.10.4 (authorized band edge)
- Test method: ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024. §11.11 (antenna port conducted spurious emissions)
- Test method: ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024. §11.12.3 (radiated restricted band edge)
- Test method: ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024. §6.5, 6.6 (radiated emissions in restricted bands)

§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)).

Table 8.6-1: FCC §15.209 – Radiated emission limits

Frequency, MHz	Field strength of emissions		Measurement distance, m
	μV/m	dBμV/m	
0.009–0.490	2400/F	$67.6 - 20 \times \log_{10}(F)$	300
0.490–1.705	24000/F	$87.6 - 20 \times \log_{10}(F)$	30
1.705–30.0	30	29.5	30
30–88	100	40.0	3
88–216	150	43.5	3
216–960	200	46.0	3
above 960	500	54.0	3

Notes: In the emission table above, the tighter limit applies at the band edges.
For frequencies above 1 GHz the limit on peak RF emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.

Table 8.6-2: FCC restricted frequency bands

MHz	MHz	MHz	GHz
0.090–0.110	16.42–16.423	399.9–410	4.5–5.15
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	Above 38.6
13.36–13.41			

8.6.2 Test summary

Verdict	Pass		
Test date	May 11, 2026	Temperature	22.1 °C
	September 9, 2026		23.1 °C
Test engineer	Chenhao Ma, Wireless Test Technician	Air pressure	1001.2 mbar
			1003.2 mbar
Test location	☒ Wireless bench	Relative humidity	56.7 %
	☐ Other:		55.3 %

8.6.3 Notes

Testing was performed with the transmitter operating on a fixed channel at full power. Low, middle, and high channels were tested. The spectrum was searched from 30 MHz to 26 GHz (above the 10th harmonic of the highest transmit frequency).

For radiated measurements, the EUT was investigated to identify the worst case orientation with respect to the fundamental transmitter power. All measurements were performed with the EUT in that worst-case orientation.

The spectral plots within this section have been corrected with all relevant transducer factors.

Radiated emissions are reported for the modulation / data rate settings that produced the highest transmitter output power as a worst-case(1Mbps).

8.6.4 Setup details

EUT power input during test	Battery powered with charger
EUT setup configuration	☒ Table-top
	☐ Floor standing
	☐ Other:

Spectrum analyzer settings (conducted emissions):

Resolution bandwidth	100 kHz
Video bandwidth	300 kHz
Detector mode	Peak
Trace mode	Max Hold
Measurement time	Long enough for trace to stabilize

Receiver settings for radiated measurements within restricted bands below 1 GHz:

Resolution bandwidth	120 kHz
Video bandwidth	300 kHz
Detector mode	Peak (preview measurements)
	Quasi-Peak (final measurements)

Receiver settings for radiated measurements within restricted bands above 1 GHz:

Resolution bandwidth	1 MHz
Video bandwidth	3 MHz
Detector mode	Peak (preview measurements)
	Peak and average (final measurements)

8.6.5 Test data

Antenna port conducted spurious emissions:

- Authorized band edge:

Table 8.6-3: Authorized band edge conducted emissions (antenna port)

Test Frequency (MHz)	Modulation	Frequency of highest emission (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dB)
2402	GFSK, 1 Mbps	2399.274	-60.23	-31.99	28.24
2480	GFSK, 1 Mbps	2483.577	-60.34	-33.61	26.73
2402	GFSK, 2 Mbps	2399.991	-47.14	-35.00	12.14
2480	GFSK, 2 Mbps	2483.728	-68.32	-35.59	32.73

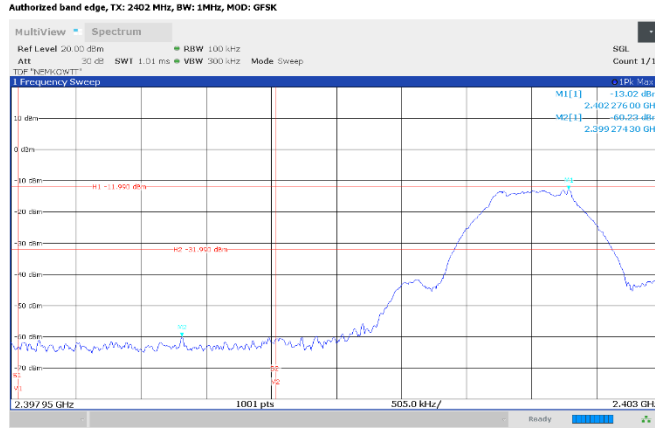


Figure 8.6-1: Authorized band-edge emissions, reference level, GFSK, 1 Mbps, 2402 MHz

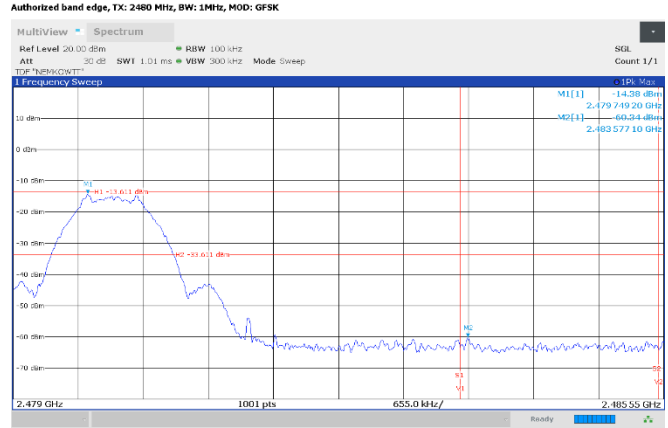


Figure 8.6-2: Authorized band-edge emissions, GFSK, 1 Mbps, 2480 MHz

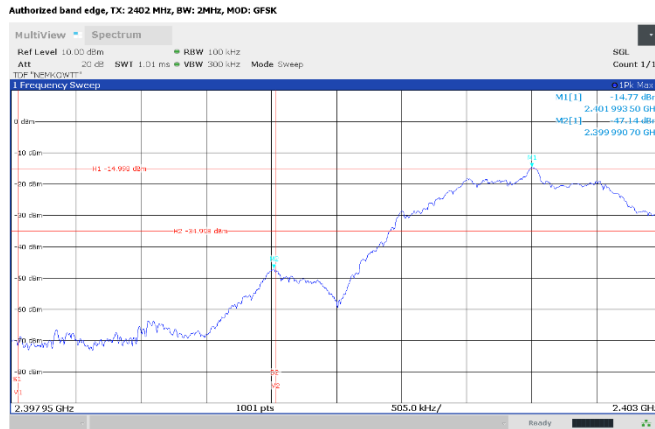


Figure 8.6-3: Authorized band-edge emissions, reference level, GFSK, 2 Mbps, 2402 MHz

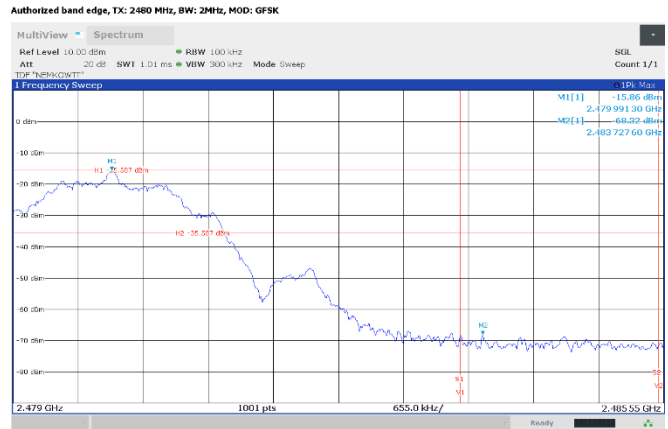


Figure 8.6-4: Authorized band-edge emissions, GFSK, 2 Mbps, 2480 MHz

Antenna port conducted spurious emissions:

Table 8.6-4: Antenna port conducted spurious emissions

Test Frequency (MHz)	Modulation	Frequency of highest emission (MHz)	Amplitude (dBm)	Limit (dBm)	Margin (dB)
2402	GFSK, 1 Mbps	9607.003967	-58.86	-32.05	13.93
2440	GFSK, 1 Mbps	837.687810	-40.32	-32.45	7.87
2480	GFSK, 1 Mbps	7440.625769	-47.65	-33.73	13.92
2402	GFSK, 2 Mbps	824.95259	-36.73	-34.94	1.79
2440	GFSK, 2 Mbps	5176.87	-42.09	-34.59	7.50
2480	GFSK, 2 Mbps	5175.62	-42.72	-35.62	7.10

Section 8 *Testing data*
Test name *Spurious emissions*
Specification(s) *FCC 15.247 & RSS-247*

