



Test report

REP108758-1R1TRFWL

Date of issue: September 10, 2025

Applicant:

WaveLynx Technologies Corporation

Product description:

Wavelynx APEX Module

Model:

AX-01, AX-02, AX-05

Product marketing name(s):

AX-01, AX-02, AX-05

FCC ID:

2AEI3WLTC-AXM-125

ISED certification number:

20063-WLTAXM0125

Specifications:

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

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

◆ **Industry Canada RSS-247, Issue 3**

Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

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	Lan Sayasane, Sr. EMC Test Engineer
Reviewed by	James Cunningham, EMC/WL Manager
Review date	September 10, 2025
Reviewer signature	

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 contained in this report are within Nemko USA's ISO/IEC 17025 accreditation.

This report must not be used by the client to claim product certification, approval, or endorsement by ANAB, NIST, or any agency of the U.S. Government.

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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
Industry Canada RSS-247, Issue 3	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

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
REP108758-1TRFWL	September 9, 2025	Original report issued
REP108758-1R1TRFWL	September 10, 2025	Updated following TCB initial review

Section 2 Summary of test results

2.1 Sample information

Receipt date	01-Aug-25
Nemko sample ID number	REP108758

2.2 Testing period

Test start date	01-Aug-25
Test end date	01-Aug-25

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	Pass
§15.203	Antenna requirement	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	Not applicable
§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

Table 2.3-3: ISED RSS-247 requirements

Part	Test description	Verdict
5.1 (a)	Bandwidth of a frequency hopping channel	Not applicable
5.1 (b)	Minimum channel spacing for frequency hopping systems	Not applicable
5.1 (c)	Frequency hopping systems operating in the 902–928 MHz band	Not applicable
5.1 (d)	Frequency hopping systems operating in the 2400–2483.5 MHz band	Not applicable
5.1 (e)	Frequency hopping systems operating in the 5725–5850 MHz band	Not applicable
5.2 (a)	Minimum 6 dB bandwidth	Pass
5.2 (b)	Maximum power spectral density	Pass
5.3 (a)	Digital modulation turned off	Not applicable
5.3 (b)	Frequency hopping turned off	Not applicable
5.4 (a)	Frequency hopping systems operating in the 902–928 MHz band	Not applicable
5.4 (b)	Frequency hopping systems operating in the 2400–2483.5 MHz band	Not applicable
5.4 (c)	Frequency hopping systems operating in the 5725–5850 MHz	Not applicable
5.4 (d)	Systems employing digital modulation techniques	Pass
5.4 (e)	Point-to-point systems in 2400–2483.5 MHz and 5725–5850 MHz band	Not applicable
5.4 (f)	Transmitters which operate in the 2400–2483.5 MHz band with multiple directional beams	Not applicable
5.5	Out-of-band emissions	Pass

Table 2.3-4: ISED RSS-GEN requirements

Part	Test description	Verdict
6.7	Occupied bandwidth (99%)	Pass
7.3	Receiver radiated emission limits	Not applicable ¹
7.4	Receiver conducted emission limits	Not applicable ¹
8.8	Power Line Conducted Emissions Limits for Licence-Exempt Radio Apparatus	Not applicable

Notes: ¹Only applicable to scanner receivers or stand-alone receivers operating in the band 30-960 MHz

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	WaveLynx Technologies Corporation
Address	100 Technology Drive
City	Broomfield
State	CO
Postal/Zip code	80021
Country	USA

3.3 Manufacturer

Company name	WaveLynx Technologies Corporation
Address	100 Technology Drive
City	Broomfield
State	CO
Postal/Zip code	80021
Country	USA

3.4 EUT information

Product name	WavelynxAPEX Module
Model	AX-01, AX-02, AX-05
Variant(s)	None
Serial number	EUT #2
Part number	N/A
Power requirements	5 VDC
Description/theory of operation	The equipment under test is a DC powered RFID Module, communicating with a remote tag and outputting the tag information through a Wiegand or Serial interface. The module is a single PCB which comprises a microcontroller, beeper, green, and red LED's for audio/visual feedback, drive circuitry for communication to a host device, and transceivers to communicate with a remote tag or mobile device.
Operational frequencies	2.4 GHz
Software details	None

3.5 Transmitter Information

Frequency band	2400 – 2483.5 MHz
Transmitter type	<input type="checkbox"/> Frequency hopping spread spectrum (FHSS) <input checked="" type="checkbox"/> Digital transmission system (DTS) <input type="checkbox"/> Hybrid FHSS / DTS
Minimum frequency (MHz)	2402
Maximum frequency (MHz)	2480
Type of modulation	GFSK
Data rate	<input type="checkbox"/> 125 kbps operation <input type="checkbox"/> 500 kbps operation <input checked="" type="checkbox"/> 1 Mbps operation <input checked="" type="checkbox"/> 2 Mbps operation
Tested frequencies	2402 MHz (low), 2426 MHz (middle), and 2480 MHz (high)
Antenna type	Integrated
Antenna peak gain	2.80 dBi

3.6 EUT setup details

Table 3.6-1: EUT sub assemblies

Description	Brand name	Model/Part number	Serial number	Rev.
None	N/A	N/A	N/A	N/A

Table 3.6-2: EUT interface ports

Description	Qty.
AX-05 connector – J301 (Power Input)	1
AX-05 connector – J302 (Not Used)	1
Micro USB (Not Used)	1

Table 3.6-3: Support equipment

Description	Brand name	Model/Part number	Serial number	Rev.
DC Power Supply	Topward	3303D	736346	--

Table 3.6-4: Inter-connection cables

Cable description	From	To	Length (m)
Power cable	AX-05 connector – J301 (Power Input)	DC Power Supply	1

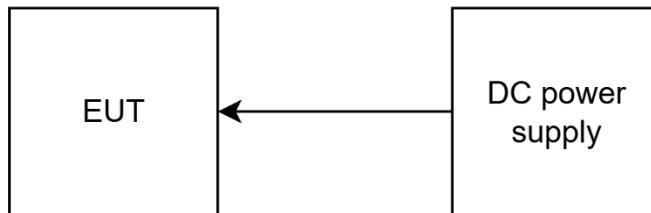


Figure 3.6-1: Test setup diagram

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 $\pm 5\%$, 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 $(U_{lab} - U_{cispr})$, exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{cispr})$, 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.
EMI Test Receiver	Rohde & Schwarz	ESU40	E1121	1 year	03-Oct-2025
EMI Test Receiver	Rohde & Schwarz	ESU26.5	E1353	1 year	13-Nov-2025
Preamplifier	Sonoma	310N	E1155	1 year	18-Jun-2026
System Controller	Sunol Sciences	SC104V	E1191	NCR	NCR
System Controller	Sunol Sciences	SC104V	E1129	NCR	NCR
Antenna, Biconilog	ETS Lindgren	3142E	E1371	2 years	20-Aug-2026
Antenna, DRG Horn	ETS Lindgren	3117-PA	E1160	2 years	17-May-2026
Antenna, Standard Gain Horn	Eravant	SAZ-2410-42-S1	EW107	1 year	11-Feb-2026
Low Noise Amplifier	Eravant	SBL-1834034038-KFKF	EW111	NCR	NCR
Waveguide to Coax Adapter Ka Band Right Angle	Eravant	SWC-28KM-R1	EW101	NCR	NCR
Signal and Spectrum Analyzer	Rohde & Schwarz	FSV40	E1120	2 years	14-Dec-2025
DC Power Supply	Hewlett Packard	6235A	D1000	NCR	NCR
True RMS Multimeter	Fluke	175	4041	NCR	NCR
RF cable	W.L. Gore	FKD01D02938.0	N/A	VBU	VBU
Attenuator (20 dB)	Pasternack	C407-20	N/A	VBI	VBI

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 V10.60.15 (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 §5.13

§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	August 21, 2025	Temperature	22 °C
Test engineer	Lan Sayasane, Sr. EMC Test Engineer	Air pressure	1002.0 mbar
Test location	<input checked="" type="checkbox"/> Wireless bench <input type="checkbox"/> Other:	Relative humidity	58 %

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	5 VDC
-----------------------------	-------

8.1.5 Test data

<input type="checkbox"/>	EUT is battery operated. Therefore, all tests performed with a new fully charged battery
<input checked="" type="checkbox"/>	EUT power supply voltage varied across supported range. No variation in transmitter output power observed therefore all tests performed at nominal power supply voltage.
<input type="checkbox"/>	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	Temperature	22 °C
Test date	August 1, 2025	Air pressure	1009.0 mbar
Test engineer	Lan Sayasane, Sr. EMC Test Engineer	Relative humidity	52 %

8.2.2 Notes

None

8.2.3 Test data

Antenna part number:	AANI-CH-0070
Technical description:	RF ANTENNA 2.4 GHz CERAMIC CHIP
Peak gain (dBi):	2.80 dBi
Source of gain data:	<input checked="" type="checkbox"/> Declared by client <input type="checkbox"/> Antenna data sheet or specification. Document name: <input type="checkbox"/> Antenna gain test report. Document name:

8.3 Minimum 6 dB bandwidth

8.3.1 References and limits

- FCC 47 CFR Part 15, Subpart C: §15.247(a)(2)
- ISED: RSS-247 5.2(a)
- Test method: ANSI C63.10-2020 §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.

RSS-247:

5.2 DTSS include systems that employ digital modulation techniques resulting in spectral characteristics similar to direct sequence systems. The following applies to the bands 902-928 MHz and 2400-2483.5 MHz:

(a) The minimum 6 dB bandwidth shall be 500 kHz.

8.3.2 Test summary

Verdict	Pass		
Test date	August 20, 2025	Temperature	23 °C
Test engineer	Lan Sayasane, Sr. EMC Test Engineer	Air pressure	1002.0 mbar
Test location	<input checked="" type="checkbox"/> Wireless bench <input type="checkbox"/> Other:	Relative humidity	59 %

8.3.3 Notes

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

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

8.3.4 Setup details

EUT power input during test	5 VDC
EUT setup configuration	<input checked="" type="checkbox"/> Table-top <input type="checkbox"/> Floor standing <input type="checkbox"/> 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

8.3.5 Test data

Table 8.3-1: Minimum 6 dB bandwidth test data

Test Frequency (MHz)	Modulation	DTS Bandwidth (kHz)	Limit (kHz)	Margin (kHz)
2402	GFSK, 1 Mbps	703.500	≥ 500	203.500
2426	GFSK, 1 Mbps	670.500	≥ 500	170.500
2480	GFSK, 1 Mbps	691.500	≥ 500	191.500
2402	GFSK, 2 Mbps	1149.000	≥ 500	649.000
2426	GFSK, 2 Mbps	1119.000	≥ 500	619.000
2480	GFSK, 2 Mbps	1116.000	≥ 500	616.000

Section 8

Test name

Testing data
Minimum 6 dB bandwidth

Specification(s)

FCC 15.247 & RSS-247



DTS bandwidth, TX: 2402 MHz, BW: 1MHz, MOD: GFSK_1Mbps



Figure 8.3-1: Minimum 6 dB bandwidth, GFSK, 1 Mbps, 2402 MHz

DTS bandwidth, TX: 2426 MHz, BW: 1MHz, MOD: GFSK_1Mbps



Figure 8.3-2: Minimum 6 dB bandwidth, GFSK, 1 Mbps, 2426 MHz

DTS bandwidth, TX: 2480 MHz, BW: 1MHz, MOD: GFSK_1Mbps



Figure 8.3-3: Minimum 6 dB bandwidth, GFSK, 1 Mbps, 2480 MHz

DTS bandwidth, TX: 2402 MHz, BW: 2MHz, MOD: GFSK_2Mbps

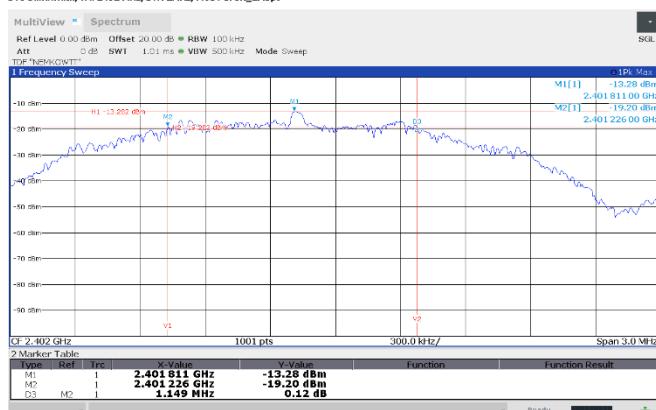


Figure 8.3-4: Minimum 6 dB bandwidth, GFSK, 2 Mbps, 2402 MHz

DTS bandwidth, TX: 2426 MHz, BW: 2MHz, MOD: GFSK_2Mbps

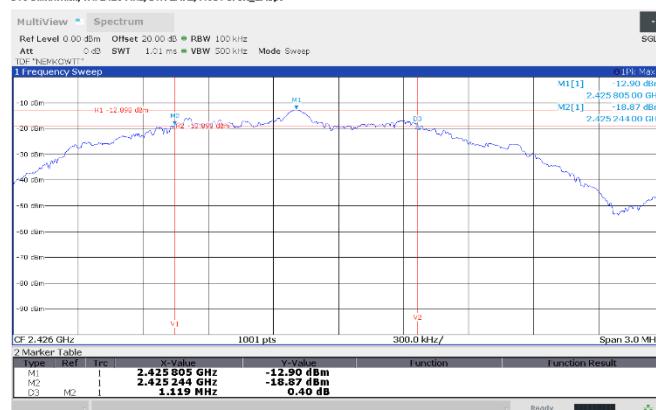


Figure 8.3-5: Minimum 6 dB bandwidth, GFSK, 2 Mbps, 2426 MHz

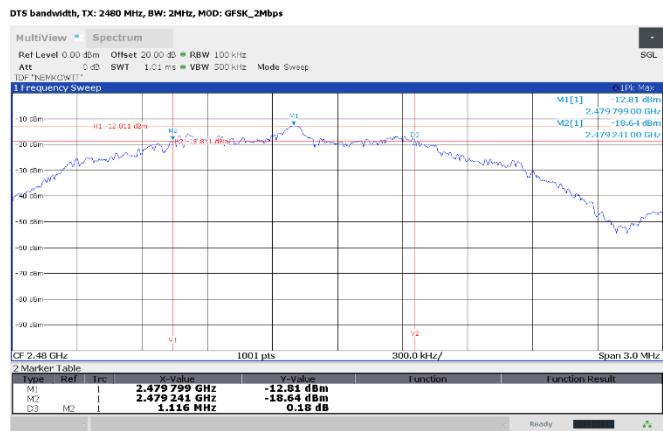


Figure 8.3-6: Minimum 6 dB bandwidth, GFSK, 2 Mbps, 2480 MHz

8.4 Maximum peak output power

8.4.1 References and limits

- FCC 47 CFR Part 15, Subpart C: §15.247(b)(3)
- ISED: RSS-247 5.4(d)
- Test method: ANSI C63.10-2020 §11.9.1.1 (RBW \geq 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.

RSS-247:

5.4 Devices shall comply with the following requirements, where applicable:

(d) For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1 W. The EIRP shall not exceed 4 W, except as provided in RSS 247 section 5.4(e).

As an alternative to a peak power measurement, compliance can be based on a measurement of the maximum conducted output power. The maximum conducted output power is the total transmit power delivered to all antennas and antenna elements, averaged across all symbols in the signalling 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 transmitting at a reduced power level. If multiple modes of operation are implemented, the maximum conducted output power is the highest total transmit power occurring in any mode.

8.4.2 Test summary

Verdict	Pass		
Test date	August 20, 2025	Temperature	23 °C
Test engineer	Lan Sayasane, Sr. EMC Test Engineer	Air pressure	1002.0 mbar
Test location	<input checked="" type="checkbox"/> Wireless bench <input type="checkbox"/> Other:	Relative humidity	59 %

8.4.3 Notes

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

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

8.4.4 Setup details

EUT power input during test	5 VDC
EUT setup configuration	<input checked="" type="checkbox"/> Table-top <input type="checkbox"/> Floor standing <input type="checkbox"/> Other:

Receiver/spectrum analyzer settings:

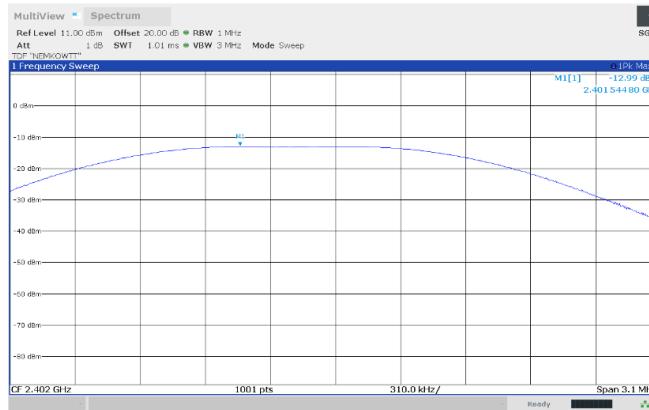
Resolution bandwidth	1 MHz (1 Mbps operation), 2 MHz (2 Mbps operation)
Video bandwidth	3MHz (1 Mbps operation), 10 MHz (2 Mbps operation)
Detector mode	Peak
Trace mode	Max Hold
Measurement time	Long enough for trace to stabilize

Section 8**Test name****Specification(s)****Testing data****Maximum peak output power****FCC 15.247 & RSS-247****8.4.5 Test data****Table 8.4-1: Maximum peak output power test data**

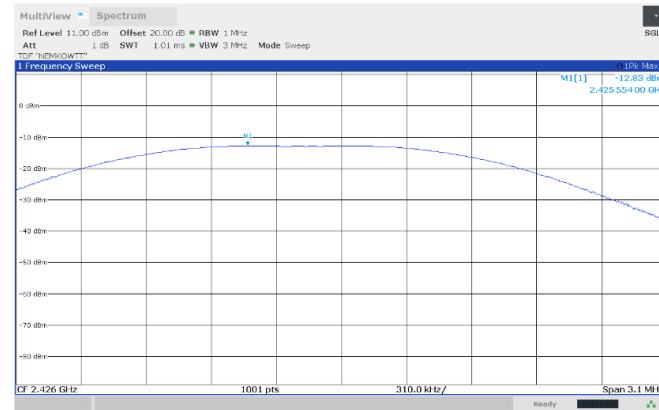
Test Frequency (MHz)	Modulation	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	EIRP (dBm) (ISED)
2402	GFSK, 1 Mbps	-12.99	≤ 30	42.99	-10.19
2426	GFSK, 1 Mbps	-12.83	≤ 30	42.83	-10.03
2480	GFSK, 1 Mbps	-12.75	≤ 30	42.75	-9.95
2402	GFSK, 2 Mbps	-13.02	≤ 30	43.02	-10.22
2426	GFSK, 2 Mbps	-12.83	≤ 30	42.83	-10.03
2480	GFSK, 2 Mbps	-12.75	≤ 30	42.75	-9.95

Note: EIRP (dBm) = conducted power (dBm) + antenna gain (dBi)

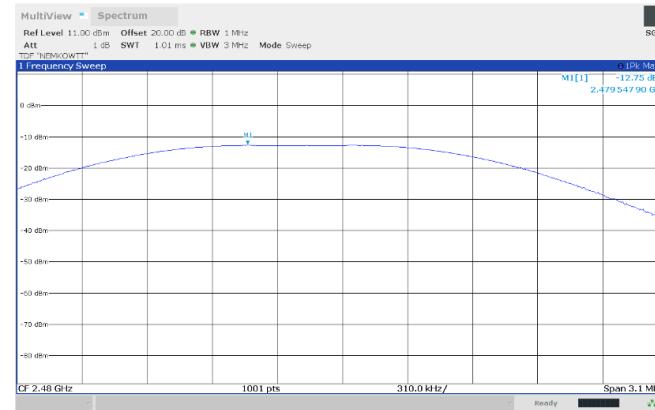
Peak output power, TX: 2402 MHz, BW: 1MHz, MOD: GFSK_1Mbps

**Figure 8.4-1: Maximum peak output power, GFSK, 1 Mbps, 2402 MHz**

Peak output power, TX: 2426 MHz, BW: 1MHz, MOD: GFSK_1Mbps

**Figure 8.4-2: Maximum peak output power, GFSK, 1 Mbps, 2426 MHz**

Peak output power, TX: 2480 MHz, BW: 1MHz, MOD: GFSK_1Mbps

**Figure 8.4-3: Maximum peak output power, GFSK, 1 Mbps, 2480 MHz**

Section 8

Test name

Specification(s)

Testing data
Maximum peak output power
FCC 15.247 & RSS-247



Peak output power, TX: 2402 MHz, BW: 2MHz, MOD: GFSK_2Mbps

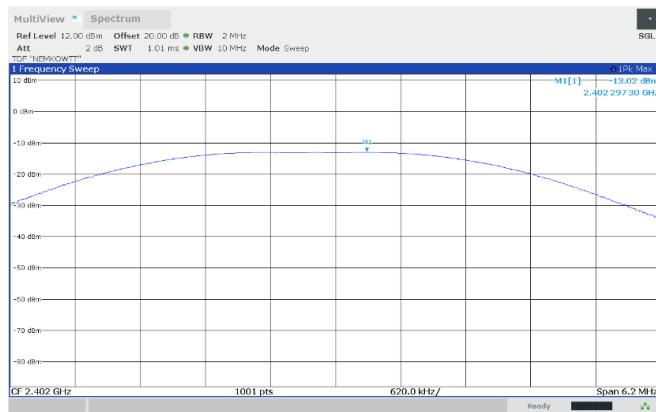


Figure 8.4-4: Maximum peak output power, GFSK, 2 Mbps, 2402 MHz

Peak output power, TX: 2426 MHz, BW: 2MHz, MOD: GFSK_2Mbps

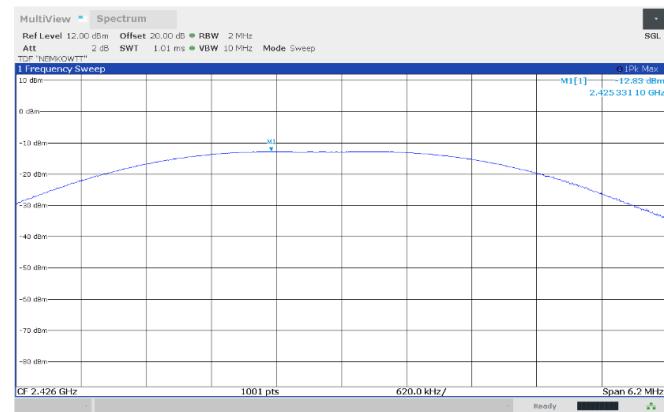


Figure 8.4-5: Maximum peak output power, GFSK, 2 Mbps, 2426 MHz

Peak output power, TX: 2480 MHz, BW: 2MHz, MOD: GFSK_2Mbps

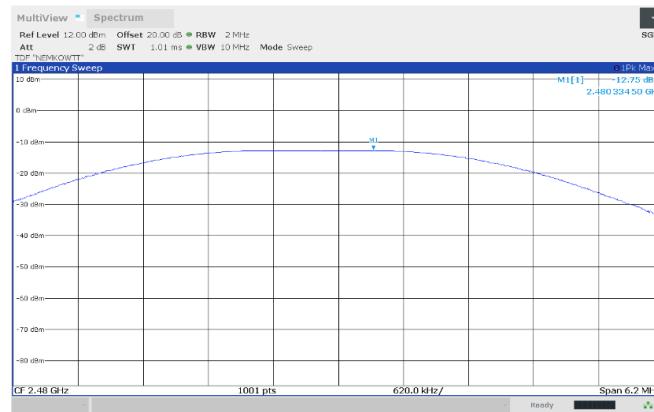


Figure 8.4-6: Maximum peak output power, GFSK, 2 Mbps, 2480 MHz

8.5 Spurious emissions

8.5.1 References and limits

- FCC 47 CFR Part 15, Subpart C: §15.247(d)
- RSS-247: §5.5
- Test method: ANSI C63.10-2020 §6.10.4 (authorized band edge)
- Test method: ANSI C63.10-2020 §11.11 (antenna port conducted spurious emissions)
- Test method: ANSI C63.10-2020 §11.12.3 (radiated restricted band edge)
- Test method: ANSI C63.10-2020 §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)).

RSS-247:

5.5 In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

Table 8.5-1: FCC §15.209 / RSS-GEN §8.9 – 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 × log ₁₀ (F)	300
0.490–1.705	24000/F	87.6 – 20 × 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 8.5-2: 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			

Table 8.5-3: ISED RSS-GEN restricted frequency bands

MHz	MHz	GHz
090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 - 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 - 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 - 8500	
108 - 138		

8.5.2 Test summary

Verdict	Pass		
Test date	August 4, 2025	Temperature	23 °C
Test engineer	Lan Sayasane, Sr. EMC Test Engineer	Air pressure	1003.0 mbar
Test location	<input checked="" type="checkbox"/> Wireless bench (conducted tests) <input checked="" type="checkbox"/> 10 m semi-anechoic chamber (radiated tests) <input checked="" type="checkbox"/> 3 m semi-anechoic chamber (radiated tests) <input type="checkbox"/> Other:	Relative humidity	48 %

8.5.3 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. For this EUT, the worst case modulation / data rate setting used was: GFSK / 1 Mbps and 2 Mbps.

