RADIO REPORT

FCC 47 CFR Part 15C
ISED Canada RSS-247

Frequency hopping systems operating within the 2400.0 MHz - 2483.5 MHz MHz band

Report Reference No	G0M-2302-1881-TFC247BT-W271-V03
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation	DAkkS - Registration number : D-PL-12092-01-03 (ISED) ISED Testing Laboratory site: 3470A DAkkS - Registration number : D-PL-12092-01-04 (FCC) FCC Filed Test Laboratory, Reg.-No.: 96970
Applicant	u-blox AG
Address	Zürcherstrasse 68 8800 Thalwil Switzerland
Test Specification	47 CFR Part 15C RSS-247, Issue 2, 2017-02 RSS-Gen, Issue 5, Amendment 2, 2021-02
Non-Standard Test Method	None
Equipment under Test (EUT):	
Product Description	MAYA-W2 host-based multiradio modules
Model(s)	MAYA-W271-00B
Additional Model(s)	None
Brand Name(s)	u-blox
Hardware Version(s)	02
Software Version(s)	1.0.0.39.1-18.80.1.p154.38
FCC ID	XPYMAYAW2A
IC	8595A-MAYAW2A
Test Result	**PASSED**

Possible test case verdicts:		
Required by standard but not tested	N/T	
Not required by standard	N/R	
Not applicable to EUT	N/A	
Test object does meet the requirement	P(PASS)	
Test object does not meet the requirement	F(FAIL)	
Testing:		
Test Lab Temperature	20 °C - 30 °C	
Test Lab Humidity	25 % - 55 %	
Date of receipt of test item	2023-03-02	
Report:		
Compiled by	Radwan Jaafar	
Responsible for test (+ signature) (Responsible for Test)	Radwan Jaafar	 .....
Approved by (+ signature) (Test Lab Engineer)	Wilfried Treffke	 .....
Date of Issue	2024-01-11	
Total number of pages	145	
General Remarks:		
The test results presented in this report relate only to the object tested. **The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.** This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.		
Additional Comments:		
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ADDITIONAL VARIANTS

Additional Variants (not tested and not evaluated variants)		
Not-tested Variant	**Description**	
1	Product Type Description	Host-based multiradio module
	Model name	MAYA-W261-00B
	Brand name	u-blox
	Hardware Version	02
	Software Version	1.0.0.39.1-18.80.1.p154.38
	FCC ID	XPYMAYAW2A
	IC	8595A-MAYAW2A
	PMN	MAYA-W261-00B
	HVIN	MAYA-W261-00B
	FVIN	N/A
	HMN	N/A
Comment: Those named additional variants above have not been tested. Those additional variants of the series have been declared by the manufacturer. The test report explicitly states that those variants were neither tested nor assessed nor evaluated.		

VERSION HISTORY

Version History			
Version	Issue Date	Remarks	Revised By
01	2023-11-03	Initial Release	--
02	2023-11-29	Replaced document: G0M-2302-1881-TFC247BT-W271-V01 Replaced by: G0M-2302-1881-TFC247BT-W271-V02 Reason: Correction of the model name and FVIN of the EUT.	R. Jaafar
03	2024-01-11	Replaced document: G0M-2302-1881-TFC247BT-W271-V02 Replaced by: G0M-2302-1881-TFC247BT-W271-V03 Reason: - Correction of the module name in the plots. - Add EIRP test results for IC at section 3.6.	R. Jaafar

ABBREVIATIONS AND ACRONYMS

Acronyms	
Acronym	Description
BR	Basic Rate (Bluetooth)
EDR	Enhanced Data Rate (Bluetooth)
EUT	Equipment Under Test
FCC	Federal Communications Commission
ISED	Innovation, Science and Economic Development Canada
RBW	Resolution bandwidth
RMS	Root mean square
VBW	Video bandwidth
V_{NOM}	Nominal supply voltage

REPORT INDEX

1 Equipment (Test Item) Under Test

Description	MAYA-W2 host-based multiradio modules		
Model	MAYA-W271-00B		
Additional Model(s)	None		
Brand Name(s)	u-blox		
Sample Identification	EUT	Sample-ID	Serial Number
	Conducted and radiated with external antenna	43093	AM56C1DEB945F940300
Hardware Version(s)	02		
Software Version(s)	1.0.0.39.1-18.80.1.p154.38		
PMN	MAYA-W271-00B		
HVIN	MAYA-W271-00B		
FVIN	N/A		
HMN	N/A		
FCC ID	XPYMAYAW2A		
IC	8595A-MAYAW2A		
Equipment type	Radio Module		
Radio type	Transceiver		
Assigned frequency bands	2400.0 MHz - 2483.5 MHz		
Radio technology	Bluetooth		
Modulation	GFSK, PI/4-DQPSK, 8-DPSK		
Number of antenna ports	2		
Antenna	Type	External	
	Model	ANT-DB1-RAF-SMA	
	Manufacturer	Linx Technologies	
	Gain	4.1 dBi (customer declaration)	
Supply Voltage (1st port)	V_{NOM}	3.3 VDC	
Supply Voltage (2nd port)	V_{NOM}	1.8 VDC	
Operating Temperature	T_{NOM}	20 °C	
AC/DC-Adaptor	Model	None	
Manufacturer	u-blox AG Zürcherstrasse 68 8800 Thalwil Switzerland		

1.1 Photos – Equipment External

EUT top view
Photos removed - refer to additional exhibit

EUT bottom view
Photos removed - refer to additional exhibit

EUT overview with external antenna
Photos removed - refer to additional exhibit

External antenna
Photos removed - refer to additional exhibit

Evaluation board top view
Photos removed - refer to additional exhibit

Evaluation board bottom view
Photos removed - refer to additional exhibit

Data cable
Photos removed - refer to additional exhibit

USB C cable
Photos removed - refer to additional exhibit

Evaluation board side view
Photos removed - refer to additional exhibit

SPI Cable
Photos removed - refer to additional exhibit

Power adapter
Photos removed - refer to additional exhibit

Cable to connect EUT to external power supply
Photos removed - refer to additional exhibit

1.2 Photos – Equipment Internal

RF Module-MW271 (length)
Photos removed - refer to additional exhibit

RF Module-MW271 (width)
Photos removed - refer to additional exhibit

RF Module-MW271 unshielded (length)
Photos removed - refer to additional exhibit

RF Module-MW271 unshielded (width)
Photos removed - refer to additional exhibit

1.3 Support Equipment

Product Type	Device	Manufacturer	Model	Comment
AE	Notebook	Dell	Latitude E7250	For configuring test modes
AE	Evaluation Board	u-blox		
CBL	USB-C	---	---	Connection between evaluation board and EUT
CBL	Data cable	---	---	
CBL	SBI cable			
CBL	Ethernet	---	---	Connection between evaluation board and notebook
AE	AC/DC Adapter	EDACPOWER ELECT.	EA1045CR	To power the evaluation board
SFT	Terminal	Debian / Linux	---	For test mode activation
Description:				
AE	Auxiliary Equipment			
SIM	Simulator			
CBL	Connecting Cable			
SFT	Software			
Comment:				

1.4 Test Modes

Mode	Description
DH5 Single	Mode = Transmit Modulation = GFSK Spreading = None Packet type = DH5 Duty cycle = 77%
2-DH5 Single	Mode = Transmit Modulation = PI/4-DQPSK Spreading = None Packet type = 2-DH5 Duty cycle = 77%
3-DH5 Single	Mode = Transmit Modulation = 8-DPSK Spreading = None Packet type = 3-DH5 Duty cycle = 77%
DH5 Hopping	Mode = Transmit Modulation = GFSK Spreading = FHSS Packet type = DH5 Duty cycle = 77%
2-DH5 Hopping	Mode = Transmit Modulation = PI/4-DQPSK Spreading = FHSS Packet type = 2-DH5 Duty cycle = 77%
3-DH5 Hopping	Mode = Transmit Modulation = 8-DPSK Spreading = FHSS Packet type = 3-DH5 Duty cycle = 77%
Receive	Mode = Scan mode
Comment: Power for all test modes is set to maximum (controlled by the communication tester).	

1.5 Test Frequencies

Designator	Mode	Channel	Frequency [MHz]
F1	Tx	0	2402
F2	Tx / Rx	39	2441
F3	Tx	40	2442
F4	Tx	78	2480

1.6 Sample emission level calculation

The following is a description of terms and a sample calculation, as appears in the radiated emissions data table. The numbers used in the calculation are for example only. There is no direct correlation to the specific data taken for the product described in this document:

Reading:

This is the reading obtained on the spectrum analyzer in dBµV. Any external preamplifiers used are taken into account through internal analyzer settings.

A.F.:

This is the antenna factor for the receiving antenna. It is a conversion factor, which converts electric fields strengths to voltages, which can be measured directly on the spectrum analyzer. It is treated as a loss in dB. Cable losses have been included with the A.F. to simplify the calculations. The antenna factor is used in calculations as follows:

Reading on Analyzer (dBµV) + A.F. (dB/m) = Net field strength (dBµV/m)

Net:

This is the net field strength measurement (as shown above).

Margin:

This is the margin of compliance below the FCC limit. The units are given in dB. A negative margin indicates the emission was below the limit. A positive margin indicates that the emission exceeds the limit.

Field strength limit:

This is the FCC Class B radiated emission limit (in units of dBµV/m). The FCC limits are given in units of µV/m. The following formula is used to convert the units of µV/m to dBµV/m:

Field strength limit (dBµV/m) = 20 · log (µV/m)

Example only for radiated field strength:

Reading + AF	= Net Reading	:	Net reading	- Field strength limit	= Margin
+21.5 dBµV	+ 26 dB/m	:	47.5 dBµV/m	- 57.0 dBµV/m	= -9.5

2 Result Summary

FCC 47 CFR Part 15C, ISED RSS-247				
Product Standard Reference	**Requirement**	**Reference Method**	**Result**	**Remarks**
ISED RSS-Gen, Issue 5 A2 (section 6.7)	Occupied Bandwidth	ANSI C63.10-2013	N/R	Informational only
FCC § 15.247(a)(1) ISED RSS-247 § 5.1 Issue 2	20 dB Bandwidth	ANSI C63.10-2013	PASS	
FCC § 15.247(a)(1)(iii) ISED RSS-247, Issue 2 (section 5.1)	Number of hopping frequencies	ANSI C63.10-2013	PASS	
FCC § 15.247(a)(1) ISED RSS-247, Issue 2 (section 5.1)	Frequency hopping channel separation	ANSI C63.10-2013	PASS	
FCC § 15.247(a)(1)(iii) ISED RSS-247, Issue 2 (section 5.1)	Time of occupancy (Dwell time)	ANSI C63.10-2013	PASS	
FCC § 15.247(b) ISED RSS-247, Issue 2 (section 5.4)	Maximum peak conducted power	ANSI C63.10-2013	PASS	
FCC § 15.207 ISED RSS-247, Issue 2 (section 3.1)	AC power line conducted emissions	ANSI C63.10-2013	PASS	
FCC § 15.247(d) ISED RSS-247, Issue 2 (section 5.5)	Band edge compliance	ANSI C63.10-2013	PASS	
FCC § 15.247(d) ISED RSS-247, Issue 2 (section 5.5)	Conducted spurious emissions	ANSI C63.10-2013	PASS	
FCC § 15.247(d) FCC § 15.209 ISED RSS-Gen, Issue 5 A2 (section 6.13)	Transmitter radiated spurious emissions	ANSI C63.10-2013	PASS	
ISED RSS-247, Issue 2 (section 3.1)	Receiver radiated spurious emissions	ANSI C63.4-2014	PASS	
Comment: The Decision Rule is applied on the basis of ETSI TR 102 273 and ETSI TR 100 028. These standards provide guidance on how to calculate and apply measurement uncertainty whilst providing maximum uncertainties allowance. In all cases due consideration will be given to ILAC-G8:09/2019. Where a result is considered conditional in respect of its proximity to the limit line, the customer would be made aware of situation so that they can make an informed decision on how to proceed.				

Possible Test Case Verdicts	
PASS	Test object does meet the requirements
FAIL	Test object does not meet the requirements
N/T	Required by standard but not tested
N/R	Not required by standard for the test object

3 Test Conditions and Results

3.1 Test Conditions and Results - Occupied bandwidth

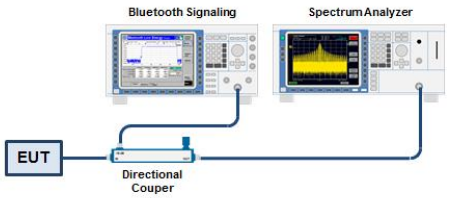
3.1.1 Information

Test Information	
Reference	ISED RSS-Gen, Issue 5 A2 (section 6.7)
Measurement Method	ANSI C63.10 6.9.3
Measurement Uncertainty	± 1.26 %
Test Sample ID	43093
Operator	Ehsan Sohrabi
Date	2023-07-10

3.1.2 Limits

Limits
None (Informational only)

3.1.3 Setup

Test Setup


3.1.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyser	R&S	FSU 26	EF01003	2022-07	2023-07
Bluetooth signaling	R&S	CMW 270	EF01169	2023-04	2024-04
Cable (CAABC)	Gigalane	GIGALANE 1730	EF00779	2023-03	2024-03

3.1.5 Procedure

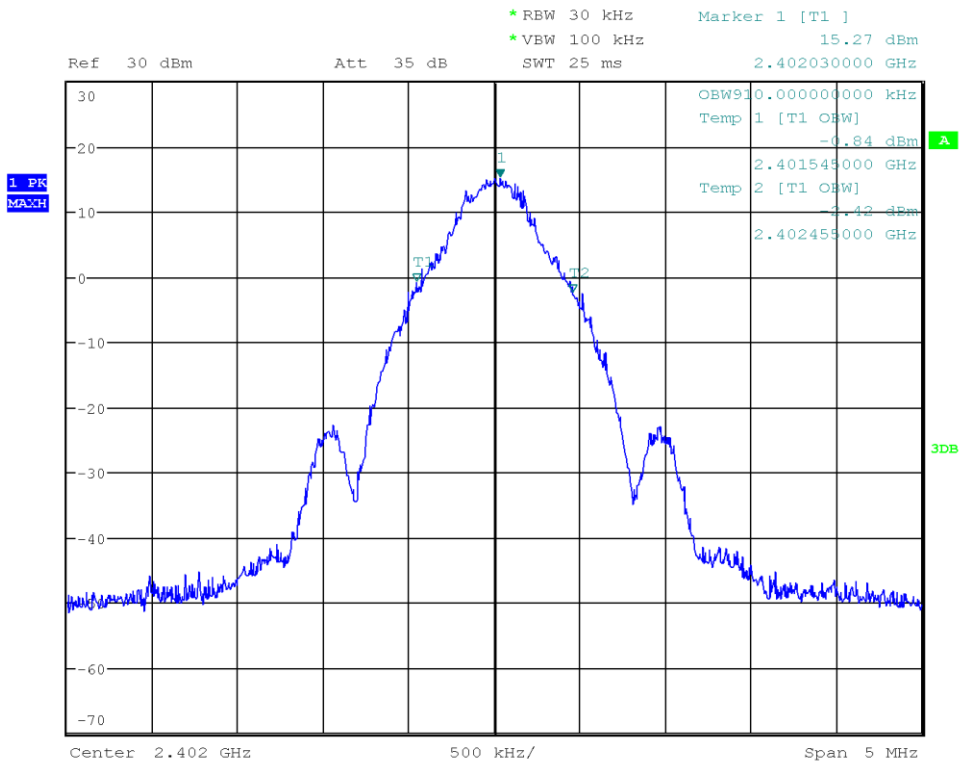
Test Procedure
1. EUT transmitter is activated in test mode under normal conditions 2. The spectrum analyzer is set to peak detection and maximum hold with a span twice the emission spectrum 3. The resolution bandwidth is set to the range of 1 % to 5 % of the occupied bandwidth 4. The occupied bandwidth is measured with the build-in analyzer function

3.1.6 Results

Test Results		
Mode	Frequency [MHz]	Bandwidth [MHz]
DH5	2402	0.905
DH5	2441	0.905
DH5	2480	0.900
2-DH5	2402	1.195
2-DH5	2441	1.195
2-DH5	2480	1.195
3-DH5	2402	1.190
3-DH5	2441	1.190
3-DH5	2480	1.190

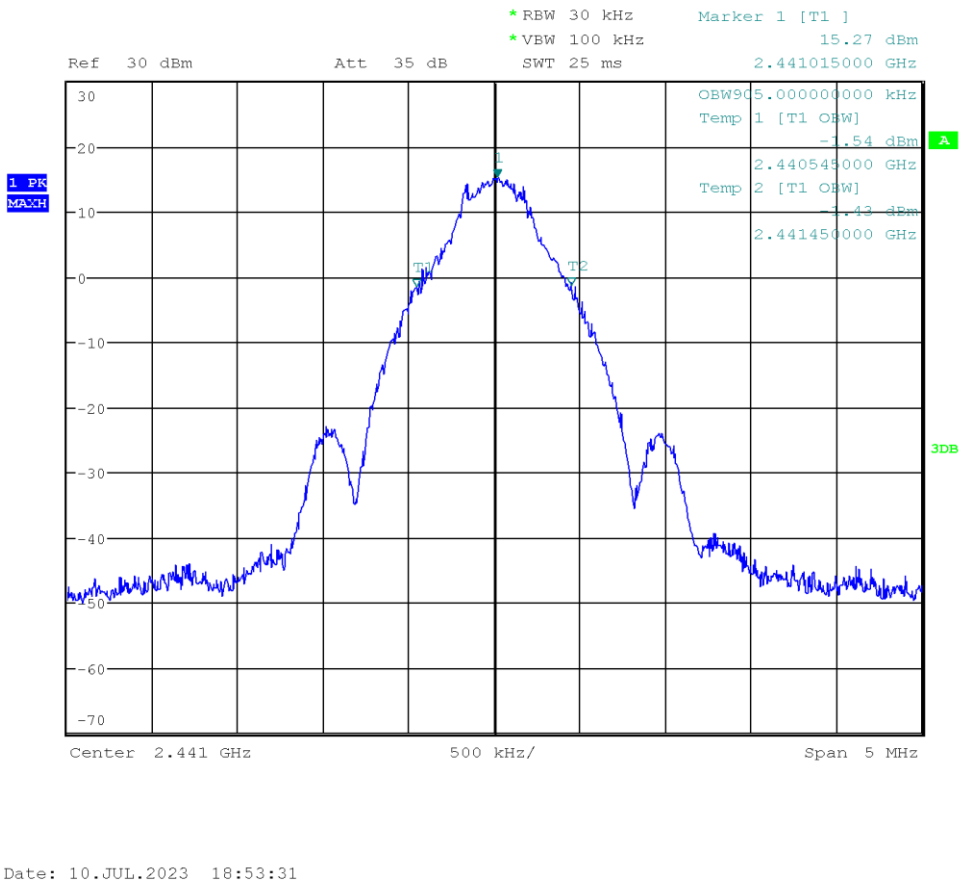
Occupied Bandwidth

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.3
Operational Mode:	DH5, Channel: 0, 2402 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-10
Occupied Bandwidth [MHz]:	0.905