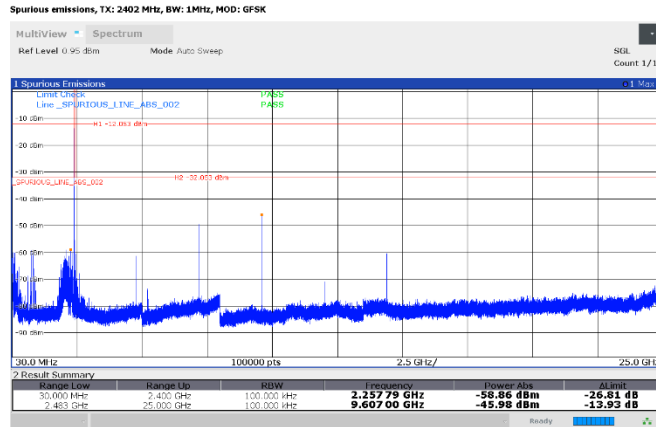


Figure 8.6-5: Antenna port conducted spurious emissions, GFSK, 1 Mbps, 2402 MHz

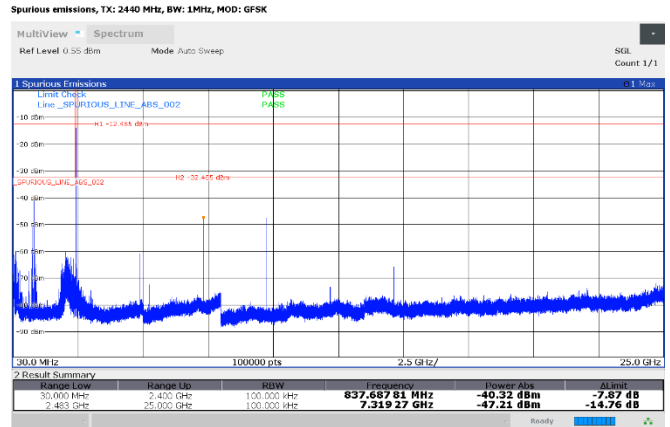


Figure 8.6-6: Antenna port conducted spurious emissions, GFSK, 1 Mbps, 2402 MHz

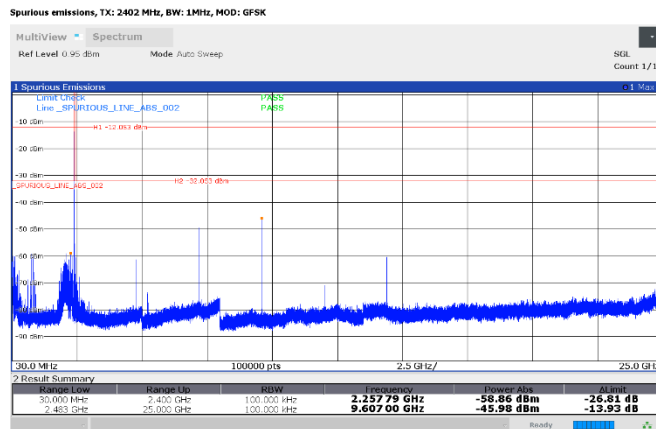


Figure 8.6-7: Antenna port conducted spurious emissions, GFSK, 1 Mbps, 2402 MHz

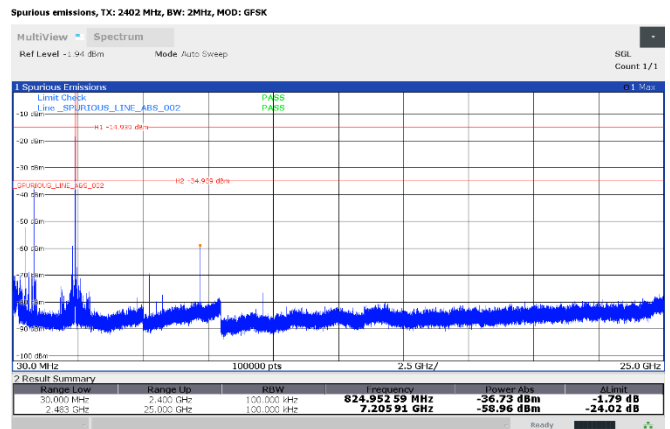


Figure 8.6-8: Antenna port conducted spurious emissions, GFSK, 2 Mbps, 2402 MHz

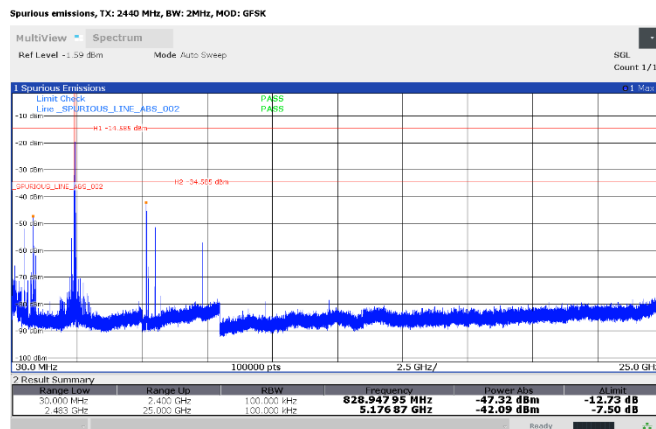


Figure 8.6-9: Antenna port conducted spurious emissions, GFSK, 2 Mbps, 2440 MHz

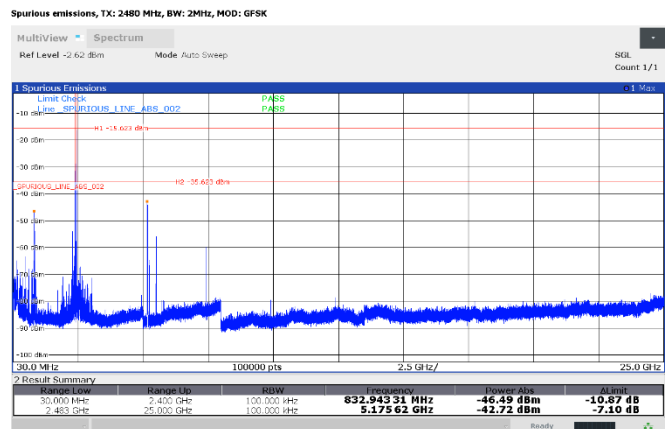


Figure 8.6-10: Antenna port conducted spurious emissions, GFSK, 2 Mbps, 2480 MHz

Radiated spurious emissions:

- Restricted band edge:

Full Spectrum

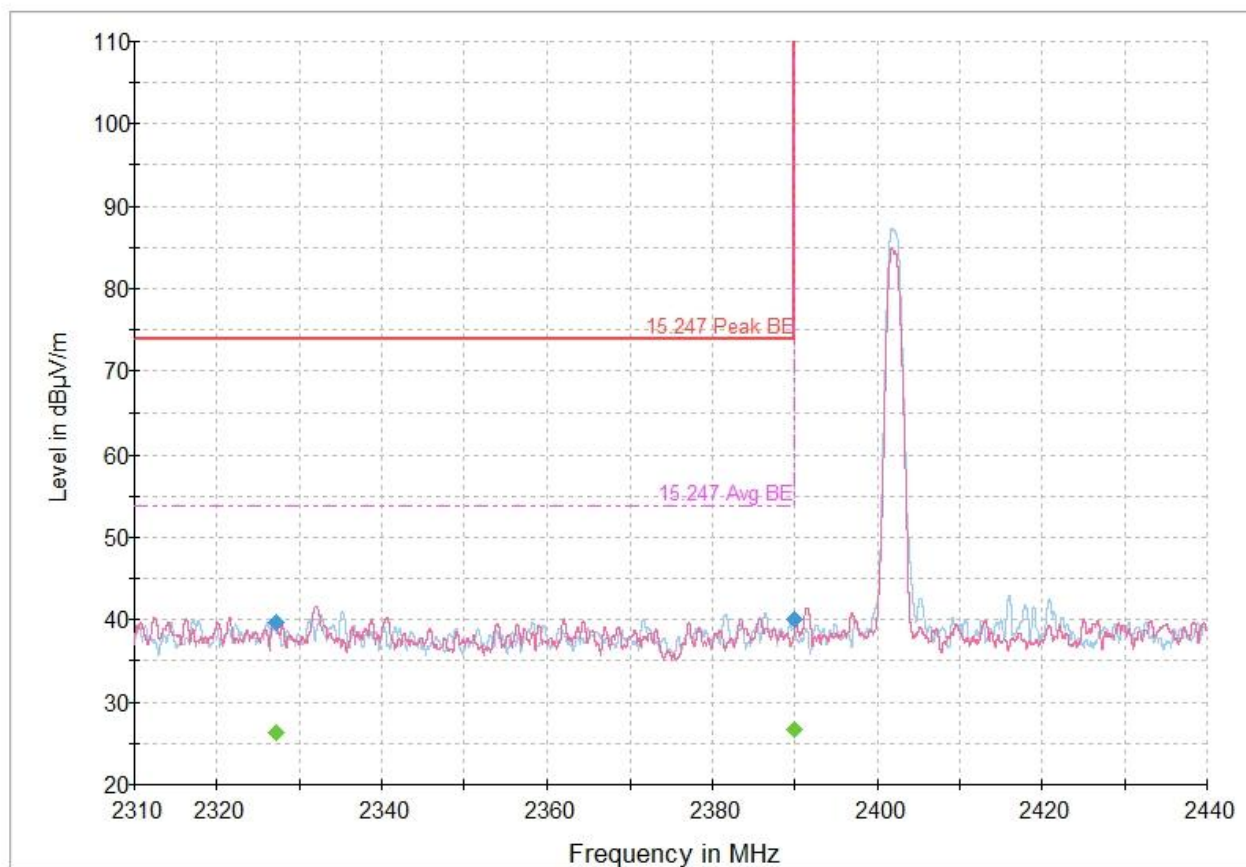


Figure 8.6-11: Radiated emissions spectral plot (2.31 GHz - 2.44 GHz) low band edge 1Mbps

Table 8.6-5: Radiated emissions results

Frequency (MHz)	MaxPeak (dBμV/m)	CAverage (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2327.183667	---	26.31	53.90	27.59	5000.0	1000.000	344.0	H	265.0	-4.3
2327.183667	39.69	---	73.90	34.21	5000.0	1000.000	344.0	H	265.0	-4.3
2390.000000	---	26.64	53.90	27.26	5000.0	1000.000	351.0	V	31.0	-4.0
2390.000000	40.00	---	73.90	33.90	5000.0	1000.000	351.0	V	31.0	-4.0

Notes: ¹ Field strength (dBμV/m) = receiver/spectrum analyzer value (dBμV) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ Emissions that were continuously present for a minimum of 1 second and occurred more than once for every 15 seconds observation period were considered valid emissions. The maximum value of valid emissions has been recorded.