8.5.4 Setup details

EUT power input during test	5 VDC
EUT setup configuration	<input checked="" type="checkbox"/> Table-top <input type="checkbox"/> Floor standing <input type="checkbox"/> 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)

8.5.5 Test data

Antenna port conducted spurious emissions:

- Authorized band edge:

Table 8.5-4: Authorized band edge conducted emissions (antenna port)

Test Frequency (MHz)	Modulation	Frequency of highest emission (MHz)	Amplitude (dBc)	Limit (dBc)	Margin (dB)
2402	GFSK, 1 Mbps	2399.789	-50.76	-20.00	30.76
2480	GFSK, 1 Mbps	2485.436	-55.99	-20.00	35.99
2402	GFSK, 2 Mbps	2399.779	-31.58	-20.00	21.58
2480	GFSK, 2 Mbps	2483.518	-52.48	-20.00	32.48

Note: Amplitude (dBc) = Peak emission level (dBm) - Reference level (dBm)

For example: $-64.05 \text{ dBm} - (-13.29 \text{ dBm}) = -64.05 + 13.29 = -50.76 \text{ dBc}$



Figure 8.5-1: Authorized band-edge emissions, reference level, GFSK, 1 Mbps, 2402 MHz

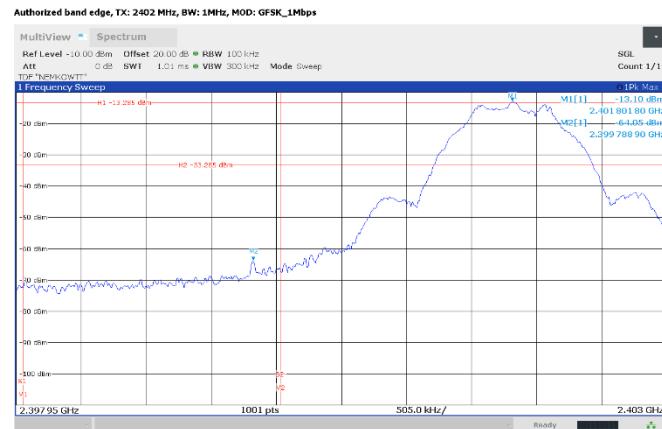


Figure 8.5-2: Authorized band-edge emissions, GFSK, 1 Mbps, 2402 MHz

Section 8
Test name
Specification(s)

Testing data
Spurious emissions
FCC 15.247 & RSS-247



Spurious emission reference level, TX: 2480 MHz, BW: 1MHz, MOD: GFSK_1Mbps



Figure 8.5-3: Authorized band-edge emissions, reference level, GFSK, 1 Mbps, 2480 MHz

Authorized band edge, TX: 2480 MHz, BW: 1MHz, MOD: GFSK_1Mbps

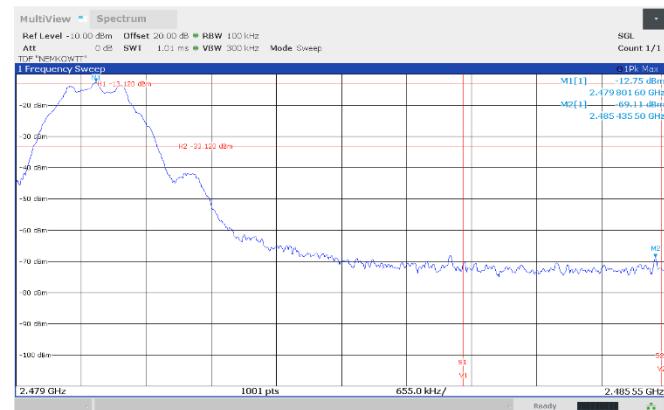


Figure 8.5-4: Authorized band-edge emissions, GFSK, 1 Mbps, 2480 MHz

Spurious emission reference level, TX: 2402 MHz, BW: 2MHz, MOD: GFSK_2Mbps



Figure 8.5-5: Authorized band-edge emissions, reference level, GFSK 2 Mbps, 2402 MHz

Authorized band edge, TX: 2402 MHz, BW: 2MHz, MOD: GFSK_2Mbps

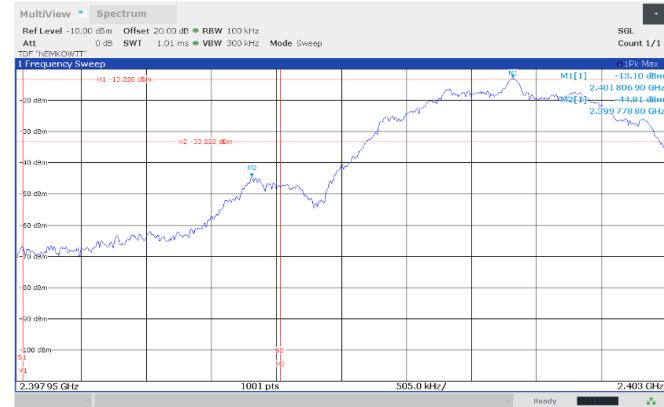


Figure 8.5-6: Authorized band-edge emissions, GFSK, 2 Mbps, 2402 MHz

Spurious emission reference level, TX: 2480 MHz, BW: 2MHz, MOD: GFSK_2Mbps



Figure 8.5-7: Authorized band-edge emissions, reference level, GFSK, 2 Mbps, 2480 MHz

Authorized band edge, TX: 2480 MHz, BW: 2MHz, MOD: GFSK_2Mbps



Figure 8.5-8: Authorized band-edge emissions, GFSK, 2 Mbps, 2480 MHz

Section 8**Test name***Testing data**Spurious emissions***Specification(s)**

FCC 15.247 & RSS-247



- Antenna port conducted spurious emissions:

Table 8.5-5: Antenna port conducted spurious emissions

Test Frequency (MHz)	Modulation	Frequency of highest emission (MHz)	Amplitude (dBc)	Limit (dBc)	Margin (dB)
2402	GFSK, 1 Mbps	2388.388473	-39.32	-20.00	19.32
2426	GFSK, 1 Mbps	4851.009784	-47.46	-20.00	27.46
2480	GFSK, 1 Mbps	2493.113366	-38.17	-20.00	18.17
2402	GFSK, 2 Mbps	2399.625435	-34.82	-20.00	14.82
2426	GFSK, 2 Mbps	4851.509179	-45.10	-20.00	25.10
2480	GFSK, 2 Mbps	2493.113366	-40.46	-20.00	20.46

Note: Amplitude (dBc) = Peak emission level (dBm) - Reference level (dBm)

For example: $-52.49 \text{ dBm} - (-13.17 \text{ dBm}) = -52.49 + 13.17 = -39.32 \text{ dBc}$.

Spurious emission reference level, TX: 2402 MHz, BW: 1MHz, MOD: GFSK_1Mbps

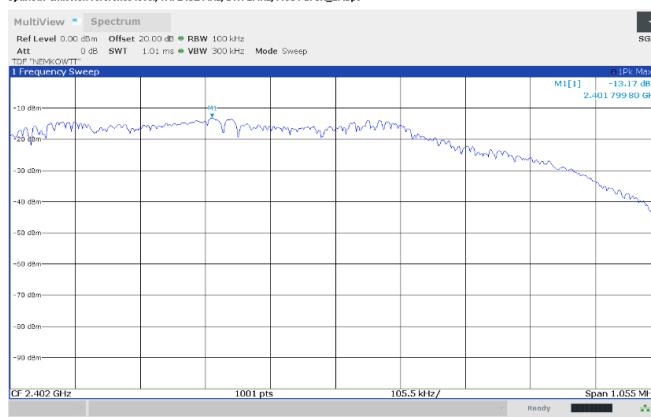


Figure 8.5-9: Antenna port conducted spurious emissions, reference level, GFSK, 1 Mbps, 2402 MHz

Spurious emissions, TX: 2402 MHz, BW: 1MHz, MOD: GFSK_1Mbps

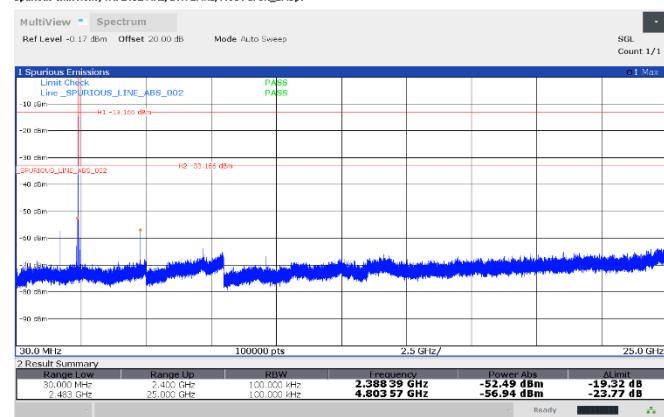


Figure 8.5-10: Antenna port conducted spurious emissions, GFSK, 1 Mbps, 2402 MHz

Spurious emission reference level, TX: 2426 MHz, BW: 1MHz, MOD: GFSK_1Mbps



Figure 8.5-11: Antenna port conducted spurious emissions, reference level, GFSK, 1 Mbps, 2426 MHz

Spurious emissions, TX: 2426 MHz, BW: 1MHz, MOD: GFSK_1Mbps

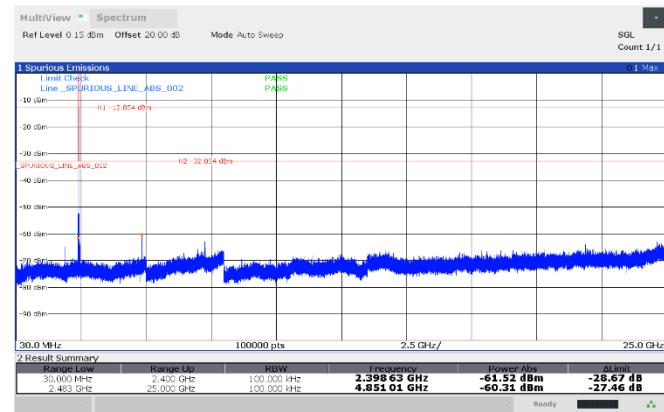


Figure 8.5-12: Antenna port conducted spurious emissions, GFSK, 1 Mbps, 2426 MHz

Section 8
Test name
Specification(s)

Testing data
Spurious emissions
FCC 15.247 & RSS-247



Spurious emission reference level, TX: 2480 MHz, BW: 1MHz, MOD: GFSK_1Mbps



Figure 8.5-13: Antenna port conducted spurious emissions, reference level, GFSK, 1 Mbps, 2480 MHz

Spurious emissions, TX: 2480 MHz, BW: 1MHz, MOD: GFSK_1Mbps

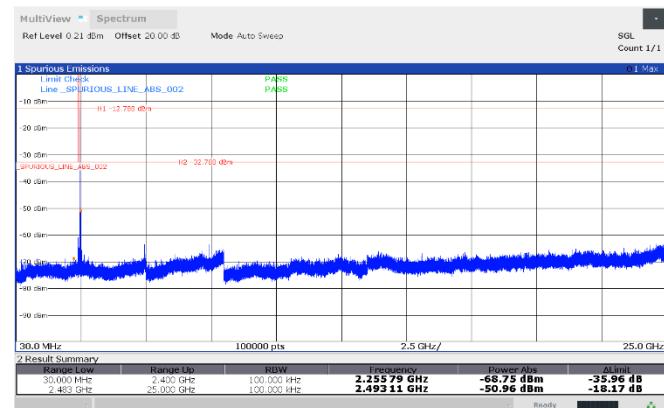


Figure 8.5-14: Antenna port conducted spurious emissions, GFSK, 1 Mbps, 2480 MHz

Spurious emission reference level, TX: 2402 MHz, BW: 2MHz, MOD: GFSK_2Mbps

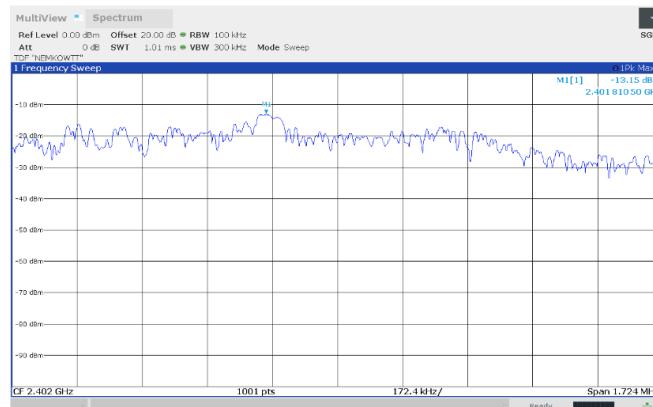


Figure 8.5-15: Antenna port conducted spurious emissions, reference level, GFSK, 2 Mbps, 2402 MHz

Spurious emissions, TX: 2402 MHz, BW: 2MHz, MOD: GFSK_2Mbps

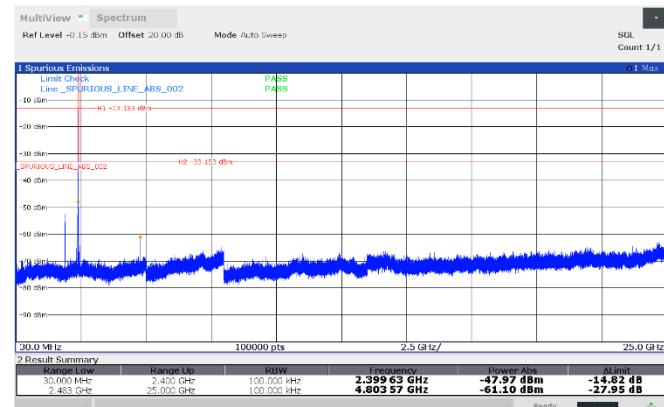


Figure 8.5-16: Antenna port conducted spurious emissions, GFSK, 2 Mbps, 2402 MHz

Spurious emission reference level, TX: 2426 MHz, BW: 2MHz, MOD: GFSK_2Mbps

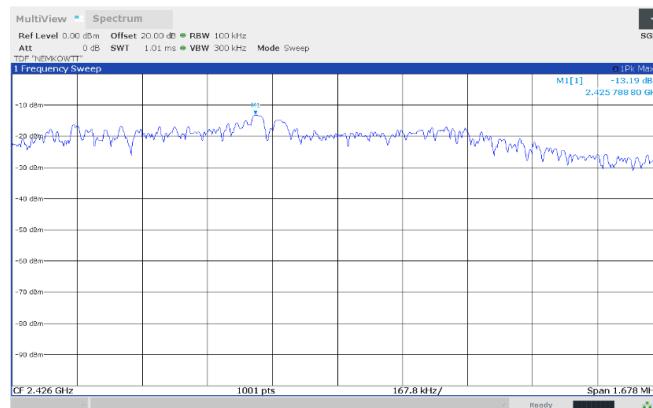


Figure 8.5-17: Antenna port conducted spurious emissions, reference level, GFSK, 2 Mbps, 2426 MHz

Spurious emissions, TX: 2426 MHz, BW: 2MHz, MOD: GFSK_2Mbps

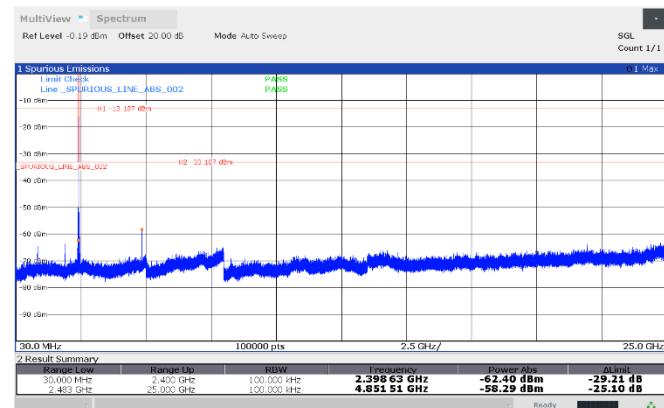


Figure 8.5-18: Antenna port conducted spurious emissions, GFSK, 2 Mbps, 2426 MHz

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

Spurious emission reference level, TX: 2480 MHz, BW: 2MHz, MOD: GFSK_2Mbps

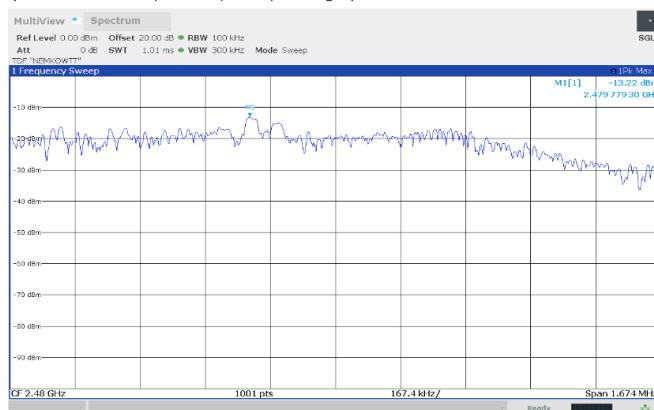


Figure 8.5-19: Antenna port conducted spurious emissions, reference level, GFSK, 2 Mbps, 2480 MHz

Spurious emissions, TX: 2480 MHz, BW: 2MHz, MOD: GFSK_2Mbps

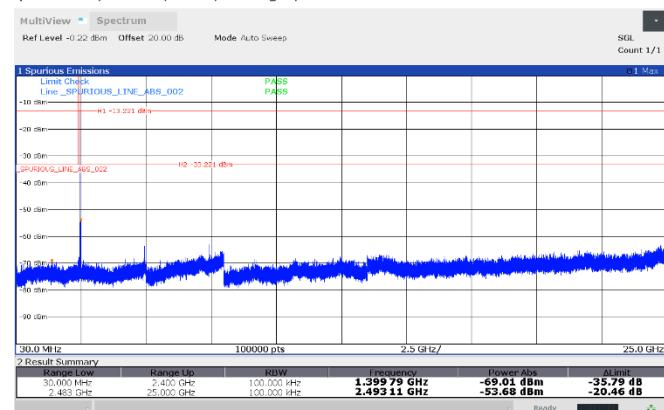
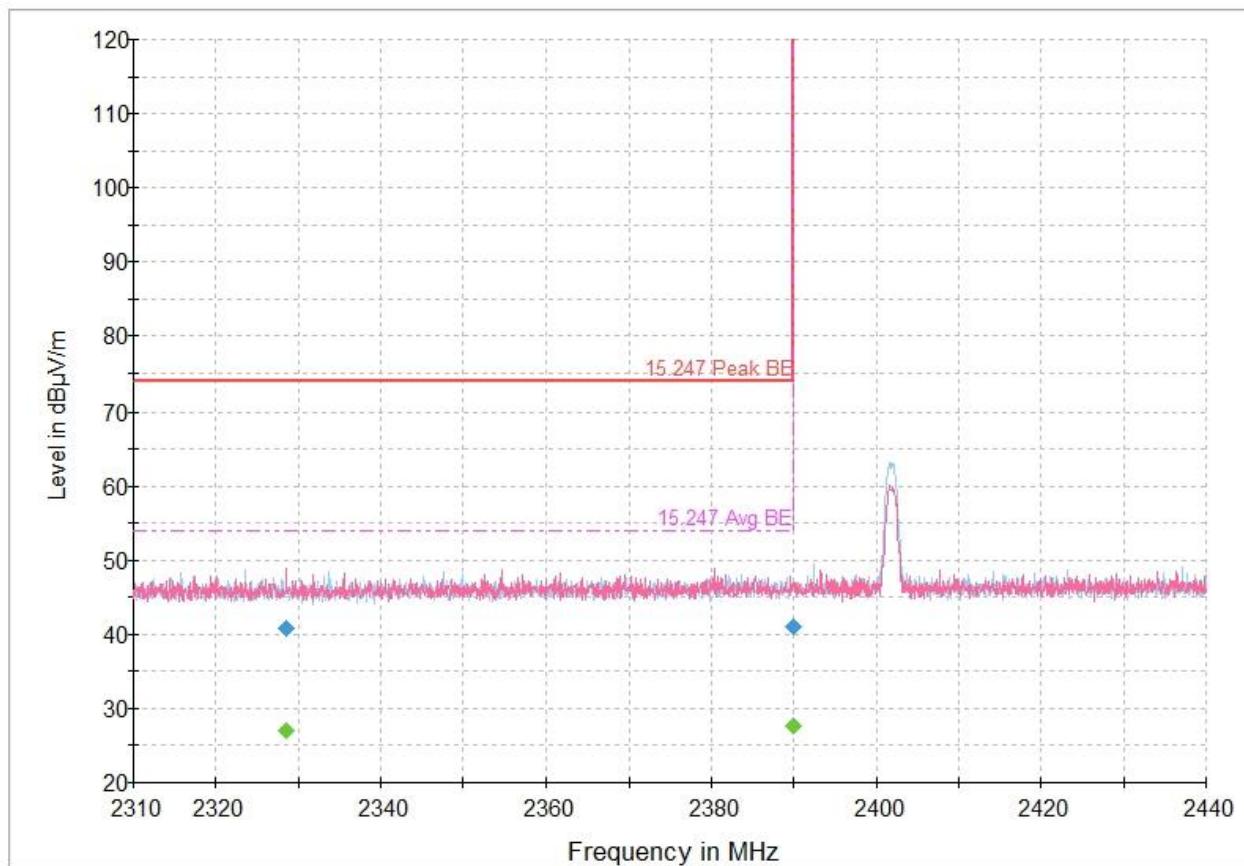


Figure 8.5-20: Antenna port conducted spurious emissions, GFSK, 2 Mbps, 2480 MHz

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

- **Restricted band edge:**

Full Spectrum**Figure 8.5-21: Radiated emissions spectral plot (2.31 GHz - 2.44 GHz) – 2402 MHz_1 Mbps****Table 8.5-6: 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)
2328.525000	---	27.03	53.90	26.87	5000.0	1000.000	351.0	V	72.0	-4.3
2328.525000	40.91	---	73.90	32.99	5000.0	1000.000	351.0	V	72.0	-4.3
2390.000000	---	27.56	53.90	26.34	5000.0	1000.000	376.0	V	37.0	-4.0
2390.000000	41.00	---	73.90	32.90	5000.0	1000.000	376.0	V	37.0	-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.

Full Spectrum

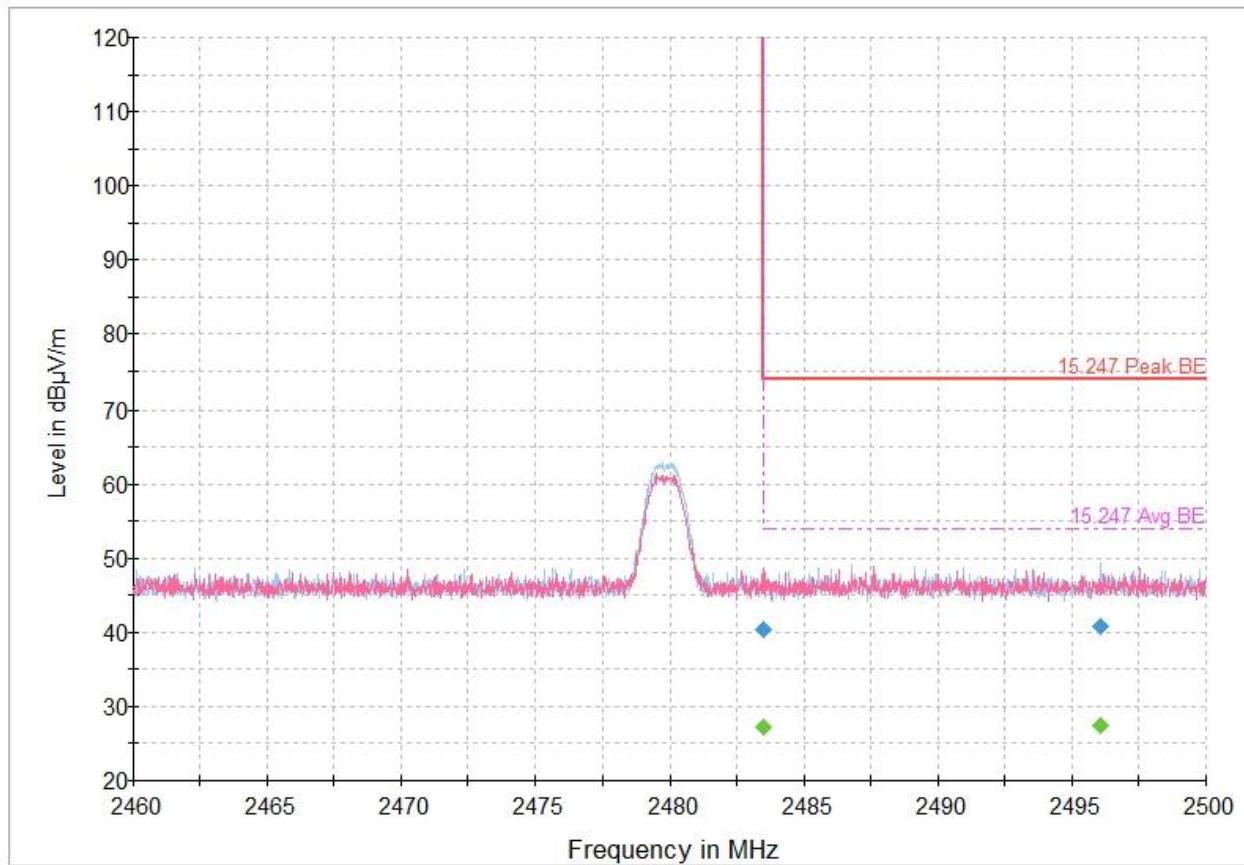


Figure 8.5-22: Radiated emissions spectral plot (2.46 GHz - 2.5 GHz) – 2480 MHz_1 Mbps

Table 8.5-7: 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)
2483.50000	---	27.18	53.90	26.72	5000.0	1000.000	124.0	V	206.0	-3.8
2483.50000	40.31	---	73.90	33.59	5000.0	1000.000	124.0	V	206.0	-3.8
2496.08000	---	27.35	53.90	26.55	5000.0	1000.000	241.0	V	311.0	-3.7
2496.08000	40.89	---	73.90	33.01	5000.0	1000.000	241.0	V	311.0	-3.7