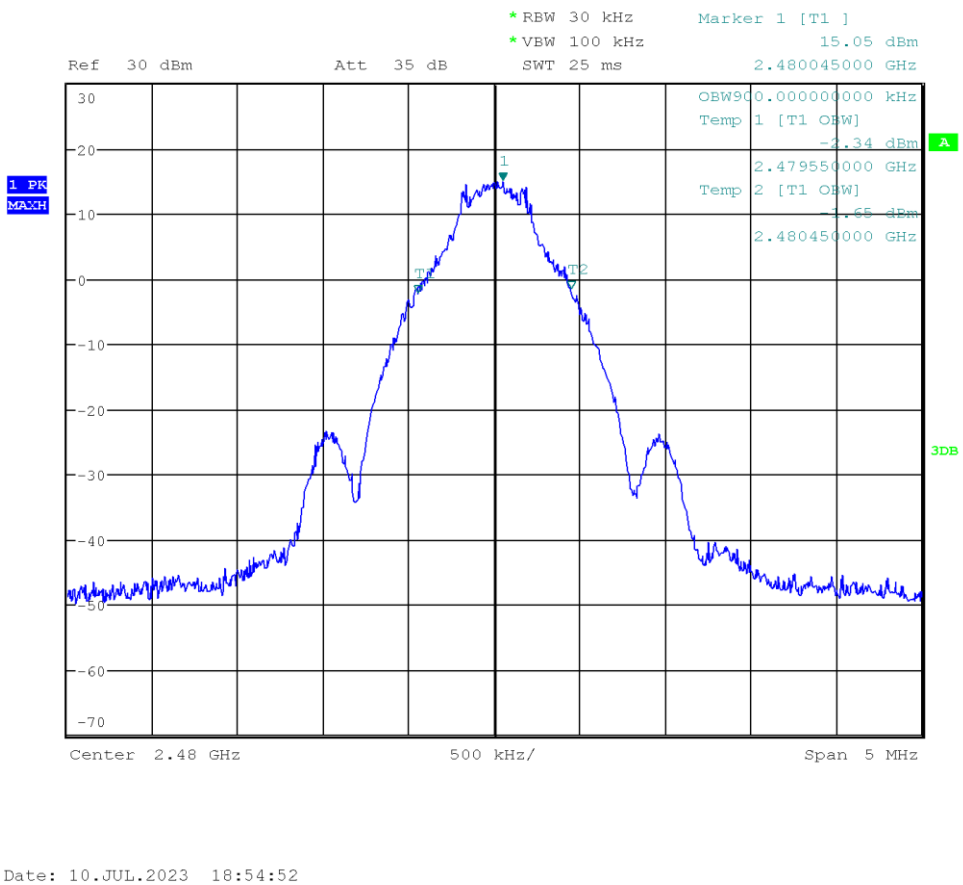
Occupied Bandwidth

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.3
Operational Mode:	DH5, Channel: 39, 2441 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-10
Occupied Bandwidth [MHz]:	0.905



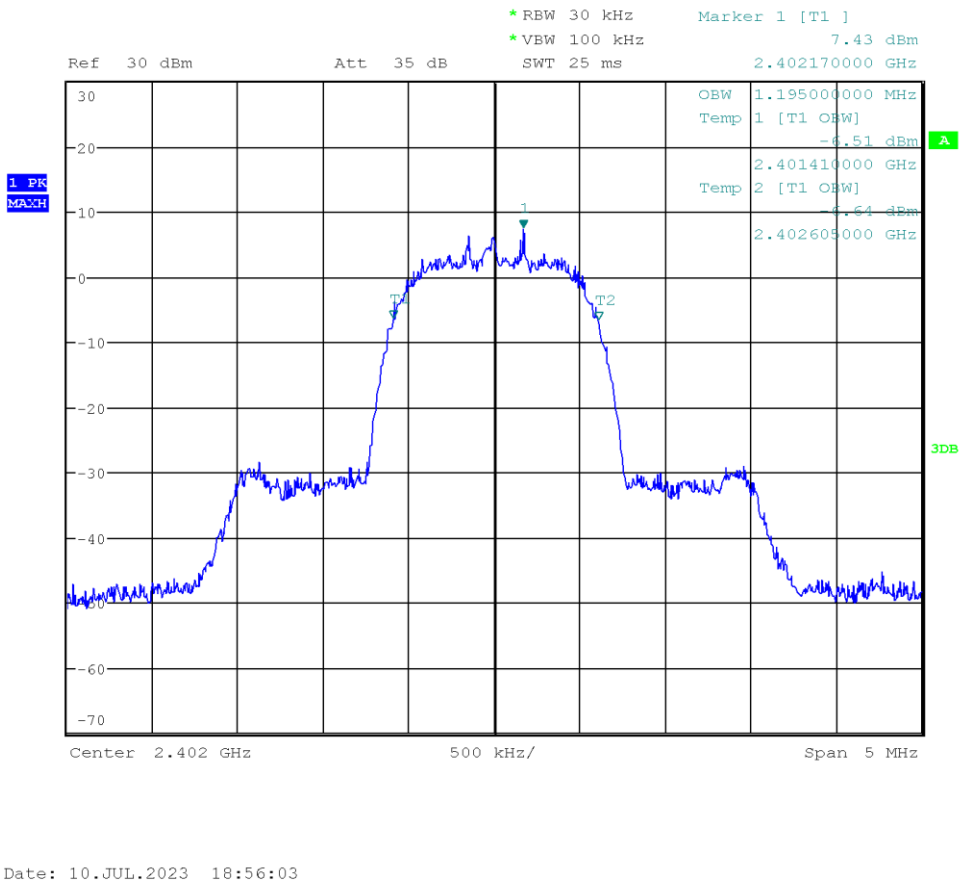
Occupied Bandwidth

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.3
Operational Mode:	DH5, Channel: 78, 2480 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-10
Occupied Bandwidth [MHz]:	0.900



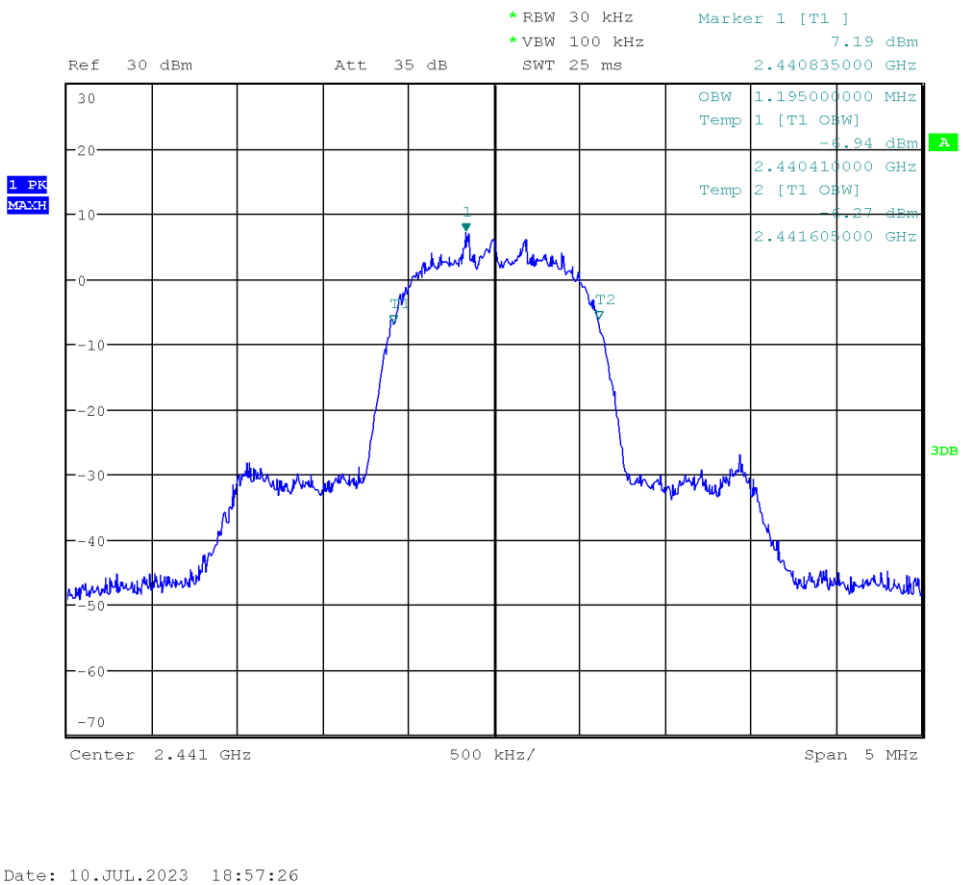
Occupied Bandwidth

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.3
Operational Mode:	2-DH5, Channel: 0, 2402 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-10
Occupied Bandwidth [MHz]:	1.195



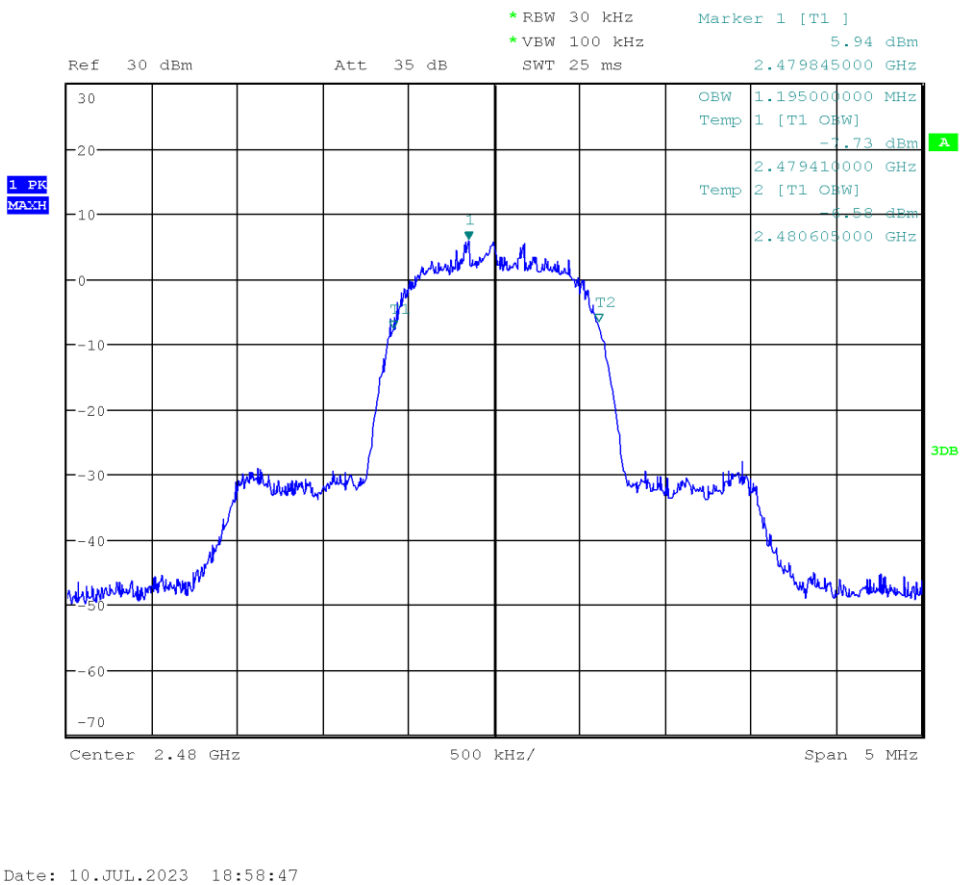
Occupied Bandwidth

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.3
Operational Mode:	2-DH5, Channel: 39, 2441 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-10
Occupied Bandwidth [MHz]:	1.195



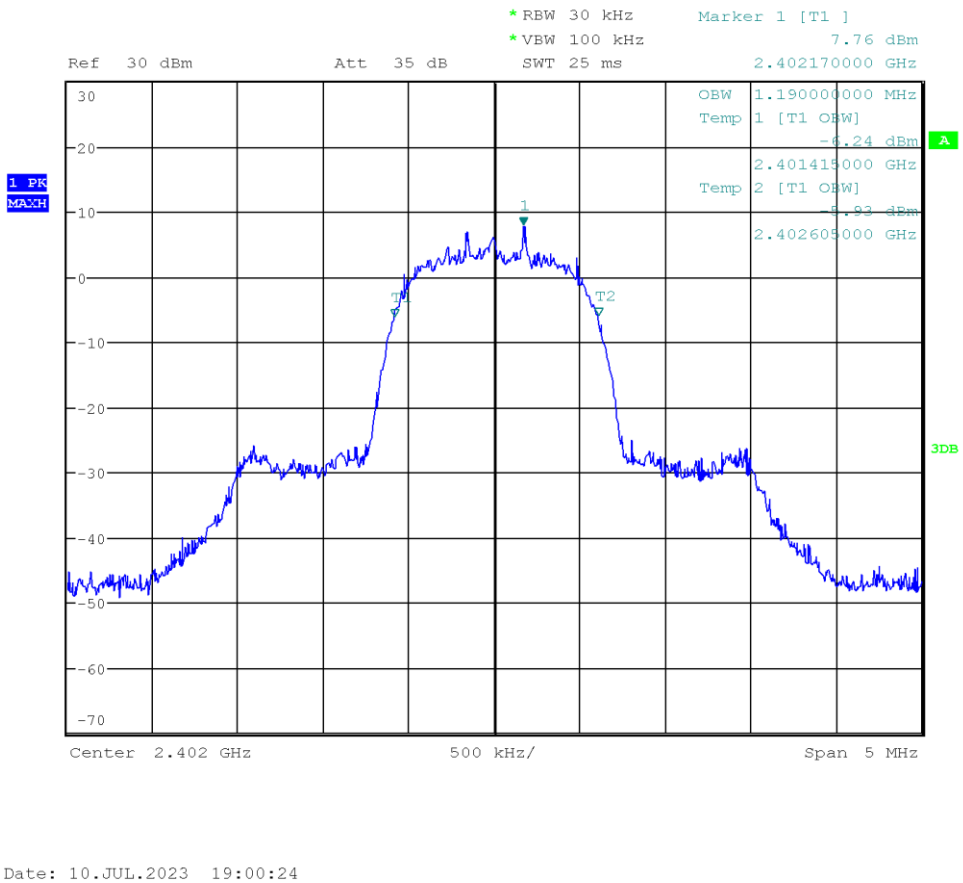
Occupied Bandwidth

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.3
Operational Mode:	2-DH5, Channel: 78, 2480 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-10
Occupied Bandwidth [MHz]:	1.195



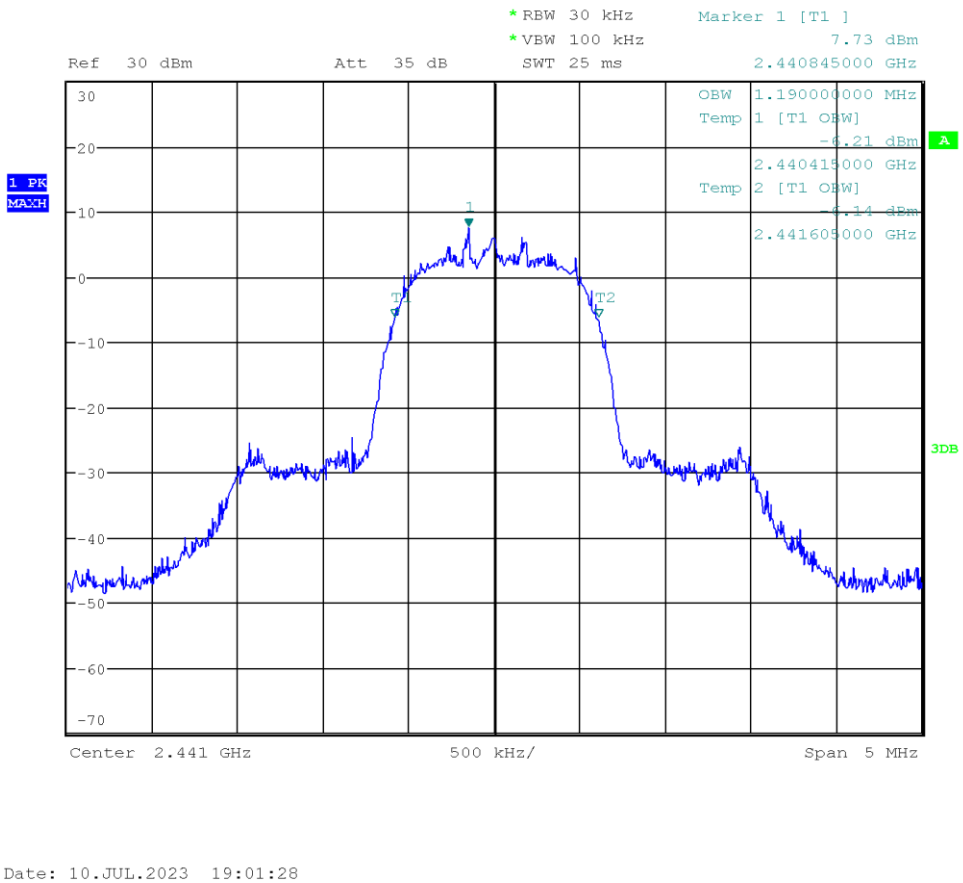
Occupied Bandwidth

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.3
Operational Mode:	3-DH5, Channel: 0, 2402 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-10
Occupied Bandwidth [MHz]:	1.190