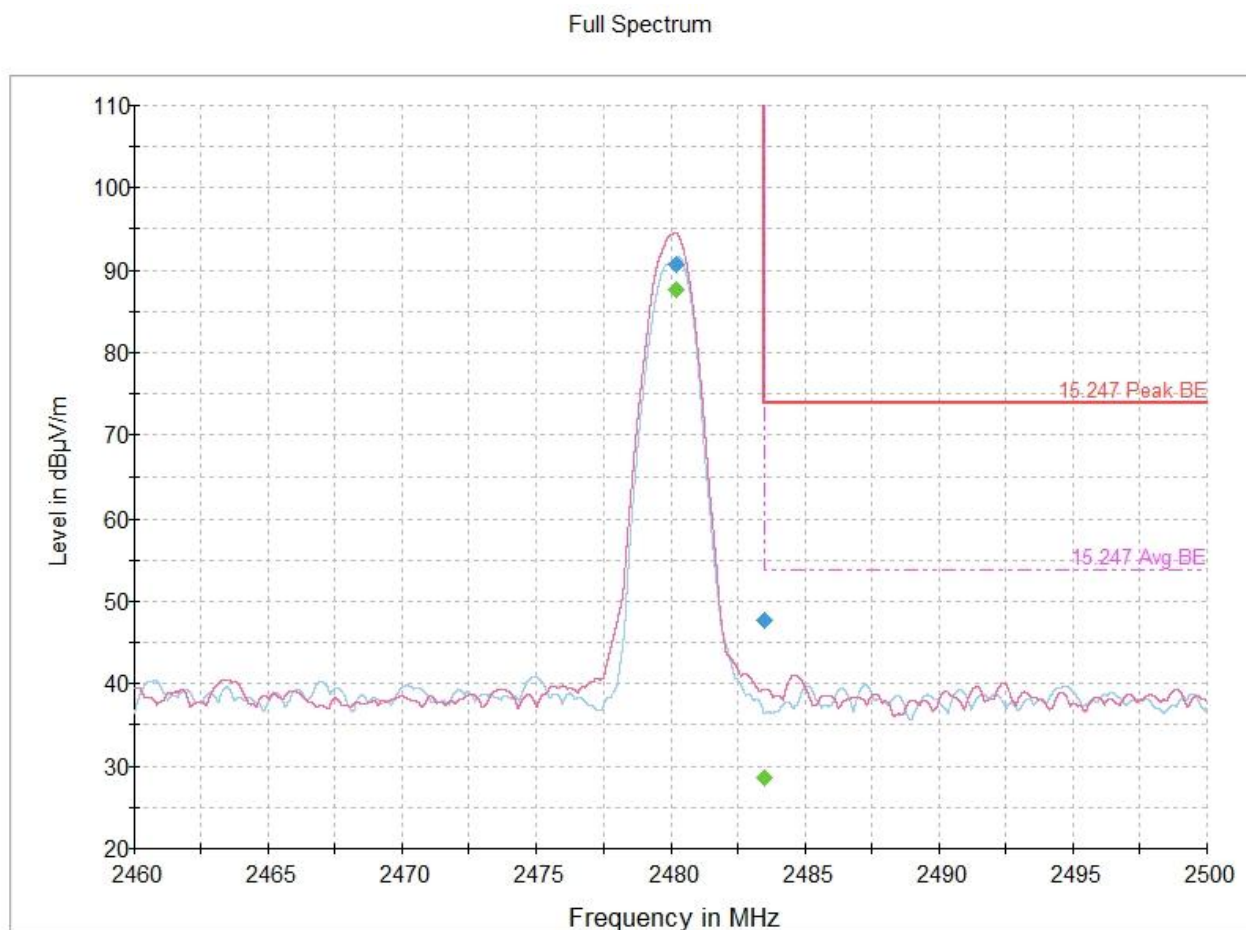


Figure 8.6-12: Radiated emissions spectral plot (2.46 GHz - 2.5 GHz)high band edge 1Mbps

Table 8.6-6: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.500000	---	28.65	53.90	25.25	5000.0	1000.000	240.0	H	140.0	-3.8
2483.500000	47.69	---	73.90	26.21	5000.0	1000.000	240.0	H	140.0	-3.8

Notes: ¹ Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ Emissions that were continuously present for a minimum of 1 second and occurred more than once for every 15 seconds observation period were considered valid emissions. The maximum value of valid emissions has been recorded.

Full Spectrum

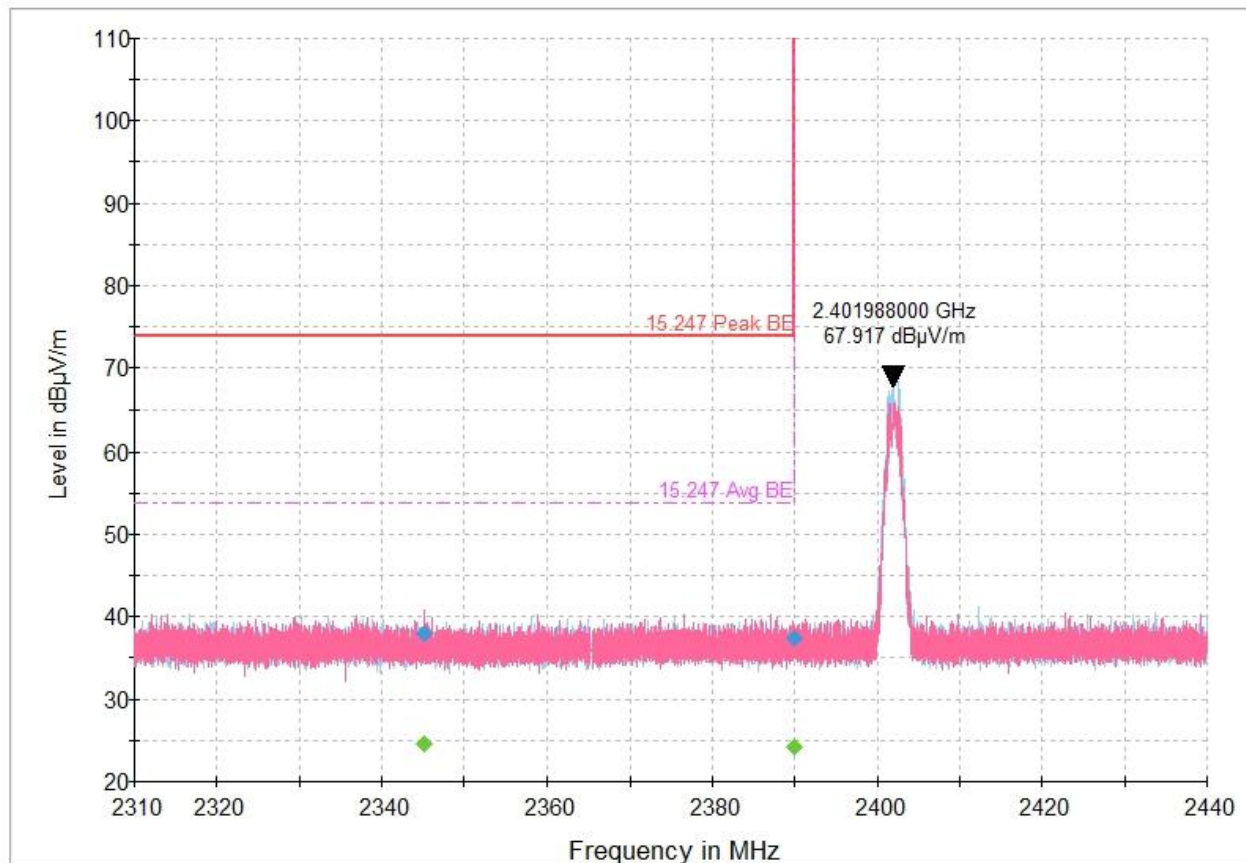


Figure 8.6-13: Radiated emissions spectral plot (2.31 GHz - 2.44 GHz) low edge 2Mbps

Table 8.6-7: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2345.143333	---	24.50	53.90	29.40	5000.0	1000.000	294.0	H	343.0	-8.5
2345.143333	37.93	---	73.90	35.97	5000.0	1000.000	294.0	H	343.0	-8.5
2390.000000	---	24.25	53.90	29.65	5000.0	1000.000	186.0	H	68.0	-8.1
2390.000000	37.41	---	73.90	36.49	5000.0	1000.000	186.0	H	68.0	-8.1

Notes: ¹ Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ Emissions that were continuously present for a minimum of 1 second and occurred more than once for every 15 seconds observation period were considered valid emissions. The maximum value of valid emissions has been recorded.

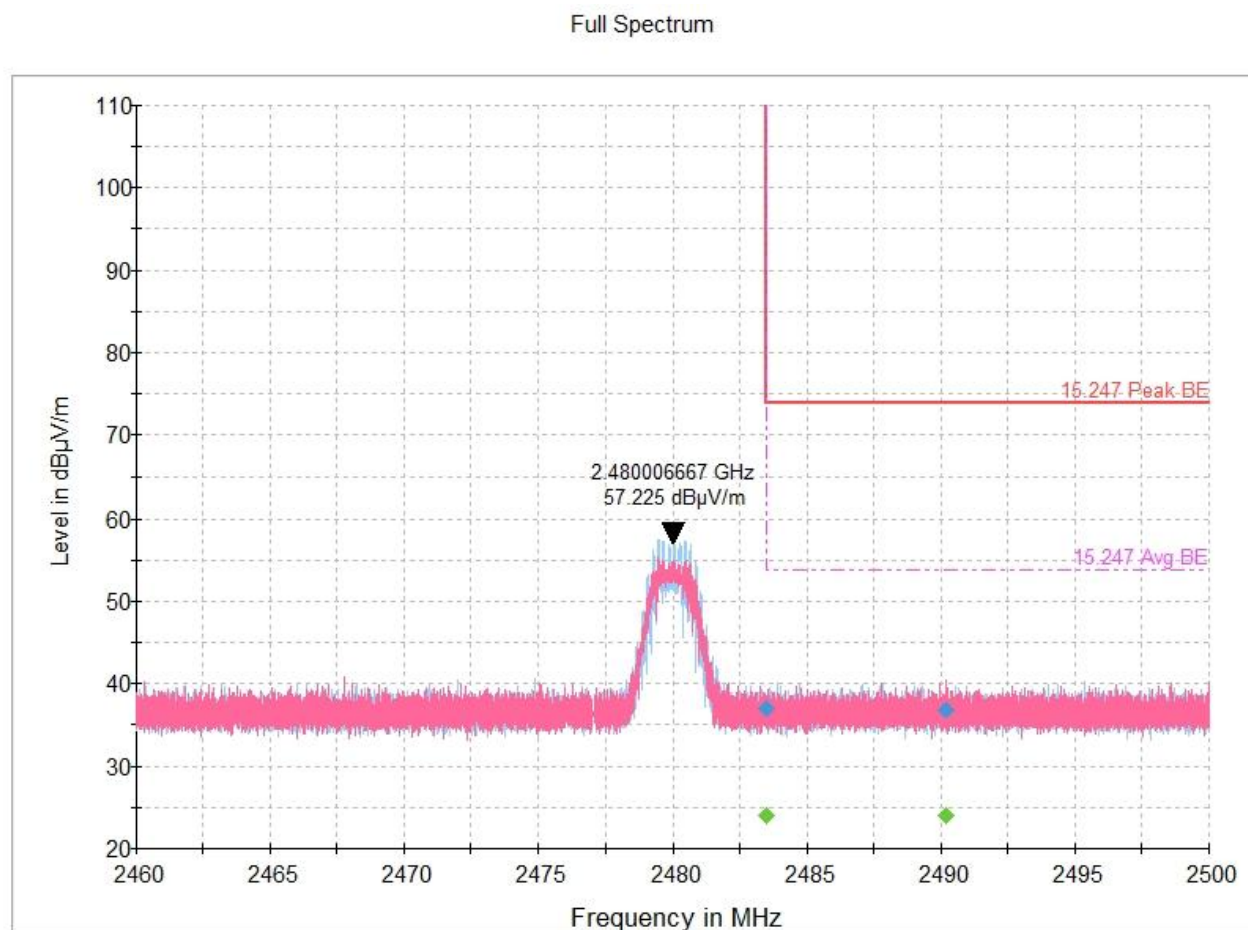


Figure 8.6-14: Radiated emissions spectral plot (2.46 GHz - 2.5 GHz) high edge 2Mbps

Table 8.6-8: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.500000	---	24.01	53.90	29.89	5000.0	1000.000	275.0	V	282.0	-7.8
2483.500000	37.05	---	73.90	36.85	5000.0	1000.000	275.0	V	282.0	-7.8
2490.190667	---	23.99	53.90	29.91	5000.0	1000.000	344.0	V	135.0	-7.8
2490.190667	36.83	---	73.90	37.07	5000.0	1000.000	344.0	V	135.0	-7.8

Notes: ¹ Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ Emissions that were continuously present for a minimum of 1 second and occurred more than once for every 15 seconds observation period were considered valid emissions. The maximum value of valid emissions has been recorded.