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

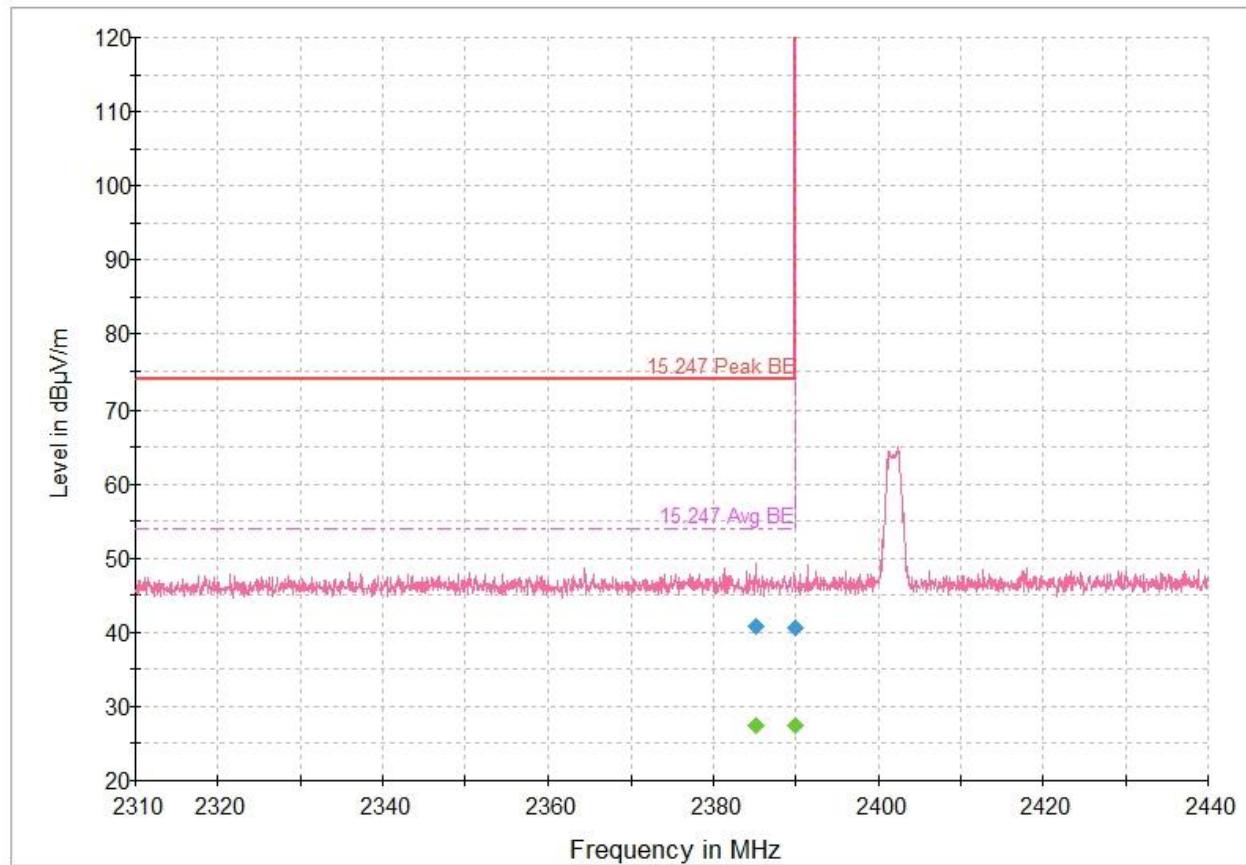


Figure 8.5-23: Radiated emissions spectral plot (2.31 GHz - 2.44 GHz) – 2402 MHz_2 Mbps Vertical

Table 8.5-8: Radiated emissions results

Frequency (MHz)	MaxPeak (dB μ V/m)	CAverage (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2385.075000	---	27.44	53.90	26.46	5000.0	1000.000	139.0	V	7.0	-4.0
2385.075000	40.83	---	73.90	33.07	5000.0	1000.000	139.0	V	7.0	-4.0
2390.000000	---	27.48	53.90	26.42	5000.0	1000.000	395.0	V	224.0	-4.0
2390.000000	40.63	---	73.90	33.27	5000.0	1000.000	395.0	V	224.0	-4.0

Notes:

¹ Field strength (dB μ V/m) = receiver/spectrum analyzer value (dB μ V) + 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

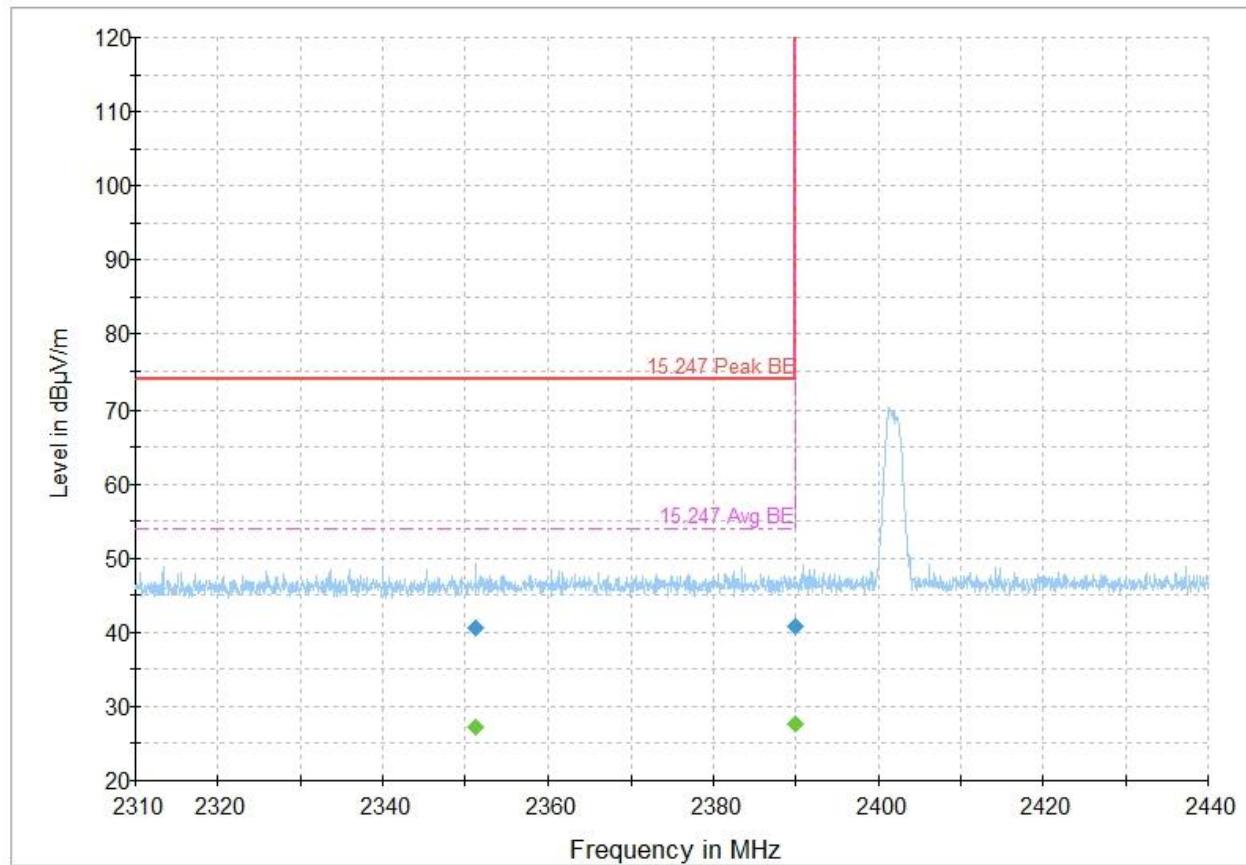


Figure 8.5-24: Radiated emissions spectral plot (2.31 GHz - 2.44 GHz) – 2402 MHz_2 Mbps Horizontal

Table 8.5-9: Radiated emissions results

Frequency (MHz)	MaxPeak (dB μ V/m)	CAverage (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2351.275000	---	27.12	53.90	26.78	5000.0	1000.000	366.0	H	12.0	-4.2
2351.275000	40.64	---	73.90	33.26	5000.0	1000.000	366.0	H	12.0	-4.2
2390.000000	---	27.56	53.90	26.34	5000.0	1000.000	399.0	H	262.0	-4.0
2390.000000	40.75	---	73.90	33.15	5000.0	1000.000	399.0	H	262.0	-4.0

Notes:

¹ Field strength (dB μ V/m) = receiver/spectrum analyzer value (dB μ V) + 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

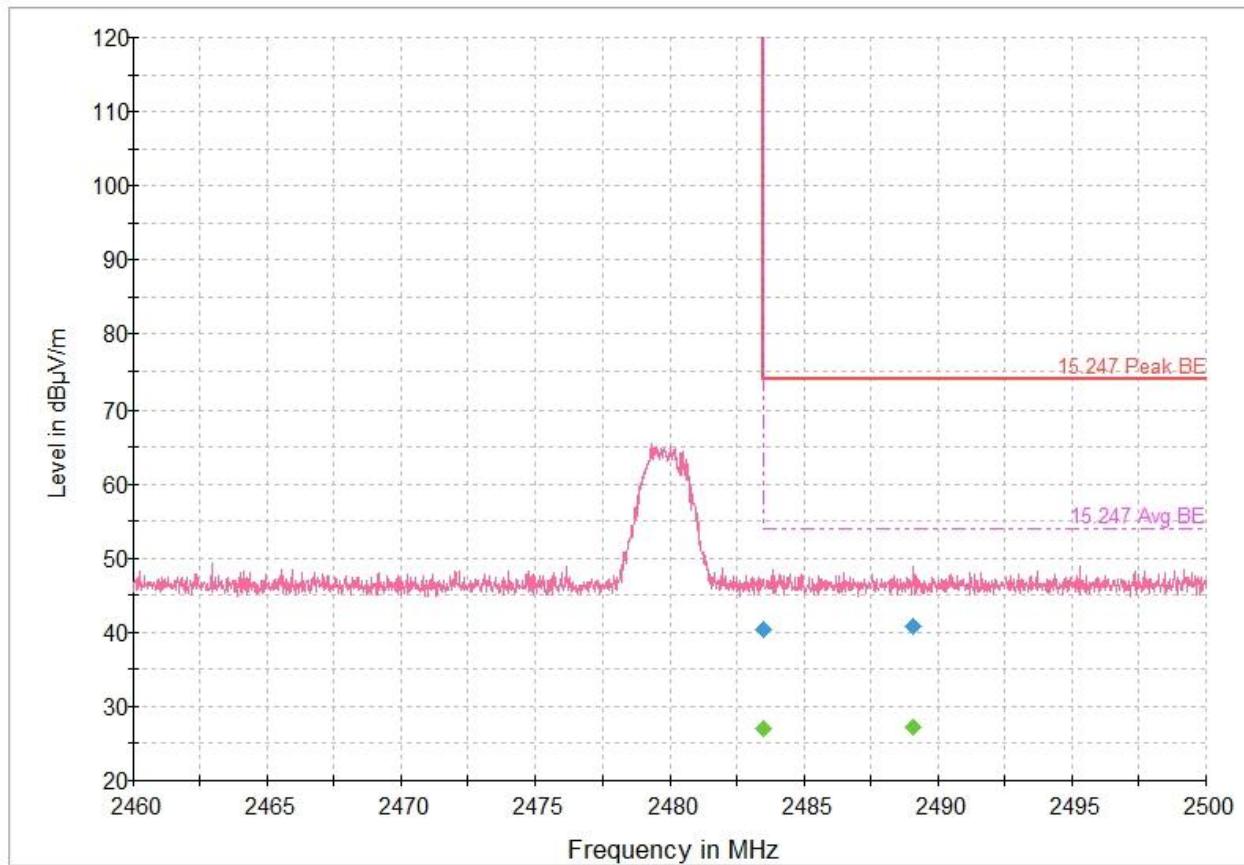


Figure 8.5-25: Radiated emissions spectral plot (2.46 GHz - 2.5 GHz) – 2480 MHz_2 Mbps_Vertical

Table 8.5-10: Radiated emissions results

Frequency (MHz)	MaxPeak (dB μ V/m)	CAverage (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.50000	---	27.05	53.90	26.85	5000.0	1000.000	241.0	V	333.0	-3.8
2483.50000	40.33	---	73.90	33.57	5000.0	1000.000	241.0	V	333.0	-3.8
2489.08000	---	27.20	53.90	26.70	5000.0	1000.000	150.0	V	76.0	-3.8
2489.08000	40.71	---	73.90	33.19	5000.0	1000.000	150.0	V	76.0	-3.8

Notes:

¹ Field strength (dB μ V/m) = receiver/spectrum analyzer value (dB μ V) + 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

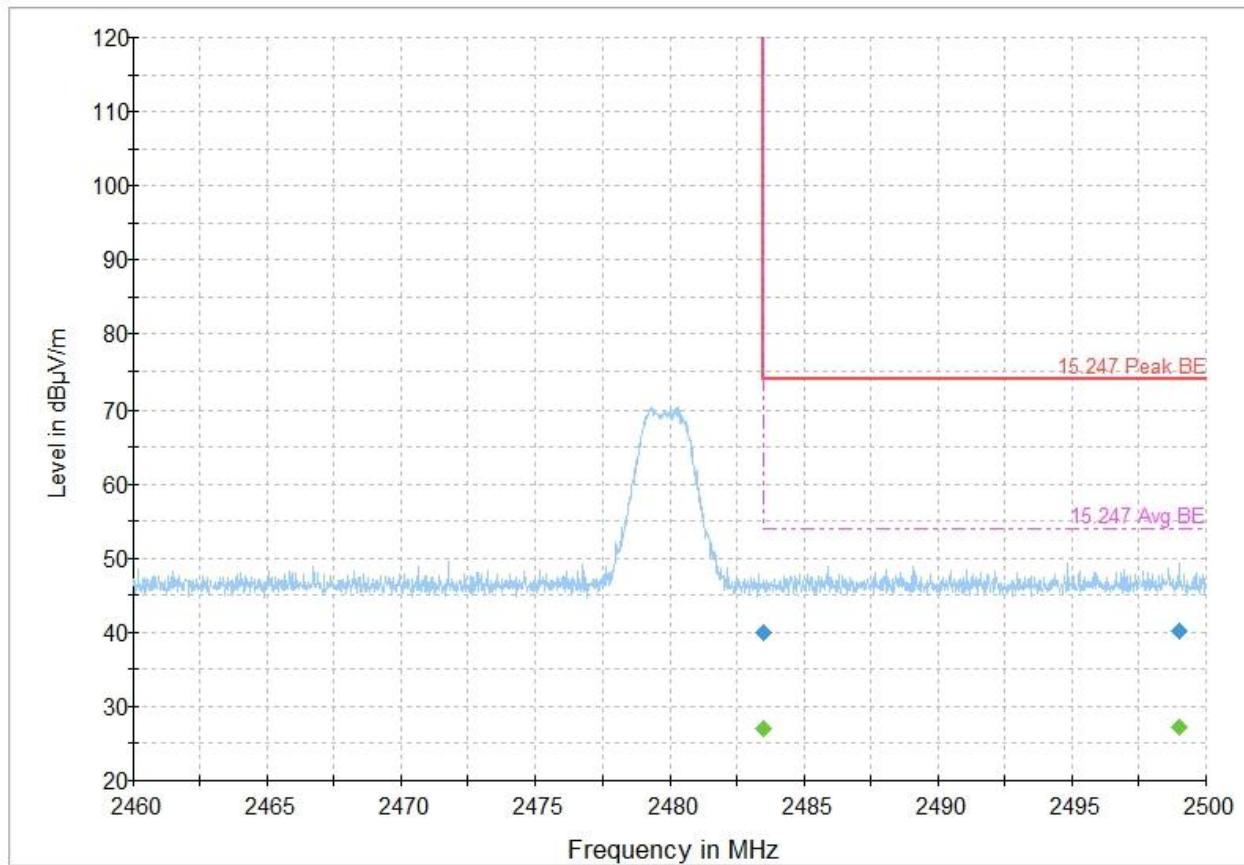


Figure 8.5-26: Radiated emissions spectral plot (2.46 GHz - 2.5 GHz) – 2480 MHz_2 Mbps_Horizontal

Table 8.5-11: 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	---	27.05	53.90	26.85	5000.0	1000.000	224.0	H	79.0	-3.8
2483.500000	39.98	---	73.90	33.92	5000.0	1000.000	224.0	H	79.0	-3.8
2499.000000	---	27.24	53.90	26.66	5000.0	1000.000	228.0	H	13.0	-3.7
2499.000000	40.19	---	73.90	33.71	5000.0	1000.000	228.0	H	13.0	-3.7

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

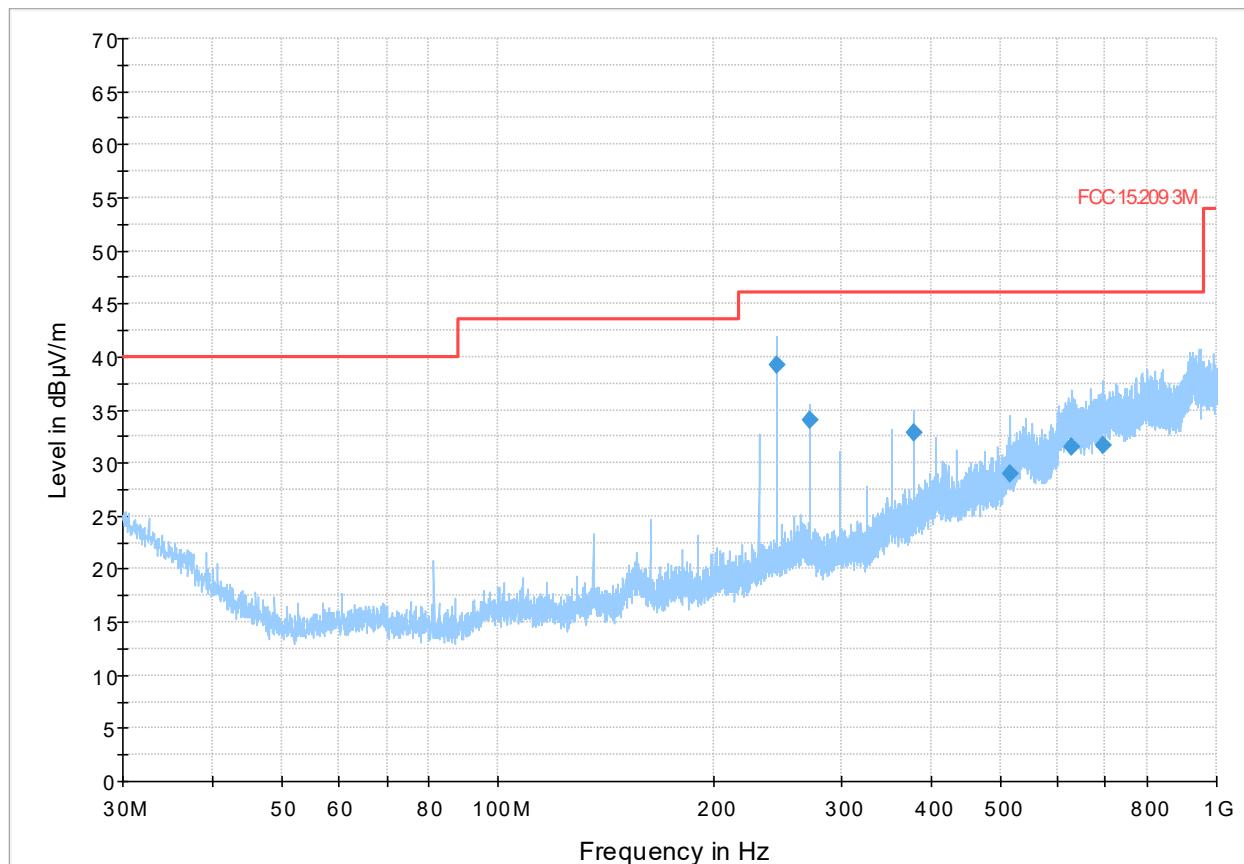


Figure 8.5-27: Radiated emissions spectral plot (30 MHz - 1 GHz) – 2402 MHz_1 Mbps

Table 8.5-12: 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)
244.059000	39.28	46.00	6.72	5000.0	120.000	174.0	H	98.0	20.0
271.250500	34.06	46.00	11.94	5000.0	120.000	100.0	H	109.0	21.4
379.705000	32.79	46.00	13.21	5000.0	120.000	145.0	V	239.0	24.6
515.231000	29.03	46.00	16.97	5000.0	120.000	194.0	V	341.0	28.3
628.713500	31.44	46.00	14.56	5000.0	120.000	238.0	H	0.0	31.4
696.764000	31.69	46.00	14.31	5000.0	120.000	259.0	H	85.0	31.8

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

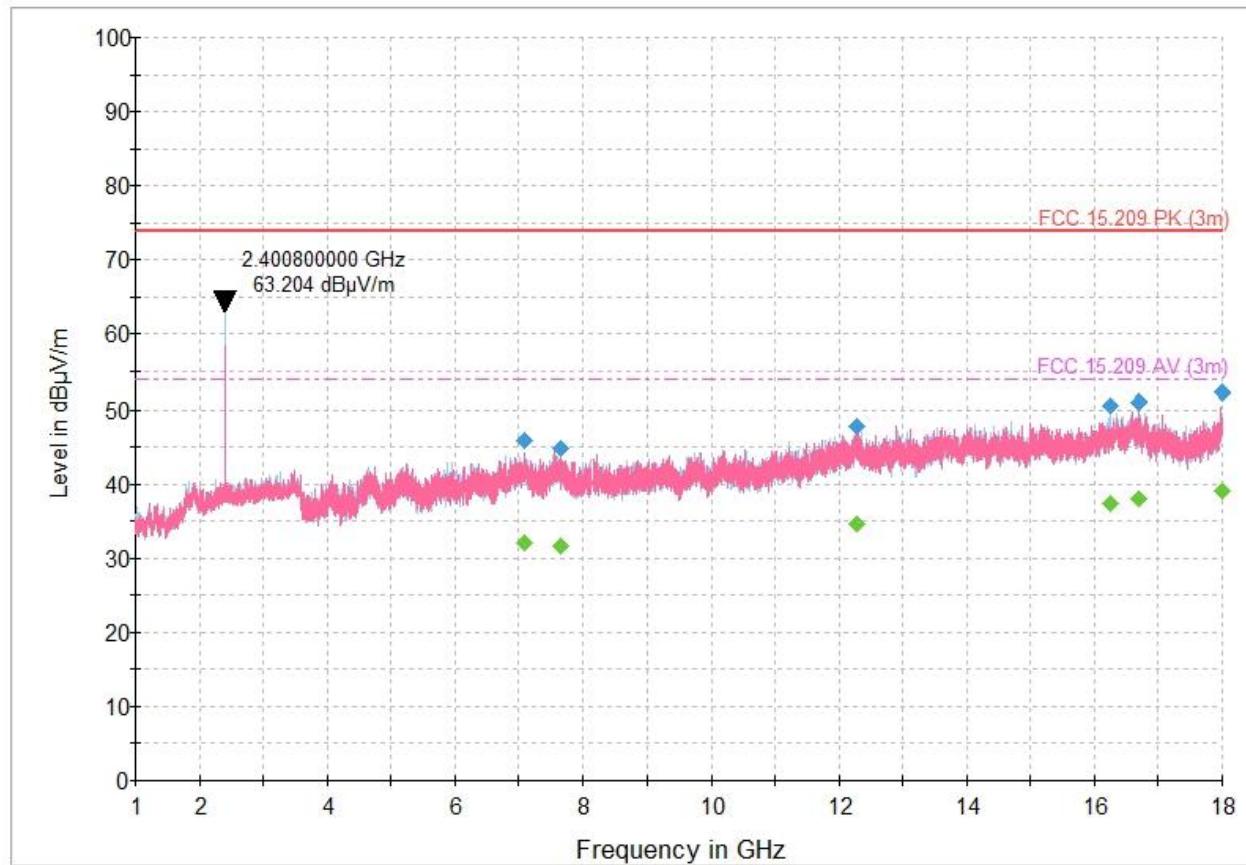


Figure 8.5-28: Radiated emissions spectral plot (1 GHz - 18 GHz) – 2402 MHz_1 Mbps

Table 8.5-13: 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)
7095.850000	45.89	---	73.90	28.01	5000.0	1000.000	269.0	V	74.0	5.8
7095.850000	---	31.97	53.90	21.93	5000.0	1000.000	269.0	V	74.0	5.8
7666.000000	44.85	---	73.90	29.05	5000.0	1000.000	397.0	V	219.0	7.2
7666.000000	---	31.63	53.90	22.27	5000.0	1000.000	397.0	V	219.0	7.2
12268.250000	---	34.54	53.90	19.36	5000.0	1000.000	288.0	H	0.0	15.8
12268.250000	47.76	---	73.90	26.14	5000.0	1000.000	288.0	H	0.0	15.8
16243.050000	---	37.30	53.90	16.60	5000.0	1000.000	199.0	H	211.0	23.2
16243.050000	50.53	---	73.90	23.37	5000.0	1000.000	199.0	H	211.0	23.2
16694.350000	50.91	---	73.90	22.99	5000.0	1000.000	371.0	V	90.0	23.1
16694.350000	---	38.07	53.90	15.83	5000.0	1000.000	371.0	V	90.0	23.1
17997.850000	52.25	---	73.90	21.65	5000.0	1000.000	208.0	V	139.0	24.9
17997.850000	---	39.09	53.90	14.81	5000.0	1000.000	208.0	V	139.0	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

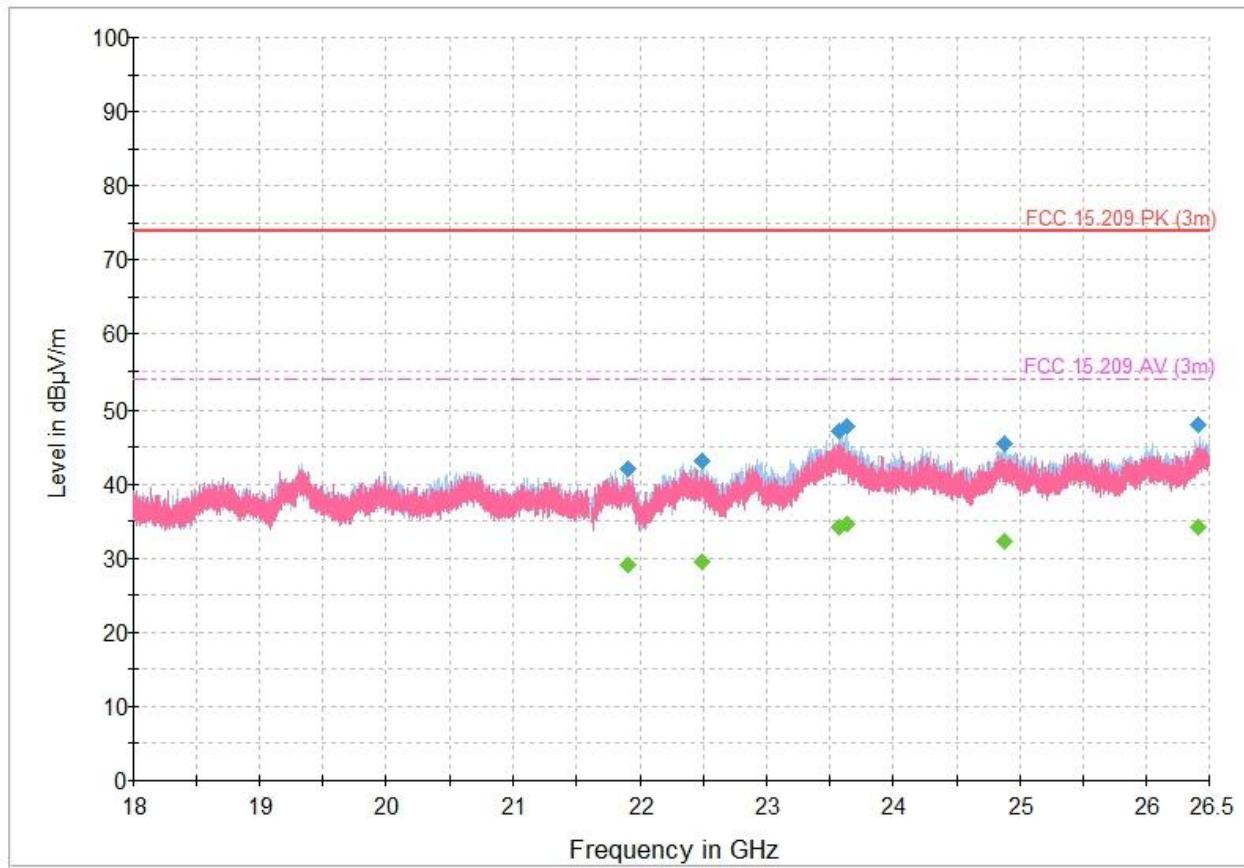


Figure 8.5-29: Radiated emissions spectral plot (18 GHz - 26.5 GHz) – 2402 MHz_1 Mbps