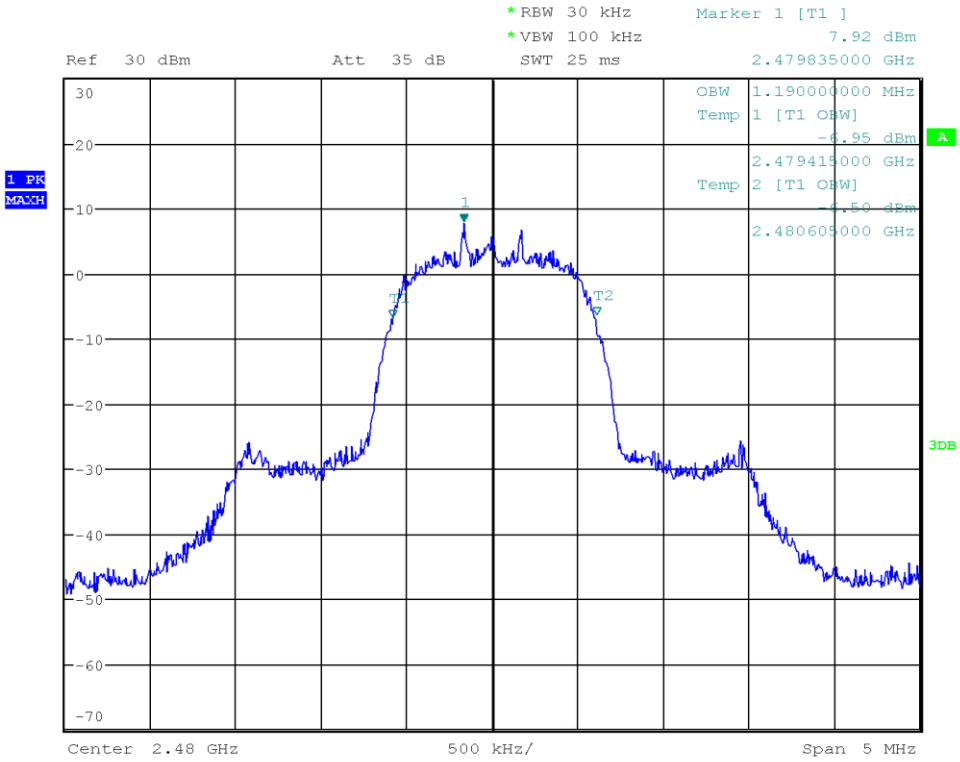
Occupied Bandwidth

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.3
Operational Mode:	3-DH5, Channel: 39, 2441 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-10
Occupied Bandwidth [MHz]:	1.190



Occupied Bandwidth

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.3
Operational Mode:	3-DH5, Channel: 78, 2480 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-10
Occupied Bandwidth [MHz]:	1.190



Date: 10.JUL.2023 19:02:36

3.2 Test Conditions and Results - 20 dB bandwidth

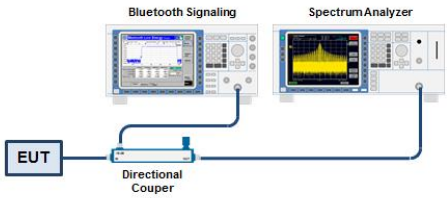
3.2.1 Information

Test Information	
Reference	FCC 15.247(a)(1) / ISED RSS-247 5.1
Measurement Method	ANSI C63.10 6.9.2
Measurement Uncertainty	± 1.26 %
Test Sample ID	43093
Operator	Ehsan Sohrabi
Date	2023-07-11

3.2.2 Limits

Limits
None (Informational only)

3.2.3 Setup

Test Setup


3.2.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyser	R&S	FSU 26	EF01003	2022-07	2023-07
Bluetooth signaling	R&S	CMW 270	EF01169	2023-04	2024-04
Cable (CAABC)	Gigalane	GIGALANE 1730	EF00779	2023-03	2024-03

3.2.5 Procedure

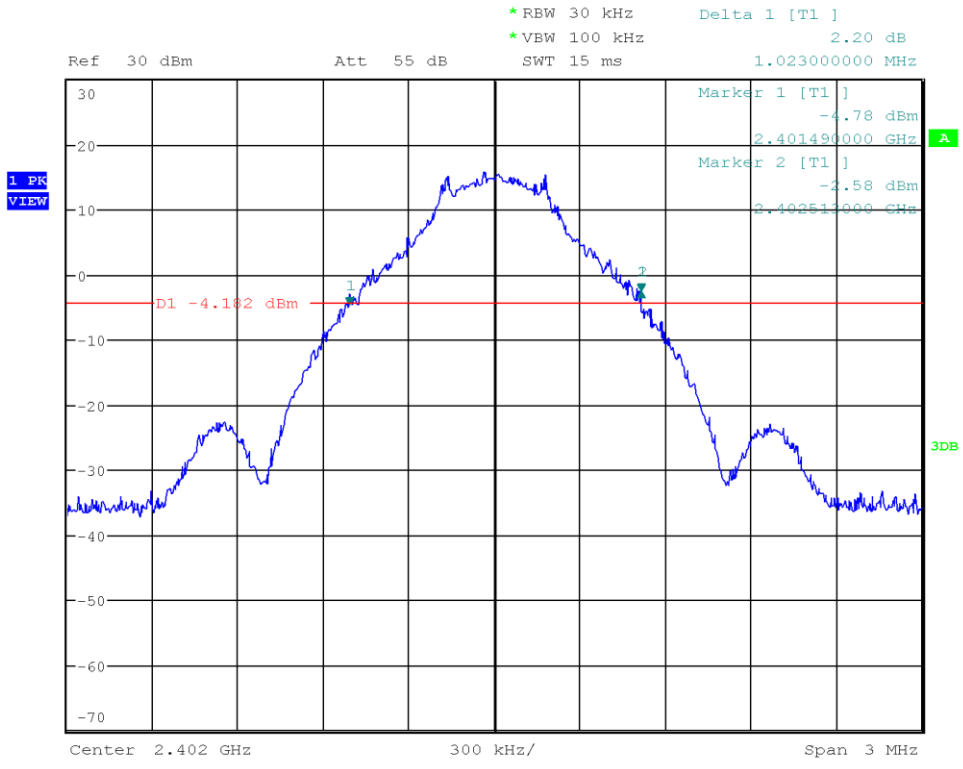
Test Procedure
1. EUT set to test mode (Communication tester is used if needed)
2. Span set to at least twice the emission spectrum
3. Detector set to peak and max hold
4. Envelope peak value of emission spectrum is selected
5. Marker on envelope of spectrum is set to level of -20 dB to the left of the peak
6. Marker on envelope of spectrum is set to level of -20 dB to the right of the peak
7. 20dB Bandwidth is determined by marker frequency separation

3.2.6 Results

Test Results		
Mode	Frequency [MHz]	Bandwidth [MHz]
DH5	2402	1.023
DH5	2441	1.020
DH5	2480	1.002
2-DH5	2402	1.320
2-DH5	2441	1.329
2-DH5	2480	1.323
3-DH5	2402	1.323
3-DH5	2441	1.329
3-DH5	2480	1.308

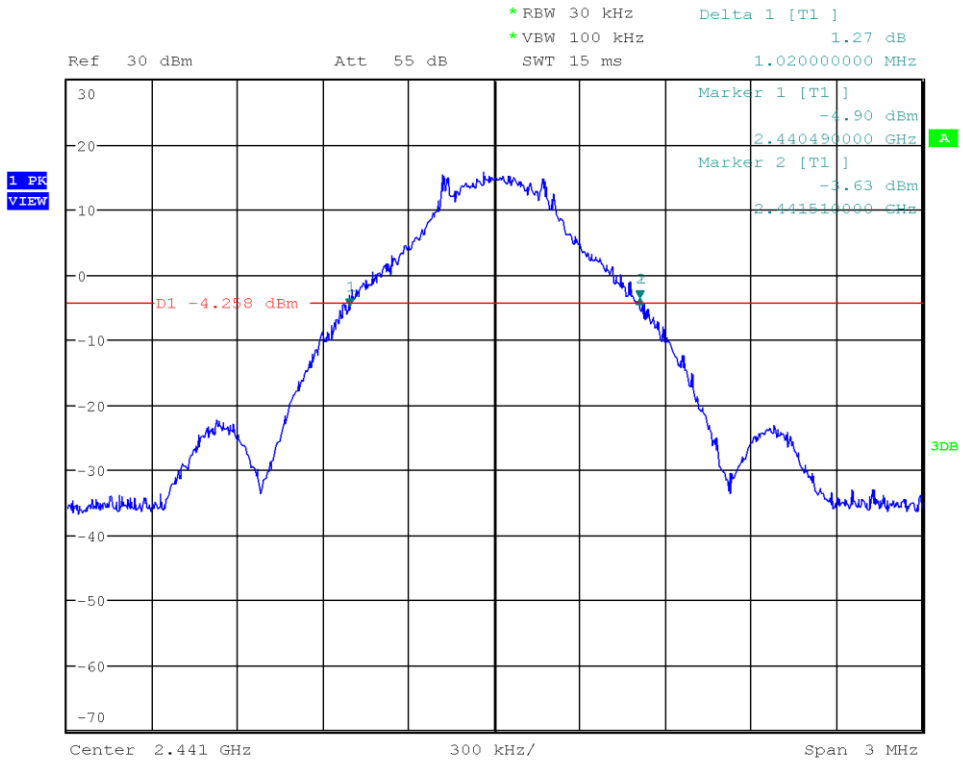
20 dB Bandwidth

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.2
Operational Mode:	DH5, Channel: 0, 2402 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Lower Frequency [MHz]:	2401.490
Upper Frequency [MHz]:	2402.513
20 dB Bandwidth [MHz]:	1.023



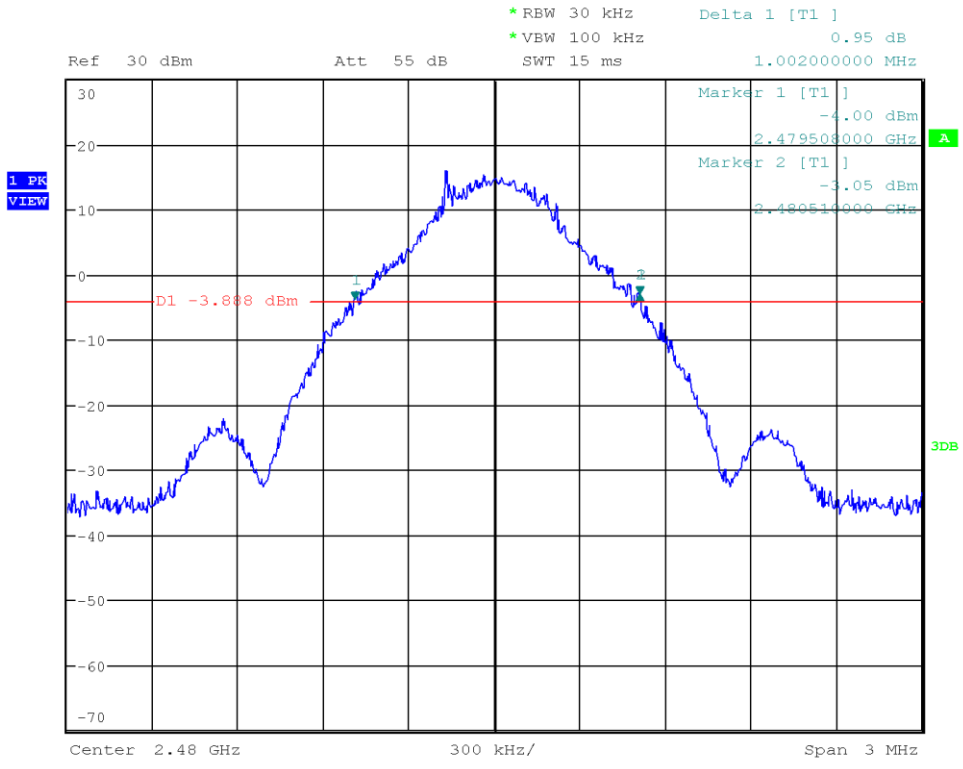
20 dB Bandwidth

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.2
Operational Mode:	DH5, Channel: 39, 2441 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Lower Frequency [MHz]:	2440.490
Upper Frequency [MHz]:	2441.510
20 dB Bandwidth [MHz]:	1.020



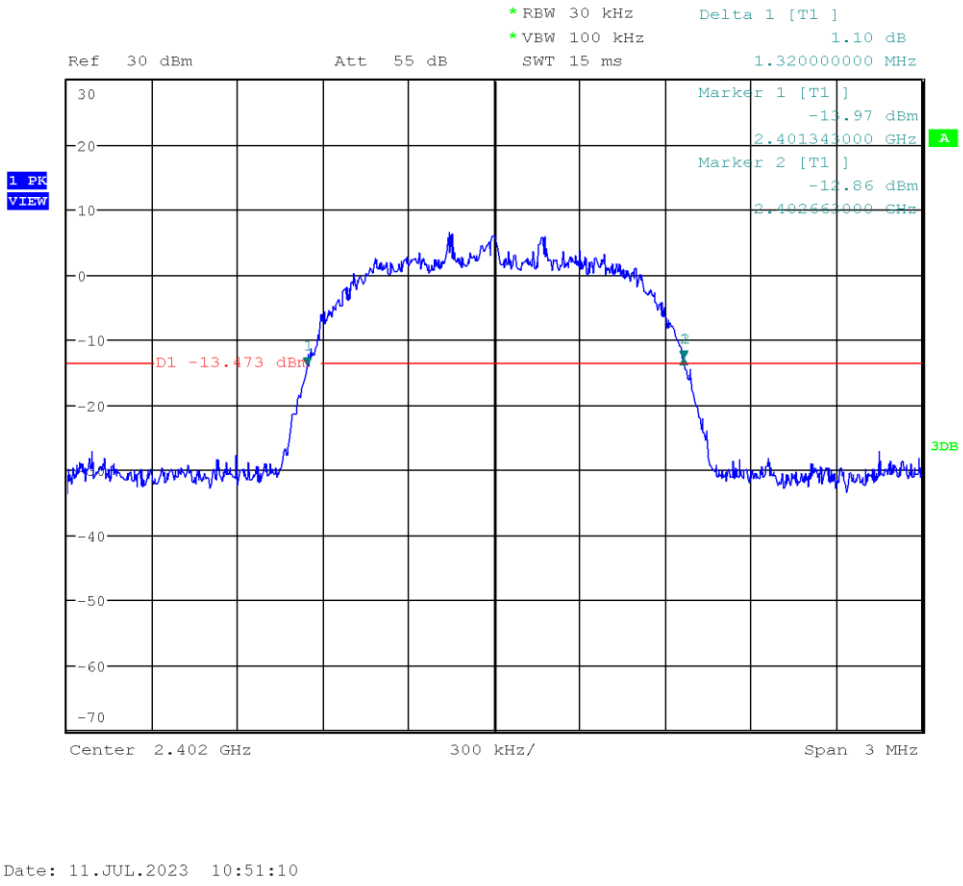
20 dB Bandwidth

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.2
Operational Mode:	DH5, Channel: 78, 2480 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Lower Frequency [MHz]:	2479.508
Upper Frequency [MHz]:	2480.510
20 dB Bandwidth [MHz]:	1.002



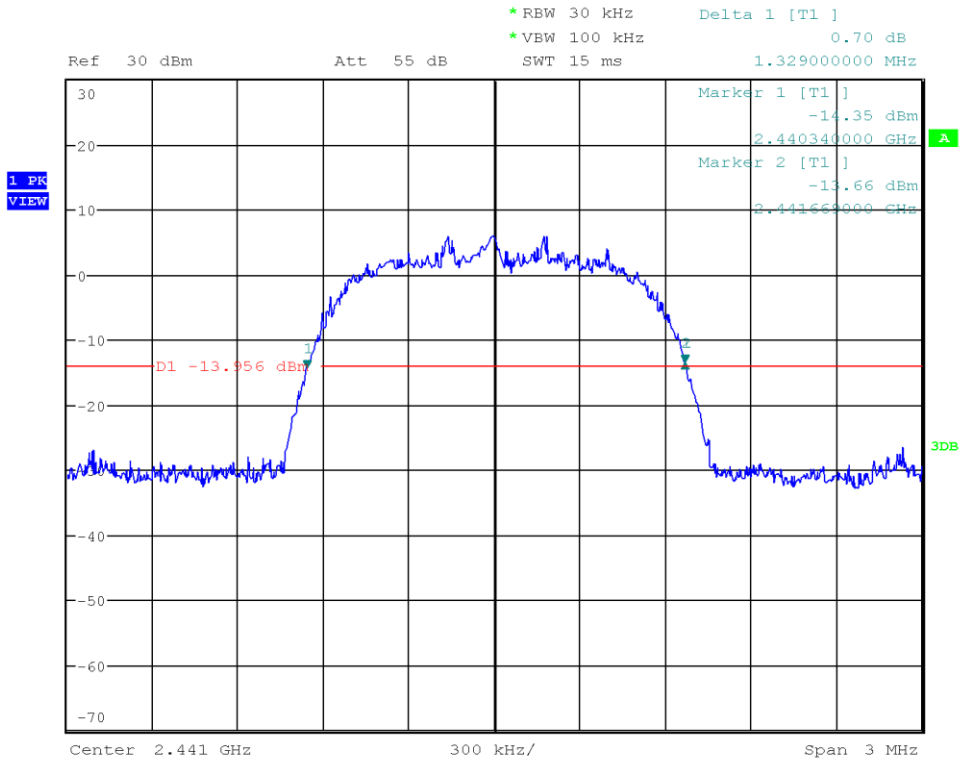
20 dB Bandwidth

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.2
Operational Mode:	2-DH5, Channel: 0, 2402 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Lower Frequency [MHz]:	2401.343
Upper Frequency [MHz]:	2402.663
20 dB Bandwidth [MHz]:	1.320