- Radiated spurious emissions, restricted bands:

Full Spectrum

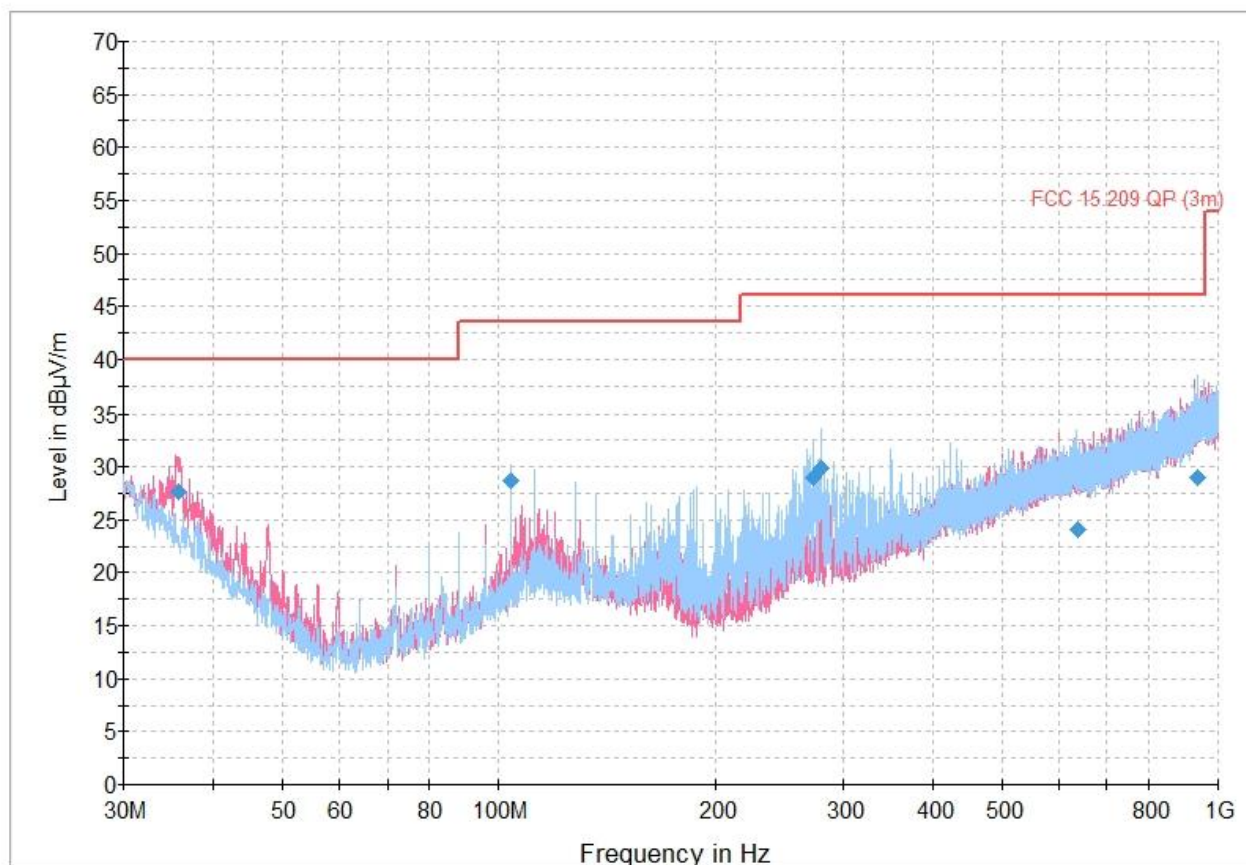


Figure 8.6-15: Radiated emissions spectral plot (30 MHz - 1 GHz) low channel

Table 8.6-9: Radiated emissions results

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
35.829000	27.70	40.00	12.30	5000.0	120.000	103.0	V	279.0	23.4
103.998667	28.74	43.50	14.76	5000.0	120.000	290.0	H	301.0	18.4
273.465333	28.92	46.00	17.08	5000.0	120.000	103.0	H	250.0	21.4
280.069000	29.87	46.00	16.13	5000.0	120.000	107.0	H	142.0	21.6
636.500667	24.05	46.00	21.95	5000.0	120.000	387.0	H	212.0	29.9
934.101667	28.92	46.00	17.08	5000.0	120.000	371.0	H	74.0	34.2

Notes: ¹ Field strength (dBμV/m) = receiver/spectrum analyzer value (dBμV) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ Emissions that were continuously present for a minimum of 1 second and occurred more than once for every 15 seconds observation period were considered valid emissions. The maximum value of valid emissions has been recorded.

Full Spectrum

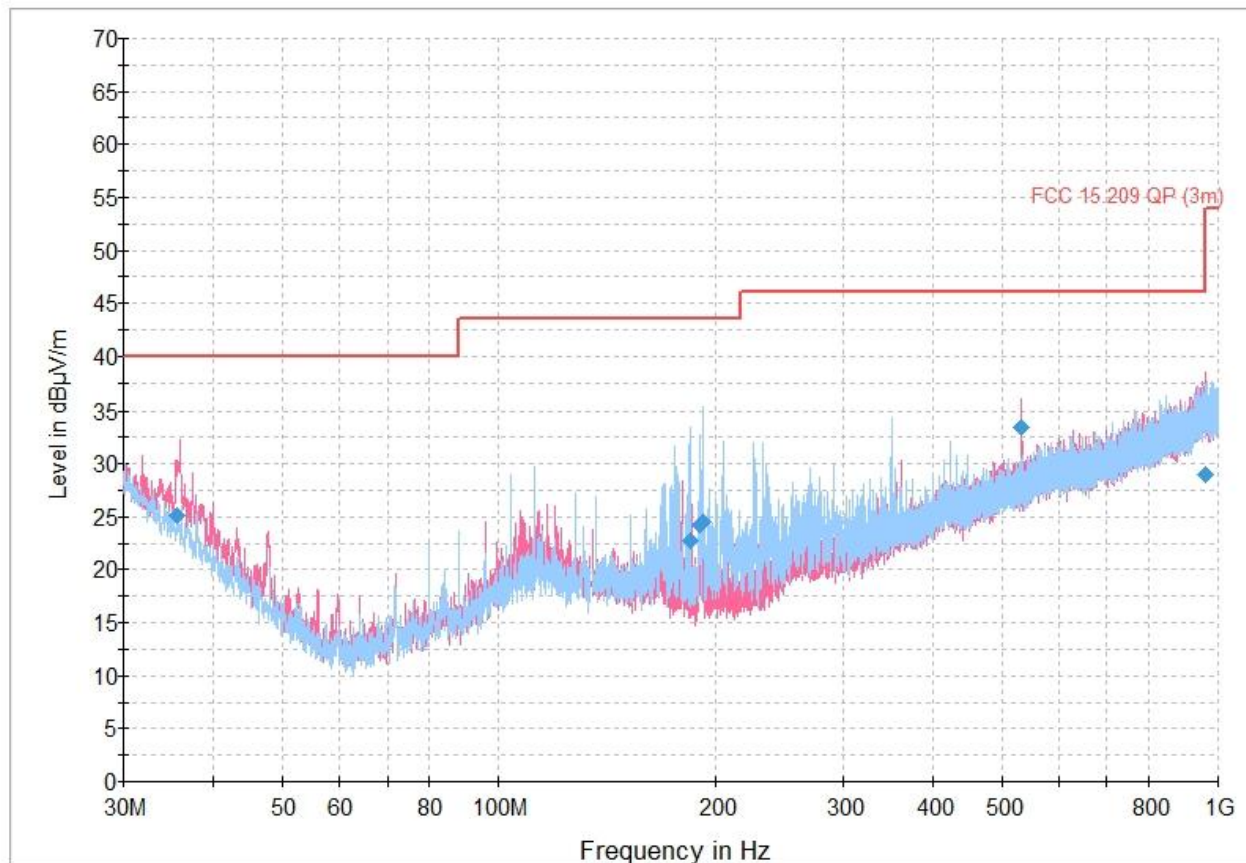


Figure 8.6-16: Radiated emissions spectral plot (30 MHz - 1 GHz) mid channel

Table 8.6-10: Radiated emissions results

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
35.681667	25.08	40.00	14.92	5000.0	120.000	146.0	V	299.0	23.5
184.071333	22.81	43.50	20.69	5000.0	120.000	145.0	H	297.0	17.5
189.563667	24.18	43.50	19.32	5000.0	120.000	139.0	H	180.0	17.8
191.317333	24.49	43.50	19.01	5000.0	120.000	178.0	H	179.0	18.0
530.997667	33.39	46.00	12.61	5000.0	120.000	119.0	V	107.0	27.7
959.428000	28.95	46.00	17.05	5000.0	120.000	307.0	V	252.0	34.8

Notes: ¹ Field strength (dBμV/m) = receiver/spectrum analyzer value (dBμV) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ Emissions that were continuously present for a minimum of 1 second and occurred more than once for every 15 seconds observation period were considered valid emissions. The maximum value of valid emissions has been recorded.