Table 8.5-14: 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)
21902.862500	42.10	---	73.90	31.80	5000.0	1000.000	179.0	H	11.0	16.5
21902.862500	---	29.05	53.90	24.85	5000.0	1000.000	179.0	H	11.0	16.5
22486.137500	---	29.44	53.90	24.46	5000.0	1000.000	103.0	H	0.0	17.3
22486.137500	43.02	---	73.90	30.88	5000.0	1000.000	103.0	H	0.0	17.3
23572.450000	47.15	---	73.90	26.75	5000.0	1000.000	220.0	H	199.0	23.2
23572.450000	---	34.26	53.90	19.64	5000.0	1000.000	220.0	H	199.0	23.2
23637.693750	47.70	---	73.90	26.20	5000.0	1000.000	110.0	H	70.0	22.8
23637.693750	---	34.60	53.90	19.30	5000.0	1000.000	110.0	H	70.0	22.8
24881.793750	---	32.19	53.90	21.71	5000.0	1000.000	397.0	H	10.0	21.0
24881.793750	45.52	---	73.90	28.38	5000.0	1000.000	397.0	H	10.0	21.0
26417.200000	47.90	---	73.90	26.00	5000.0	1000.000	158.0	H	134.0	23.8
26417.200000	---	34.28	53.90	19.62	5000.0	1000.000	158.0	H	134.0	23.8

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

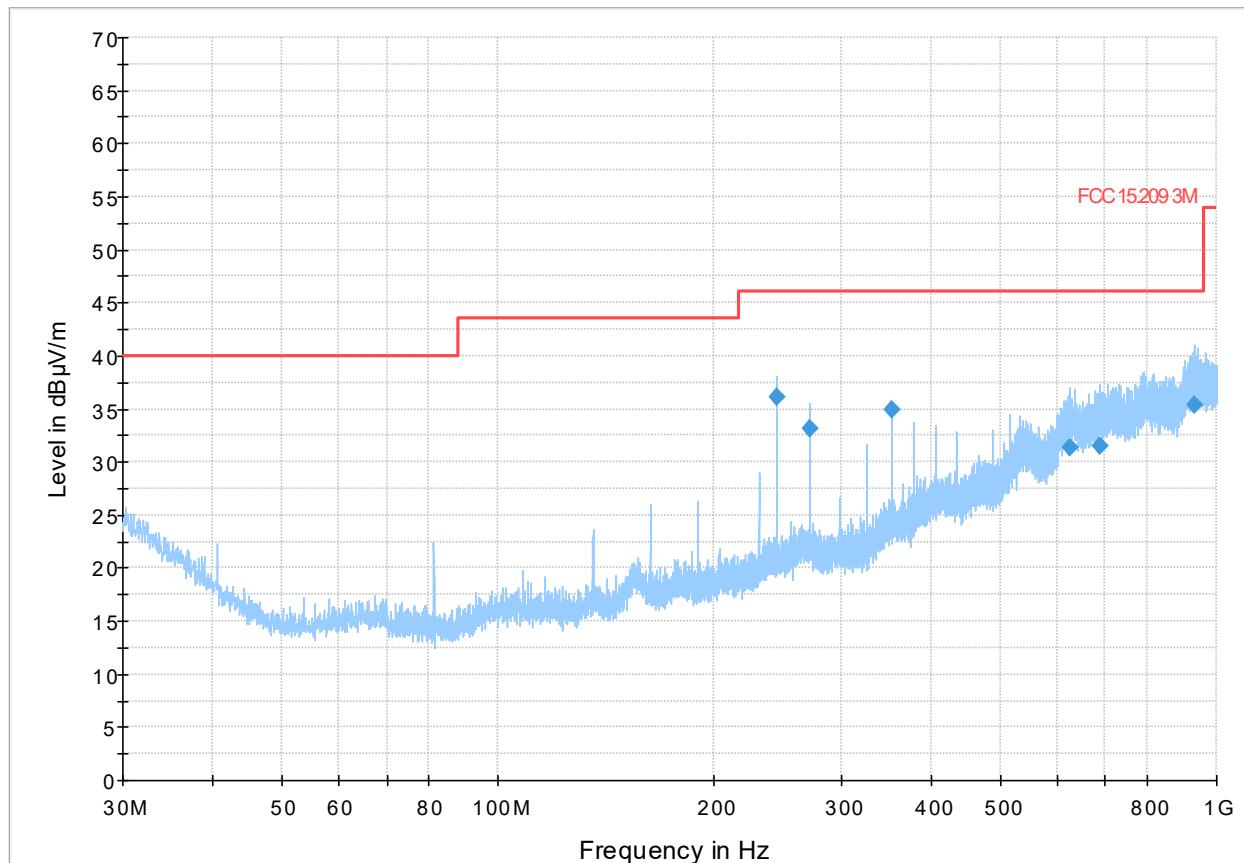


Figure 8.5-30: Radiated emissions spectral plot (30 MHz - 1 GHz) – 2426 MHz_1 Mbps

Table 8.5-15: 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)
244.139000	36.11	46.00	9.89	5000.0	120.000	132.0	H	98.0	20.0
271.210500	33.12	46.00	12.88	5000.0	120.000	194.0	V	176.0	21.4
352.553500	34.96	46.00	11.04	5000.0	120.000	168.0	V	59.0	23.7
625.440000	31.40	46.00	14.60	5000.0	120.000	180.0	V	291.0	31.4
687.531000	31.53	46.00	14.47	5000.0	120.000	302.0	V	339.0	31.6
931.229000	35.37	46.00	10.63	5000.0	120.000	186.0	H	276.0	35.4

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

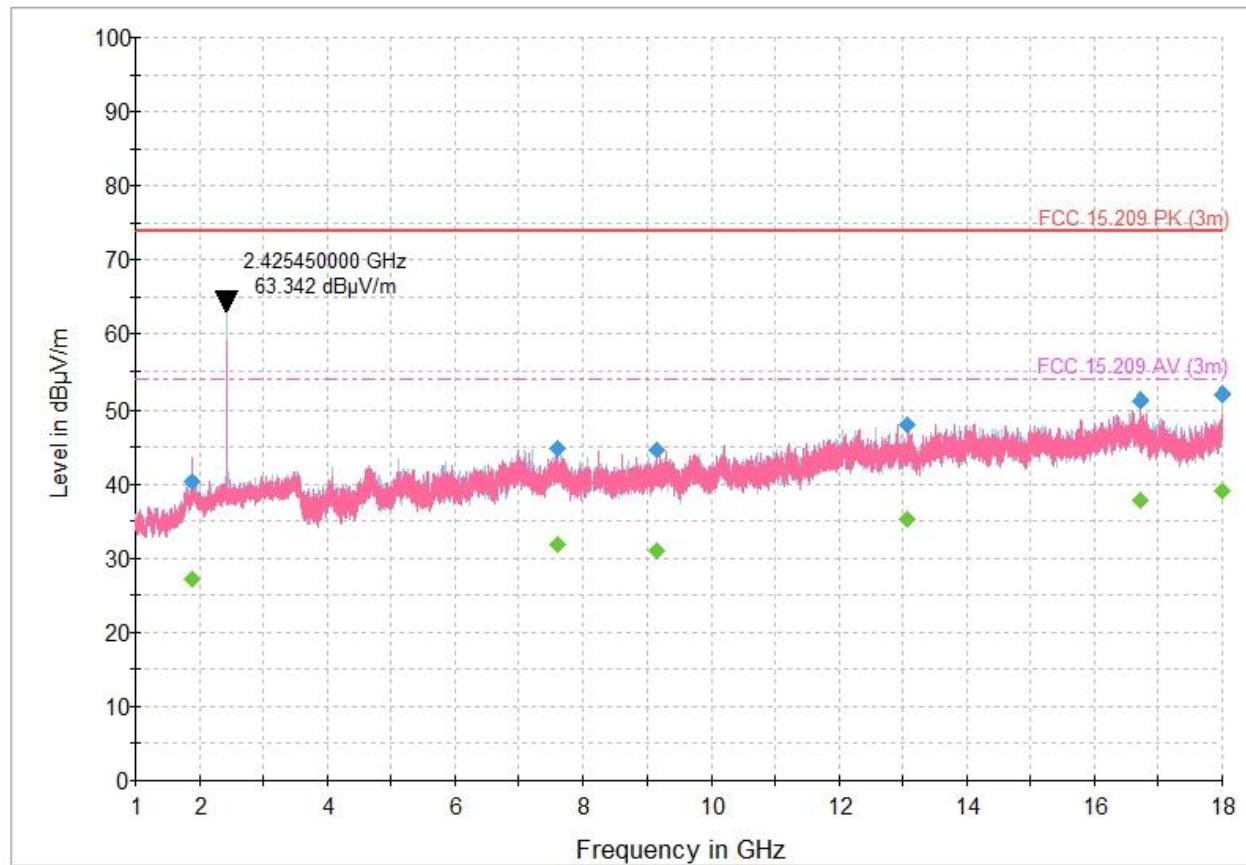


Figure 8.5-31: Radiated emissions spectral plot (1 GHz - 18 GHz) – 2426 MHz_1 Mbps

Table 8.5-16: Radiated emissions results

Frequency (MHz)	MaxPeak (dB μ V/m)	CAverage (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1891.750000	---	27.14	53.90	26.76	5000.0	1000.000	220.0	V	339.0	-5.5
1891.750000	40.27	---	73.90	33.63	5000.0	1000.000	220.0	V	339.0	-5.5
7605.450000	---	31.90	53.90	22.00	5000.0	1000.000	226.0	V	276.0	7.1
7605.450000	44.70	---	73.90	29.20	5000.0	1000.000	226.0	V	276.0	7.1
9146.800000	---	31.07	53.90	22.83	5000.0	1000.000	271.0	V	202.0	8.8
9146.800000	44.55	---	73.90	29.35	5000.0	1000.000	271.0	V	202.0	8.8
13061.600000	48.09	---	73.90	25.81	5000.0	1000.000	347.0	H	32.0	16.7
13061.600000	---	35.22	53.90	18.68	5000.0	1000.000	347.0	H	32.0	16.7
16709.400000	---	37.76	53.90	16.14	5000.0	1000.000	345.0	V	263.0	23.1
16709.400000	51.24	---	73.90	22.66	5000.0	1000.000	345.0	V	263.0	23.1
17997.400000	51.97	---	73.90	21.93	5000.0	1000.000	337.0	H	238.0	24.9
17997.400000	---	38.99	53.90	14.91	5000.0	1000.000	337.0	H	238.0	24.9

Notes: ¹ Field strength (dB μ V/m) = receiver/spectrum analyzer value (dB μ V) + 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

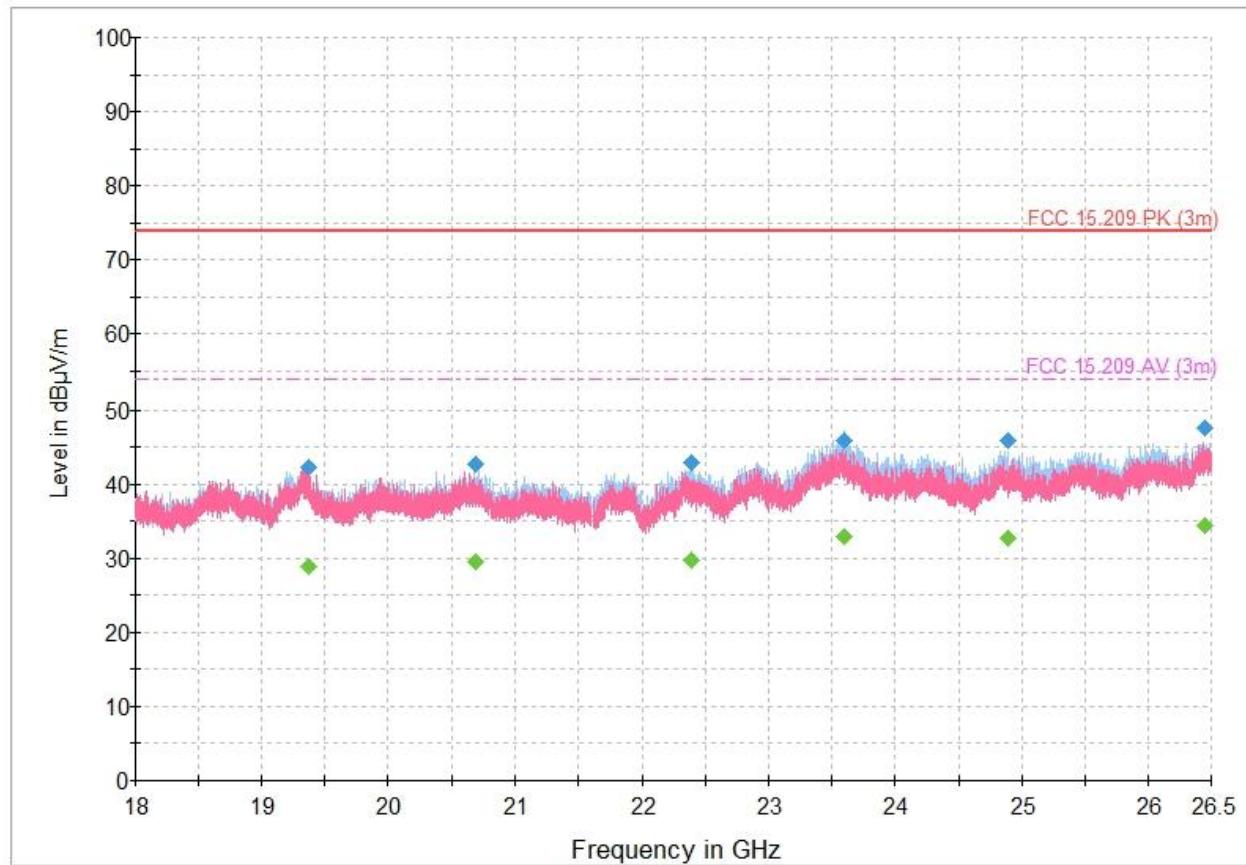


Figure 8.5-32: Radiated emissions spectral plot (18 GHz - 26.5 GHz) – 2426 MHz_1 Mbps

Table 8.5-17: 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)
19373.756250	42.34	---	73.90	31.56	5000.0	1000.000	380.0	H	11.0	14.5
19373.756250	---	28.84	53.90	25.06	5000.0	1000.000	380.0	H	11.0	14.5
20688.443750	42.68	---	73.90	31.22	5000.0	1000.000	115.0	H	355.0	16.6
20688.443750	---	29.61	53.90	24.29	5000.0	1000.000	115.0	H	355.0	16.6
22387.081250	42.89	---	73.90	31.01	5000.0	1000.000	386.0	H	135.0	17.3
22387.081250	---	29.70	53.90	24.20	5000.0	1000.000	386.0	H	135.0	17.3
23596.306250	45.96	---	73.90	27.94	5000.0	1000.000	200.0	H	11.0	23.1
23596.306250	---	32.81	53.90	21.09	5000.0	1000.000	200.0	H	11.0	23.1
24896.918750	---	32.70	53.90	21.20	5000.0	1000.000	266.0	H	246.0	21.1
24896.918750	45.79	---	73.90	28.11	5000.0	1000.000	266.0	H	246.0	21.1
26447.587500	---	34.29	53.90	19.61	5000.0	1000.000	136.0	H	235.0	24.1
26447.587500	47.62	---	73.90	26.28	5000.0	1000.000	136.0	H	235.0	24.1

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.

Full Spectrum

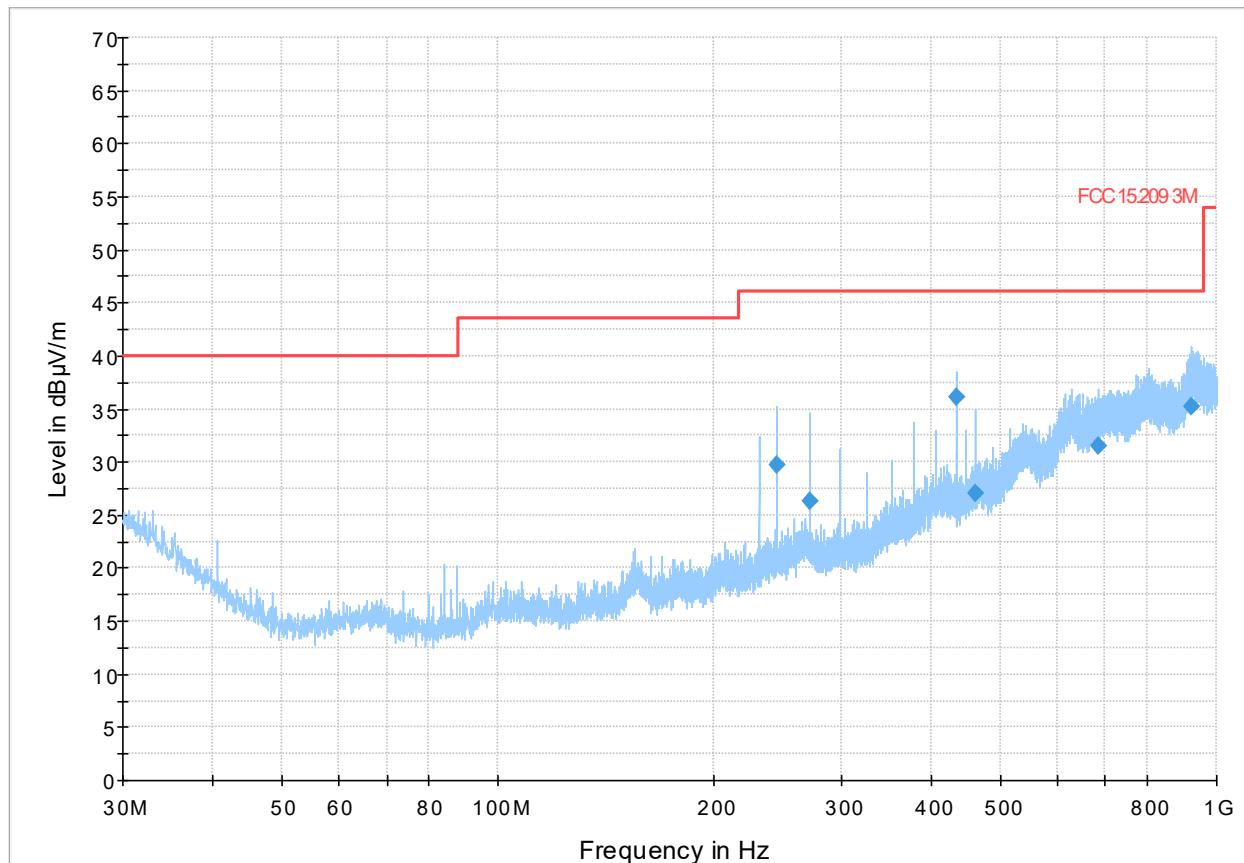


Figure 8.5-33: Radiated emissions spectral plot (30 MHz - 1 GHz) – 2480 MHz_1 Mbps

Table 8.5-18: 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)
244.139000	29.74	46.00	16.26	5000.0	120.000	168.0	V	214.0	20.0
271.250500	26.29	46.00	19.71	5000.0	120.000	225.0	V	129.0	21.4
433.896500	36.07	46.00	9.93	5000.0	120.000	100.0	H	116.0	25.7
460.999500	27.04	46.00	18.96	5000.0	120.000	236.0	H	216.0	26.8
685.075500	31.49	46.00	14.51	5000.0	120.000	207.0	H	10.0	31.5
924.037500	35.23	46.00	10.77	5000.0	120.000	146.0	H	34.0	35.3

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

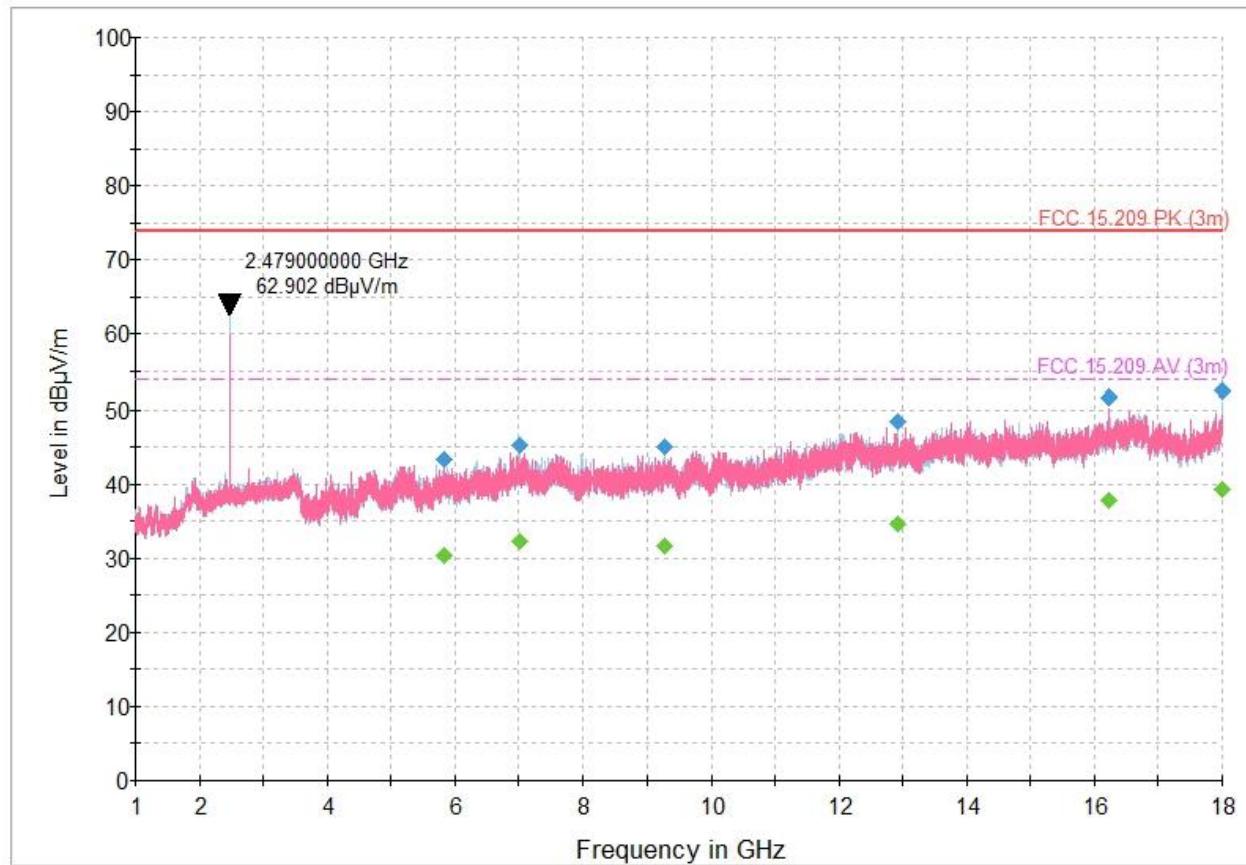


Figure 8.5-34: Radiated emissions spectral plot (1 GHz - 18 GHz) – 2480 MHz_1 Mbps

Table 8.5-19: 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)
5824.050000	---	30.44	53.90	23.46	5000.0	1000.000	149.0	V	20.0	4.4
5824.050000	43.36	---	73.90	30.54	5000.0	1000.000	149.0	V	20.0	4.4
7018.250000	---	32.22	53.90	21.68	5000.0	1000.000	397.0	H	86.0	5.8
7018.250000	45.26	---	73.90	28.64	5000.0	1000.000	397.0	H	86.0	5.8
9258.250000	45.10	---	73.90	28.80	5000.0	1000.000	372.0	H	108.0	9.1
9258.250000	---	31.72	53.90	22.18	5000.0	1000.000	372.0	H	108.0	9.1
12905.850000	---	34.60	53.90	19.30	5000.0	1000.000	213.0	H	184.0	16.1
12905.850000	48.35	---	73.90	25.55	5000.0	1000.000	213.0	H	184.0	16.1
16219.750000	---	37.89	53.90	16.01	5000.0	1000.000	141.0	V	234.0	23.0
16219.750000	51.63	---	73.90	22.27	5000.0	1000.000	141.0	V	234.0	23.0
17991.350000	52.53	---	73.90	21.37	5000.0	1000.000	366.0	H	205.0	24.7
17991.350000	---	39.23	53.90	14.67	5000.0	1000.000	366.0	H	205.0	24.7