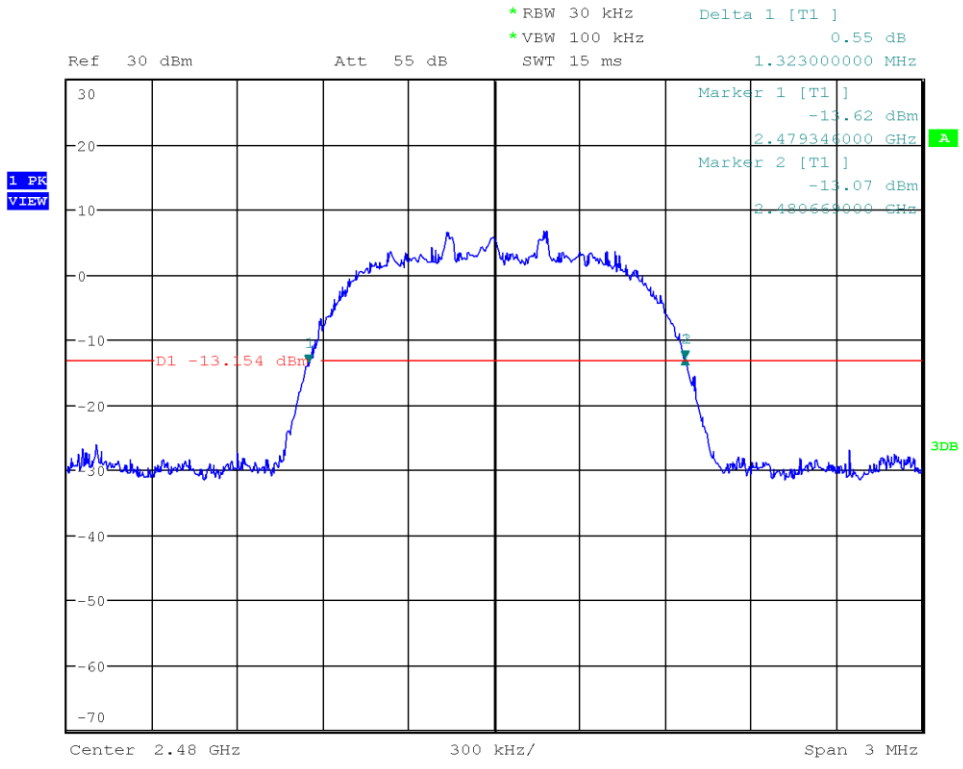
20 dB Bandwidth

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.2
Operational Mode:	2-DH5, Channel: 39, 2441 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Lower Frequency [MHz]:	2440.340
Upper Frequency [MHz]:	2441.669
20 dB Bandwidth [MHz]:	1.329



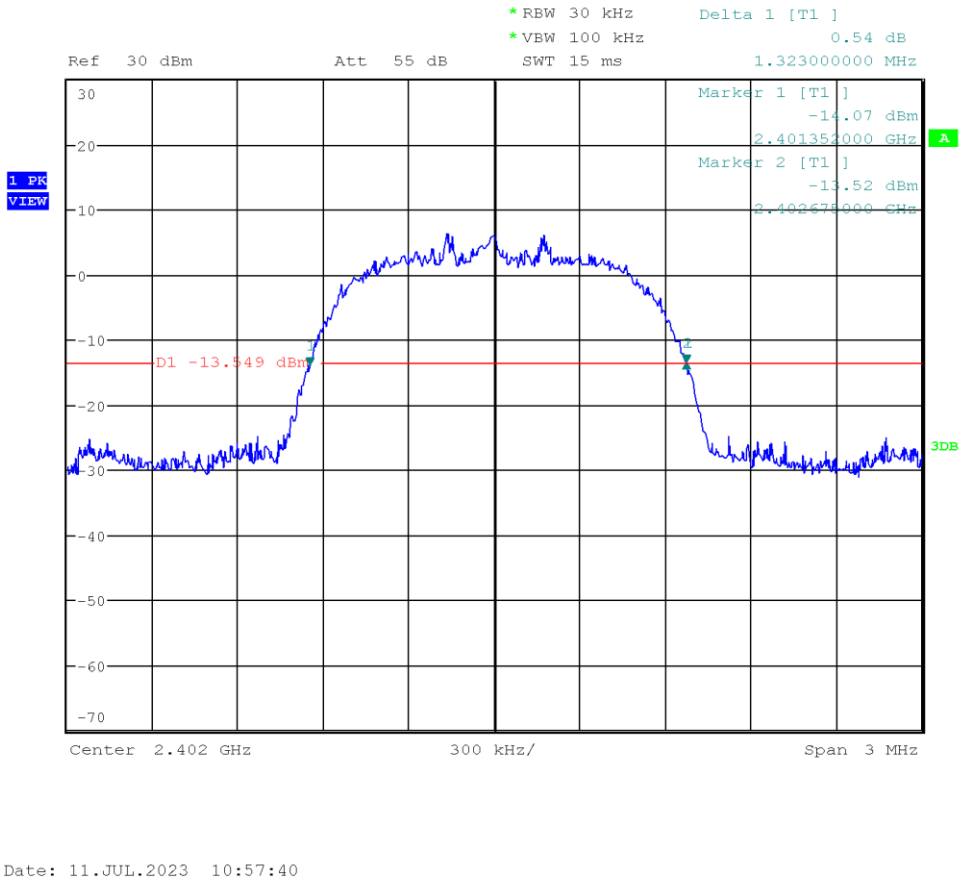
20 dB Bandwidth

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.2
Operational Mode:	2-DH5, Channel: 78, 2480 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Lower Frequency [MHz]:	2479.346
Upper Frequency [MHz]:	2480.669
20 dB Bandwidth [MHz]:	1.323



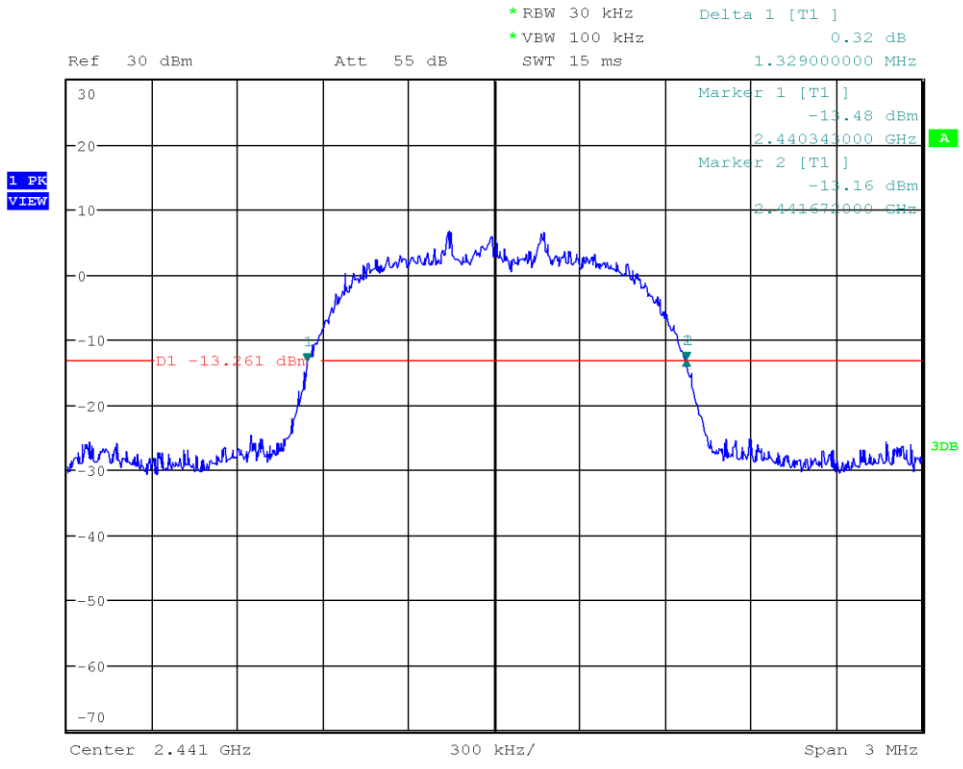
20 dB Bandwidth

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.2
Operational Mode:	3-DH5, Channel: 0, 2402 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Lower Frequency [MHz]:	2401.352
Upper Frequency [MHz]:	2402.675
20 dB Bandwidth [MHz]:	1.323



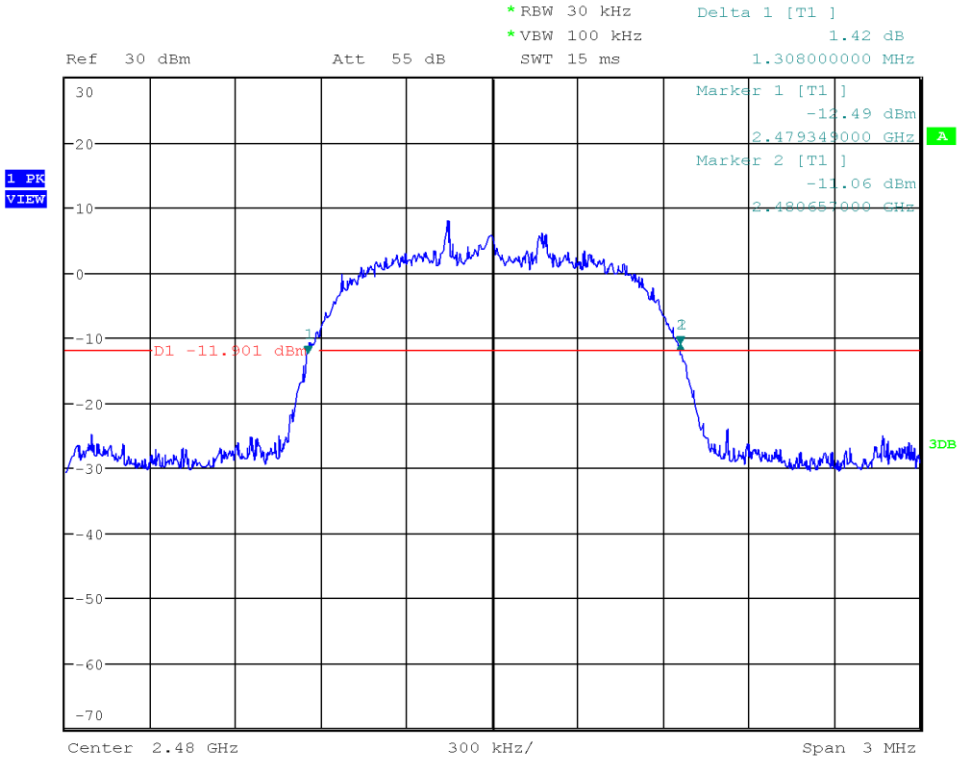
20 dB Bandwidth

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.2
Operational Mode:	3-DH5, Channel: 39, 2441 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Lower Frequency [MHz]:	2440.343
Upper Frequency [MHz]:	2441.672
20 dB Bandwidth [MHz]:	1.329



20 dB Bandwidth

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 6.9.2
Operational Mode:	3-DH5, Channel: 78, 2480 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Lower Frequency [MHz]:	2479.349
Upper Frequency [MHz]:	2480.657
20 dB Bandwidth [MHz]:	1.308



3.3 Test Conditions and Results - Number of hopping frequencies

3.3.1 Information

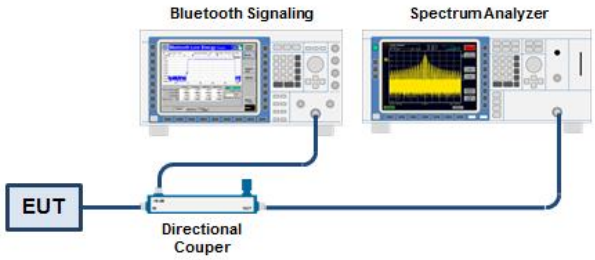
Test Information	
Reference	FCC § 15.247(a)(1)(iii); ISED RSS-247, Issue 2 (section 5.1)
Measurement Method	ANSI C63.10 7.8.3
Operator	Ehsan Sohrabi
Date	2023-07-11

3.3.2 Limits

Limits
≥ 15

3.3.3 Setup

Test Setup



3.3.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyser	R&S	FSU 26	EF01003	2022-07	2023-07
Bluetooth signaling	R&S	CMW 270	EF01169	2023-04	2024-04
Cable (CAABC)	Gigalane	GIGALANE 1730	EF00779	2023-03	2024-03

3.3.5 Procedure

Test Procedure

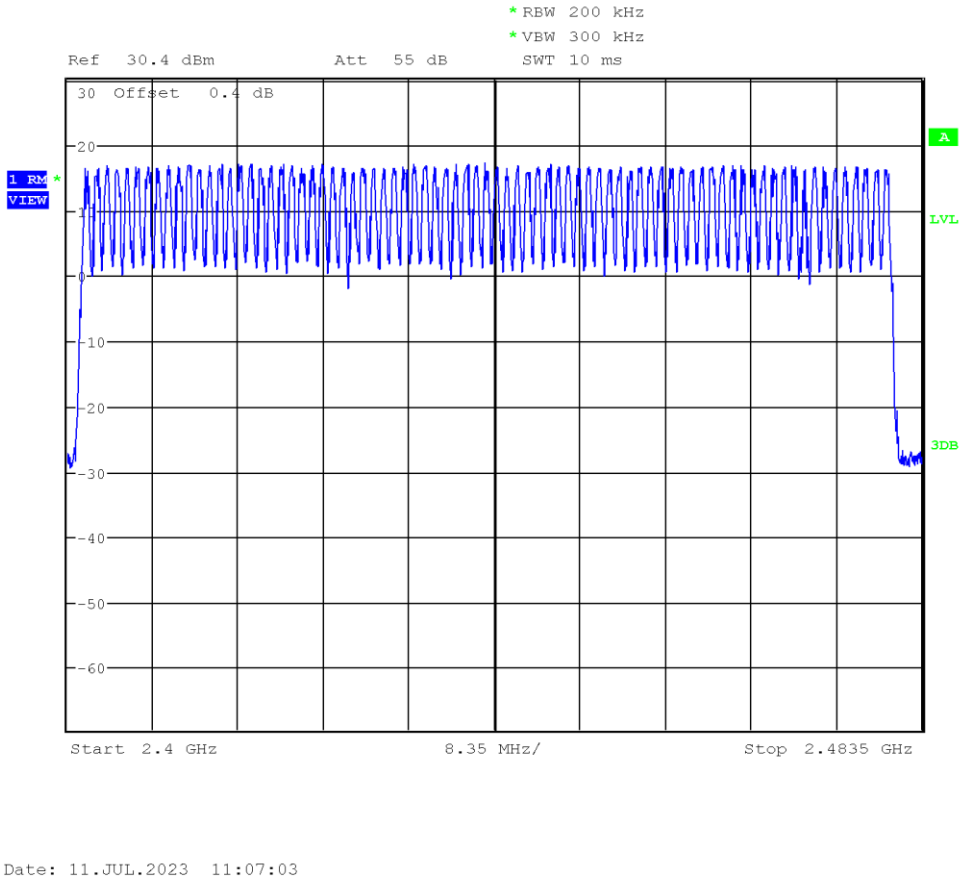
1. EUT set to test mode (Communication tester is used if needed)
2. Span set to measurement frequency range
3. Detector set to peak and max hold
4. Resolution bandwidth is set small enough to resolve hopping channel emission spectra
5. The number of peaks is counted to determine number of hopping frequencies

3.3.6 Results

Test Results		
Number of hopping frequencies	Limit	Verdict
79	79	PASS

Number of hopping frequencies

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.27 (a)(1)(iii)
Reference Method:	ANSI C63.10:2013 7.8.3
Operational Mode:	Bluetooth, DH5, Hopping Mode
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Number of Hopping Channels:	79



3.4 Test Conditions and Results - Frequency hopping channel separation

3.4.1 Information

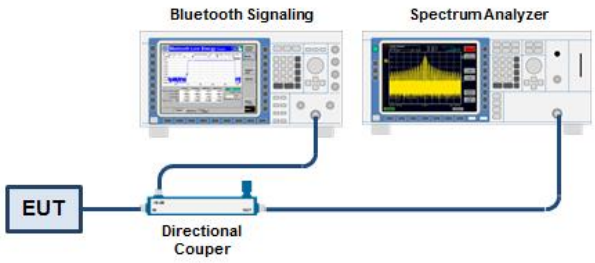
Test Information	
Reference	FCC § 15.247(a)(1); ISED RSS-247, Issue 2 (section 5.1)
Measurement Method	ANSI C63.10 7.8.4
Measurement Uncertainty	± 3.14 %
Operator	Ehsan Sohrabi
Date	2023-07-11

3.4.2 Limits

Limit
≥ 25 kHz or ⅔ of 20 dB bandwidth

3.4.3 Setup

Test Setup



3.4.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyser	R&S	FSU 26	EF01003	2022-07	2023-07
Bluetooth signaling	R&S	CMW 270	EF01169	2023-04	2024-04
Cable (CAABC)	Gigalane	GIGALANE 1730	EF00779	2023-03	2024-03

3.4.5 Procedure

Test Procedure

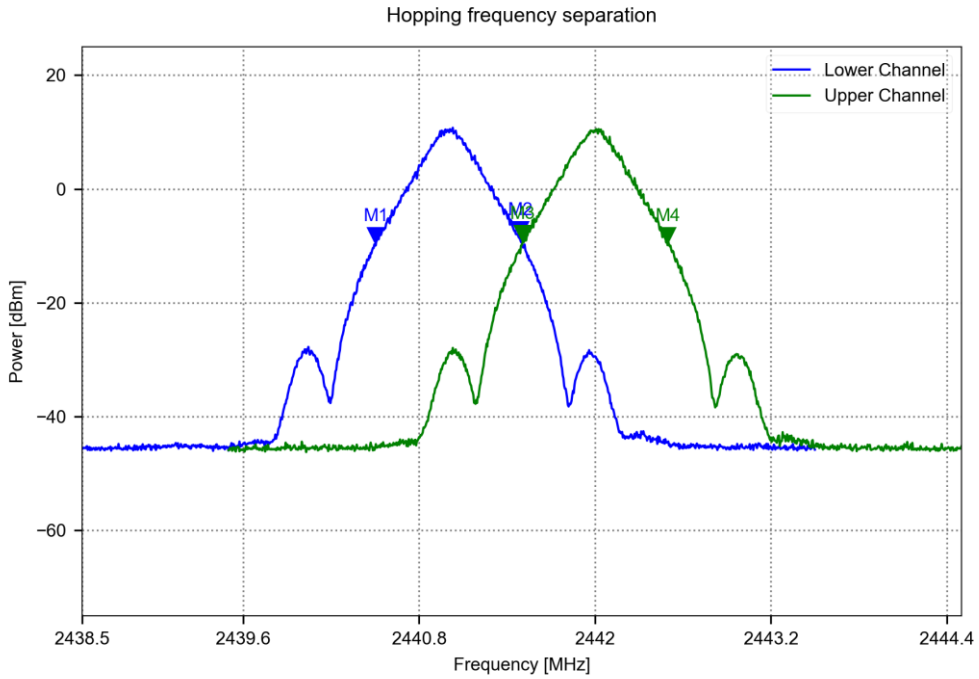
1. EUT set to test mode (Communication tester is used if needed)
2. Span set to measurement frequency range
3. Detector set to peak and max hold
4. Resolution bandwidth is set small enough to resolve hopping channel emission spectra
5. The two adjacent channel peaks are marked
6. Channel separation is determined from frequency separation of markers

3.4.6 Results

Test Results			
Mode	Channel separation [kHz]	Limit [kHz]	Verdict
DH5 Hopping	1003	≥ ⅔ · 984.0 = 656.0	PASS
2-DH5 Hopping	997	≥ ⅔ · 1329.0 = 886.0	PASS
3-DH5 Hopping	997	≥ ⅔ · 1308.0 = 872.0	PASS