Full Spectrum

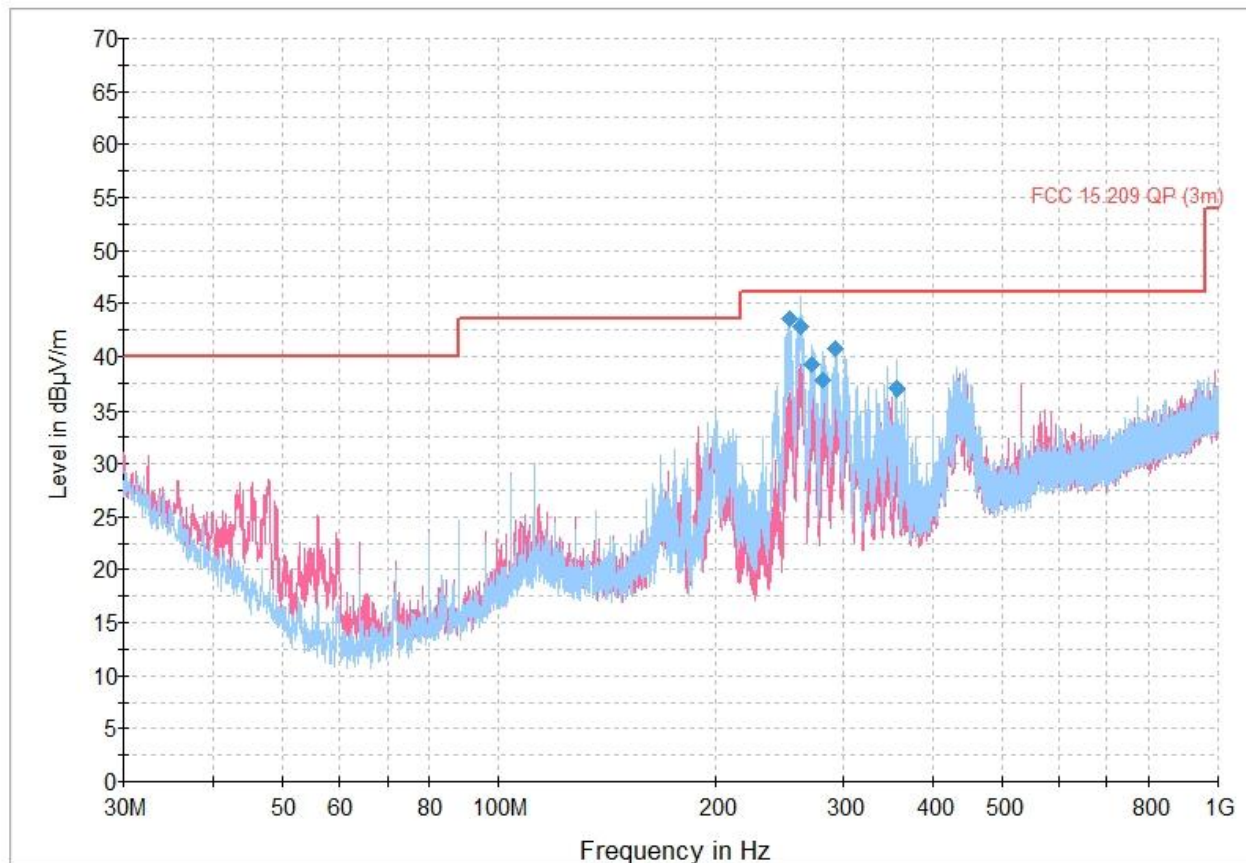


Figure 8.6-17: Radiated emissions spectral plot (30 MHz - 1 GHz) high channel

Table 8.6-11: Radiated emissions results

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
253.146333	43.61	46.00	2.39	5000.0	120.000	131.0	H	283.0	21.2
261.791333	42.81	46.00	3.19	5000.0	120.000	120.0	H	226.0	22.0
271.722000	39.17	46.00	6.83	5000.0	120.000	124.0	H	275.0	21.4
281.217667	37.81	46.00	8.19	5000.0	120.000	112.0	H	120.0	21.6
293.190333	40.78	46.00	5.22	5000.0	120.000	109.0	H	126.0	21.9
357.322667	37.01	46.00	8.99	5000.0	120.000	103.0	H	118.0	24.0

Notes: ¹ Field strength (dBμV/m) = receiver/spectrum analyzer value (dBμV) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ Emissions that were continuously present for a minimum of 1 second and occurred more than once for every 15 seconds observation period were considered valid emissions. The maximum value of valid emissions has been recorded.

Full Spectrum

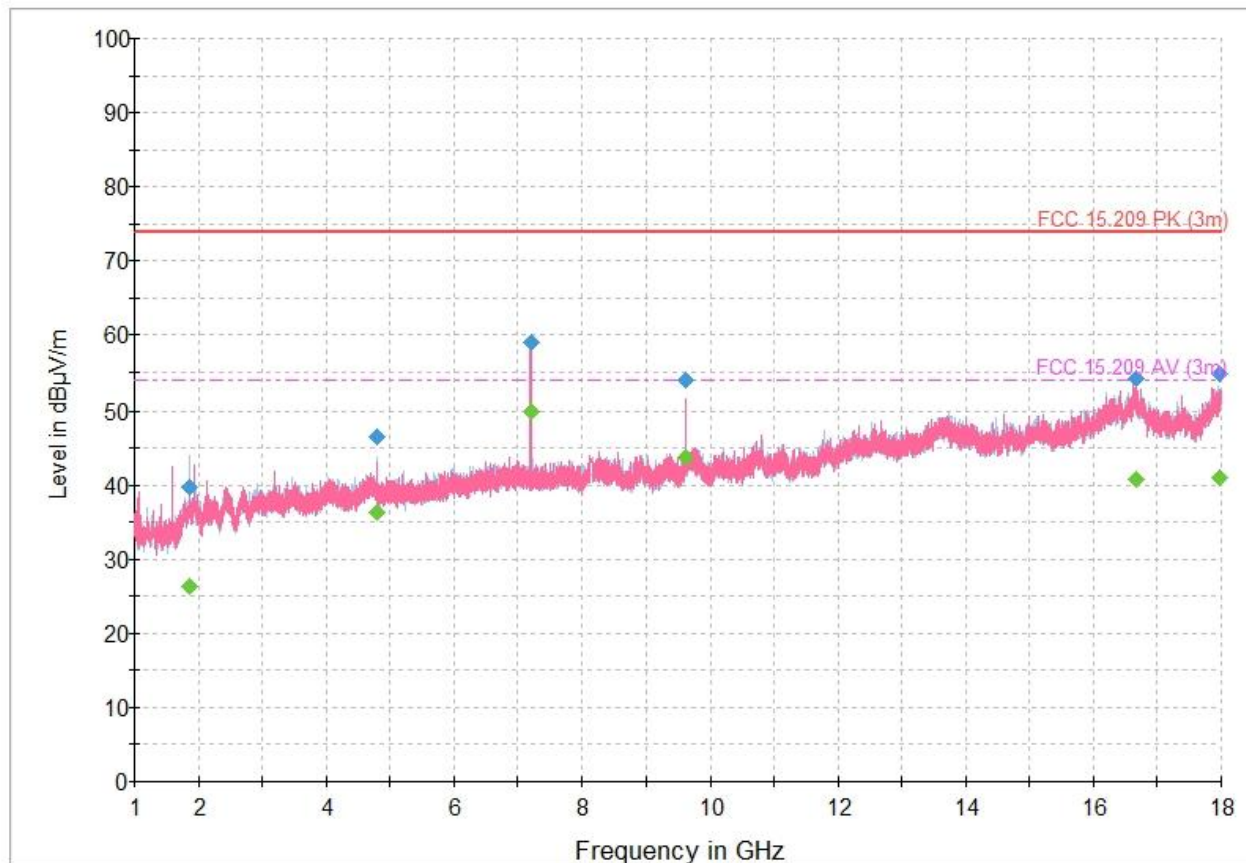


Figure 8.6-18: Radiated emissions spectral plot (1 GHz - 18 GHz) low channel

Table 8.6-12: Radiated emissions results

Frequency (MHz)	MaxPeak (dBμV/m)	CAverage (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1861.050000	39.78	---	73.90	34.12	5000.0	1000.000	278.0	H	40.0	-5.8
1861.050000	---	26.25	53.90	27.65	5000.0	1000.000	278.0	H	40.0	-5.8
4803.950000	46.40	---	73.90	27.50	5000.0	1000.000	103.0	H	31.0	2.1
4803.950000	---	36.22	53.90	17.68	5000.0	1000.000	103.0	H	31.0	2.1
7206.800000	---	49.98	53.90	3.92	5000.0	1000.000	212.0	V	320.0	6.0
7206.800000	58.94	---	73.90	14.96	5000.0	1000.000	212.0	V	320.0	6.0
9609.000000	---	43.67	53.90	10.23	5000.0	1000.000	122.0	V	326.0	10.3
9609.000000	53.96	---	73.90	19.94	5000.0	1000.000	122.0	V	326.0	10.3
16676.300000	54.16	---	73.90	19.74	5000.0	1000.000	164.0	V	211.0	23.3
16676.300000	---	40.84	53.90	13.06	5000.0	1000.000	164.0	V	211.0	23.3
17964.750000	54.85	---	73.90	19.05	5000.0	1000.000	181.0	H	130.0	23.9
17964.750000	---	41.01	53.90	12.89	5000.0	1000.000	181.0	H	130.0	23.9

Notes: ¹ Field strength (dBμV/m) = receiver/spectrum analyzer value (dBμV) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ Emissions that were continuously present for a minimum of 1 second and occurred more than once for every 15 seconds observation period were considered valid emissions. The maximum value of valid emissions has been recorded.