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

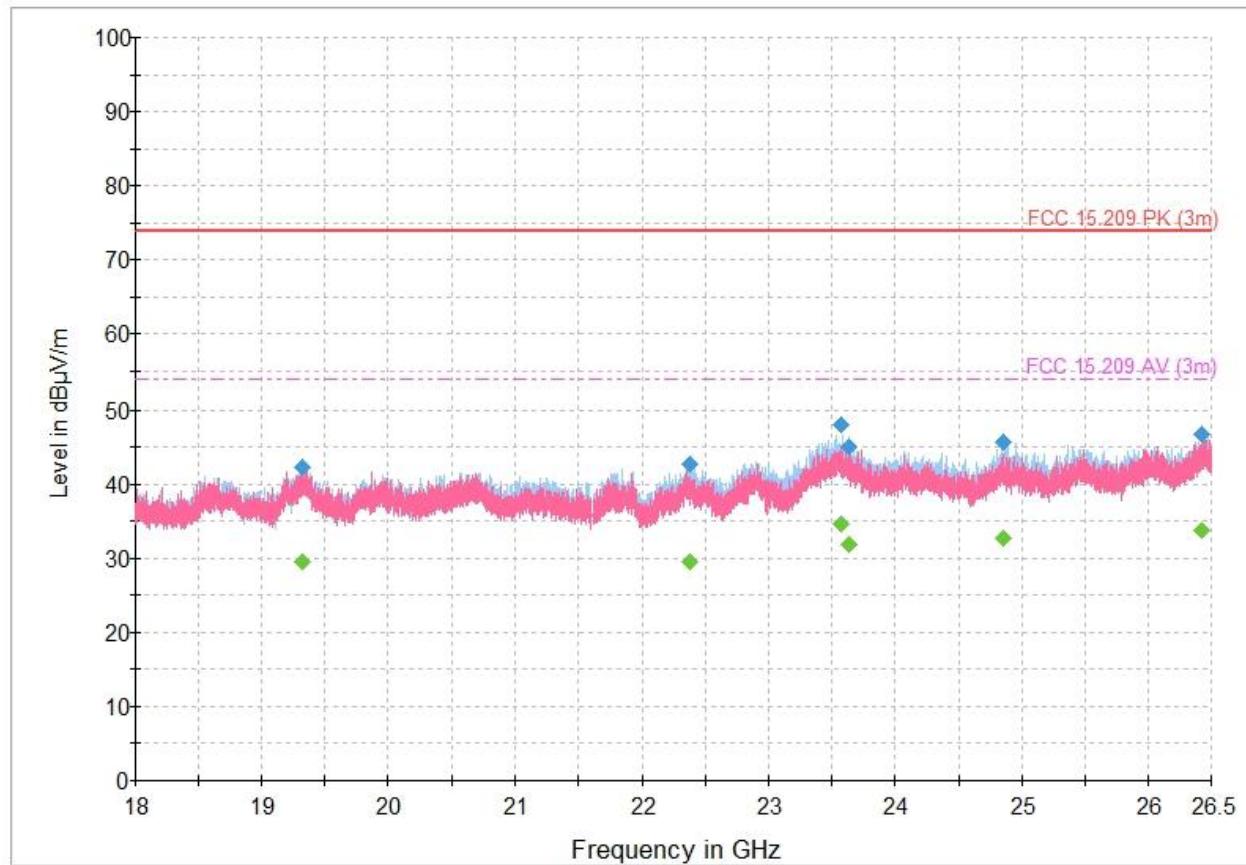


Figure 8.5-35: Radiated emissions spectral plot (18 GHz - 26.5 GHz) – 2480 MHz_1 Mbps

Table 8.5-20: 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)
19318.237500	42.29	---	73.90	31.61	5000.0	1000.000	323.0	H	0.0	14.8
19318.237500	---	29.52	53.90	24.38	5000.0	1000.000	323.0	H	0.0	14.8
22369.118750	---	29.57	53.90	24.33	5000.0	1000.000	280.0	H	132.0	17.3
22369.118750	42.71	---	73.90	31.19	5000.0	1000.000	280.0	H	132.0	17.3
23574.412500	47.99	---	73.90	25.91	5000.0	1000.000	107.0	H	282.0	23.3
23574.412500	---	34.61	53.90	19.29	5000.0	1000.000	107.0	H	282.0	23.3
23635.568750	---	31.82	53.90	22.08	5000.0	1000.000	309.0	H	301.0	22.8
23635.568750	44.98	---	73.90	28.92	5000.0	1000.000	309.0	H	301.0	22.8
24857.725000	45.61	---	73.90	28.29	5000.0	1000.000	103.0	H	219.0	21.0
24857.725000	---	32.65	53.90	21.25	5000.0	1000.000	103.0	H	219.0	21.0
26419.412500	46.69	---	73.90	27.21	5000.0	1000.000	339.0	H	11.0	23.8
26419.412500	---	33.69	53.90	20.21	5000.0	1000.000	339.0	H	11.0	23.8

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

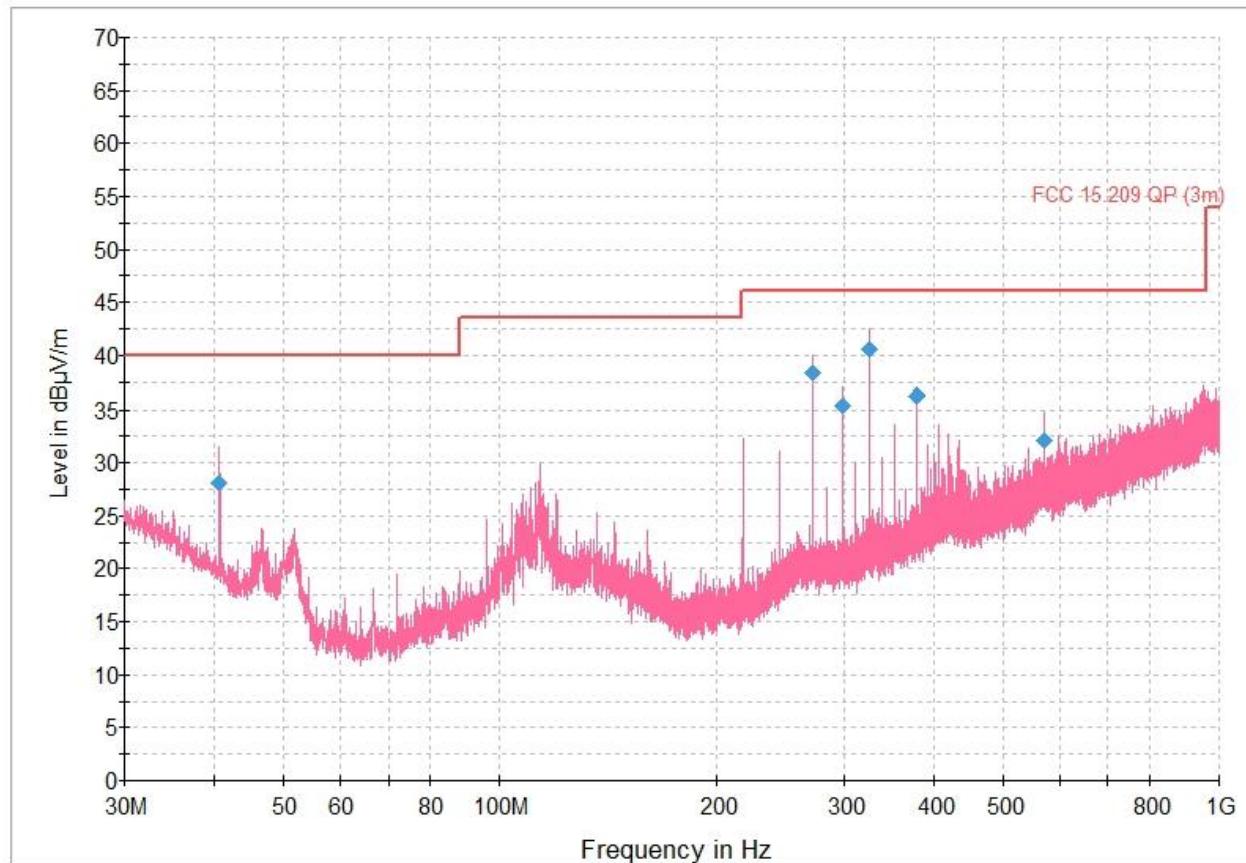


Figure 8.5-36: Radiated emissions spectral plot (30 MHz - 1 GHz) – 2402 MHz_2 Mbps_Vertical

Table 8.5-21: 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)
40.690000	28.07	40.00	11.93	5000.0	120.000	105.0	V	254.0	20.9
271.186667	38.40	46.00	7.60	5000.0	120.000	124.0	V	123.0	21.4
298.314333	35.39	46.00	10.61	5000.0	120.000	101.0	V	108.0	22.0
325.442000	40.65	46.00	5.35	5000.0	120.000	101.0	V	131.0	22.9
379.697333	36.33	46.00	9.67	5000.0	120.000	176.0	V	32.0	24.5
569.566333	32.05	46.00	13.95	5000.0	120.000	197.0	V	142.0	29.0

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

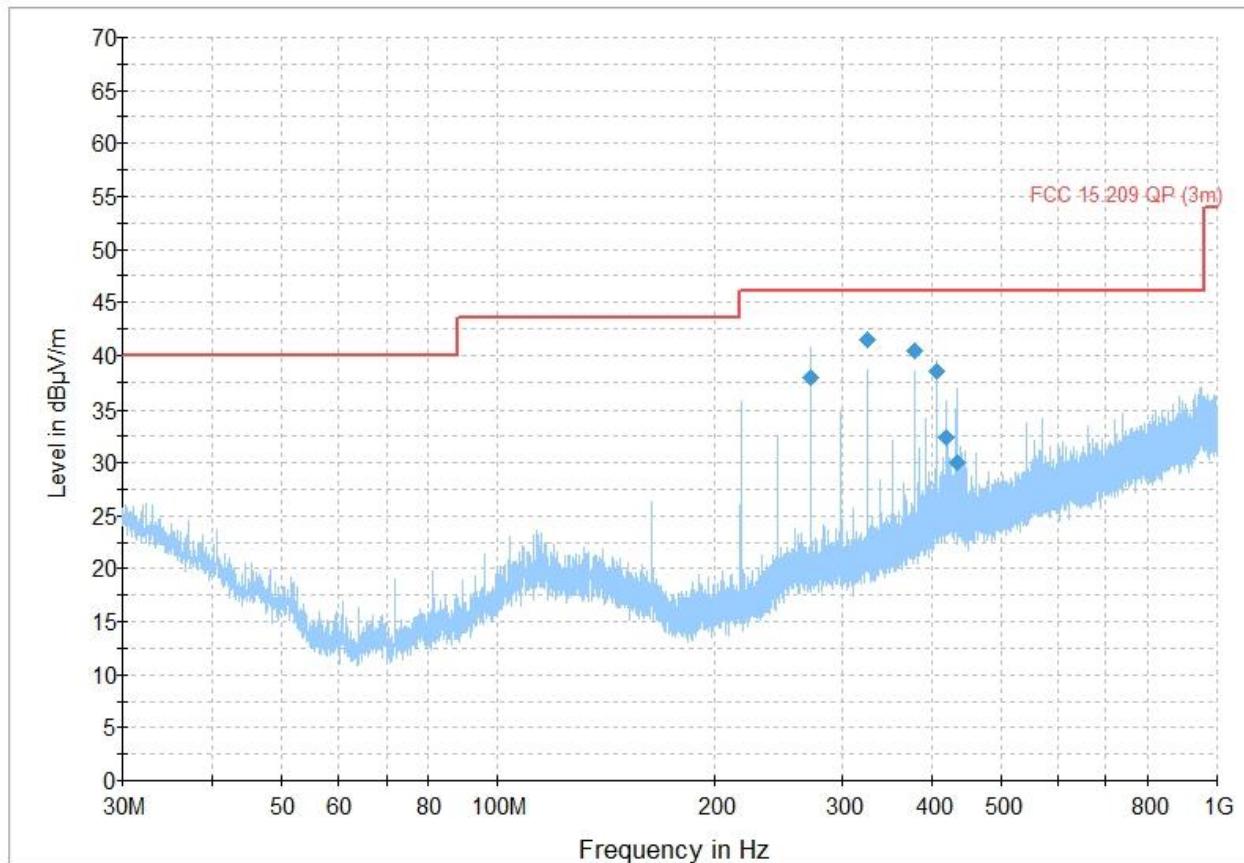


Figure 8.5-37: Radiated emissions spectral plot (30 MHz - 1 GHz) – 2402 MHz_2 Mbps_Horizontal

Table 8.5-22: 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)
271.186667	37.83	46.00	8.17	5000.0	120.000	183.0	H	121.0	21.4
325.449667	41.51	46.00	4.49	5000.0	120.000	143.0	H	120.0	22.9
379.665000	40.44	46.00	5.56	5000.0	120.000	108.0	H	122.0	24.5
406.792667	38.43	46.00	7.57	5000.0	120.000	101.0	H	122.0	25.6
420.380333	32.39	46.00	13.61	5000.0	120.000	105.0	H	212.0	26.3
434.448000	29.97	46.00	16.03	5000.0	120.000	101.0	H	130.0	26.0

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

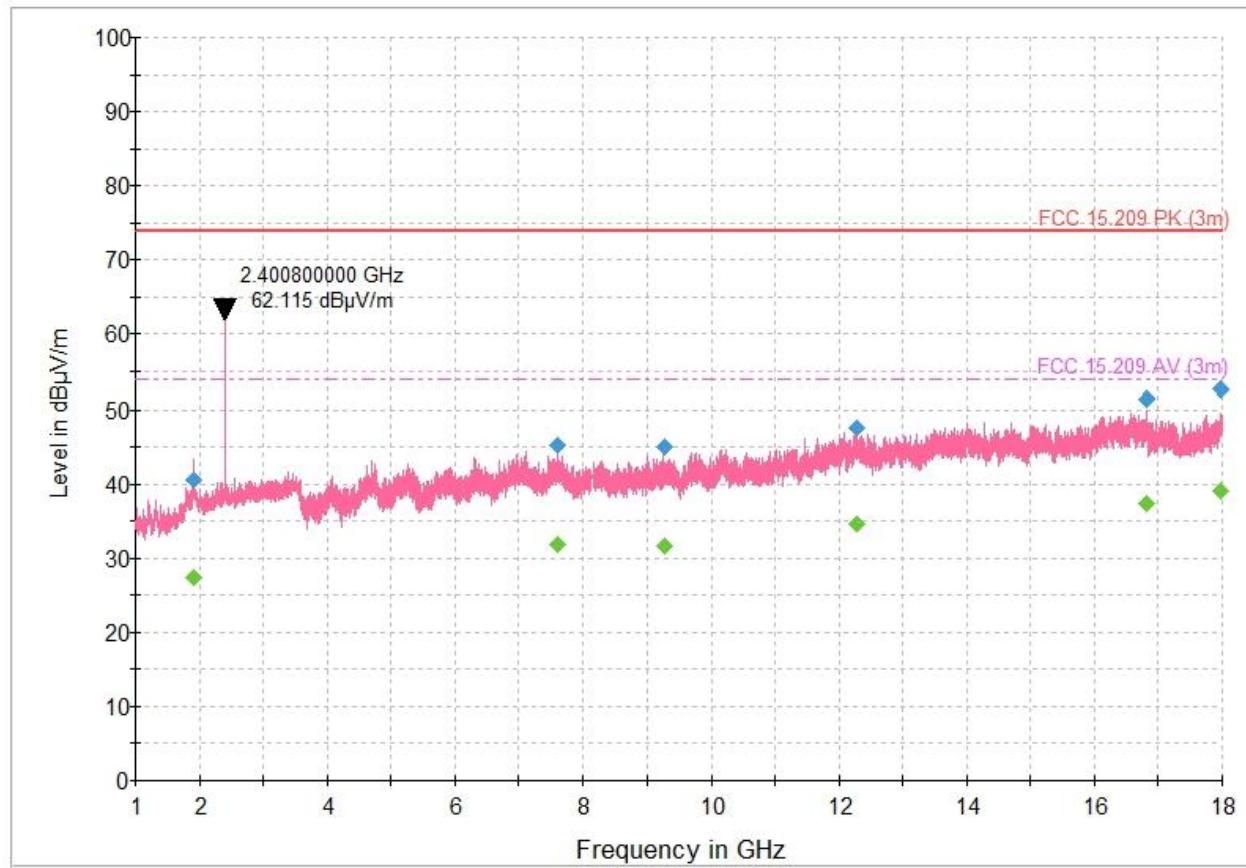


Figure 8.5-38: Radiated emissions spectral plot (1 GHz - 18 GHz) – 2402 MHz_2 Mbps_Vertical

Table 8.5-23: Radiated emissions results

Frequency (MHz)	MaxPeak (dB μ V/m)	CAverage (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1905.800000	40.49	---	73.90	33.41	5000.0	1000.000	145.0	V	323.0	-5.5
1905.800000	---	27.45	53.90	26.45	5000.0	1000.000	145.0	V	323.0	-5.5
7613.900000	45.28	---	73.90	28.62	5000.0	1000.000	245.0	V	232.0	7.1
7613.900000	---	31.84	53.90	22.06	5000.0	1000.000	245.0	V	232.0	7.1
9257.600000	---	31.73	53.90	22.17	5000.0	1000.000	121.0	V	176.0	9.1
9257.600000	44.98	---	73.90	28.92	5000.0	1000.000	121.0	V	176.0	9.1
12264.700000	47.61	---	73.90	26.29	5000.0	1000.000	288.0	V	98.0	15.8
12264.700000	---	34.59	53.90	19.31	5000.0	1000.000	288.0	V	98.0	15.8
16806.500000	51.34	---	73.90	22.56	5000.0	1000.000	297.0	V	257.0	22.3
16806.500000	---	37.38	53.90	16.52	5000.0	1000.000	297.0	V	257.0	22.3
17979.000000	---	39.03	53.90	14.87	5000.0	1000.000	176.0	V	87.0	24.3
17979.000000	52.66	---	73.90	21.24	5000.0	1000.000	176.0	V	87.0	24.3

Notes: ¹ Field strength (dB μ V/m) = receiver/spectrum analyzer value (dB μ V) + 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

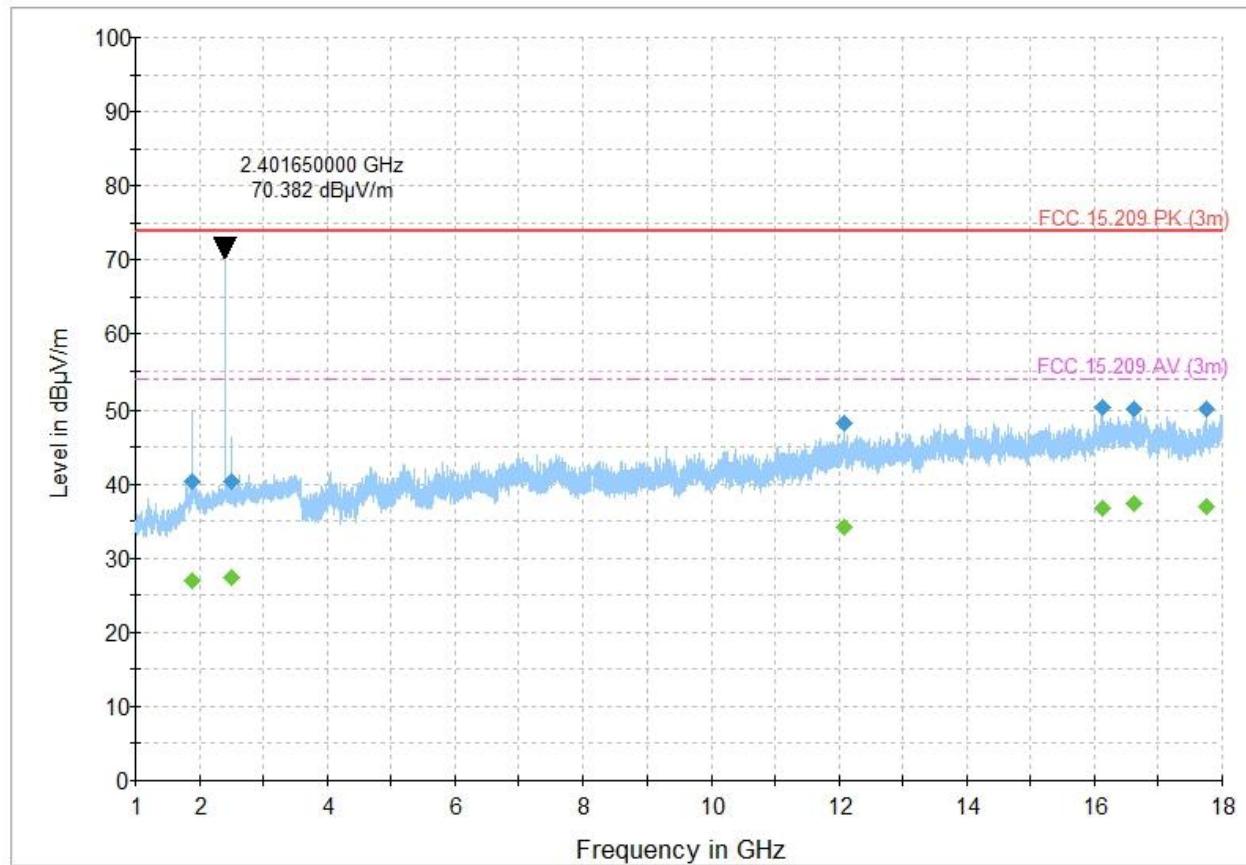


Figure 8.5-39: Radiated emissions spectral plot (1 GHz - 18 GHz) – 2402 MHz_2 Mbps_Horizontal

Table 8.5-24: 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)
1889.700000	---	27.05	53.90	26.85	5000.0	1000.000	399.0	H	208.0	-5.5
1889.700000	40.24	---	73.90	33.66	5000.0	1000.000	399.0	H	208.0	-5.5
2503.850000	40.33	---	73.90	33.57	5000.0	1000.000	376.0	H	320.0	-3.7
2503.850000	---	27.43	53.90	26.47	5000.0	1000.000	376.0	H	320.0	-3.7
12068.000000	48.20	---	73.90	25.70	5000.0	1000.000	381.0	H	323.0	15.1
12068.000000	---	34.21	53.90	19.69	5000.0	1000.000	381.0	H	323.0	15.1
16113.600000	---	36.65	53.90	17.25	5000.0	1000.000	308.0	H	142.0	22.5
16113.600000	50.36	---	73.90	23.54	5000.0	1000.000	308.0	H	142.0	22.5
16622.100000	50.14	---	73.90	23.76	5000.0	1000.000	184.0	H	54.0	23.4
16622.100000	---	37.37	53.90	16.53	5000.0	1000.000	184.0	H	54.0	23.4
17759.300000	---	36.93	53.90	16.97	5000.0	1000.000	147.0	H	306.0	22.2
17759.300000	50.14	---	73.90	23.76	5000.0	1000.000	147.0	H	306.0	22.2

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

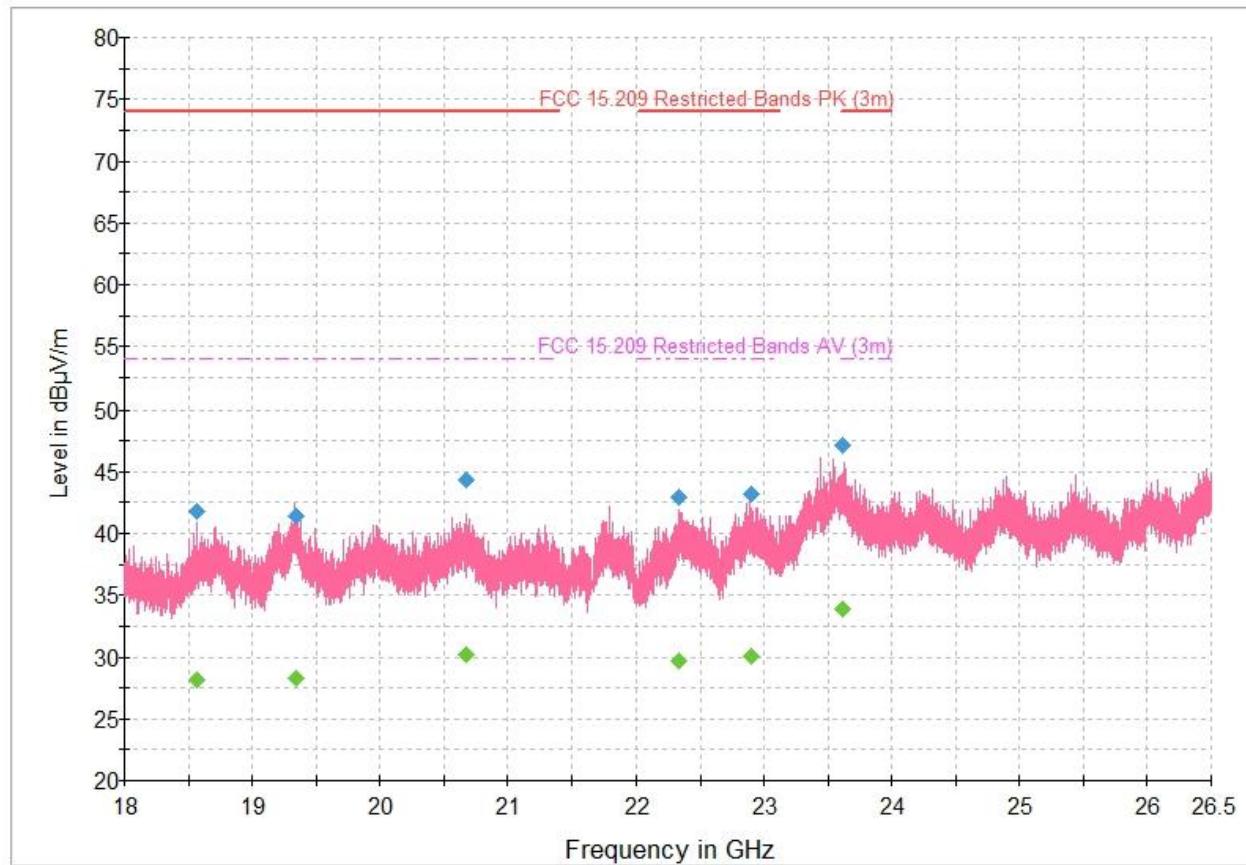


Figure 8.5-40: Radiated emissions spectral plot (18 GHz - 26.5 GHz) – 2402 MHz_2 Mbps_Vertical