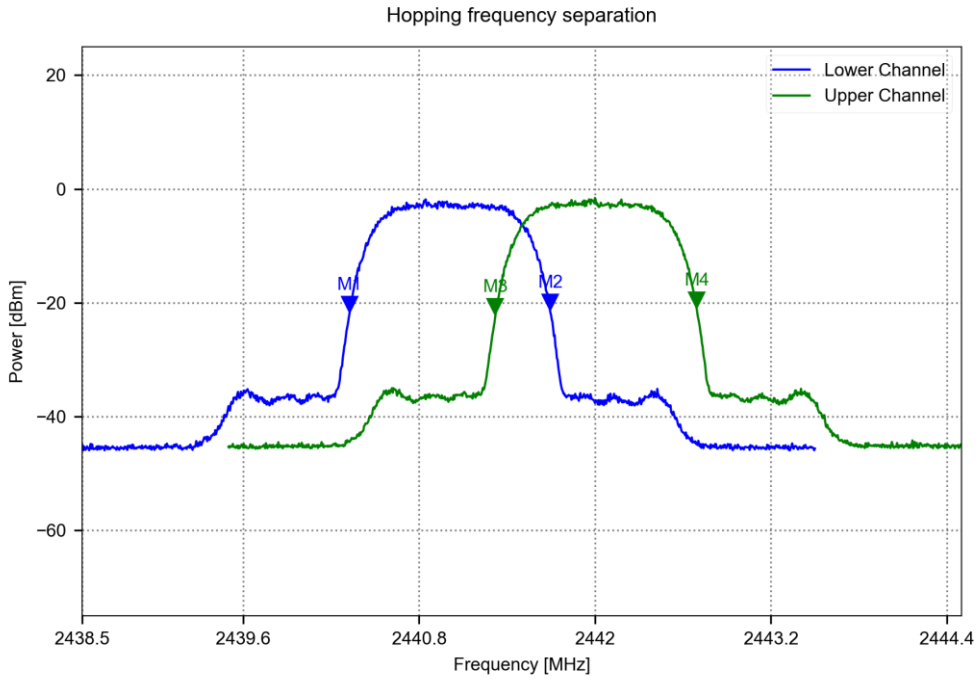
Hopping frequency separation

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247(a)(1)
Reference Method:	ANSI C63.10:2013 7.8.2
Operational Mode:	Bluetooth, DH5, Channels: 2441 + 2442 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Lower Frequency (M1) [MHz]:	2440.505
Upper Frequency (M2) [MHz]:	2441.490
Lower Frequency (M3) [MHz]:	2441.505
Upper Frequency (M4) [MHz]:	2442.495
Lower center Frequency [MHz]:	2440.997
Upper center Frequency [MHz]:	2442.000
Hopping Frequency Separation [MHz]:	1.003



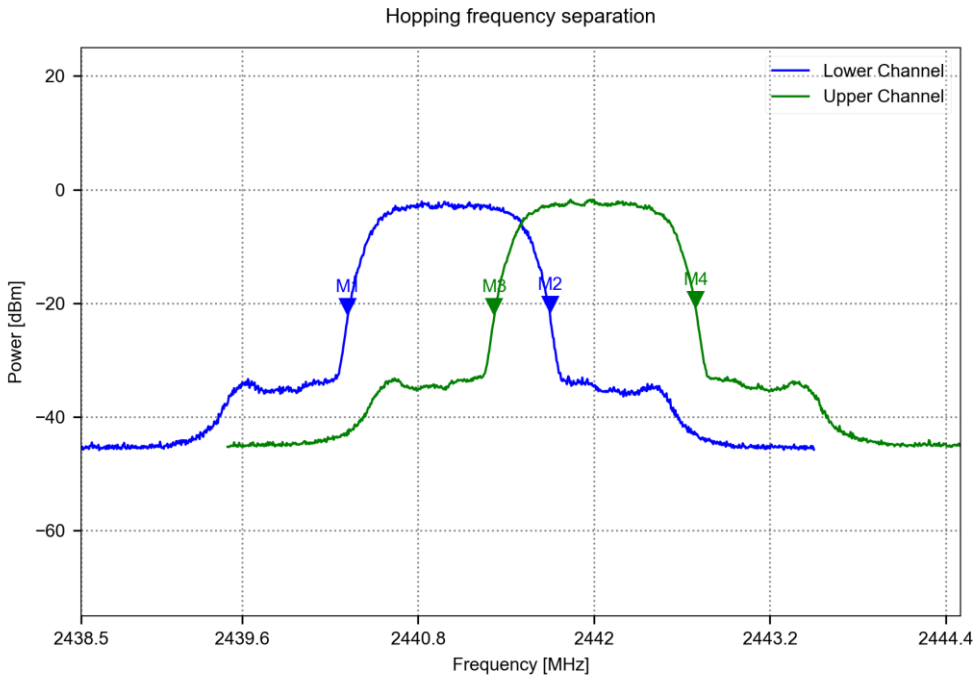
Hopping frequency separation

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247(a)(1)
Reference Method:	ANSI C63.10:2013 7.8.2
Operational Mode:	Bluetooth, 2-DH5, Channels: 2441 + 2442 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Lower Frequency (M1) [MHz]:	2440.325
Upper Frequency (M2) [MHz]:	2441.695
Lower Frequency (M3) [MHz]:	2441.320
Upper Frequency (M4) [MHz]:	2442.695
Lower center Frequency [MHz]:	2441.010
Upper center Frequency [MHz]:	2442.008
Hopping Frequency Separation [MHz]:	0.997



Hopping frequency separation

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247(a)(1)
Reference Method:	ANSI C63.10:2013 7.8.2
Operational Mode:	Bluetooth, 3-DH5, Channels: 2441 + 2442 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Lower Frequency (M1) [MHz]:	2440.320
Upper Frequency (M2) [MHz]:	2441.700
Lower Frequency (M3) [MHz]:	2441.320
Upper Frequency (M4) [MHz]:	2442.695
Lower center Frequency [MHz]:	2441.010
Upper center Frequency [MHz]:	2442.008
Hopping Frequency Separation [MHz]:	0.997



3.5 Test Conditions and Results - Time of occupancy (Dwell time)

3.5.1 Information

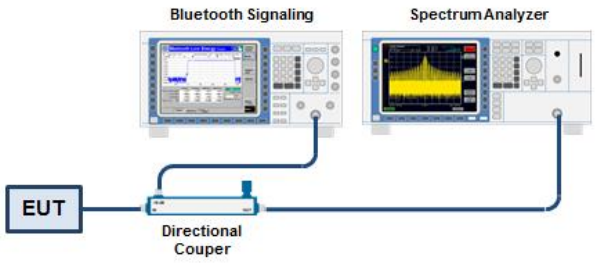
Test Information	
Reference	FCC § 15.247(a)(1)(iii); ISED RSS-247, Issue 2 (section 5.1)
Measurement Method	ANSI C63.10 7.8.2
Measurement Uncertainty	± 78.53 %
Operator	Ehsan Sohrabi
Date	2023-07-11

3.5.2 Limits

Limits
≤ 0.4 s within 0.4 s · Number of hopping channels

3.5.3 Setup

Test Setup



3.5.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyser	R&S	FSU 26	EF01003	2022-07	2023-07
Bluetooth signaling	R&S	CMW 270	EF01169	2023-04	2024-04
Cable (CAABC)	Gigalane	GIGALANE 1730	EF00779	2023-03	2024-03

3.5.5 Procedure

Test Procedure

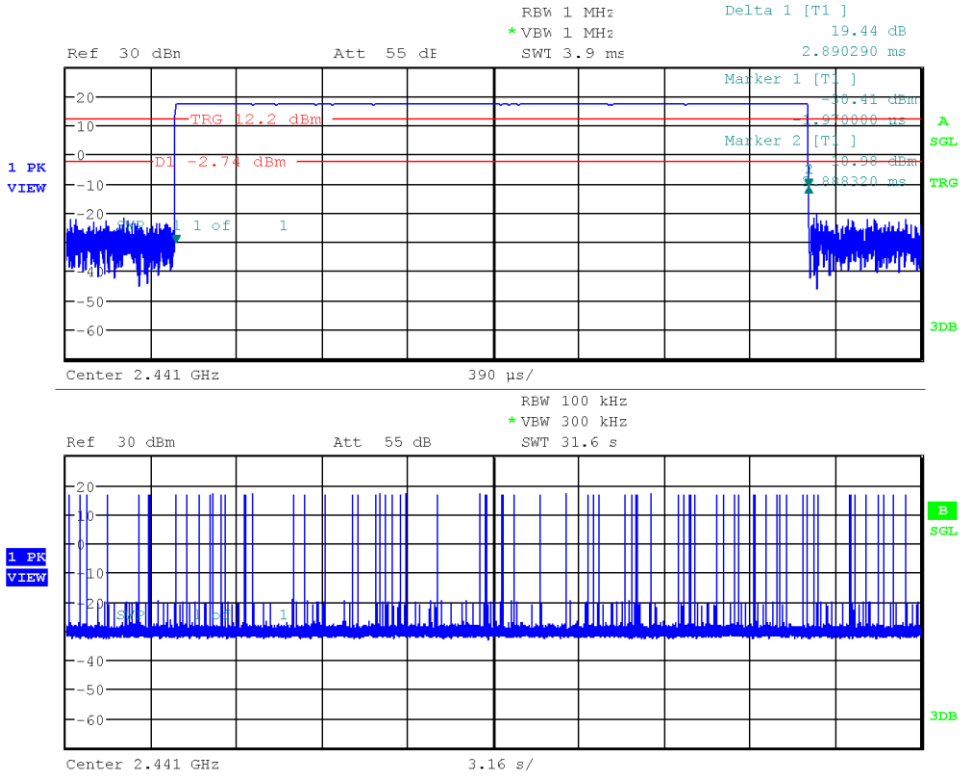
1. EUT set to test hopping mode (Communication tester is used if needed)
2. Analyzer span is set to zero span
3. Detector set to peak and max hold
4. RBW is set to 100 kHz and VBW to 300 kHz
5. The sweep time is set to capture one single dwell time
6. Trigger is set to video trigger
7. A marker is set to the start and end positions of the burst
8. The dwell time is determined from the marker difference
9. Another sweep is initiated without trigger and sweep time set to the observation time
10. The number of hops is counted
11. The total time of occupancy is calculated from the dwell time per hop multiplied by the number of hops

3.5.6 Results

Test Results					
Observation Period [s]	Number of Hops	Dwell time per Hop [s]	Time of occupancy [s]	Limit [s]	Margin [s]
31.6	69	0.00289	0.199	0.4	-0.201

Time of occupancy

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Method:	ANSI C63.10:2013 7.8.4
Operational Mode:	DH5, Hopping mode
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Dwell Time per Hop [ms]:	2.890
Number of Hops:	69
Time of occupancy [s]:	0.199



Date: 11.JUL.2023 11:33:03

3.6 Test Conditions and Results - Maximum peak conducted output power

3.6.1 Information

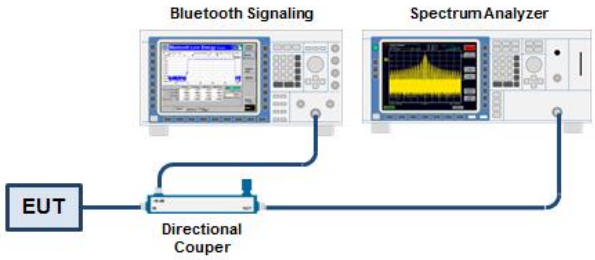
Test Information	
Reference	FCC § 15.247(b); ISED RSS-247, Issue 2 (section 5.4)
Measurement Method	ANSI C63.10 7.8.5
Measurement Uncertainty	± 2.86 dB
Operator	Ehsan Sohrabi
Date	2023-07-10

3.6.2 Limits

Limits	
Condition	Power
Number of hopping channels ≥ 75	1 W (30 dBm)
75 > Number of hopping channels ≥ 15	0.125 W (21 dBm)
The conducted output power limit specified above is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in the table, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.	
ISED: The e.i.r.p. shall not exceed 4 W.	

3.6.3 Setup

Test Setup



3.6.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyser	R&S	FSU 26	EF01003	2022-07	2023-07
Bluetooth signaling	R&S	CMW 270	EF01169	2023-04	2024-04
Cable (CAABC)	Gigalane	GIGALANE 1730	EF00779	2023-03	2024-03

3.6.5 Procedure

Test Procedure

1. EUT set to test mode (Communication tester is used if needed)
2. Analyzer resolution bandwidth is set ≥ DTS bandwidth
3. Detector set to peak and max hold
4. Sweep time is set to auto
5. After the trace has stabilized a marker is set to peak of envelope

3.6.6 Results

Test Results DH5 - FCC				
Channel [MHz]	Conducted Power [dBm]	Conducted Power [W]	Conducted Limit [W]	Verdict
2402	17.885	0.0614	1.0	PASS
2441	17.697	0.0588	1.0	PASS
2480	17.399	0.0549	1.0	PASS

Test Results 2-DH5 - FCC				
Channel [MHz]	Conducted Power [dBm]	Conducted Power [W]	Conducted Limit [W]	Verdict
2402	11.792	0.0151	1.0	PASS
2441	11.675	0.0147	1.0	PASS
2480	11.413	0.0138	1.0	PASS

Test Results 3-DH5 - FCC				
Channel [MHz]	Conducted Power [dBm]	Conducted Power [W]	Conducted Limit [W]	Verdict
2402	11.928	0.0156	1.0	PASS
2441	11.832	0.0152	1.0	PASS
2480	11.693	0.0148	1.0	PASS

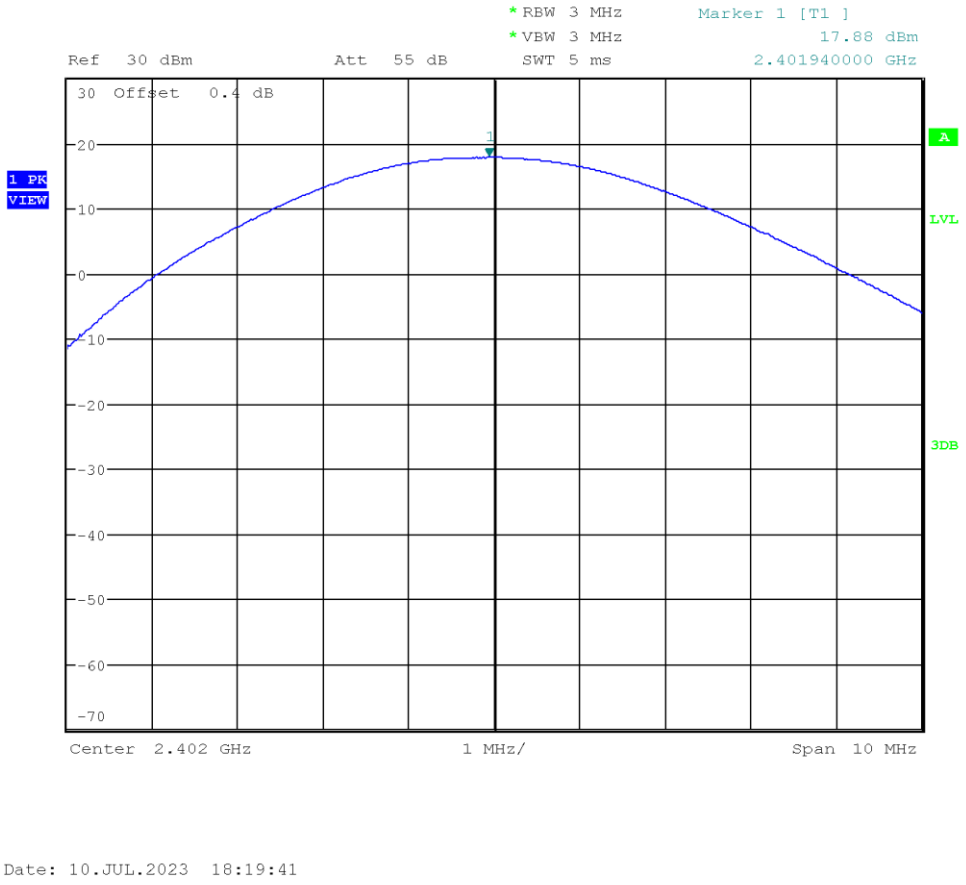
Test Results DH5 - ISED							
Channel [MHz]	Conducted Power [dBm]	Conducted Power [W]	Conducted Limit [W]	EIRP Power [dBm]	EIRP Power [W]	EIRP Limit [W]	Verdict
2402	17.885	0.0614	1.0	21.985	0.157	4.0	PASS
2441	17.697	0.0588	1.0	21.797	0.151	4.0	PASS
2480	17.399	0.0549	1.0	21.499	0.141	4.0	PASS

Test Results 2-DH5 - ISED							
Channel [MHz]	Conducted Power [dBm]	Conducted Power [W]	Conducted Limit [W]	EIRP Power [dBm]	EIRP Power [W]	EIRP Limit [W]	Verdict
2402	11.792	0.0151	1.0	15.892	0.038	4.0	PASS
2441	11.675	0.0147	1.0	15.775	0.037	4.0	PASS
2480	11.413	0.0138	1.0	15.513	0.035	4.0	PASS

Test Results 3-DH5 - ISED							
Channel [MHz]	Conducted Power [dBm]	Conducted Power [W]	Conducted Limit [W]	EIRP Power [dBm]	EIRP Power [W]	EIRP Limit [W]	Verdict
2402	11.928	0.0156	1.0	16.028	0.04	4.0	PASS
2441	11.832	0.0152	1.0	15.932	0.039	4.0	PASS
2480	11.693	0.0148	1.0	15.793	0.037	4.0	PASS