Full Spectrum

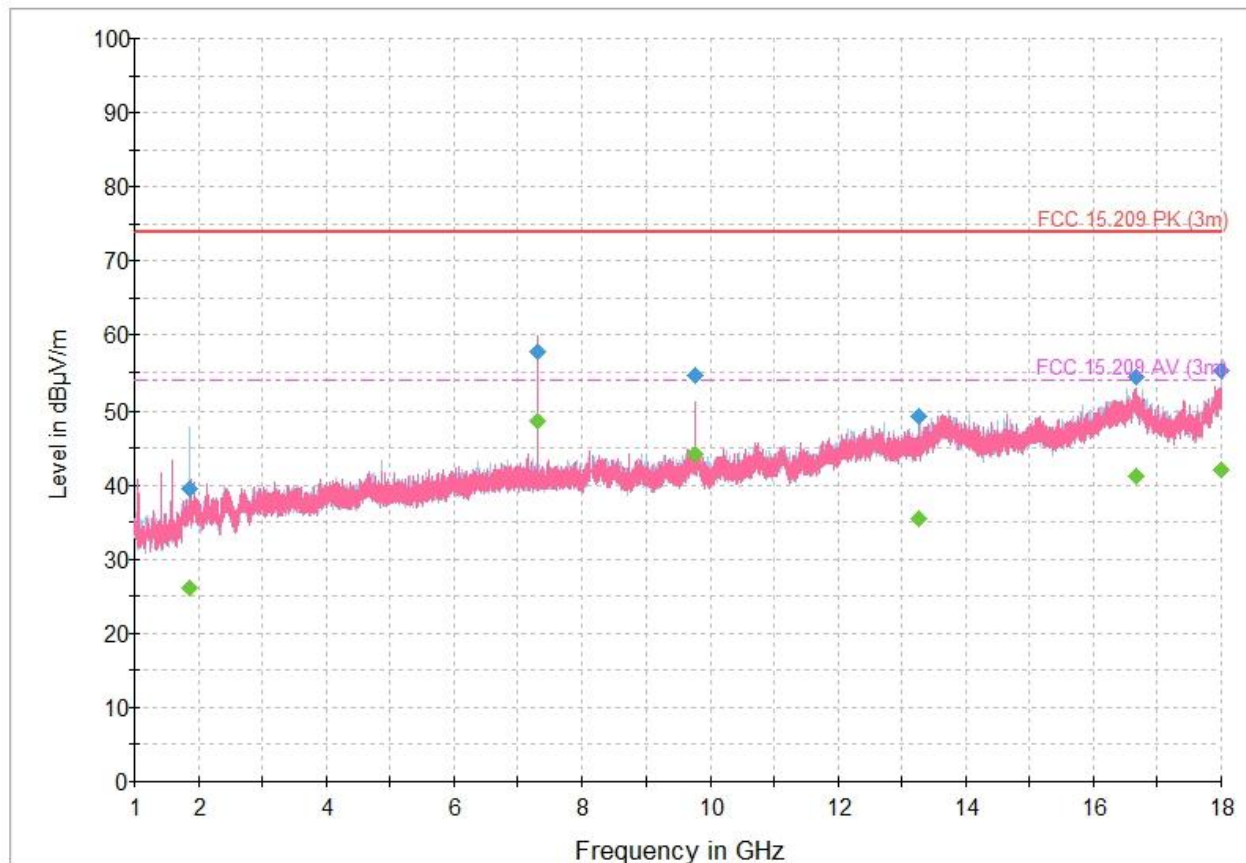


Figure 8.6-19: Radiated emissions spectral plot (1 GHz - 18 GHz) mid channel

Table 8.6-13: Radiated emissions results

Frequency (MHz)	MaxPeak (dBμV/m)	CAverage (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1866.800000	---	26.10	53.90	27.80	5000.0	1000.000	122.0	H	314.0	-5.7
1866.800000	39.53	---	73.90	34.37	5000.0	1000.000	122.0	H	314.0	-5.7
7319.200000	57.69	---	73.90	16.21	5000.0	1000.000	229.0	V	144.0	6.2
7319.200000	---	48.57	53.90	5.33	5000.0	1000.000	229.0	V	144.0	6.2
9759.050000	54.65	---	73.90	19.25	5000.0	1000.000	105.0	V	292.0	10.8
9759.050000	---	44.18	53.90	9.72	5000.0	1000.000	105.0	V	292.0	10.8
13269.150000	49.28	---	73.90	24.62	5000.0	1000.000	352.0	H	303.0	17.1
13269.150000	---	35.49	53.90	18.41	5000.0	1000.000	352.0	H	303.0	17.1
16671.500000	54.26	---	73.90	19.64	5000.0	1000.000	364.0	V	206.0	23.4
16671.500000	---	41.16	53.90	12.74	5000.0	1000.000	364.0	V	206.0	23.4
17994.800000	---	42.04	53.90	11.86	5000.0	1000.000	382.0	H	192.0	24.8
17994.800000	55.14	---	73.90	18.76	5000.0	1000.000	382.0	H	192.0	24.8

Notes: ¹ Field strength (dBμV/m) = receiver/spectrum analyzer value (dBμV) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ Emissions that were continuously present for a minimum of 1 second and occurred more than once for every 15 seconds observation period were considered valid emissions. The maximum value of valid emissions has been recorded.

Full Spectrum

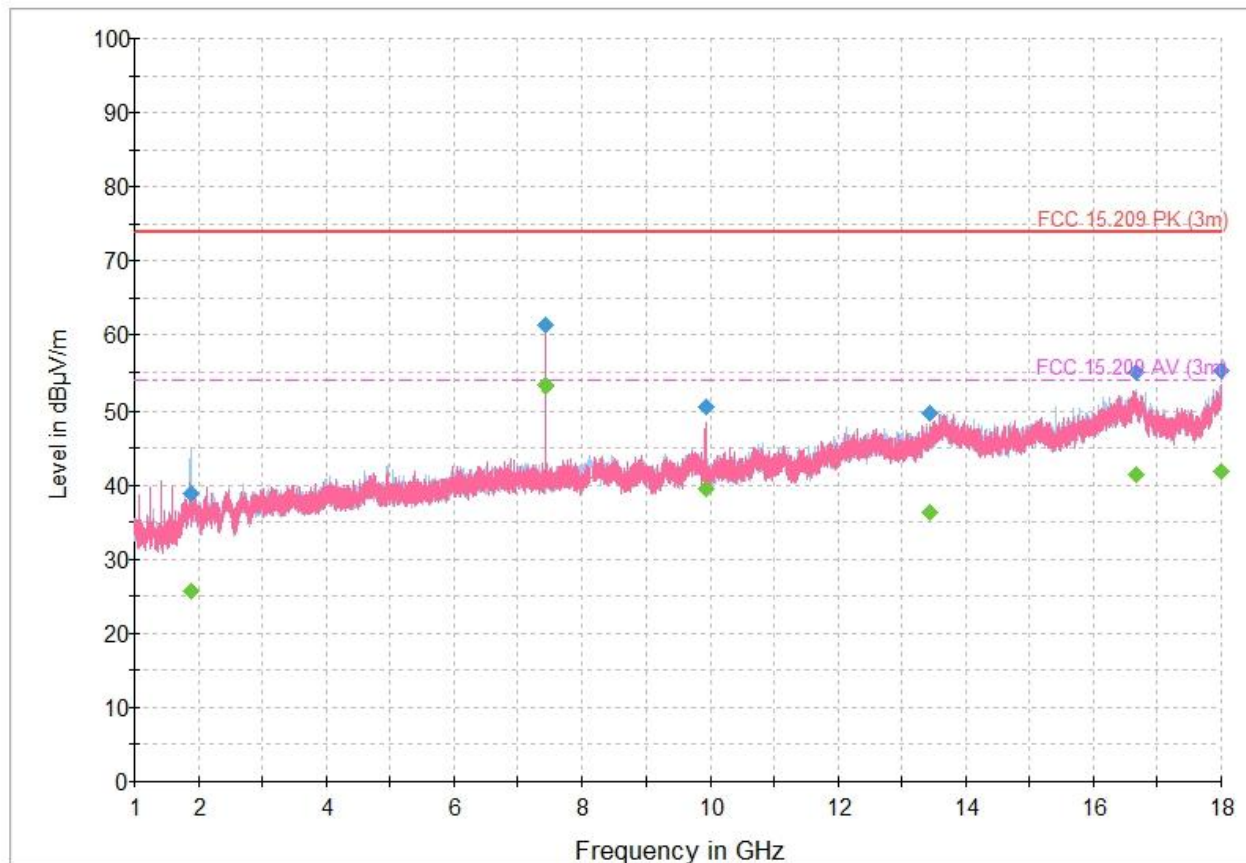


Figure 8.6-20: Radiated emissions spectral plot (1 GHz - 18 GHz) high channel

Table 8.6-14: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1885.250000	---	25.61	53.90	28.29	5000.0	1000.000	236.0	H	247.0	-5.6
1885.250000	38.92	---	73.90	34.98	5000.0	1000.000	236.0	H	247.0	-5.6
7440.650000	---	53.39	53.90	0.51	5000.0	1000.000	259.0	V	266.0	6.4
7440.650000	61.28	---	73.90	12.62	5000.0	1000.000	259.0	V	266.0	6.4
9920.950000	50.57	---	73.90	23.33	5000.0	1000.000	124.0	V	284.0	10.9
9920.950000	---	39.52	53.90	14.38	5000.0	1000.000	124.0	V	284.0	10.9
13441.600000	49.74	---	73.90	24.16	5000.0	1000.000	159.0	H	11.0	17.4
13441.600000	---	36.23	53.90	17.67	5000.0	1000.000	159.0	H	11.0	17.4
16656.400000	---	41.32	53.90	12.58	5000.0	1000.000	401.0	H	156.0	23.5
16656.400000	54.92	---	73.90	18.98	5000.0	1000.000	401.0	H	156.0	23.5
17996.900000	---	41.88	53.90	12.02	5000.0	1000.000	283.0	V	239.0	24.9
17996.900000	55.22	---	73.90	18.68	5000.0	1000.000	283.0	V	239.0	24.9

Notes: ¹ Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ Emissions that were continuously present for a minimum of 1 second and occurred more than once for every 15 seconds observation period were considered valid emissions. The maximum value of valid emissions has been recorded.