Table 8.5-25: Radiated emissions results

Frequency (MHz)	MaxPeak (dB μ V/m)	CAverage (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
18563.725000	---	28.13	53.98	25.85	5000.0	1000.000	303.0	V	0.0	13.7
18563.725000	41.78	---	73.98	32.20	5000.0	1000.000	303.0	V	0.0	13.7
19340.775000	41.45	---	73.98	32.53	5000.0	1000.000	276.0	V	282.0	14.7
19340.775000	---	28.29	53.98	25.69	5000.0	1000.000	276.0	V	282.0	14.7
20676.675000	44.30	---	73.98	29.68	5000.0	1000.000	188.0	V	58.0	16.4
20676.675000	---	30.23	53.98	23.75	5000.0	1000.000	188.0	V	58.0	16.4
22332.300000	---	29.73	53.98	24.25	5000.0	1000.000	349.0	V	32.0	17.3
22332.300000	42.89	---	73.98	31.09	5000.0	1000.000	349.0	V	32.0	17.3
22892.975000	---	30.13	53.98	23.85	5000.0	1000.000	297.0	V	314.0	19.1
22892.975000	43.14	---	73.98	30.84	5000.0	1000.000	297.0	V	314.0	19.1
23618.425000	---	33.83	53.98	20.15	5000.0	1000.000	378.0	V	270.0	22.9
23618.425000	47.11	---	73.98	26.87	5000.0	1000.000	378.0	V	270.0	22.9

Notes: ¹ Field strength (dB μ V/m) = receiver/spectrum analyzer value (dB μ V) + 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

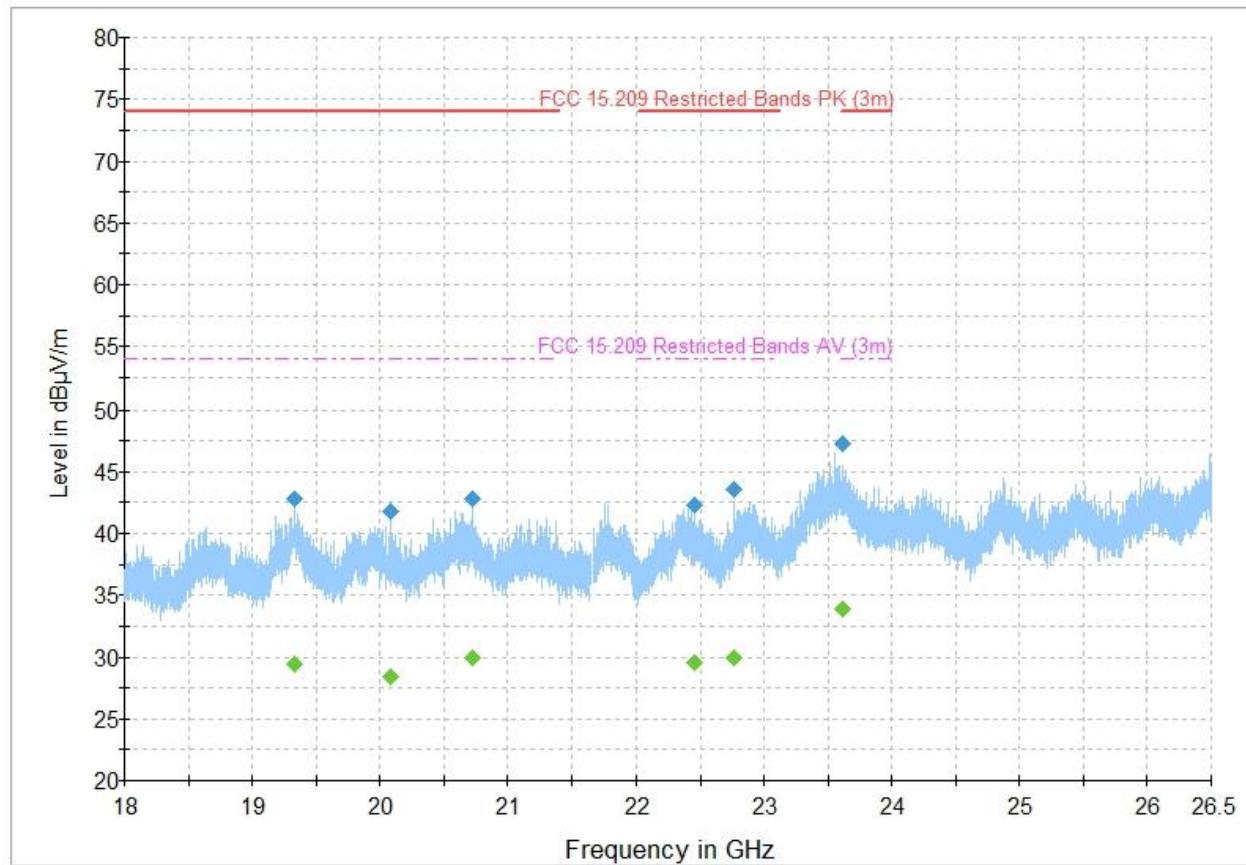


Figure 8.5-41: Radiated emissions spectral plot (18 GHz - 26.5 GHz) – 2402 MHz_2 Mbps_Horizontal

Table 8.5-26: Radiated emissions results

Frequency (MHz)	MaxPeak (dB μ V/m)	CAverage (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
19328.775000	---	29.36	53.98	24.62	5000.0	1000.000	374.0	H	43.0	14.8
19328.775000	42.80	---	73.98	31.18	5000.0	1000.000	374.0	H	43.0	14.8
20082.850000	41.74	---	73.98	32.24	5000.0	1000.000	265.0	H	186.0	14.3
20082.850000	---	28.38	53.98	25.60	5000.0	1000.000	265.0	H	186.0	14.3
20724.100000	42.82	---	73.98	31.16	5000.0	1000.000	210.0	H	0.0	16.8
20724.100000	---	29.95	53.98	24.03	5000.0	1000.000	210.0	H	0.0	16.8
22450.200000	---	29.55	53.98	24.43	5000.0	1000.000	343.0	H	248.0	17.2
22450.200000	42.36	---	73.98	31.62	5000.0	1000.000	343.0	H	248.0	17.2
22759.450000	43.54	---	73.98	30.44	5000.0	1000.000	245.0	H	0.0	18.4
22759.450000	---	29.89	53.98	24.09	5000.0	1000.000	245.0	H	0.0	18.4
23614.850000	47.23	---	73.98	26.75	5000.0	1000.000	309.0	H	65.0	23.0
23614.850000	---	33.87	53.98	20.11	5000.0	1000.000	309.0	H	65.0	23.0

Notes: ¹ Field strength (dB μ V/m) = receiver/spectrum analyzer value (dB μ V) + 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

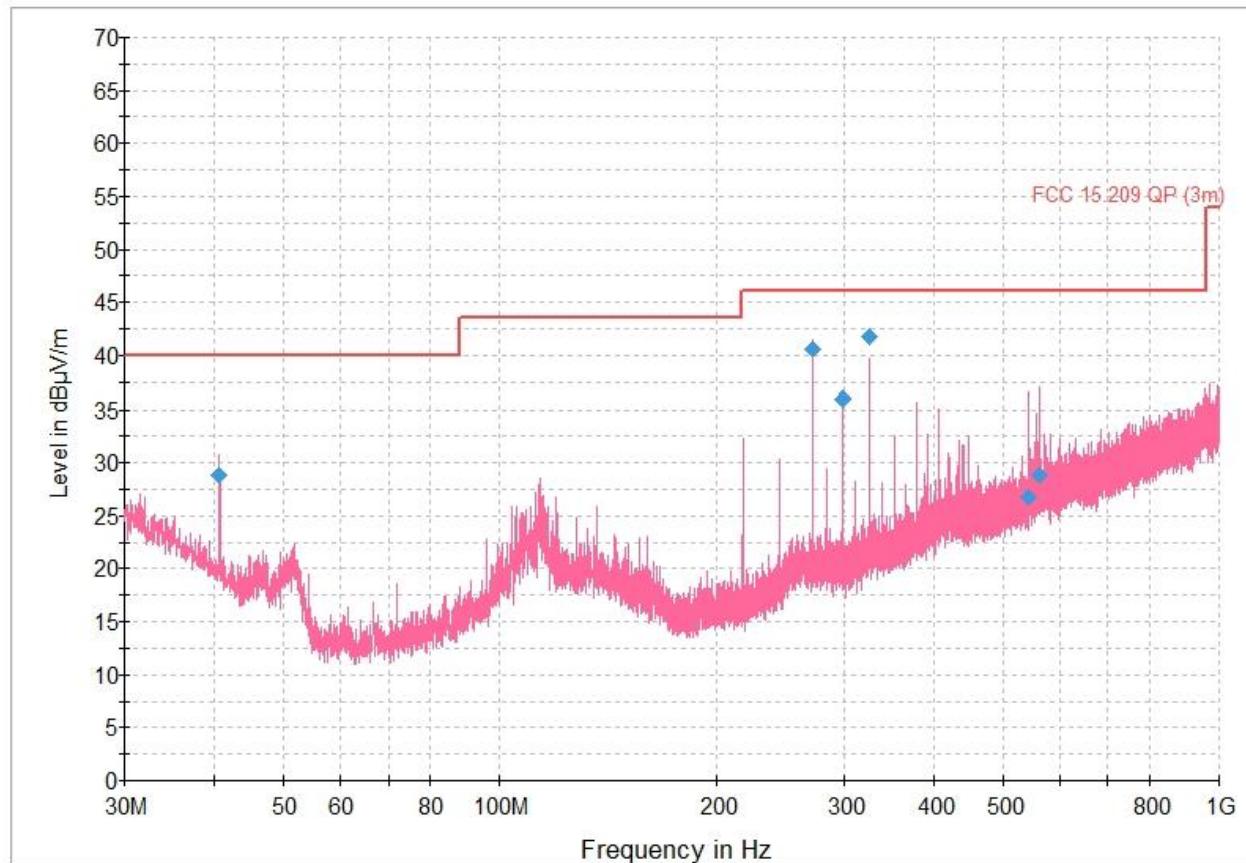


Figure 8.5-42: Radiated emissions spectral plot (30 MHz - 1 GHz) – 2426 MHz_2 Mbps_Vertical

Table 8.5-27: Radiated emissions results

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
40.690000	28.81	40.00	11.19	5000.0	120.000	101.0	V	255.0	20.9
271.226667	40.53	46.00	5.47	5000.0	120.000	105.0	V	108.0	21.4
298.322000	36.03	46.00	9.97	5000.0	120.000	101.0	V	109.0	22.0
325.442000	41.79	46.00	4.21	5000.0	120.000	101.0	V	145.0	22.9
541.845667	26.72	46.00	19.28	5000.0	120.000	101.0	V	233.0	27.9
562.460667	28.89	46.00	17.11	5000.0	120.000	197.0	V	187.0	29.1

Notes:

¹ Field strength (dB μ V/m) = receiver/spectrum analyzer value (dB μ V) + 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

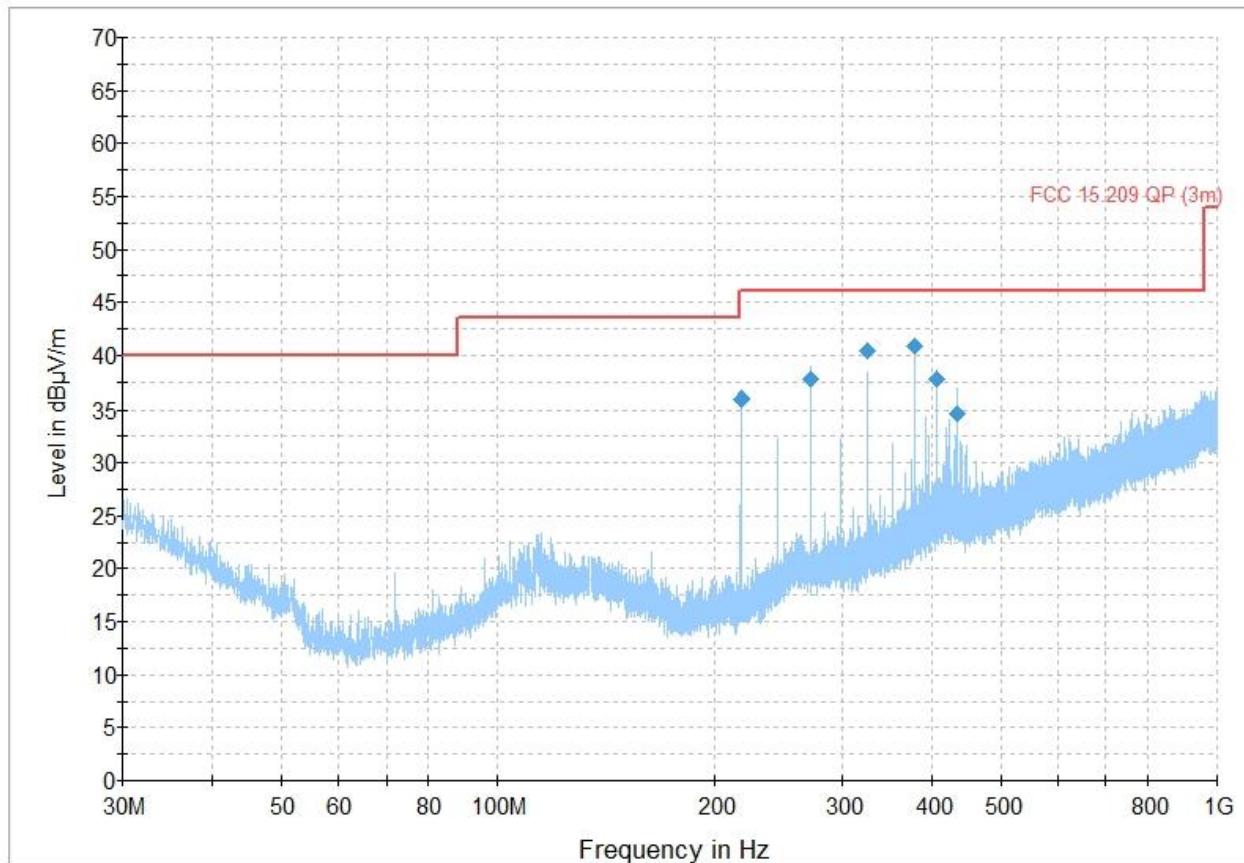


Figure 8.5-43: Radiated emissions spectral plot (30 MHz - 1 GHz) – 2426 MHz_2 Mbps_Horizontal

Table 8.5-28: 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)
216.971333	35.92	46.00	10.08	5000.0	120.000	266.0	H	243.0	18.0
271.186667	37.79	46.00	8.21	5000.0	120.000	172.0	H	131.0	21.4
325.442000	40.47	46.00	5.53	5000.0	120.000	145.0	H	222.0	22.9
379.705000	40.89	46.00	5.11	5000.0	120.000	111.0	H	118.0	24.5
406.792667	37.79	46.00	8.21	5000.0	120.000	105.0	H	220.0	25.6
433.902333	34.64	46.00	11.36	5000.0	120.000	101.0	H	214.0	26.0

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

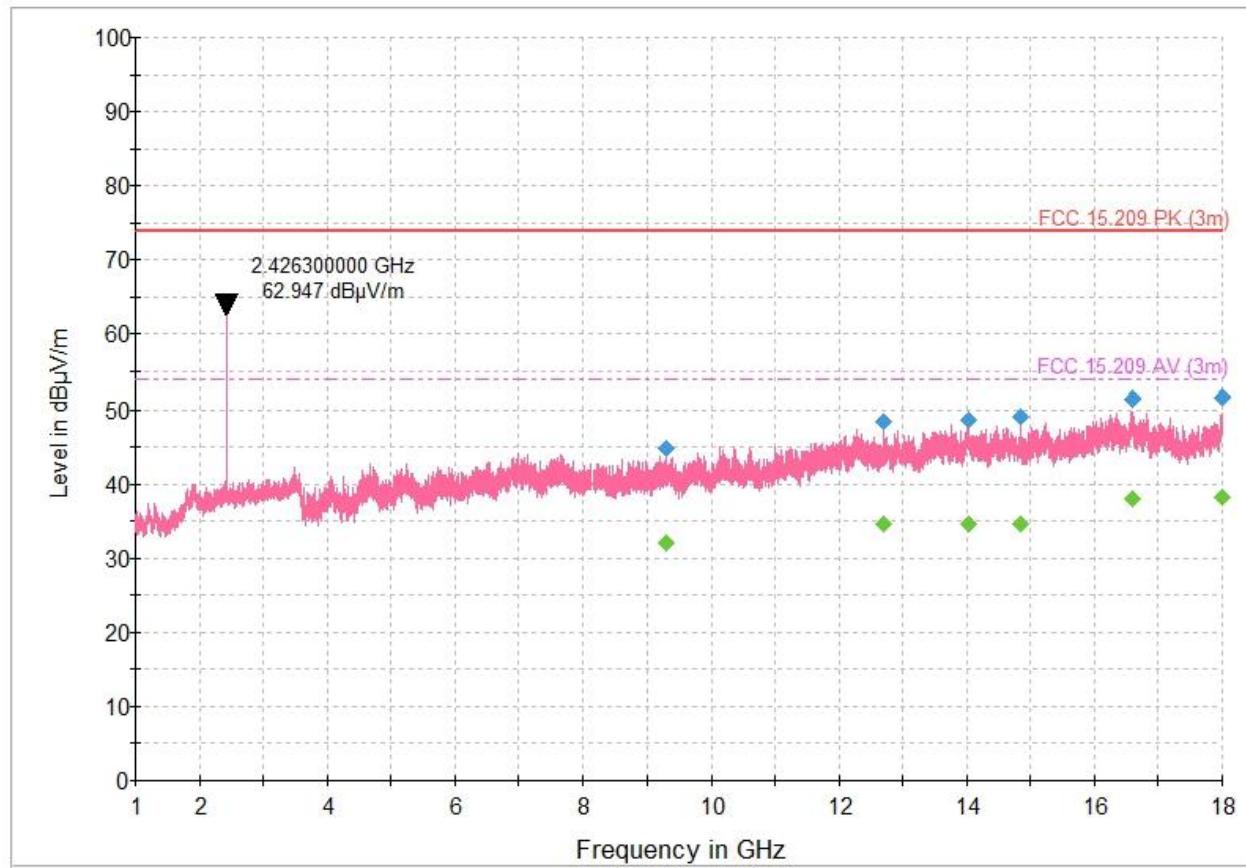


Figure 8.5-44: Radiated emissions spectral plot (1 GHz - 18 GHz) – 2426 MHz_2 Mbps_Vertical

Table 8.5-29: Radiated emissions results

Frequency (MHz)	MaxPeak (dB μ V/m)	CAverage (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
9281.250000	---	31.99	53.90	21.91	5000.0	1000.000	350.0	V	174.0	9.3
9281.250000	44.79	---	73.90	29.11	5000.0	1000.000	350.0	V	174.0	9.3
12701.150000	48.30	---	73.90	25.60	5000.0	1000.000	223.0	V	97.0	16.2
12701.150000	---	34.70	53.90	19.20	5000.0	1000.000	223.0	V	97.0	16.2
14032.400000	48.72	---	73.90	25.18	5000.0	1000.000	232.0	V	211.0	17.7
14032.400000	---	34.54	53.90	19.36	5000.0	1000.000	232.0	V	211.0	17.7
14845.250000	49.04	---	73.90	24.86	5000.0	1000.000	274.0	V	74.0	17.8
14845.250000	---	34.67	53.90	19.23	5000.0	1000.000	274.0	V	74.0	17.8
16581.350000	51.37	---	73.90	22.53	5000.0	1000.000	203.0	V	98.0	22.8
16581.350000	---	38.06	53.90	15.84	5000.0	1000.000	203.0	V	98.0	22.8
17999.250000	---	38.21	53.90	15.69	5000.0	1000.000	188.0	V	0.0	25.0
17999.250000	51.60	---	73.90	22.30	5000.0	1000.000	188.0	V	0.0	25.0

Notes: ¹ Field strength (dB μ V/m) = receiver/spectrum analyzer value (dB μ V) + 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

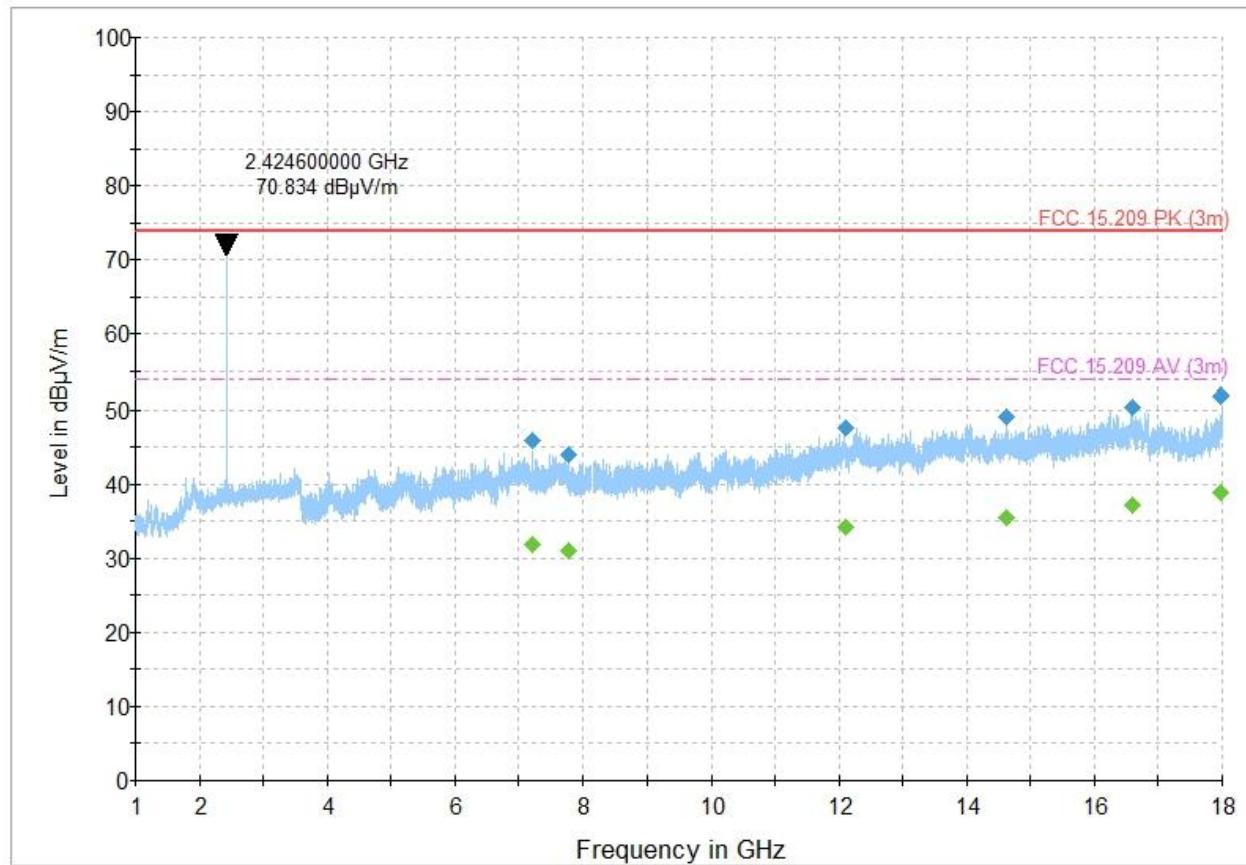


Table 8.5-30: Radiated emissions results

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)
7218.450000	45.93	---	73.90	27.97	5000.0	1000.000	194.0	H	0.0	6.1
7218.450000	---	31.75	53.90	22.15	5000.0	1000.000	194.0	H	0.0	6.1
7774.500000	---	31.06	53.90	22.84	5000.0	1000.000	259.0	H	278.0	7.1
7774.500000	43.87	---	73.90	30.03	5000.0	1000.000	259.0	H	278.0	7.1
12091.500000	47.61	---	73.90	26.29	5000.0	1000.000	155.0	H	266.0	14.9
12091.500000	---	34.23	53.90	19.67	5000.0	1000.000	155.0	H	266.0	14.9
14623.800000	---	35.36	53.90	18.54	5000.0	1000.000	115.0	H	353.0	17.9
14623.800000	48.99	---	73.90	24.91	5000.0	1000.000	115.0	H	353.0	17.9
16597.100000	50.41	---	73.90	23.49	5000.0	1000.000	252.0	H	297.0	23.1
16597.100000	---	37.20	53.90	16.70	5000.0	1000.000	252.0	H	297.0	23.1
17987.150000	51.81	---	73.90	22.09	5000.0	1000.000	243.0	H	247.0	24.6
17987.150000	---	38.93	53.90	14.97	5000.0	1000.000	243.0	H	247.0	24.6