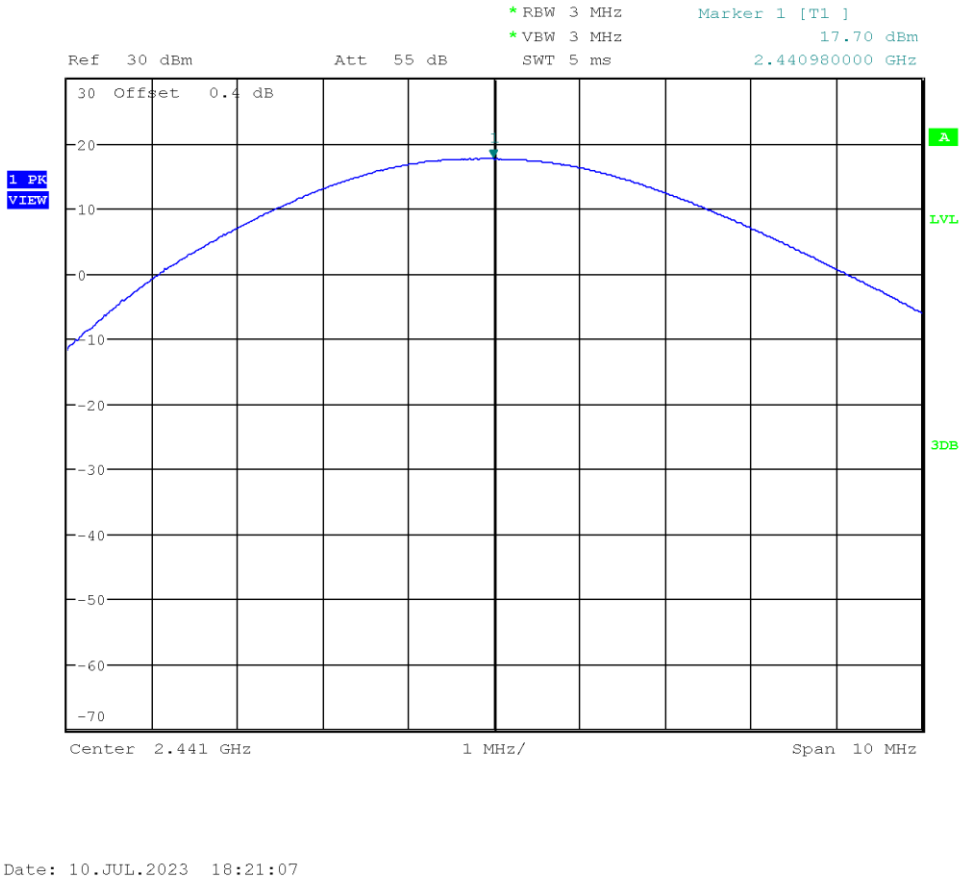
Peak Conducted Output Power

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.5
Operational Mode:	DH5, Channel: 0, 2402 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-10
Peak Power [dBm]:	17.885
Peak Power [W]:	0.0614



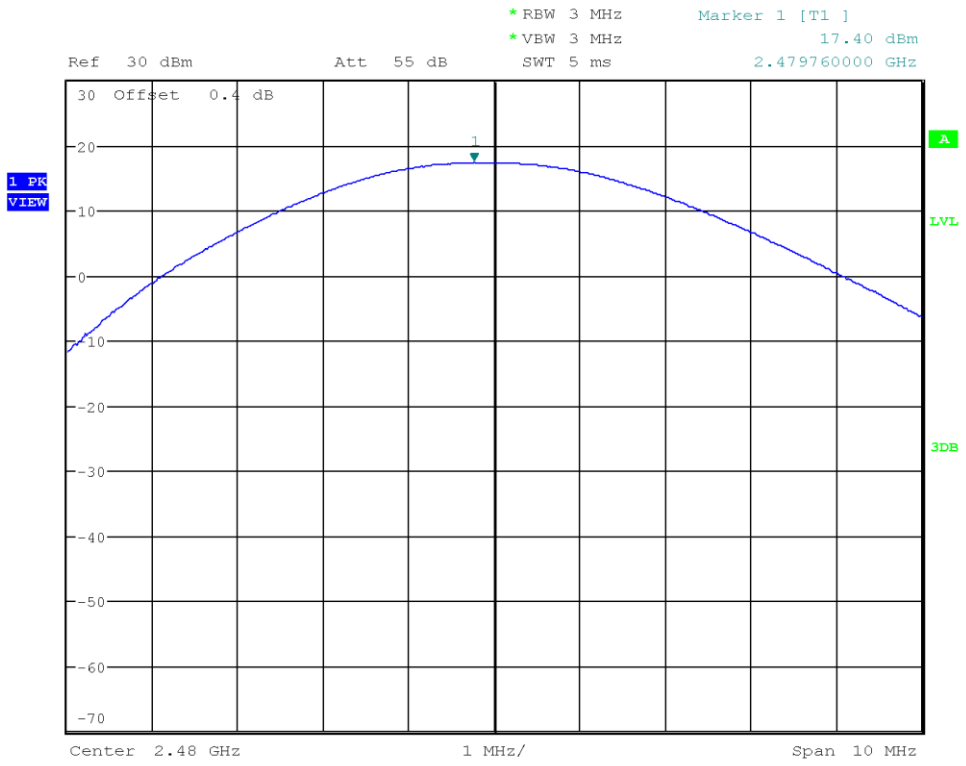
Peak Conducted Output Power

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.5
Operational Mode:	DH5, Channel: 39, 2441 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-10
Peak Power [dBm]:	17.697
Peak Power [W]:	0.0588



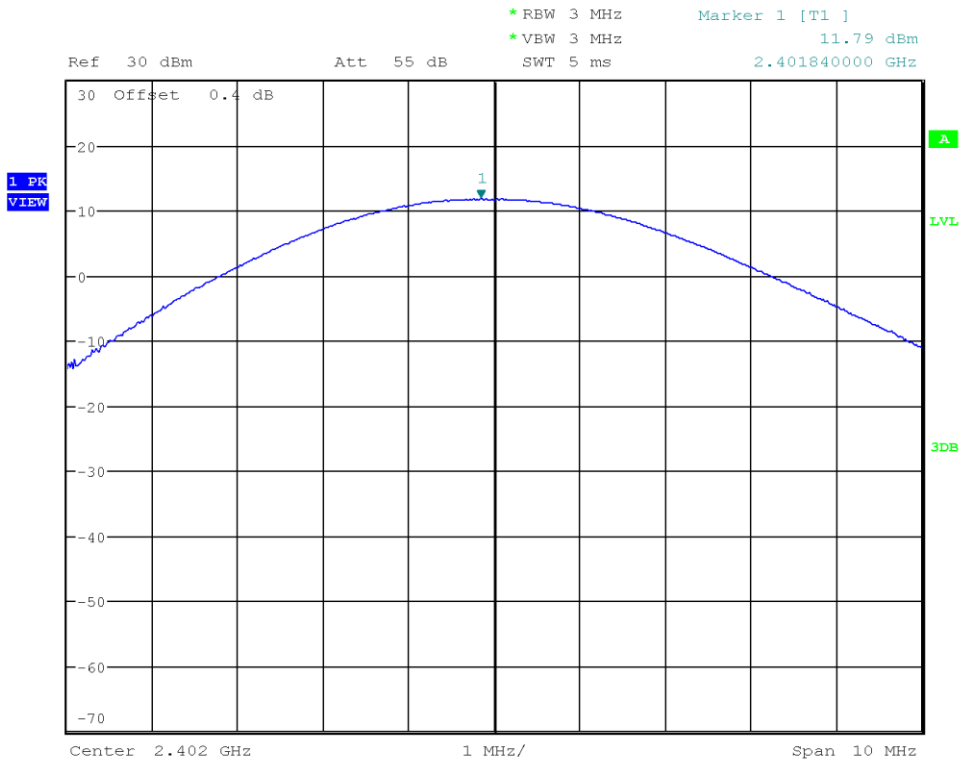
Peak Conducted Output Power

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.5
Operational Mode:	DH5, Channel: 78, 2480 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-10
Peak Power [dBm]:	17.399
Peak Power [W]:	0.0549



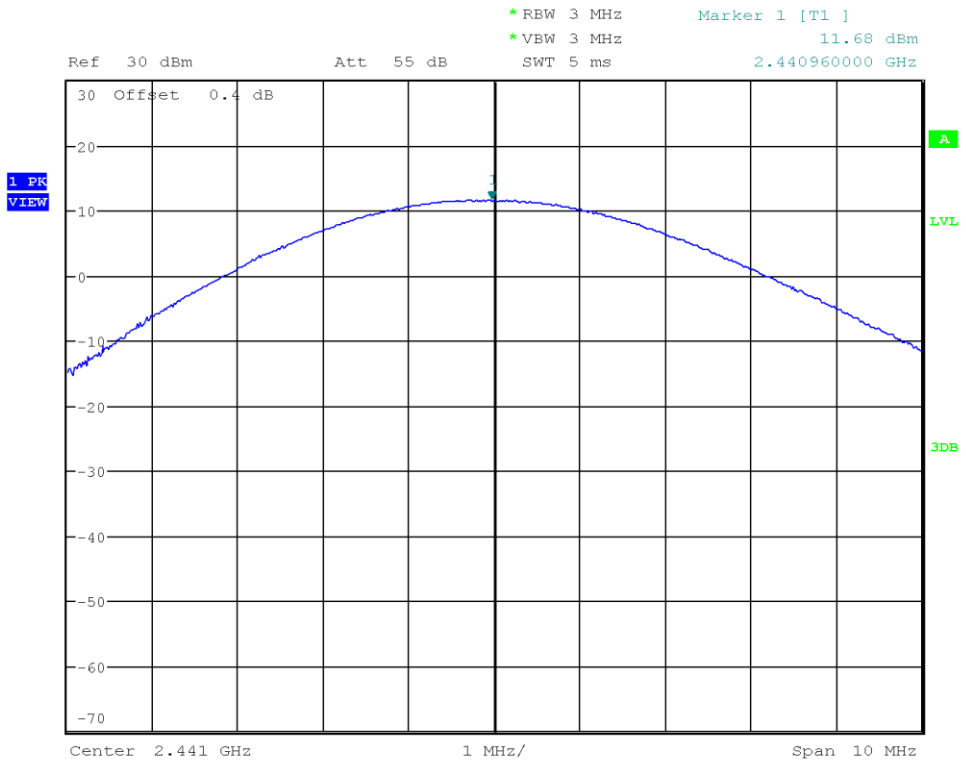
Peak Conducted Output Power

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.5
Operational Mode:	2-DH5, Channel: 0, 2402 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-10
Peak Power [dBm]:	11.792
Peak Power [W]:	0.0151



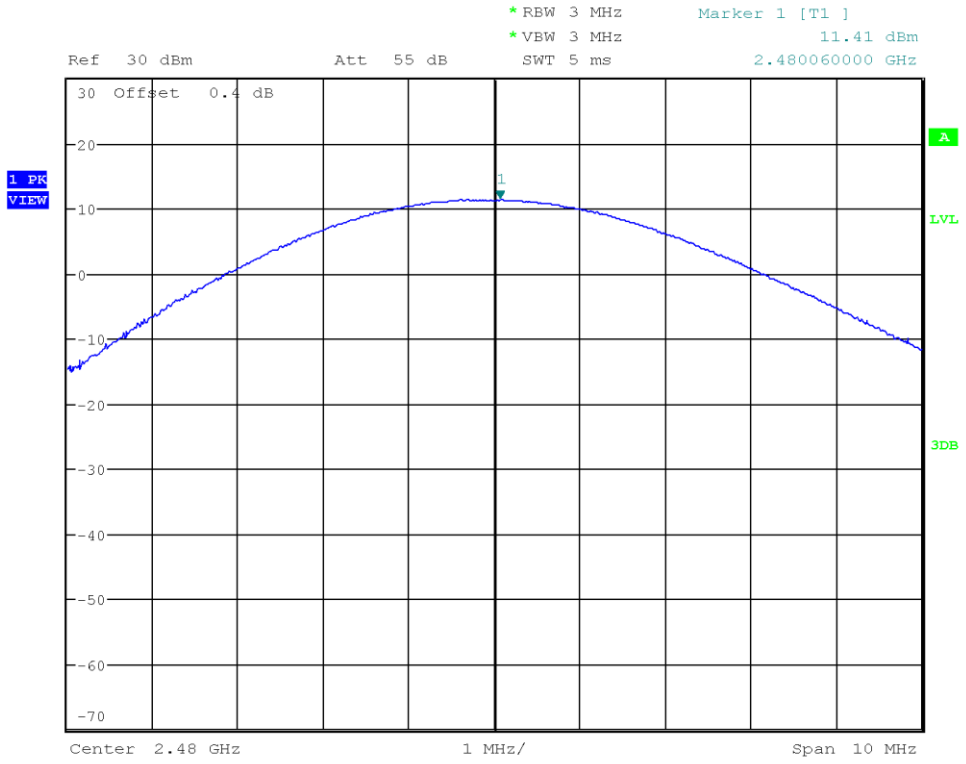
Peak Conducted Output Power

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.5
Operational Mode:	2-DH5, Channel: 39, 2441 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-10
Peak Power [dBm]:	11.675
Peak Power [W]:	0.0147



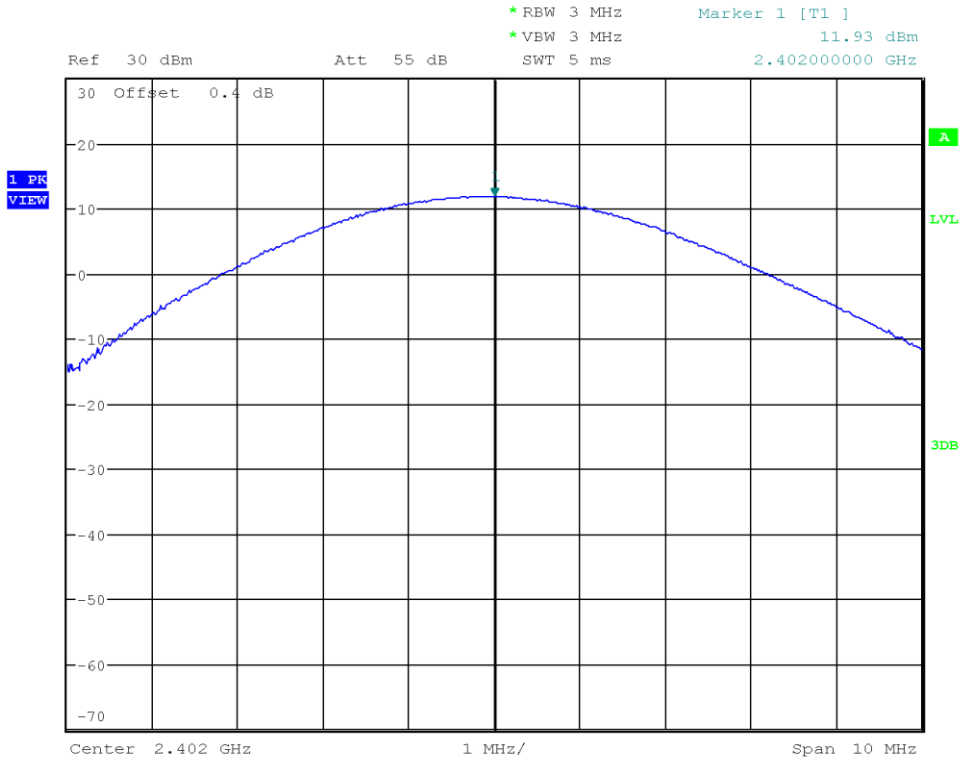
Peak Conducted Output Power

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.5
Operational Mode:	2-DH5, Channel: 78, 2480 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-10
Peak Power [dBm]:	11.413
Peak Power [W]:	0.0138



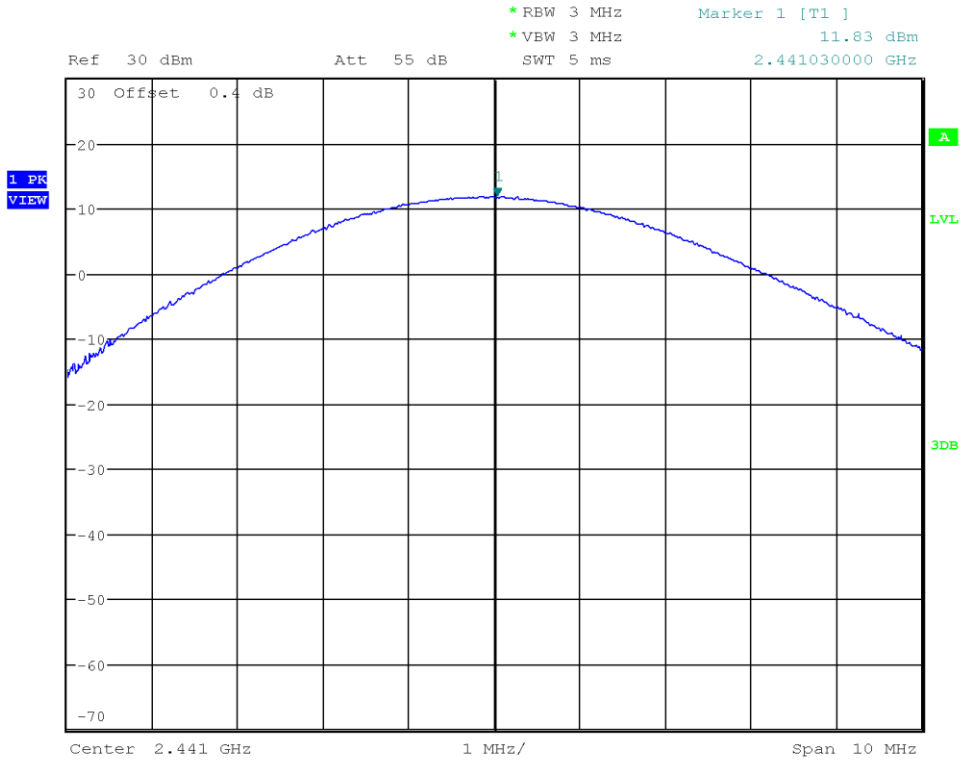
Peak Conducted Output Power

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.5
Operational Mode:	3-DH5, Channel: 0, 2402 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-10
Peak Power [dBm]:	11.928
Peak Power [W]:	0.0156