Full Spectrum

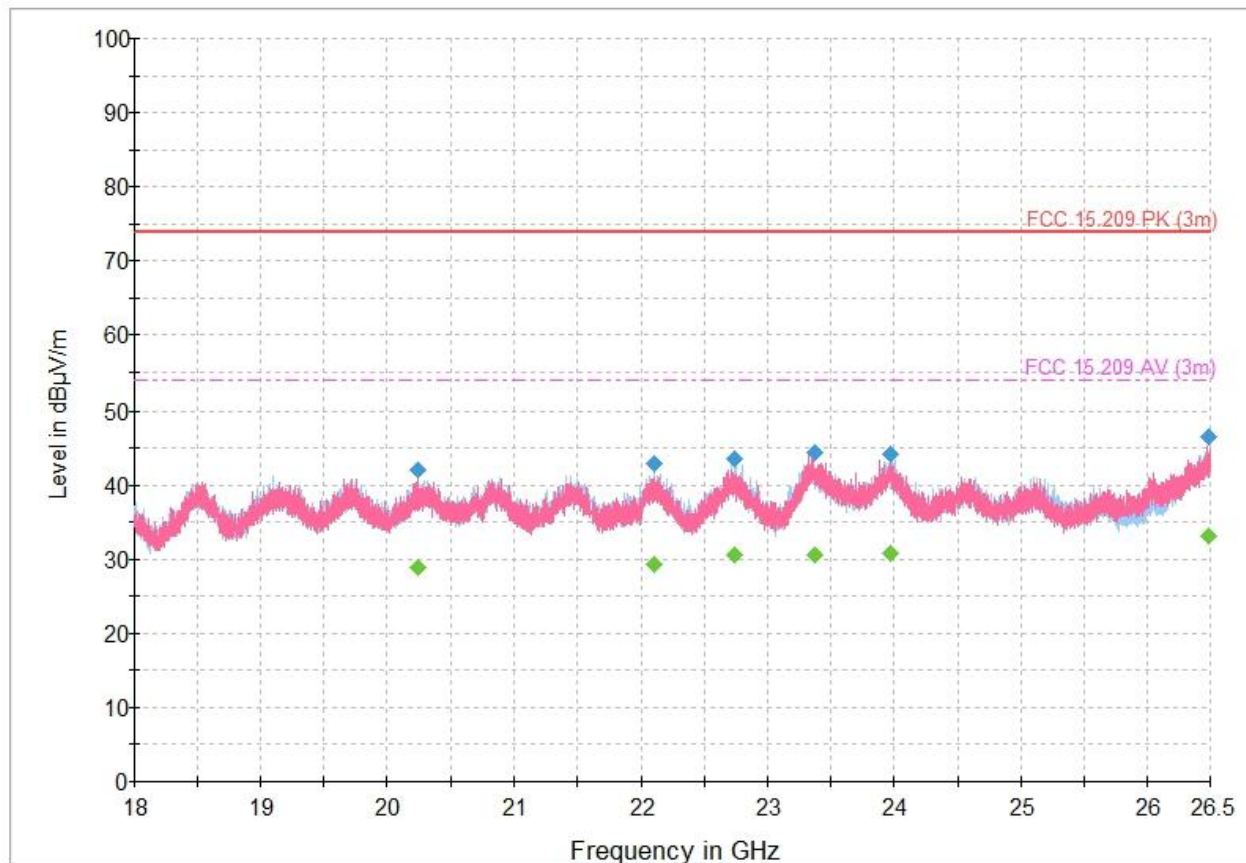


Figure 8.6-21: Radiated emissions spectral plot (18 GHz - 26.5 GHz) low channel

Table 8.6-15: Radiated emissions results

Frequency (MHz)	MaxPeak (dBμV/m)	CAverage (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
20244.712500	41.99	---	73.90	31.91	5000.0	1000.000	361.0	V	181.0	14.4
20244.712500	---	28.92	53.90	24.98	5000.0	1000.000	361.0	V	181.0	14.4
22101.175000	---	29.30	53.90	24.60	5000.0	1000.000	347.0	H	259.0	16.8
22101.175000	42.87	---	73.90	31.03	5000.0	1000.000	347.0	H	259.0	16.8
22734.387500	---	30.48	53.90	23.42	5000.0	1000.000	350.0	H	38.0	18.2
22734.387500	43.48	---	73.90	30.42	5000.0	1000.000	350.0	H	38.0	18.2
23373.281250	44.28	---	73.90	29.62	5000.0	1000.000	312.0	V	296.0	22.0
23373.281250	---	30.64	53.90	23.26	5000.0	1000.000	312.0	V	296.0	22.0
23972.918750	---	30.76	53.90	23.14	5000.0	1000.000	280.0	H	139.0	21.6
23972.918750	44.26	---	73.90	29.64	5000.0	1000.000	280.0	H	139.0	21.6
26484.475000	---	33.16	53.90	20.74	5000.0	1000.000	396.0	V	0.0	24.5
26484.475000	46.50	---	73.90	27.40	5000.0	1000.000	396.0	V	0.0	24.5

Notes: ¹ Field strength (dBμV/m) = receiver/spectrum analyzer value (dBμV) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ Emissions that were continuously present for a minimum of 1 second and occurred more than once for every 15 seconds observation period were considered valid emissions. The maximum value of valid emissions has been recorded.

Full Spectrum

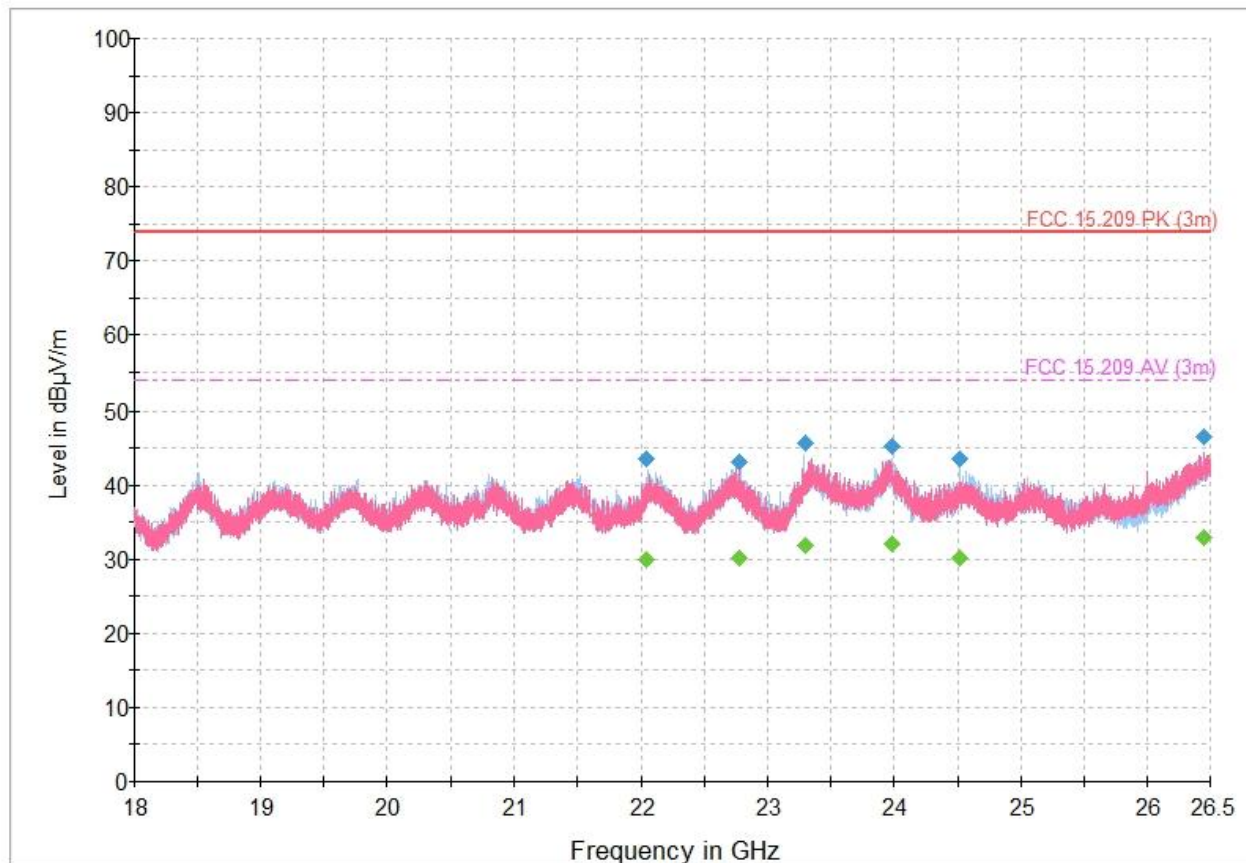


Figure 8.6-22: Radiated emissions spectral plot (18 GHz - 26.5 GHz) mid channel

Table 8.6-16: Radiated emissions results

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
22043.100000	---	29.92	53.90	23.98	5000.0	1000.000	401.0	H	0.0	16.6
22043.100000	43.46	---	73.90	30.44	5000.0	1000.000	401.0	H	0.0	16.6
22772.931250	---	30.06	53.90	23.84	5000.0	1000.000	308.0	V	44.0	18.5
22772.931250	43.10	---	73.90	30.80	5000.0	1000.000	308.0	V	44.0	18.5
23291.868750	---	31.94	53.90	21.96	5000.0	1000.000	380.0	H	204.0	21.1
23291.868750	45.64	---	73.90	28.26	5000.0	1000.000	380.0	H	204.0	21.1
23984.456250	45.32	---	73.90	28.58	5000.0	1000.000	401.0	H	80.0	21.6
23984.456250	---	31.99	53.90	21.91	5000.0	1000.000	401.0	H	80.0	21.6
24522.175000	---	30.23	53.90	23.67	5000.0	1000.000	376.0	H	49.0	20.6
24522.175000	43.45	---	73.90	30.45	5000.0	1000.000	376.0	H	49.0	20.6
26452.181250	46.48	---	73.90	27.42	5000.0	1000.000	396.0	V	116.0	24.2
26452.181250	---	32.94	53.90	20.96	5000.0	1000.000	396.0	V	116.0	24.2

Notes: ¹ Field strength (dBµV/m) = receiver/spectrum analyzer value (dBµV) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ Emissions that were continuously present for a minimum of 1 second and occurred more than once for every 15 seconds observation period were considered valid emissions. The maximum value of valid emissions has been recorded.