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

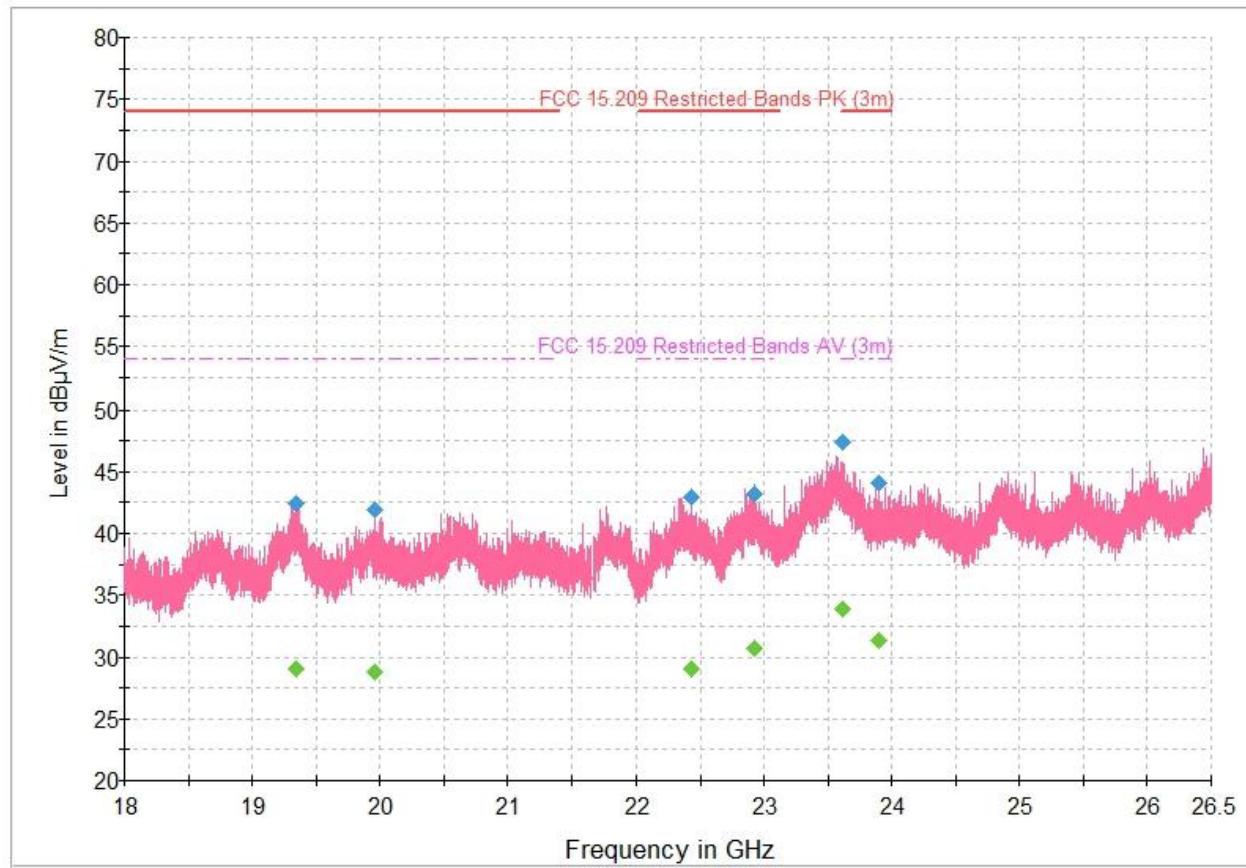


Figure 8.5-46: Radiated emissions spectral plot (18 GHz - 26.5 GHz) – 2426 MHz_2 Mbps_Vertical

Table 8.5-31: 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)
19349.350000	42.48	---	73.98	31.50	5000.0	1000.000	267.0	V	231.0	14.7
19349.350000	---	29.00	53.98	24.98	5000.0	1000.000	267.0	V	231.0	14.7
19964.575000	41.91	---	73.98	32.07	5000.0	1000.000	399.0	V	318.0	14.0
19964.575000	---	28.80	53.98	25.18	5000.0	1000.000	399.0	V	318.0	14.0
22432.950000	42.91	---	73.98	31.07	5000.0	1000.000	150.0	V	154.0	17.2
22432.950000	---	29.01	53.98	24.97	5000.0	1000.000	150.0	V	154.0	17.2
22923.800000	---	30.69	53.98	23.29	5000.0	1000.000	163.0	V	11.0	18.9
22923.800000	43.16	---	73.98	30.82	5000.0	1000.000	163.0	V	11.0	18.9
23611.525000	47.44	---	73.98	26.54	5000.0	1000.000	394.0	V	231.0	23.0
23611.525000	---	33.88	53.98	20.10	5000.0	1000.000	394.0	V	231.0	23.0
23899.275000	---	31.28	53.98	22.70	5000.0	1000.000	142.0	V	76.0	21.6
23899.275000	44.04	---	73.98	29.94	5000.0	1000.000	142.0	V	76.0	21.6

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

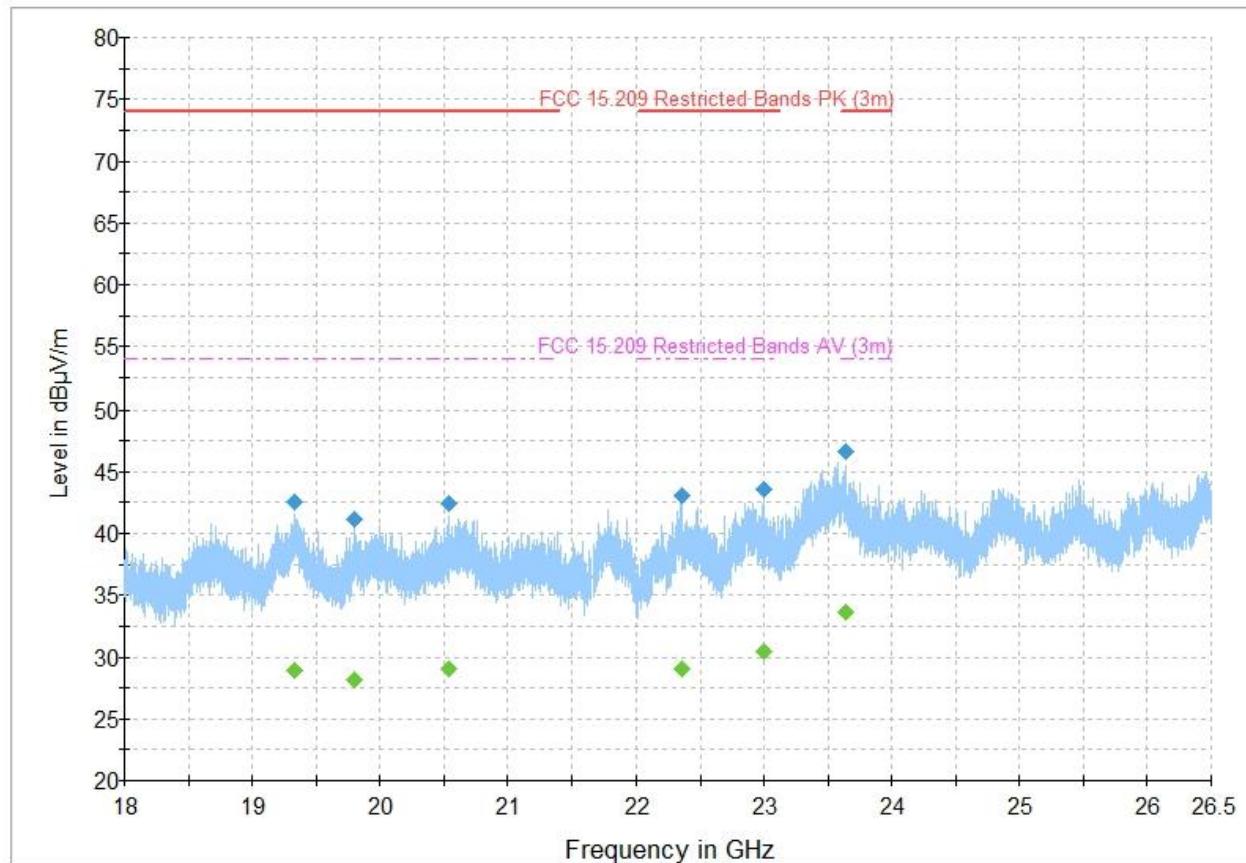


Figure 8.5-47: Radiated emissions spectral plot (18 GHz - 26.5 GHz) – 2426 MHz_2 Mbps_Horizontal

Table 8.5-32: Radiated emissions results

Frequency (MHz)	MaxPeak (dB μ V/m)	CAverage (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
19331.475000	42.59	---	73.98	31.39	5000.0	1000.000	288.0	H	200.0	14.8
19331.475000	---	28.94	53.98	25.04	5000.0	1000.000	288.0	H	200.0	14.8
19805.325000	---	28.13	53.98	25.85	5000.0	1000.000	128.0	H	185.0	14.0
19805.325000	41.11	---	73.98	32.87	5000.0	1000.000	128.0	H	185.0	14.0
20545.225000	42.40	---	73.98	31.58	5000.0	1000.000	101.0	H	348.0	15.0
20545.225000	---	29.06	53.98	24.92	5000.0	1000.000	101.0	H	348.0	15.0
22358.775000	43.09	---	73.98	30.89	5000.0	1000.000	121.0	H	302.0	17.3
22358.775000	---	29.04	53.98	24.94	5000.0	1000.000	121.0	H	302.0	17.3
23002.350000	43.62	---	73.98	30.36	5000.0	1000.000	194.0	H	339.0	18.5
23002.350000	---	30.43	53.98	23.55	5000.0	1000.000	194.0	H	339.0	18.5
23633.550000	---	33.68	53.98	20.30	5000.0	1000.000	205.0	H	112.0	22.8
23633.550000	46.67	---	73.98	27.31	5000.0	1000.000	205.0	H	112.0	22.8

Notes: ¹ Field strength (dB μ V/m) = receiver/spectrum analyzer value (dB μ V) + 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

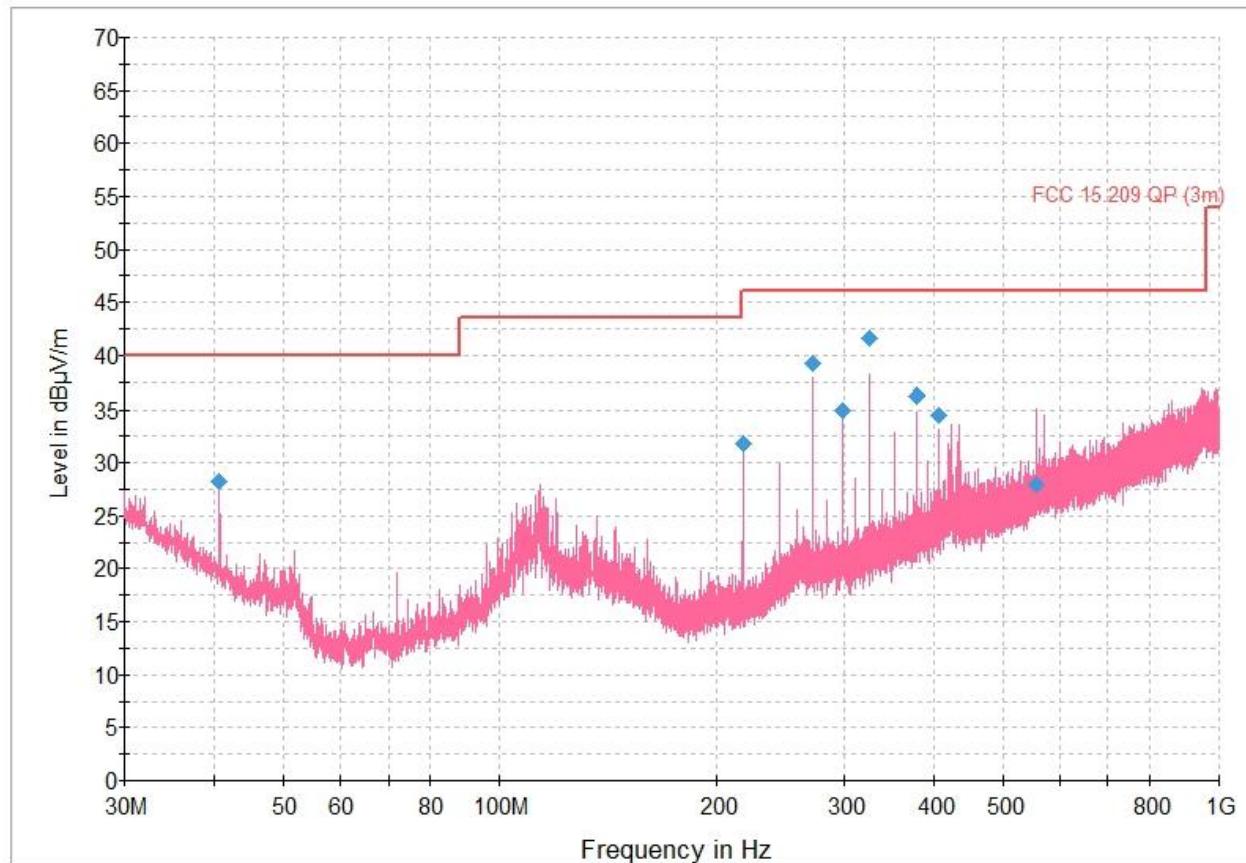


Figure 8.5-48: Radiated emissions spectral plot (30 MHz - 1 GHz) – 2480 MHz_2 Mbps_Vertical

Table 8.5-33: 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)
40.650000	28.26	40.00	11.74	5000.0	120.000	101.0	V	198.0	20.9
217.003667	31.79	46.00	14.21	5000.0	120.000	131.0	V	231.0	18.0
271.226667	39.20	46.00	6.80	5000.0	120.000	105.0	V	124.0	21.4
298.314333	34.99	46.00	11.01	5000.0	120.000	101.0	V	112.0	22.0
325.449667	41.59	46.00	4.41	5000.0	120.000	101.0	V	130.0	22.9
379.705000	36.25	46.00	9.75	5000.0	120.000	171.0	V	31.0	24.5
406.785000	34.51	46.00	11.49	5000.0	120.000	111.0	V	0.0	25.6
557.372333	27.94	46.00	18.06	5000.0	120.000	171.0	V	252.0	29.0

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

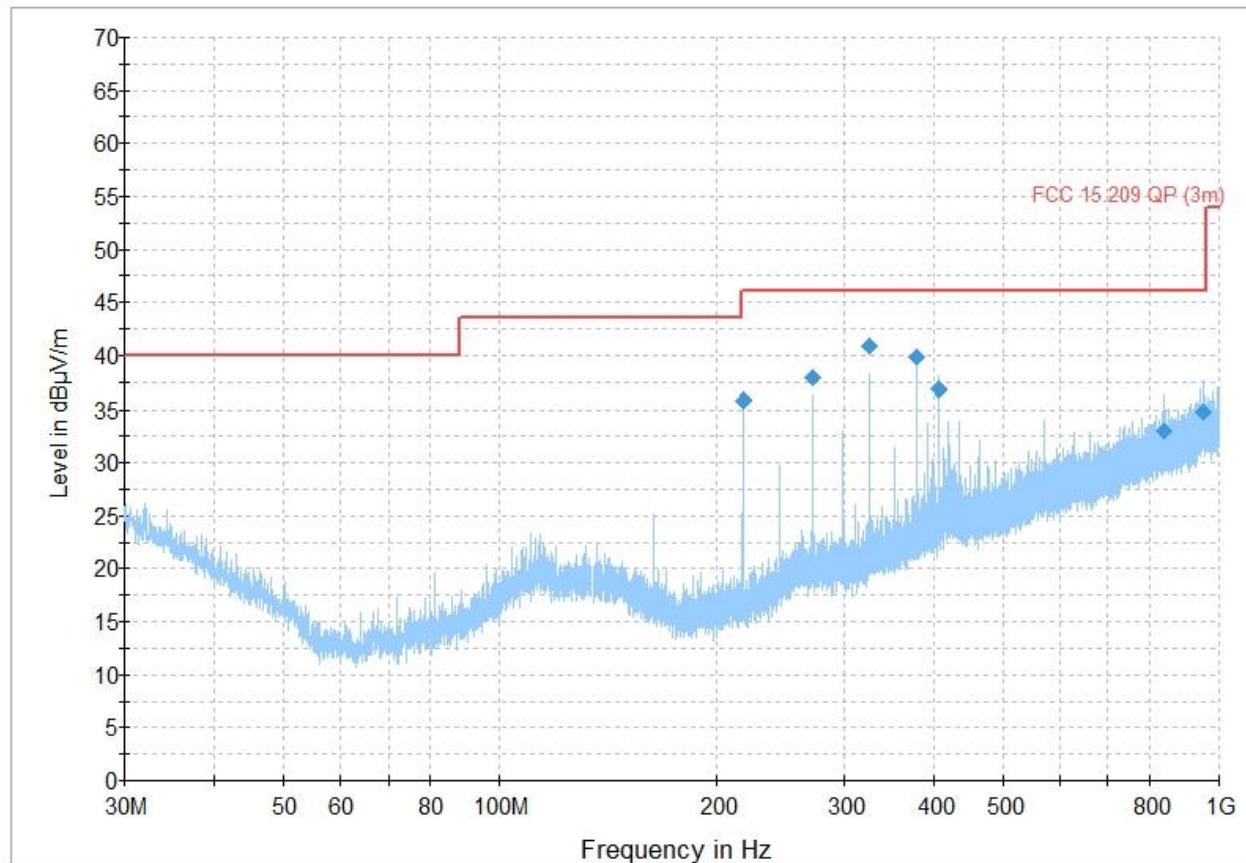


Figure 8.5-49: Radiated emissions spectral plot (30 MHz - 1 GHz) – 2480 MHz_2 Mbps_Horizontal

Table 8.5-34: Radiated emissions results

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
216.971333	35.85	46.00	10.15	5000.0	120.000	243.0	H	238.0	18.0
271.186667	37.83	46.00	8.17	5000.0	120.000	157.0	H	211.0	21.4
325.442000	40.83	46.00	5.17	5000.0	120.000	138.0	H	226.0	22.9
379.705000	39.88	46.00	6.12	5000.0	120.000	114.0	H	226.0	24.5
406.792667	36.82	46.00	9.18	5000.0	120.000	101.0	H	215.0	25.6
836.231333	32.97	46.00	13.03	5000.0	120.000	148.0	H	0.0	32.8
950.612000	34.85	46.00	11.15	5000.0	120.000	115.0	H	79.0	35.0

Notes:

¹ Field strength (dB μ V/m) = receiver/spectrum analyzer value (dB μ V) + 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

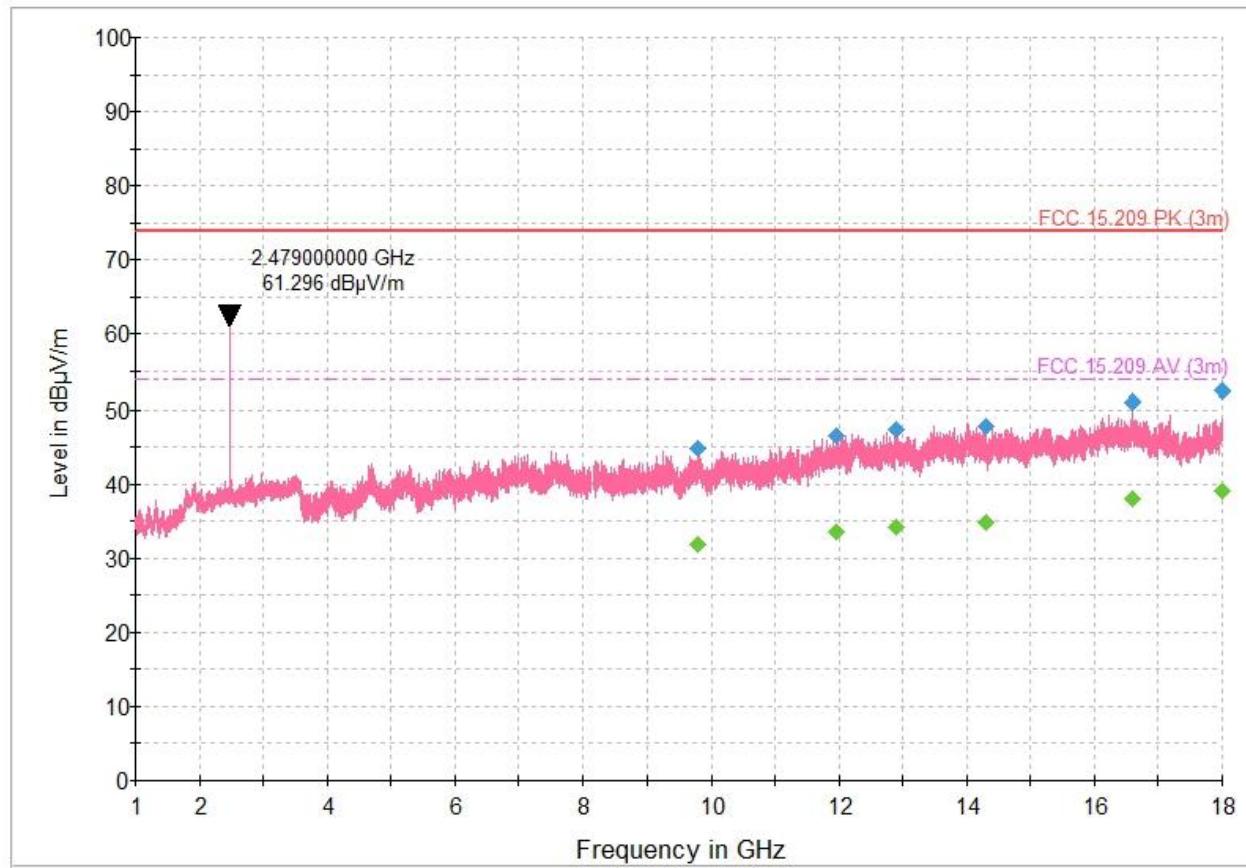


Table 8.5-35: Radiated emissions results

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)
9775.250000	44.78	---	73.90	29.12	5000.0	1000.000	250.0	V	19.0	10.9
9775.250000	---	31.80	53.90	22.10	5000.0	1000.000	250.0	V	19.0	10.9
11950.700000	---	33.45	53.90	20.45	5000.0	1000.000	376.0	V	141.0	14.9
11950.700000	46.46	---	73.90	27.44	5000.0	1000.000	376.0	V	141.0	14.9
12903.800000	---	34.27	53.90	19.63	5000.0	1000.000	190.0	V	196.0	16.1
12903.800000	47.40	---	73.90	26.50	5000.0	1000.000	190.0	V	196.0	16.1
14288.800000	---	34.91	53.90	18.99	5000.0	1000.000	140.0	V	11.0	17.2
14288.800000	47.70	---	73.90	26.20	5000.0	1000.000	140.0	V	11.0	17.2
16603.950000	---	38.07	53.90	15.83	5000.0	1000.000	124.0	V	228.0	23.2
16603.950000	51.01	---	73.90	22.89	5000.0	1000.000	124.0	V	228.0	23.2
17995.950000	52.36	---	73.90	21.54	5000.0	1000.000	162.0	V	107.0	24.9
17995.950000	---	39.05	53.90	14.85	5000.0	1000.000	162.0	V	107.0	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

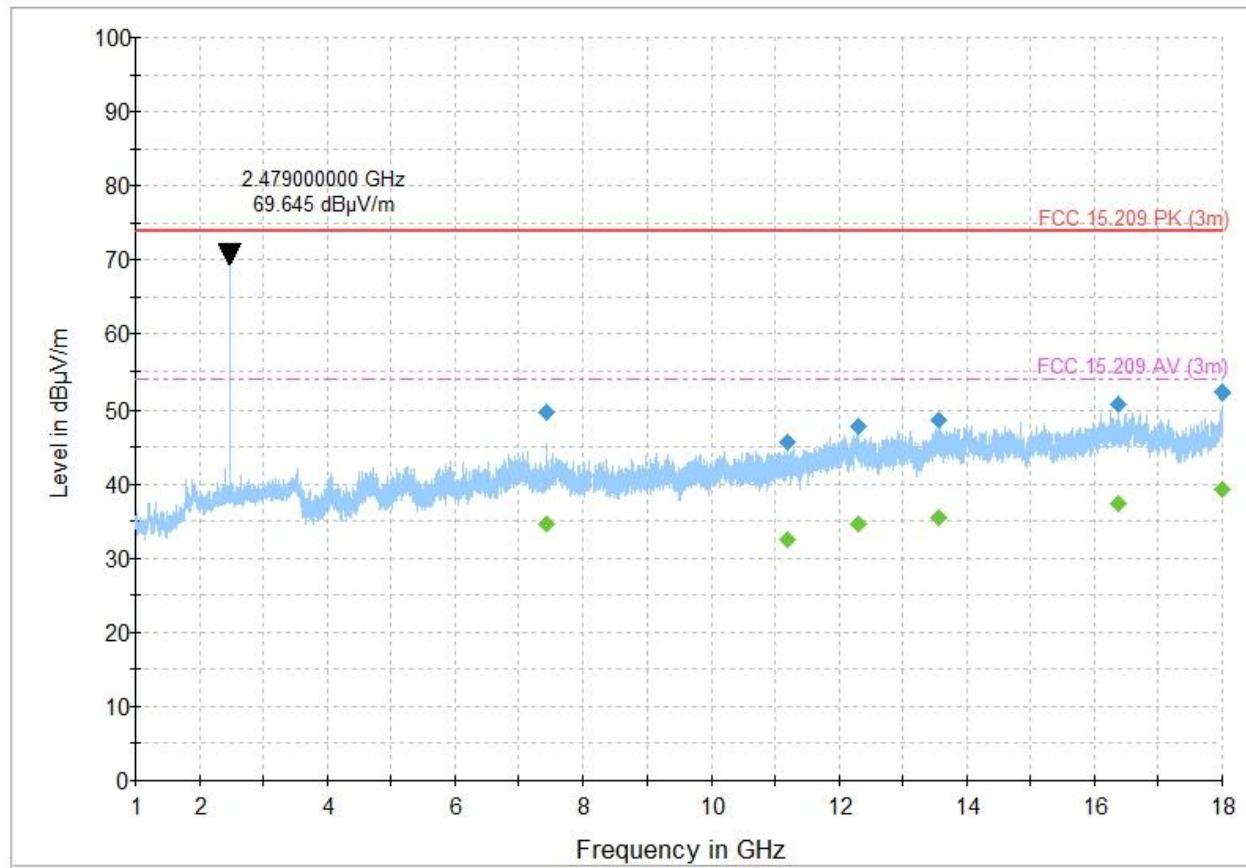


Figure 8.5-51: Radiated emissions spectral plot (1 GHz - 18 GHz) – 2480 MHz_2 Mbps_Horizontal

Table 8.5-36: 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)
7437.850000	49.62	---	73.90	24.28	5000.0	1000.000	205.0	H	302.0	6.4
7437.850000	---	34.56	53.90	19.34	5000.0	1000.000	205.0	H	302.0	6.4
11188.500000	---	32.45	53.90	21.45	5000.0	1000.000	118.0	H	278.0	11.2
11188.500000	45.67	---	73.90	28.23	5000.0	1000.000	118.0	H	278.0	11.2
12295.550000	---	34.71	53.90	19.19	5000.0	1000.000	157.0	H	143.0	15.6
12295.550000	47.75	---	73.90	26.15	5000.0	1000.000	157.0	H	143.0	15.6
13563.350000	48.67	---	73.90	25.23	5000.0	1000.000	342.0	H	189.0	17.6
13563.350000	---	35.40	53.90	18.50	5000.0	1000.000	342.0	H	189.0	17.6
16363.700000	50.67	---	73.90	23.23	5000.0	1000.000	362.0	H	304.0	22.8
16363.700000	---	37.44	53.90	16.46	5000.0	1000.000	362.0	H	304.0	22.8
17999.700000	52.32	---	73.90	21.58	5000.0	1000.000	275.0	H	32.0	25.0
17999.700000	---	39.21	53.90	14.69	5000.0	1000.000	275.0	H	32.0	25.0