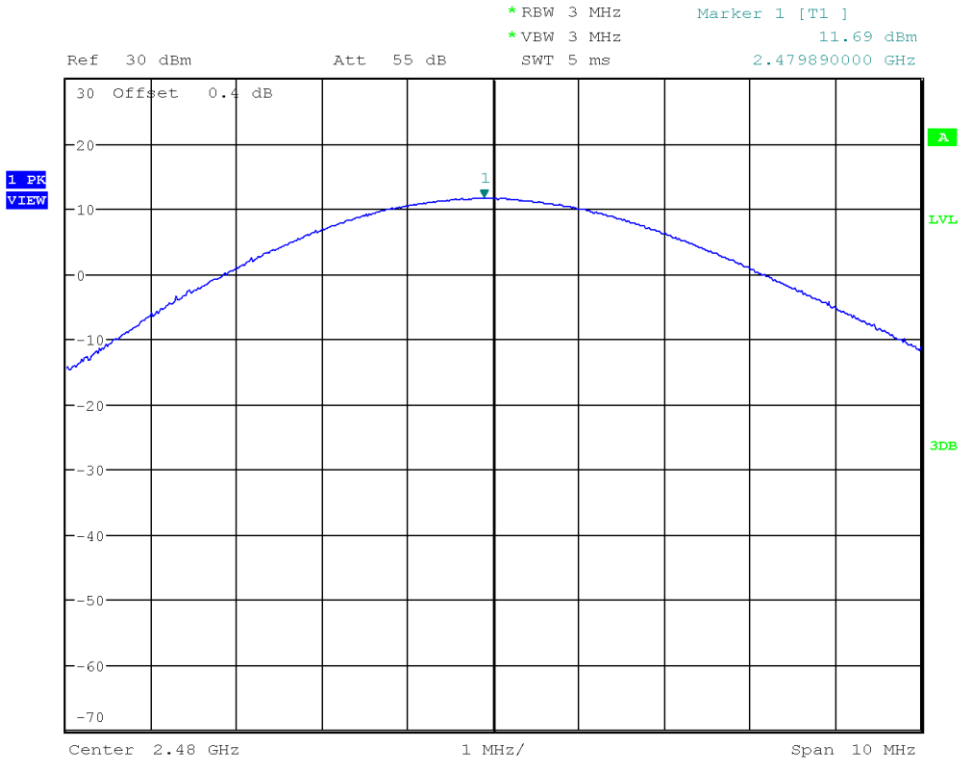
Peak Conducted Output Power

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.5
Operational Mode:	3-DH5, Channel: 39, 2441 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-10
Peak Power [dBm]:	11.832
Peak Power [W]:	0.0152



Peak Conducted Output Power

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.5
Operational Mode:	3-DH5, Channel: 78, 2480 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-10
Peak Power [dBm]:	11.693
Peak Power [W]:	0.0148



3.7 Test Conditions and Results - AC powerline conducted emissions

3.7.1 Information

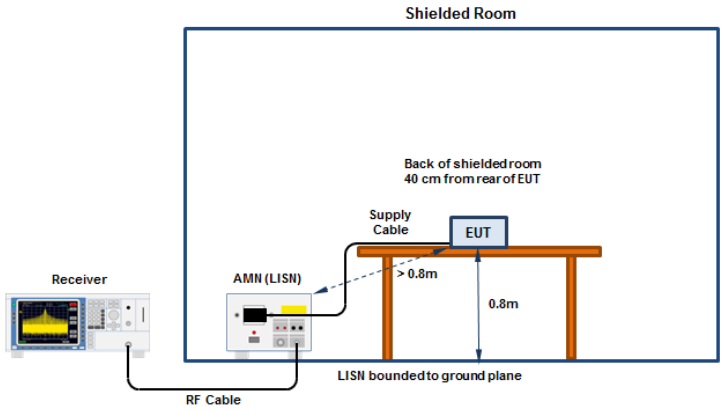
Test Information	
Reference	FCC § 15.207; ISED RSS-247, Issue 2 (section 3.1)
Measurement Method	ANSI C63.10 6.2
Measurement Uncertainty	± 3.82 dB
Operator	E. Sohrabi
Date	2023-07-25

3.7.2 Limits

Limits		
Frequency [MHz]	Quasi-Peak [dBµV]	Average [dBµV]
0.15 - 0.5	66 - 56*	56 - 46*
0.5 - 5	56	46
5 - 30	60	50
* Limit decreases linearly with the logarithm of the frequency		

3.7.3 Setup

Test Setup



3.7.4 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	RadiMation	2020.1.8

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
EMI Test Receiver	R&S	ESR7	EF00943	2022-07	2023-07
Pulse Limiter	R&S	ESH3-Z2	EF01222	2021-07	2023-07
LISN	R&S	ESH3-Z5	EF00036	2021-08	2023-08

3.7.5 Setup Photos

Setup for measurements 150 KHz - 30 MHz
Photos removed - refer to additional exhibit

Setup for measurements 150 KHz - 30 MHz (Cables)
Photos removed - refer to additional exhibit

EUT Setup
Photos removed - refer to additional exhibit

Conducted emissions at the mains power port
according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43094
Test Site:	Eurofins Product Service GmbH
Operator:	Ehsan Sohrabi
Test Date:	2023-07-25
Operating Conditions:	ambient temperature: 23 °Celsius power input: 3.3 VDC and 1.8 VDC
LISN:	Schwarzbeck NSLK 8127 RC (L)
Operational Mode:	TX, BT 5.3, 2441 MHz, PRBS9, DH5, P = max
EUT Configuration:	
Applied to Port:	120 VAC / 60 Hz

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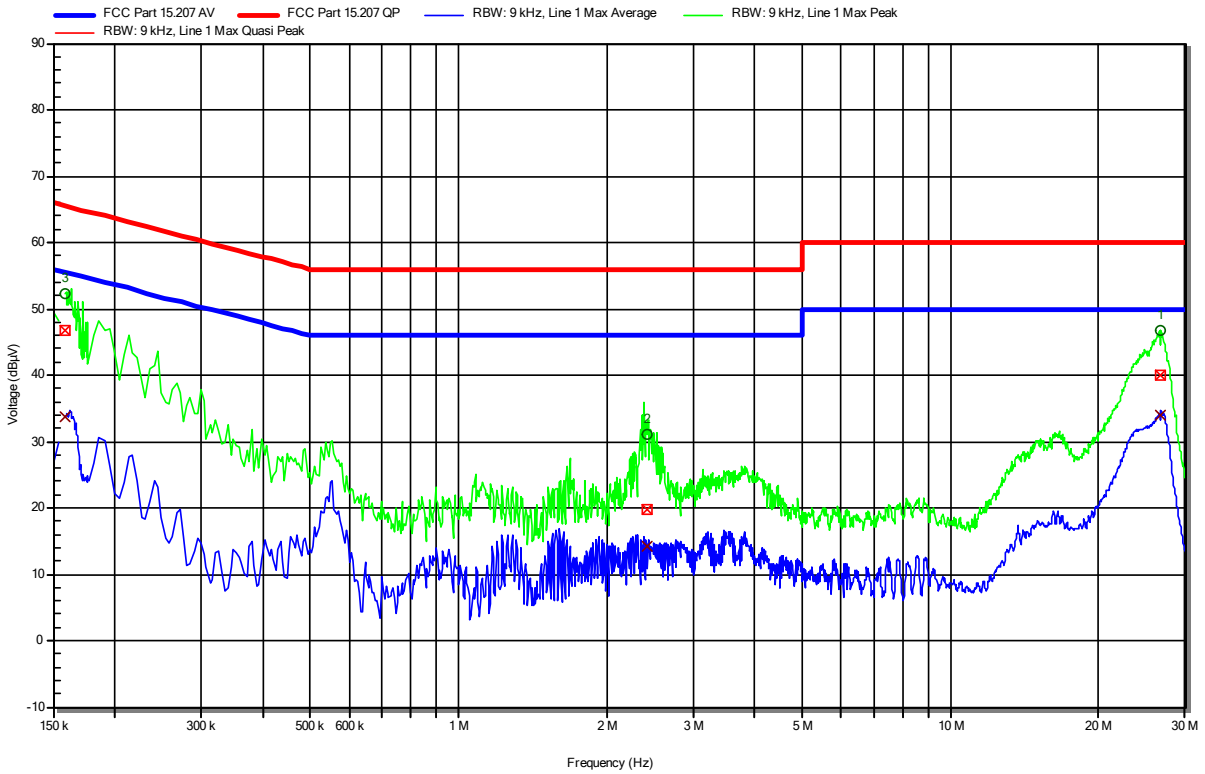
RadiMation



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	26.673 MHz	40.08 dBµV	60 dBµV	-19.92 dB	Pass	Line 1
2	2.413 MHz	19.85 dBµV	56 dBµV	-36.15 dB	Pass	Line 1
3	159 kHz	46.73 dBµV	65.52 dBµV	-18.79 dB	Pass	Line 1

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	26.673 MHz	33.89 dBµV	50 dBµV	-16.11 dB	Pass	Line 1
2	2.413 MHz	14.32 dBµV	46 dBµV	-31.68 dB	Pass	Line 1
3	159 kHz	33.77 dBµV	55.52 dBµV	-21.75 dB	Pass	Line 1

Conducted emissions at the mains power port
according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43094
Test Site:	Eurofins Product Service GmbH
Operator:	Ehsan Sohrabi
Test Date:	2023-07-25
Operating Conditions:	ambient temperature: 23 °Celsius power input: 3.3 VDC and 1.8 VDC
LISN:	Schwarzbeck NSLK 8127 (N)
Operational Mode:	Tx, BT 5.3, 2441 MHz, PRBS9, DH5, P = max
EUT Configuration:	
Applied to Port:	120 VAC / 60 Hz

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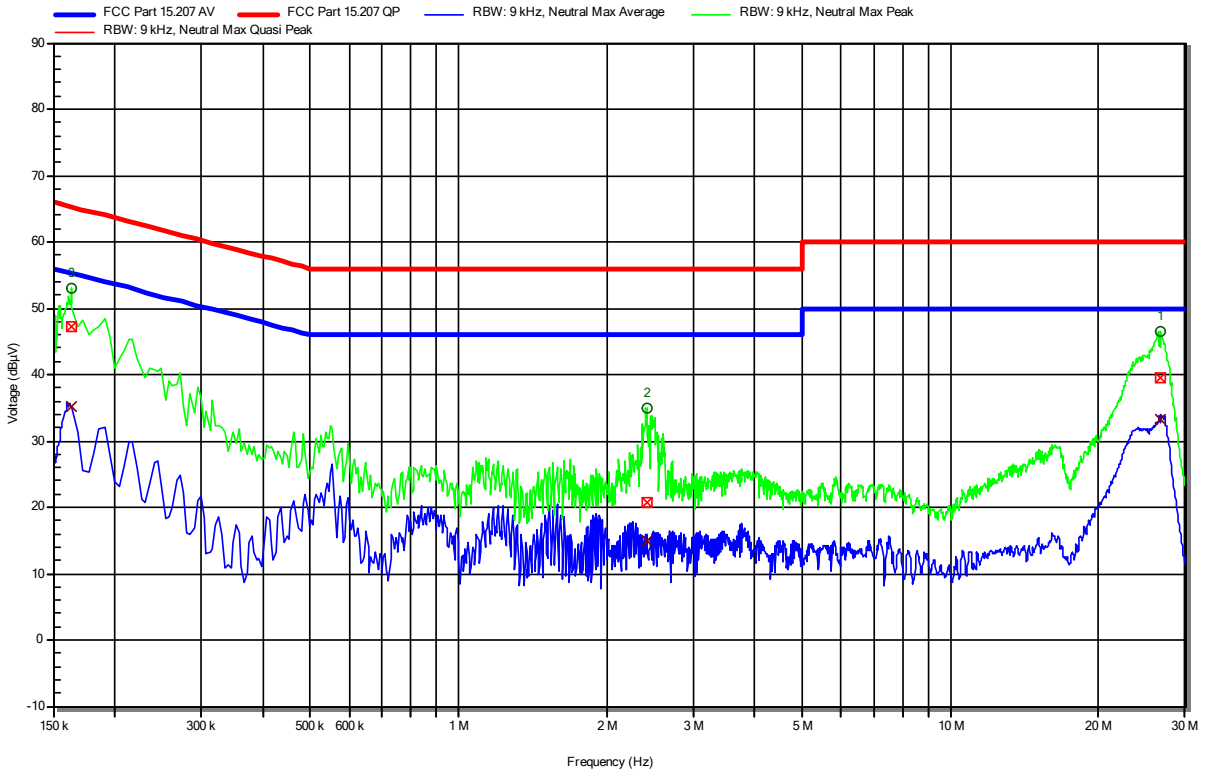
RadiMation



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	26.624 MHz	39.45 dBµV	60 dBµV	-20.55 dB	Pass	Neutral
2	2.418 MHz	20.77 dBµV	56 dBµV	-35.23 dB	Pass	Neutral
3	163.05 kHz	47.12 dBµV	65.31 dBµV	-18.19 dB	Pass	Neutral

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	26.624 MHz	33.24 dBµV	50 dBµV	-16.76 dB	Pass	Neutral
2	2.418 MHz	14.84 dBµV	46 dBµV	-31.16 dB	Pass	Neutral
3	163.05 kHz	35.3 dBµV	55.31 dBµV	-20.01 dB	Pass	Neutral

Conducted emissions at the mains power port
according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43094
Test Site:	Eurofins Product Service GmbH
Operator:	Ehsan Sohrabi
Test Date:	2023-07-25
Operating Conditions:	ambient temperature: 23 °Celsius power input: 3.3 VDC and 1.8 VDC
LISN:	Schwarzbeck NSLK 8127 RC (L)
Operational Mode:	Rx, BT 5.3, 2441 MHz
EUT Configuration:	
Applied to Port:	120 VAC / 60 Hz

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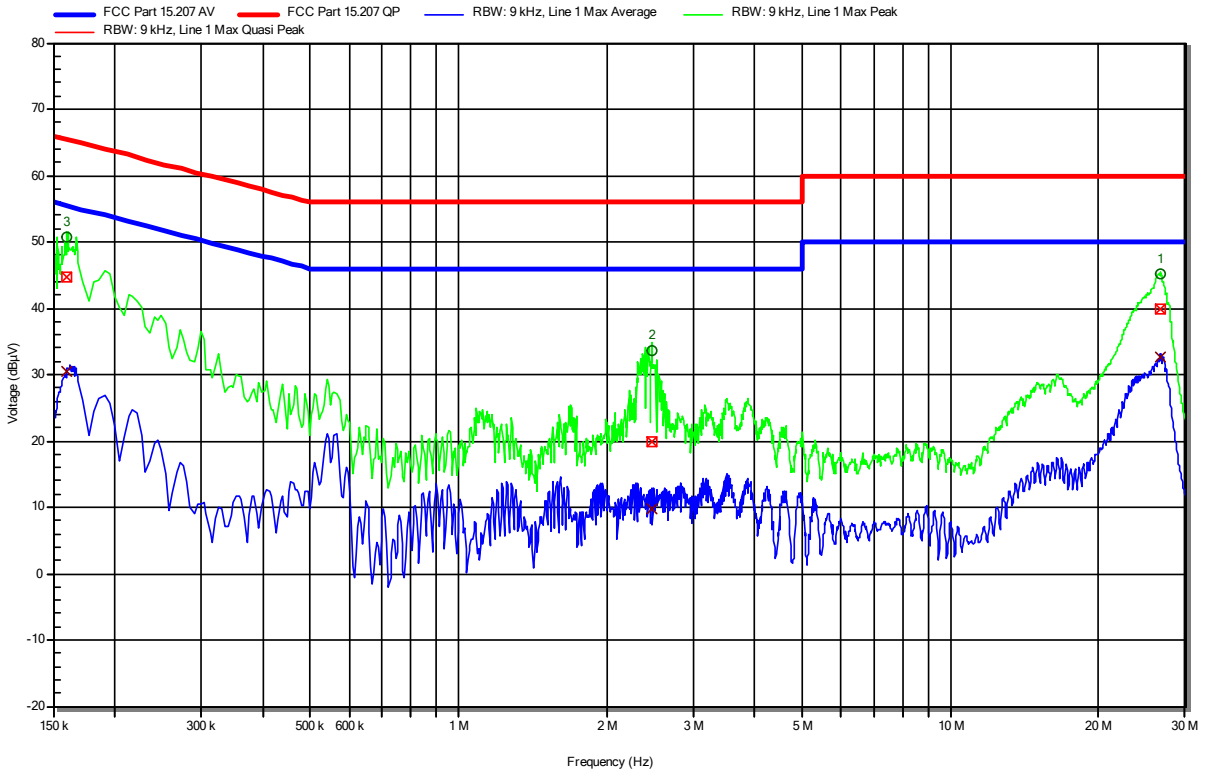
RadiMation



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	26.696 MHz	39.99 dBµV	60 dBµV	-20.01 dB	Pass	Line 1
2	2.474 MHz	19.85 dBµV	56 dBµV	-36.15 dB	Pass	Line 1
3	159.9 kHz	44.76 dBµV	65.47 dBµV	-20.71 dB	Pass	Line 1

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	26.696 MHz	32.7 dBµV	50 dBµV	-17.3 dB	Pass	Line 1
2	2.474 MHz	9.84 dBµV	46 dBµV	-36.16 dB	Pass	Line 1
3	159.9 kHz	30.46 dBµV	55.47 dBµV	-25.01 dB	Pass	Line 1

Conducted emissions at the mains power port
according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43094
Test Site:	Eurofins Product Service GmbH
Operator:	Ehsan Sohrabi
Test Date:	2023-07-25
Operating Conditions:	ambient temperature: 23 °Celsius power input: 3.3 VDC and 1.8 VDC
LISN:	Schwarzbeck NSLK 8127 (N)
Operational Mode:	Rx, BT 5.3, 2441 MHz
EUT Configuration:	
Applied to Port:	120 VAC / 60 Hz

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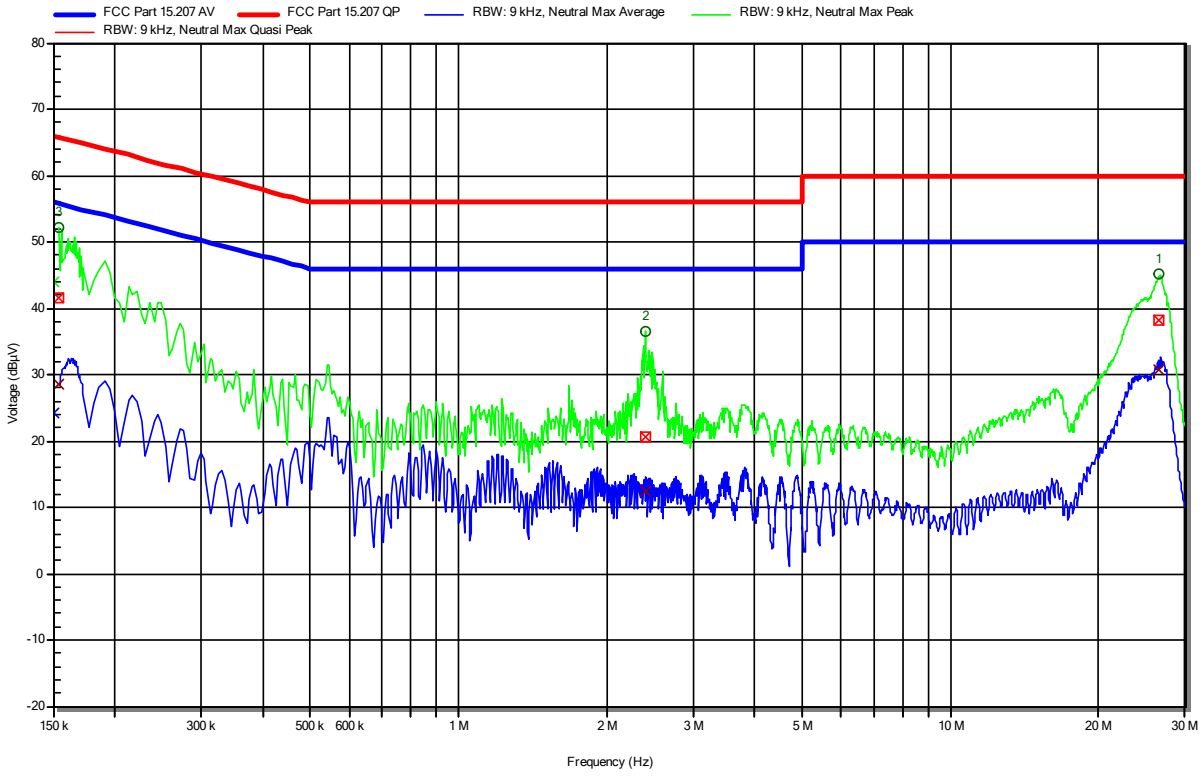
RadiMation