Full Spectrum

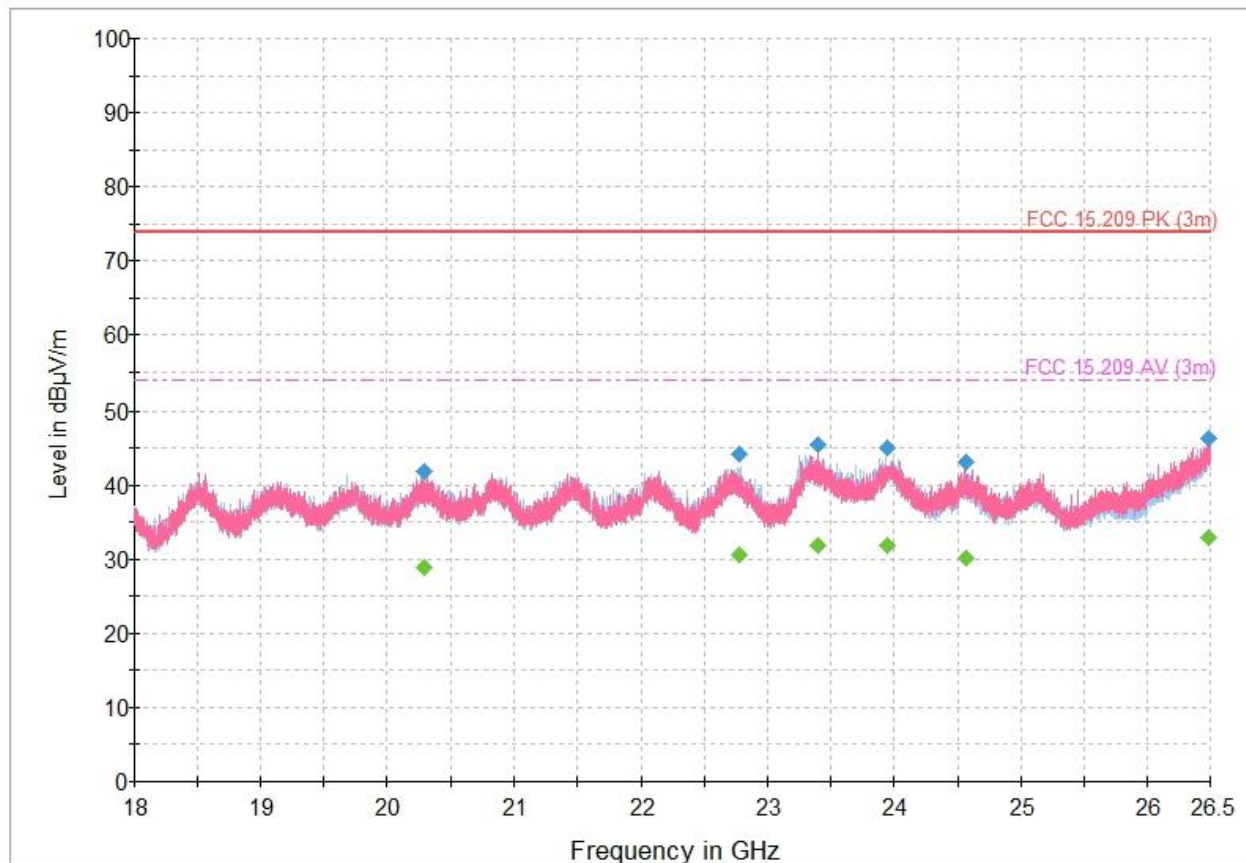


Figure 8.6-23: Radiated emissions spectral plot (18 GHz - 26.5 GHz) high channel

Table 8.6-17: Radiated emissions results

Frequency (MHz)	MaxPeak (dBμV/m)	CAverage (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
20287.100000	---	28.88	53.90	25.02	5000.0	1000.000	213.0	H	125.0	14.3
20287.100000	41.85	---	73.90	32.05	5000.0	1000.000	213.0	H	125.0	14.3
22778.043750	44.23	---	73.90	29.67	5000.0	1000.000	357.0	H	229.0	18.6
22778.043750	---	30.65	53.90	23.25	5000.0	1000.000	357.0	H	229.0	18.6
23398.887500	---	31.86	53.90	22.04	5000.0	1000.000	401.0	V	340.0	22.1
23398.887500	45.33	---	73.90	28.57	5000.0	1000.000	401.0	V	340.0	22.1
23946.256250	---	31.74	53.90	22.16	5000.0	1000.000	391.0	H	44.0	21.6
23946.256250	45.01	---	73.90	28.89	5000.0	1000.000	391.0	H	44.0	21.6
24571.668750	---	30.08	53.90	23.82	5000.0	1000.000	365.0	V	104.0	20.6
24571.668750	43.13	---	73.90	30.77	5000.0	1000.000	365.0	V	104.0	20.6
26488.537500	46.24	---	73.90	27.66	5000.0	1000.000	268.0	V	0.0	24.5
26488.537500	---	32.84	53.90	21.06	5000.0	1000.000	268.0	V	0.0	24.5

Notes: ¹ Field strength (dBμV/m) = receiver/spectrum analyzer value (dBμV) + correction factor (dB)

² Correction factors = antenna factor ACF (dB) + cable loss (dB)

³ Emissions that were continuously present for a minimum of 1 second and occurred more than once for every 15 seconds observation period were considered valid emissions. The maximum value of valid emissions has been recorded.

8.7 Power spectral density

8.7.1 References and limits

- FCC 47 CFR Part 15, Subpart C: §15.247(e)
- Test method: ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024. §11.10.2.1 (Method PKPSD)

§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.

8.7.2 Test summary

Verdict	Pass		
Test date	May 11, 2026 September 9, 2026	Temperature	22.1 °C 23.1 °C
Test engineer	Chenhao Ma, Wireless Test Technician	Air pressure	1001.2 mbar 1003.2 mbar
Test location	☒ Wireless bench ☐ Other:	Relative humidity	56.7 % 55.3 %

8.7.3 Notes

Testing was performed with the transmitter operating on a fixed channel (lowest, middle, and highest)

The spectral plots within this section have been corrected with all relevant transducer factors.

8.7.4 Setup details

EUT power input during test	Battery powered
EUT setup configuration	☒ Table-top ☐ Floor standing ☐ Other:

Spectrum analyzer settings:

Resolution bandwidth	3 kHz
Video bandwidth	10 kHz
Detector mode	Peak
Trace mode	Max Hold
Measurement time	Long enough for trace to stabilize

8.7.5 Test data

Table 8.7-1: Power spectral density test data

Test Frequency (MHz)	Modulation	Power Density (dBm/3 kHz)	Limit (dBm)	Margin (dB)
2402	GFSK, 1 Mbps	-27.82	≤ 8	35.82
2440	GFSK, 1 Mbps	-28.29	≤ 8	36.29
2480	GFSK, 1 Mbps	-29.66	≤ 8	37.66
2402	GFSK, 2 Mbps	-32.51	≤ 8	40.51
2440	GFSK, 2 Mbps	-32.07	≤ 8	40.07
2480	GFSK, 2 Mbps	-33.20	≤ 8	41.20

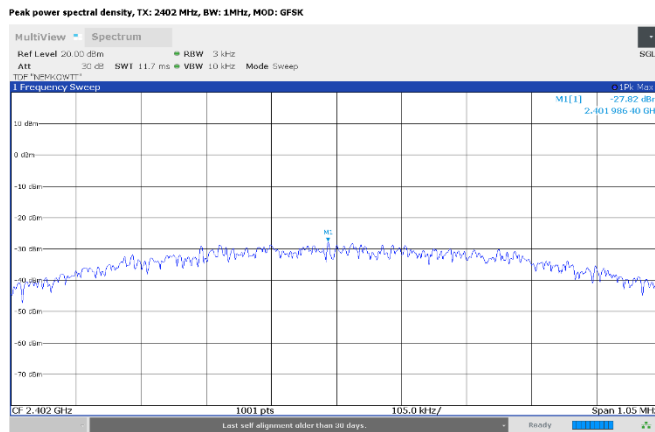


Figure 8.7-1: Power spectral density, GFSK, 1 Mbps, 2402 MHz

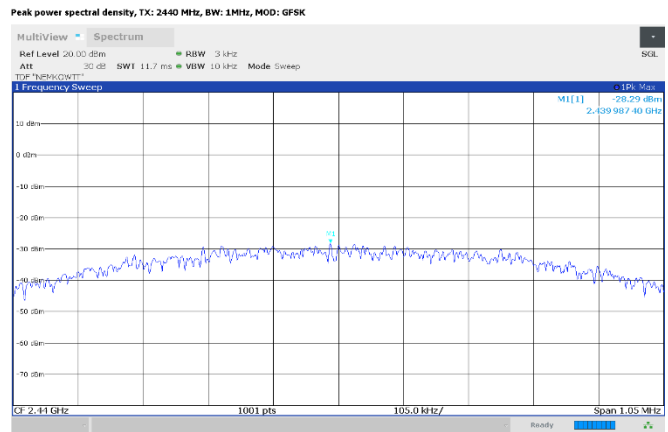


Figure 8.7-2: Power spectral density, GFSK, 1 Mbps, 2440 MHz

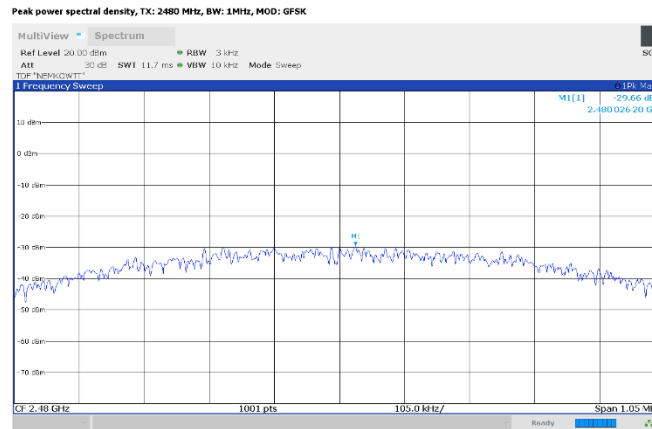


Figure 8.7-3: Power spectral density, GFSK, 1 Mbps, 2480 MHz

Peak power spectral density, TX: 2402 MHz, BW: 2MHz, MOD: GFSK

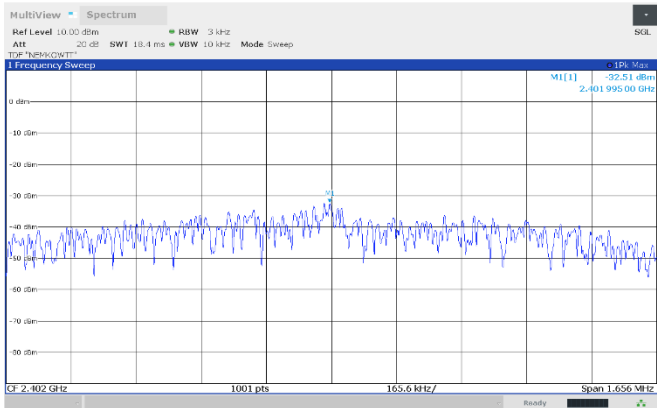


Figure 8.7-4: Power spectral density, GFSK, 2 Mbps, 2402 MHz

Peak power spectral density, TX: 2440 MHz, BW: 2MHz, MOD: GFSK

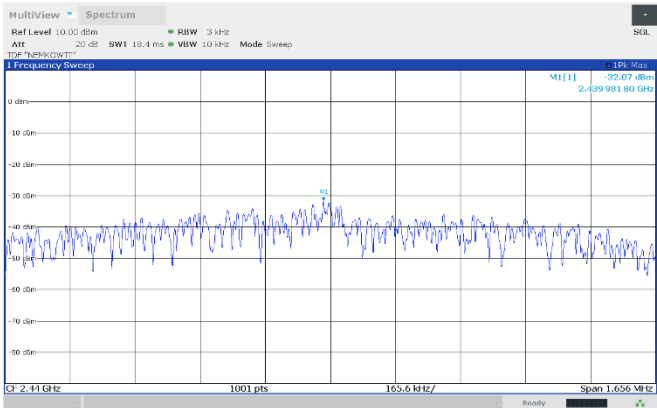


Figure 8.7-5: Power spectral density, GFSK, 2 Mbps, 2440 MHz

Peak power spectral density, TX: 2480 MHz, BW: 2MHz, MOD: GFSK

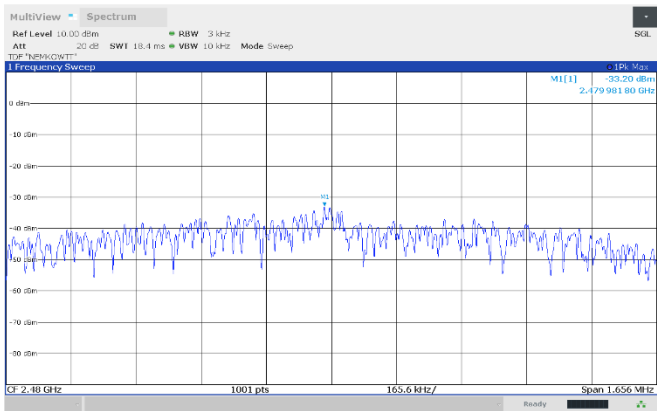


Figure 8.7-6: Power spectral density, GFSK, 2 Mbps, 2480 MHz

End of test report