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

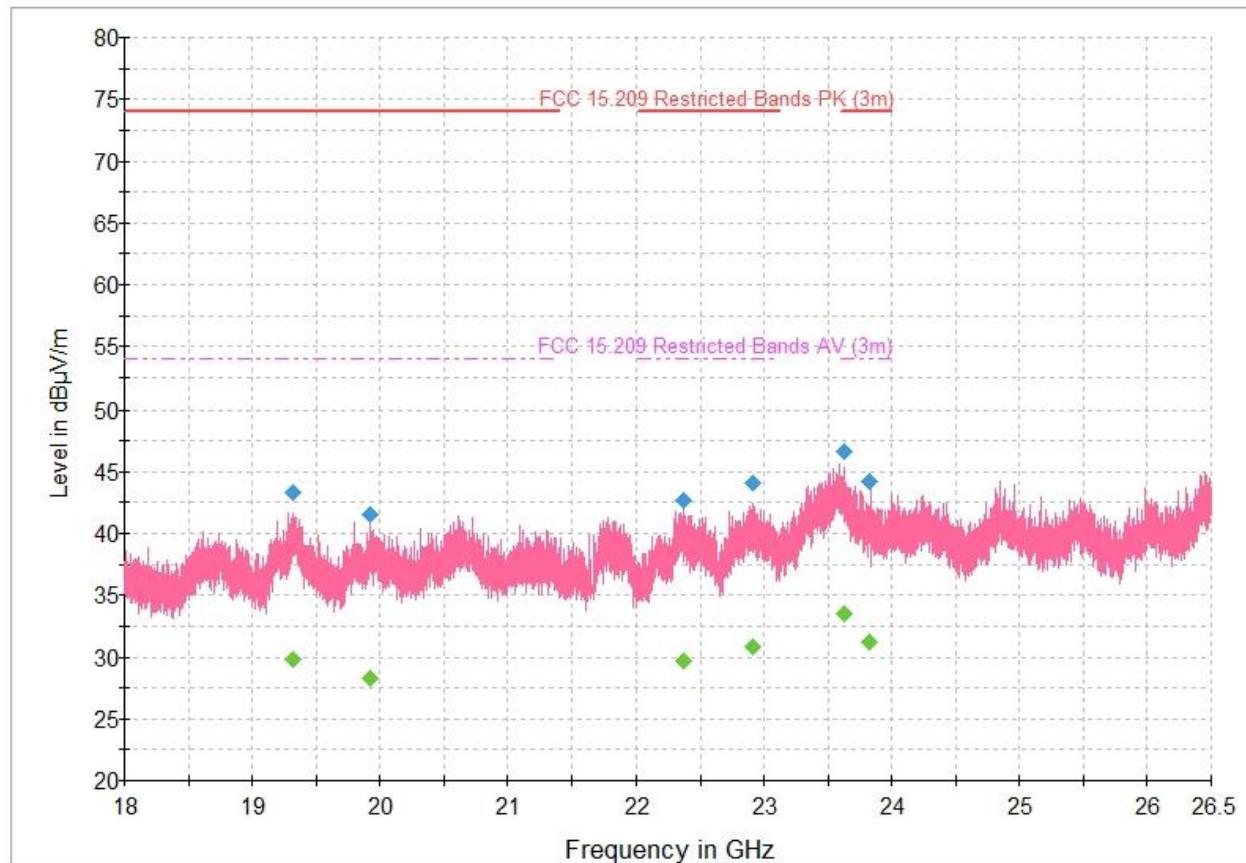


Figure 8.5-52: Radiated emissions spectral plot (18 GHz - 26.5 GHz) – 2480 MHz_2 Mbps_Vertical

Table 8.5-37: Radiated emissions results

Frequency (MHz)	MaxPeak (dB μ V/m)	CAverage (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
19323.300000	43.30	---	73.98	30.68	5000.0	1000.000	147.0	V	232.0	14.8
19323.300000	---	29.87	53.98	24.11	5000.0	1000.000	147.0	V	232.0	14.8
19928.025000	41.51	---	73.98	32.47	5000.0	1000.000	183.0	V	210.0	13.9
19928.025000	---	28.33	53.98	25.65	5000.0	1000.000	183.0	V	210.0	13.9
22367.700000	---	29.63	53.98	24.35	5000.0	1000.000	214.0	V	0.0	17.3
22367.700000	42.66	---	73.98	31.32	5000.0	1000.000	214.0	V	0.0	17.3
22906.975000	---	30.88	53.98	23.10	5000.0	1000.000	184.0	V	149.0	19.0
22906.975000	44.08	---	73.98	29.90	5000.0	1000.000	184.0	V	149.0	19.0
23626.275000	46.60	---	73.98	27.38	5000.0	1000.000	147.0	V	355.0	22.9
23626.275000	---	33.51	53.98	20.47	5000.0	1000.000	147.0	V	355.0	22.9
23827.525000	44.15	---	73.98	29.83	5000.0	1000.000	390.0	V	24.0	21.5
23827.525000	---	31.25	53.98	22.73	5000.0	1000.000	390.0	V	24.0	21.5

Notes: ¹ Field strength (dB μ V/m) = receiver/spectrum analyzer value (dB μ V) + 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

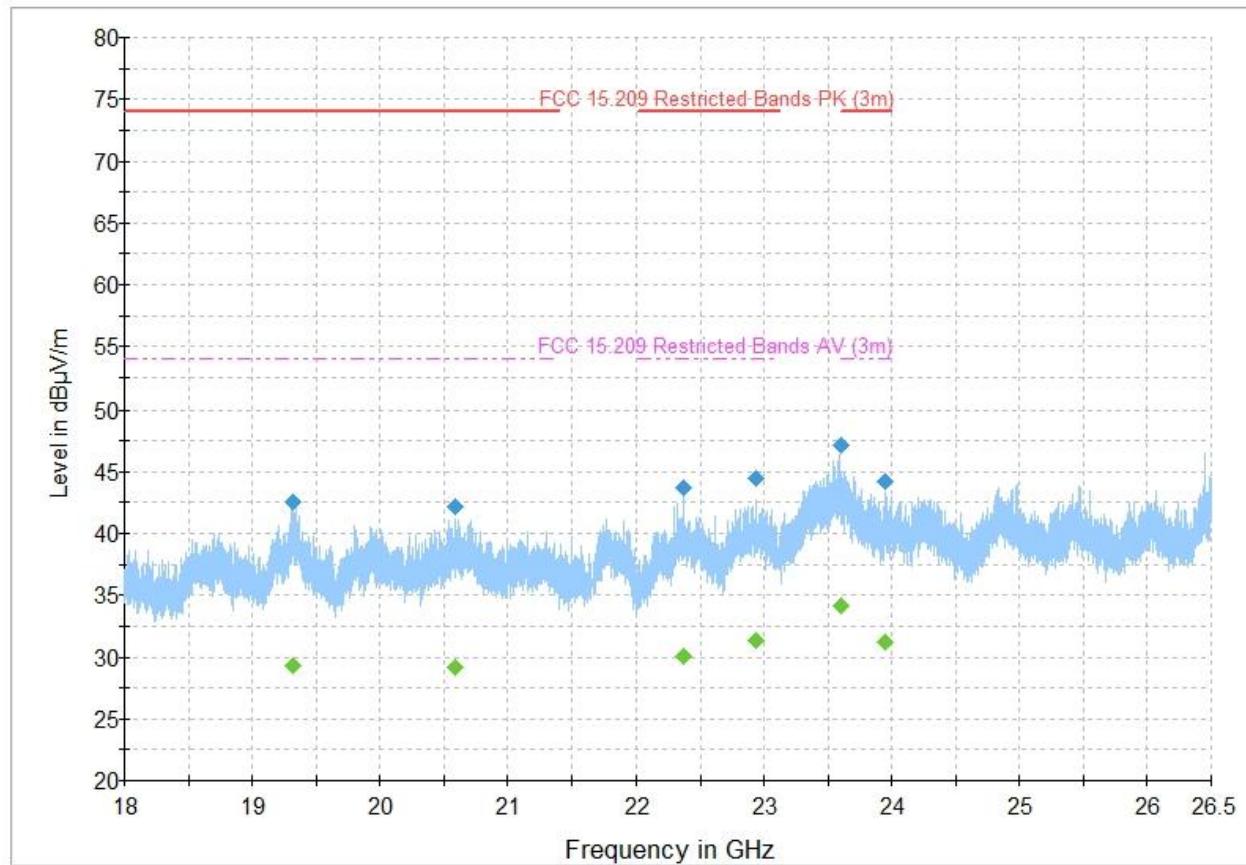


Figure 8.5-53: Radiated emissions spectral plot (18 GHz - 26.5 GHz) – 2480 MHz_2 Mbps_Horizontal

Table 8.5-38: Radiated emissions results

Frequency (MHz)	MaxPeak (dB μ V/m)	CAverage (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
19317.025000	---	29.30	53.98	24.68	5000.0	1000.000	110.0	H	226.0	14.8
19317.025000	42.55	---	73.98	31.43	5000.0	1000.000	110.0	H	226.0	14.8
20591.025000	---	29.15	53.98	24.83	5000.0	1000.000	399.0	H	312.0	15.5
20591.025000	42.18	---	73.98	31.80	5000.0	1000.000	399.0	H	312.0	15.5
22363.900000	43.68	---	73.98	30.30	5000.0	1000.000	193.0	H	80.0	17.3
22363.900000	---	30.07	53.98	23.91	5000.0	1000.000	193.0	H	80.0	17.3
22930.250000	44.42	---	73.98	29.56	5000.0	1000.000	101.0	H	99.0	18.9
22930.250000	---	31.30	53.98	22.68	5000.0	1000.000	101.0	H	99.0	18.9
23606.725000	---	34.19	53.98	19.79	5000.0	1000.000	128.0	H	183.0	23.0
23606.725000	47.09	---	73.98	26.89	5000.0	1000.000	128.0	H	183.0	23.0
23946.775000	---	31.22	53.98	22.76	5000.0	1000.000	318.0	H	138.0	21.6
23946.775000	44.20	---	73.98	29.78	5000.0	1000.000	318.0	H	138.0	21.6

Notes: ¹ Field strength (dB μ V/m) = receiver/spectrum analyzer value (dB μ V) + 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.

8.6 Power spectral density

8.6.1 References and limits

- FCC 47 CFR Part 15, Subpart C: §15.247(e)
- ISED: RSS-247: §5.2(b)
- Test method: ANSI C63.10-2020 §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.

RSS-247:

5.2 DTSs include systems that employ digital modulation techniques resulting in spectral characteristics similar to direct sequence systems. The following applies to the bands 902-928 MHz and 2400-2483.5 MHz:

(b) The transmitter power spectral density conducted from the transmitter 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 section 5.4(d), (i.e., the power spectral density shall be determined using the same method as is used to determine the conducted output power).

8.6.2 Test summary

Verdict	Pass		
Test date	August 20, 2025	Temperature	23 °C
Test engineer	Lan Sayasane, Sr. EMC Test Engineer	Air pressure	1002.0 mbar
Test location	<input checked="" type="checkbox"/> Wireless bench <input type="checkbox"/> Other:	Relative humidity	59 %

8.6.3 Notes

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

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

8.6.4 Setup details

EUT power input during test	5 VDC
EUT setup configuration	<input checked="" type="checkbox"/> Table-top <input type="checkbox"/> Floor standing <input type="checkbox"/> 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

8.6.5 Test data

Table 8.6-1: Power spectral density test data

Test Frequency (MHz)	Modulation	Power Density (dBm/3 kHz)	Limit (dBm/3 kHz)	Margin (dB)
2402	GFSK, 1 Mbps	-28.31	≤ 8	36.31
2426	GFSK, 1 Mbps	-28.32	≤ 8	36.32
2480	GFSK, 1 Mbps	-28.09	≤ 8	36.09
2402	GFSK, 2 Mbps	-30.59	≤ 8	38.59
2426	GFSK, 2 Mbps	-30.34	≤ 8	38.34
2480	GFSK, 2 Mbps	-30.16	≤ 8	38.16

Section 8

Test name

Specification(s)

Testing data

Power spectral density

FCC 15.247 & RSS-247



Peak power spectral density, TX: 2402 MHz, BW: 1MHz, MOD: GFSK_1Mbps

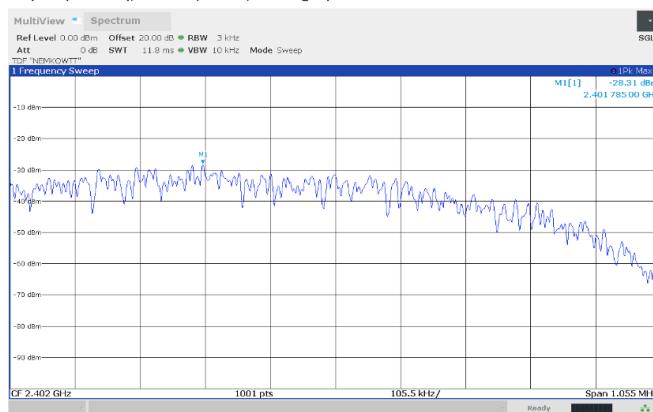


Figure 8.6-1: Power spectral density, GFSK, 1 Mbps, 2402 MHz

Peak power spectral density, TX: 2426 MHz, BW: 1MHz, MOD: GFSK_1Mbps

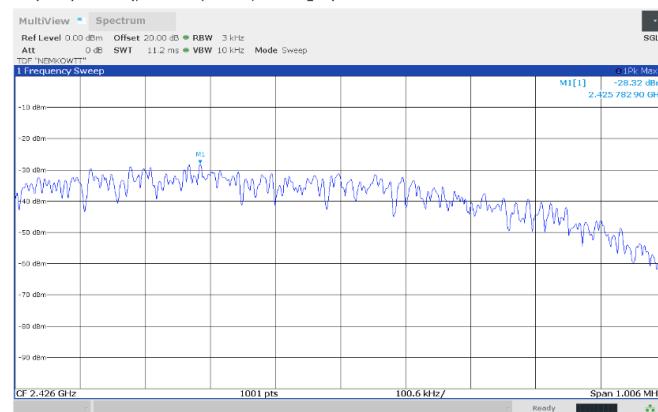


Figure 8.6-2: Power spectral density, GFSK, 1 Mbps, 2426 MHz

Peak power spectral density, TX: 2480 MHz, BW: 1MHz, MOD: GFSK_1Mbps

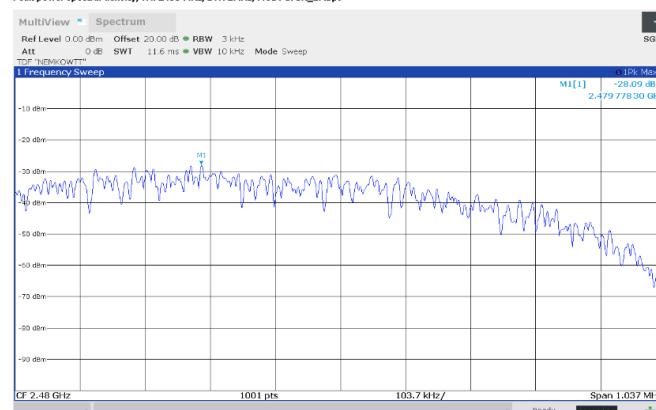


Figure 8.6-3: Power spectral density, GFSK, 1 Mbps, 2480 MHz

Peak power spectral density, TX: 2402 MHz, BW: 2MHz, MOD: GFSK_2Mbps

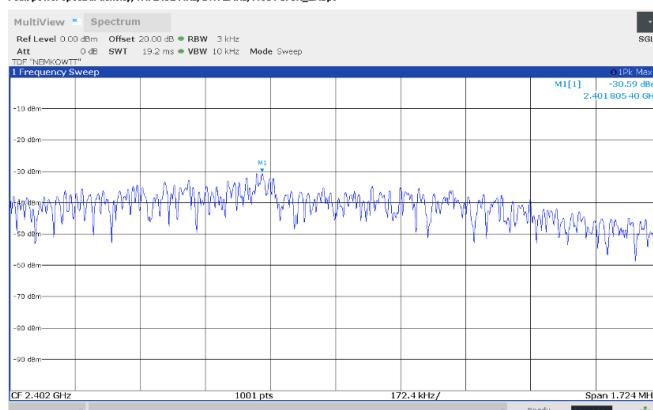


Figure 8.6-4: Power spectral density, GFSK, 2 Mbps, 2402 MHz

Peak power spectral density, TX: 2426 MHz, BW: 2MHz, MOD: GFSK_2Mbps

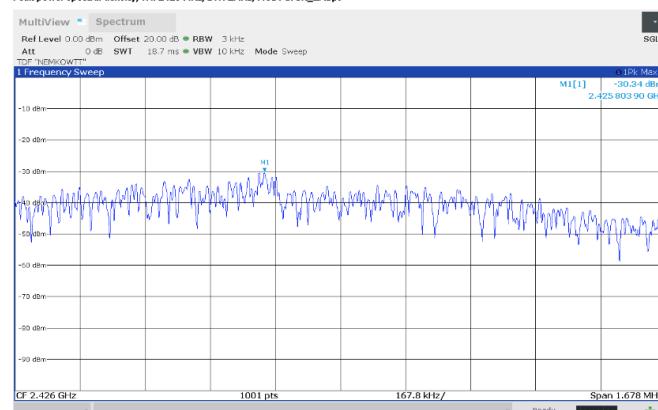


Figure 8.6-5: Power spectral density, GFSK, 2 Mbps, 2426 MHz

Section 8
Test name
Specification(s)

Testing data
Power spectral density
FCC 15.247 & RSS-247

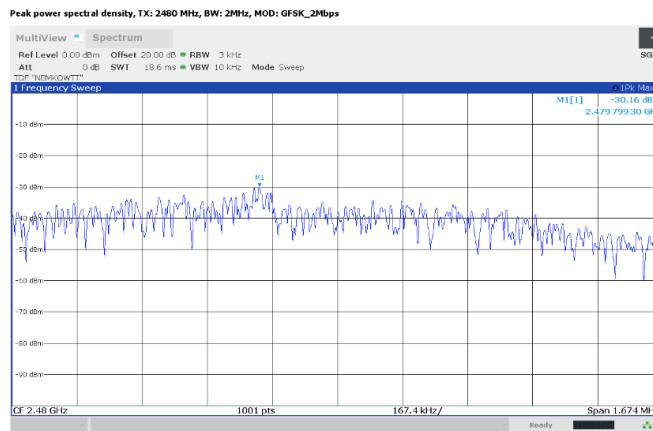


Figure 8.6-6: Power spectral density, GFSK, 2 Mbps, 2480 MHz

8.7 99% occupied bandwidth

8.7.1 References and limits

- ISED: RSS-Gen: §6.7
- Test method: ANSI C63.4-2020: §6.9.2

RSS-GEN:

6.7 The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

8.7.2 Test summary

Verdict	Pass		
Test date	August 20, 2025	Temperature	23 °C
Test engineer	Lan Sayasane, Sr. EMC Test Engineer	Air pressure	1002.0 mbar
Test location	<input checked="" type="checkbox"/> Wireless bench <input type="checkbox"/> Other:	Relative humidity	59 %

8.7.3 Notes

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

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

8.7.4 Setup details

EUT power input during test	5 VDC
EUT setup configuration	<input checked="" type="checkbox"/> Table-top <input type="checkbox"/> Floor standing <input type="checkbox"/> Other:

Receiver settings:

Resolution bandwidth	30 kHz
Video bandwidth	100 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: 99% occupied bandwidth test data

Test Frequency (MHz)	Modulation	99% BW (MHz)	f _l (MHz)	f _h (MHz)	Limit	Verdict
2402	GFSK, 1 Mbps	1.052	2401.287	2402.338	f _h and f _l within 2400 – 2483.5 MHz	Pass
2426	GFSK, 1 Mbps	1.049	2425.288	2426.337	f _h and f _l within 2400 – 2483.5 MHz	Pass
2480	GFSK, 1 Mbps	1.048	2479.284	2480.333	f _h and f _l within 2400 – 2483.5 MHz	Pass
2402	GFSK, 2 Mbps	2.076	2400.786	2402.862	f _h and f _l within 2400 – 2483.5 MHz	Pass
2426	GFSK, 2 Mbps	2.087	2424.778	2426.865	f _h and f _l within 2400 – 2483.5 MHz	Pass
2480	GFSK, 2 Mbps	2.076	2478.778	2480.855	f _h and f _l within 2400 – 2483.5 MHz	Pass

Section 8

Test name

Testing data
99% occupied bandwidth
FCC 15.247 & RSS-247



Occupied bandwidth (99 %), TX: 2402 MHz, BW: 1MHz, MOD: GFSK_1Mbps

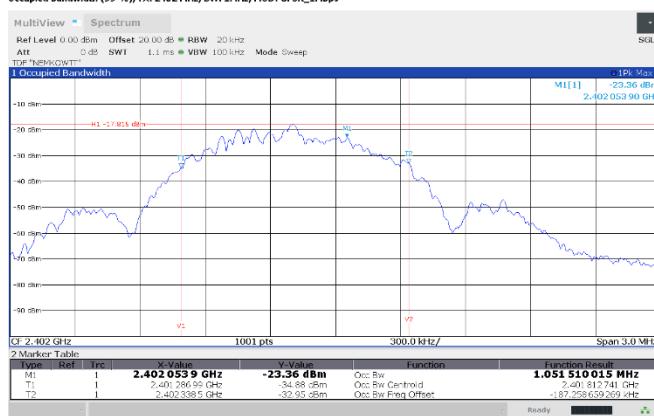


Figure 8.7-1: 99% occupied bandwidth, GFSK, 1 Mbps, 2402 MHz

Occupied bandwidth (99 %), TX: 2426 MHz, BW: 1MHz, MOD: GFSK_1Mbps



Figure 8.7-2: 99% occupied bandwidth, GFSK, 1 Mbps, 2426 MHz

Occupied bandwidth (99 %), TX: 2480 MHz, BW: 1MHz, MOD: GFSK_1Mbps

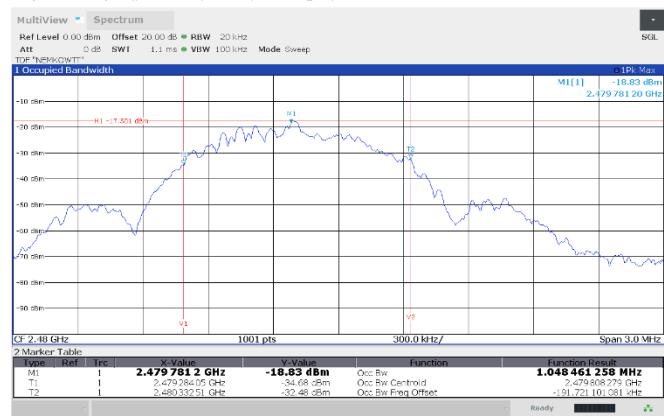


Figure 8.7-3: 99% occupied bandwidth, GFSK, 1 Mbps, 2480 MHz

Occupied bandwidth (99 %), TX: 2402 MHz, BW: 2Mhz, MOD: GFSK_2Mbps

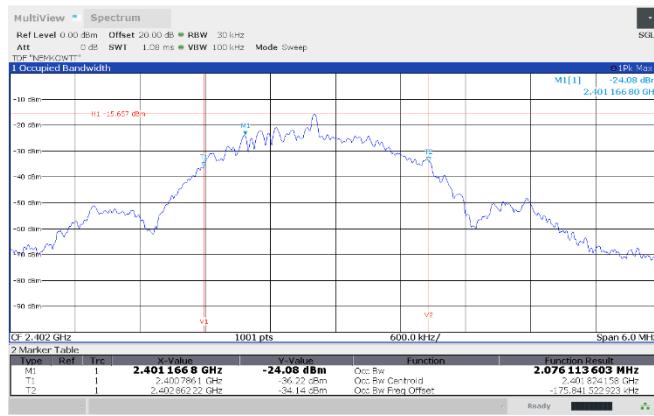


Figure 8.7-4: 99% occupied bandwidth, GFSK, 2 Mbps, 2402 MHz

Occupied bandwidth (99 %), TX: 2426 MHz, BW: 2Mhz, MOD: GFSK_2Mbps

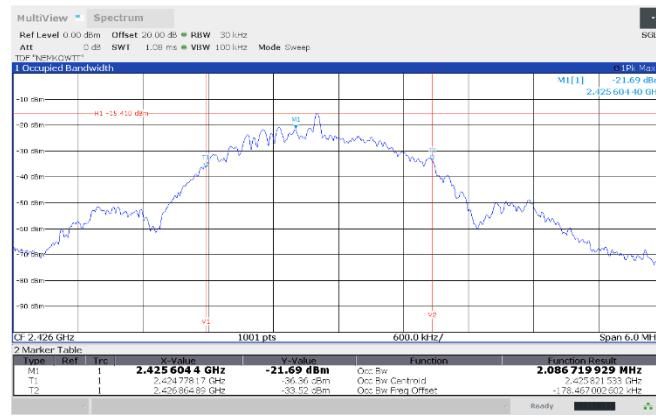


Figure 8.7-5: 99% occupied bandwidth, GFSK, 2 Mbps, 2426 MHz

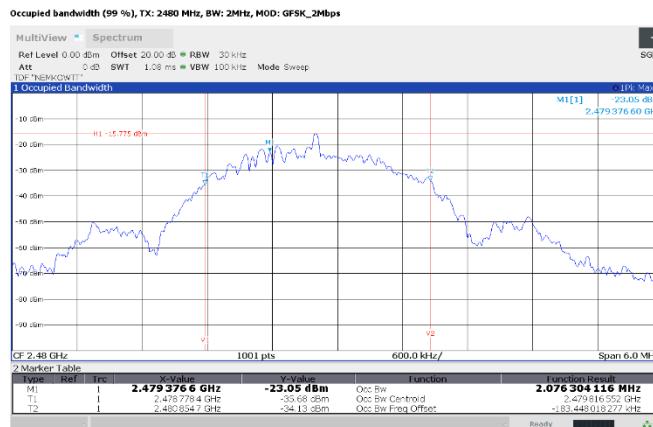


Figure 8.7-6: 99% occupied bandwidth, GFSK, 2 Mbps, 2480 MHz

End of test report