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	26.61 MHz	38.15 dBµV	60 dBµV	-21.85 dB	Pass	Neutral
2	2.403 MHz	20.55 dBµV	56 dBµV	-35.45 dB	Pass	Neutral
3	154.5 kHz	41.66 dBµV	65.75 dBµV	-24.1 dB	Pass	Neutral

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	26.61 MHz	30.78 dBµV	50 dBµV	-19.22 dB	Pass	Neutral
2	2.403 MHz	12.48 dBµV	46 dBµV	-33.52 dB	Pass	Neutral
3	154.5 kHz	28.55 dBµV	55.75 dBµV	-27.21 dB	Pass	Neutral

3.8 Test Conditions and Results - Band-edge compliance

3.8.1 Information

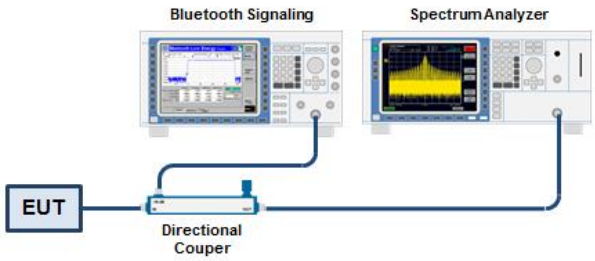
Test Information	
Reference	FCC § 15.247(d); ISED RSS-247, Issue 2 (section 5.5)
Measurement Uncertainty	± 3.64 dB
Measurement Method	ANSI C63.10 6.10
Operator	Ehsan Sohrabi
Date	2023-07-11

3.8.2 Limits

Limits	
Power Measurement	Out-of-band attenuation [dB]
Peak	20
RMS	30

3.8.3 Setup

Test Setup



3.8.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyser	R&S	FSU 26	EF01003	2022-07	2023-07
Bluetooth signaling	R&S	CMW 270	EF01169	2023-04	2024-04
Cable (CAABC)	Gigalane	GIGALANE 1730	EF00779	2023-03	2024-03

3.8.5 Procedure

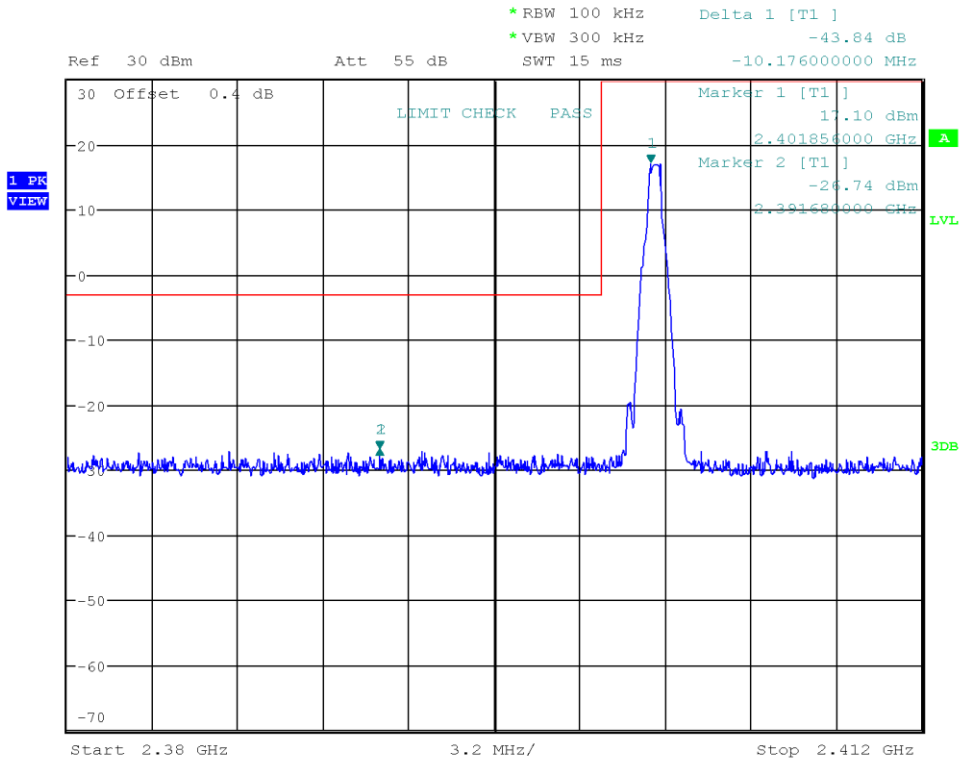
Test Procedure
1. EUT set to test mode (Communication tester is used if needed) 2. Span set around lower band edge and detector is set to peak and max hold 3. Resolution bandwidth is set to 100 kHz 4. Markers are set to peak emission levels within frequency band and outside frequency band 5. Band edge attenuation is determined from level difference

3.8.6 Results

Test Results				
Mode	Channel [MHz]	Out-of-band Attenuation [dB]	Limit [dB]	Verdict
DH5 single	2402	-43.84	-20	PASS
DH5 single	2480	-42.58	-20	PASS
DH5 hopping	2402	-43.26	-20	PASS
DH5 hopping	2480	-42.71	-20	PASS
2-DH5 single	2402	-35.69	-20	PASS
2-DH5 single	2480	-34.63	-20	PASS
2-DH5 hopping	2402	-34.86	-20	PASS
2-DH5 hopping	2480	-35.1	-20	PASS
3-DH5 single	2402	-34.72	-20	PASS
3-DH5 single	2480	-35.4	-20	PASS
3-DH5 hopping	2402	-34.46	-20	PASS
3-DH5 hopping	2480	-34.41	-20	PASS

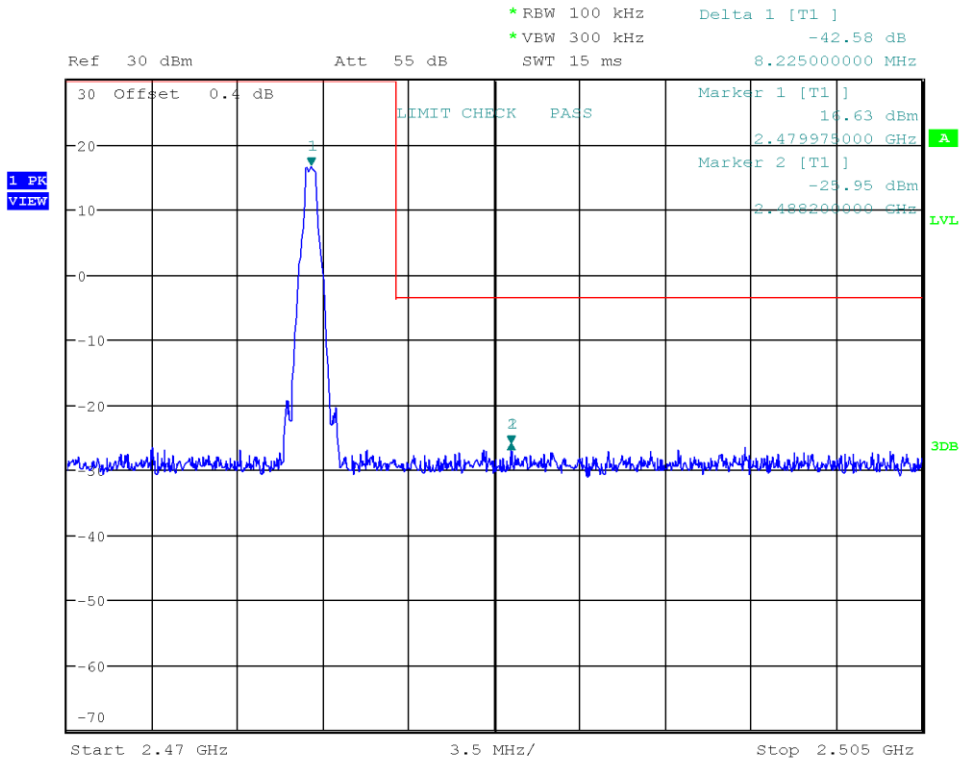
Emissions in nonrestricted frequency bands at the Band-edge

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.6, 6.10.4
Operational Mode:	DH5, Channel: 0, 2402 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Band-edge	Lower
In-band Frequency [MHz]:	2401.856
Max. in-band Level [dBm/100 kHz]:	17.104
Out-of-band Frequency [MHz]:	2391.68
Max. out-of-band Level [dBm/100 kHz]:	-26.741
Attenuation [dB]:	-43.84



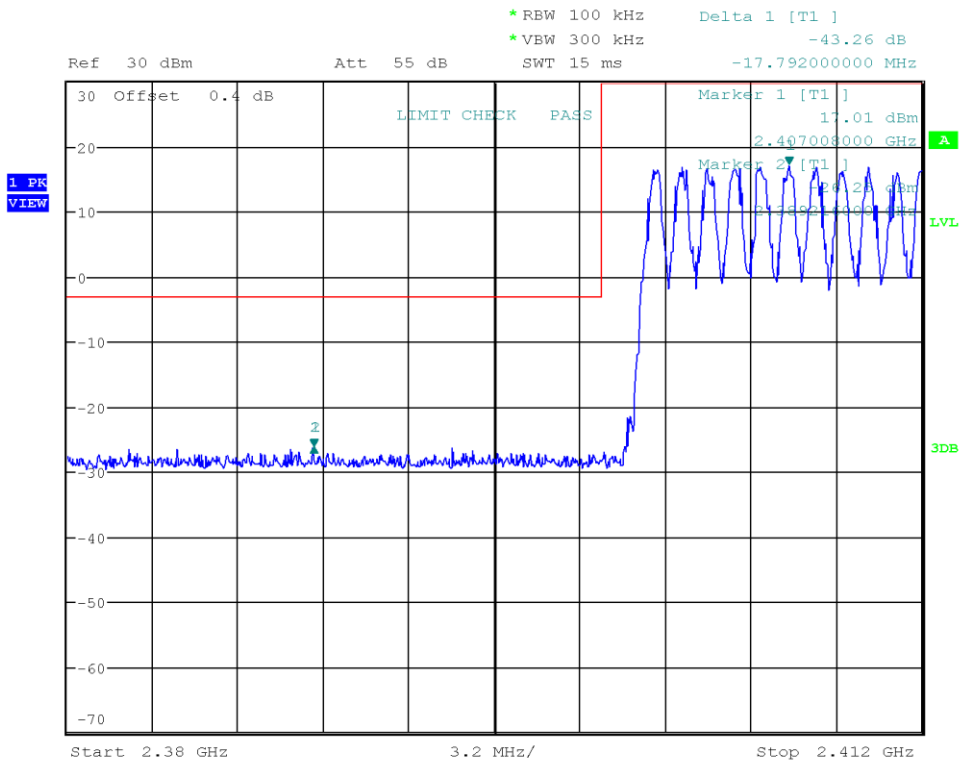
Emissions in nonrestricted frequency bands at the Band-edge

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.6, 6.10.4
Operational Mode:	DH5, Channel: 78, 2480 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Band-edge	Upper
In-band Frequency [MHz]:	2479.975
Max. in-band Level [dBm/100 kHz]:	16.626
Out-of-band Frequency [MHz]:	2488.2
Max. out-of-band Level [dBm/100 kHz]:	-25.951
Attenuation [dB]:	-42.58



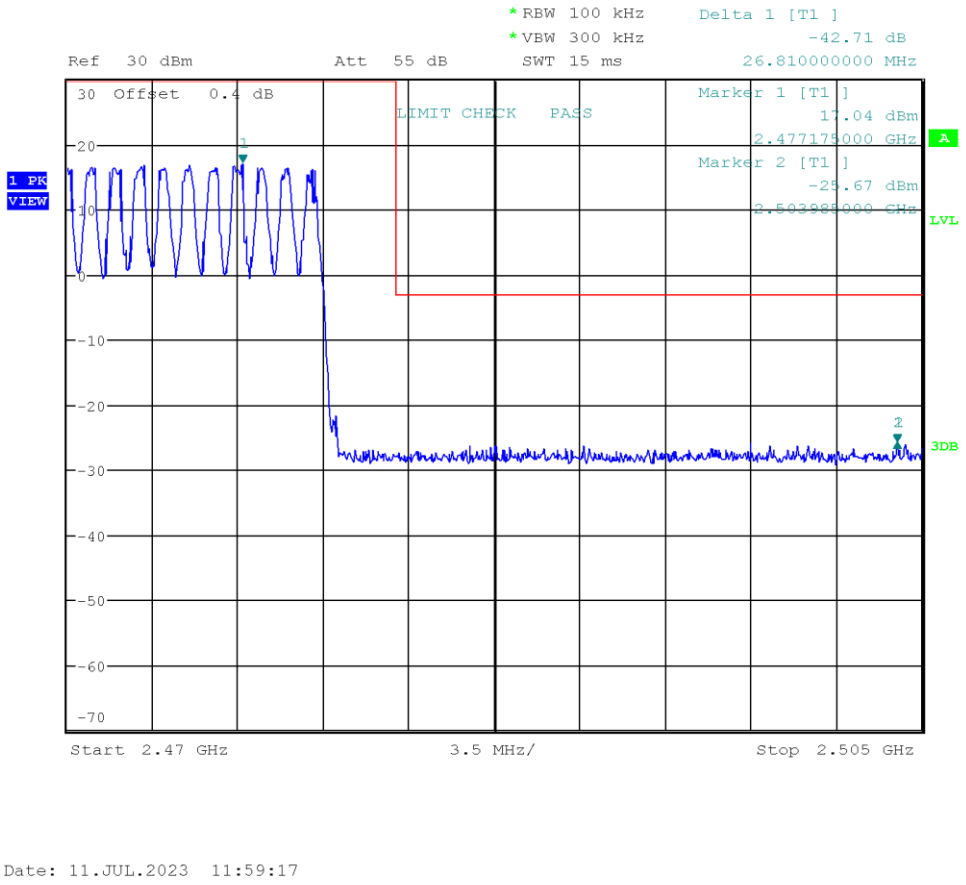
Emissions in nonrestricted frequency bands at the Band-edge

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.6, 6.10.4
Operational Mode:	DH5, Hopping
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Band-edge	Lower
In-band Frequency [MHz]:	2407.008
Max. in-band Level [dBm/100 kHz]:	17.008
Out-of-band Frequency [MHz]:	2389.216
Max. out-of-band Level [dBm/100 kHz]:	-26.252
Attenuation [dB]:	-43.26



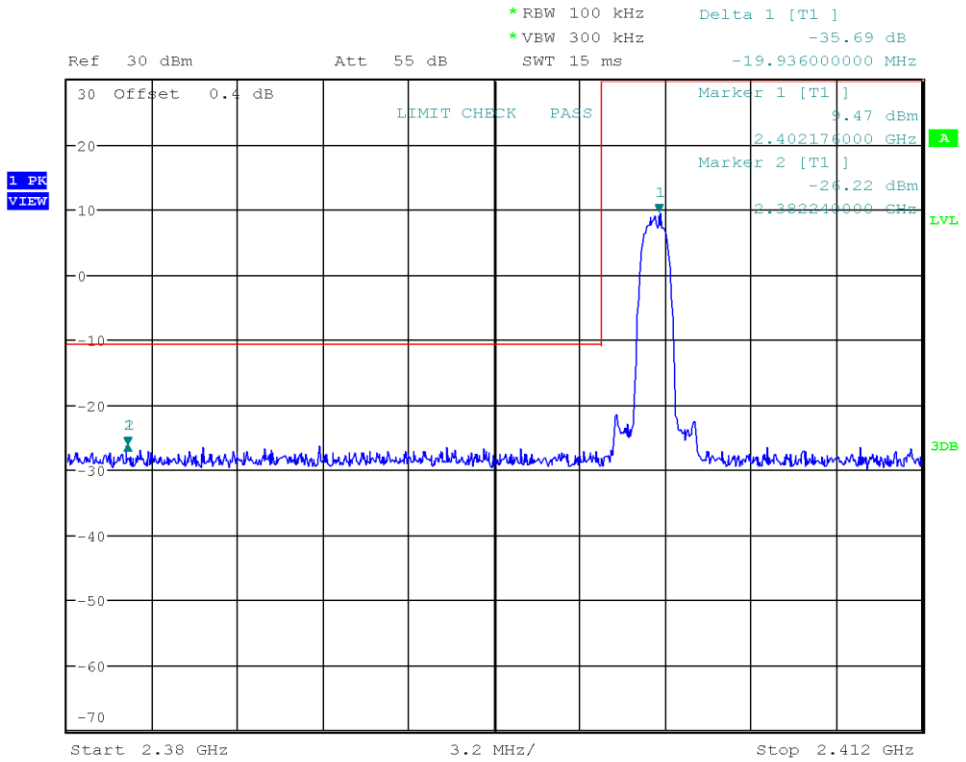
Emissions in nonrestricted frequency bands at the Band-edge

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.6, 6.10.4
Operational Mode:	DH5, Hopping
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Band-edge	Upper
In-band Frequency [MHz]:	2477.175
Max. in-band Level [dBm/100 kHz]:	17.036
Out-of-band Frequency [MHz]:	2503.985
Max. out-of-band Level [dBm/100 kHz]:	-25.673
Attenuation [dB]:	-42.71



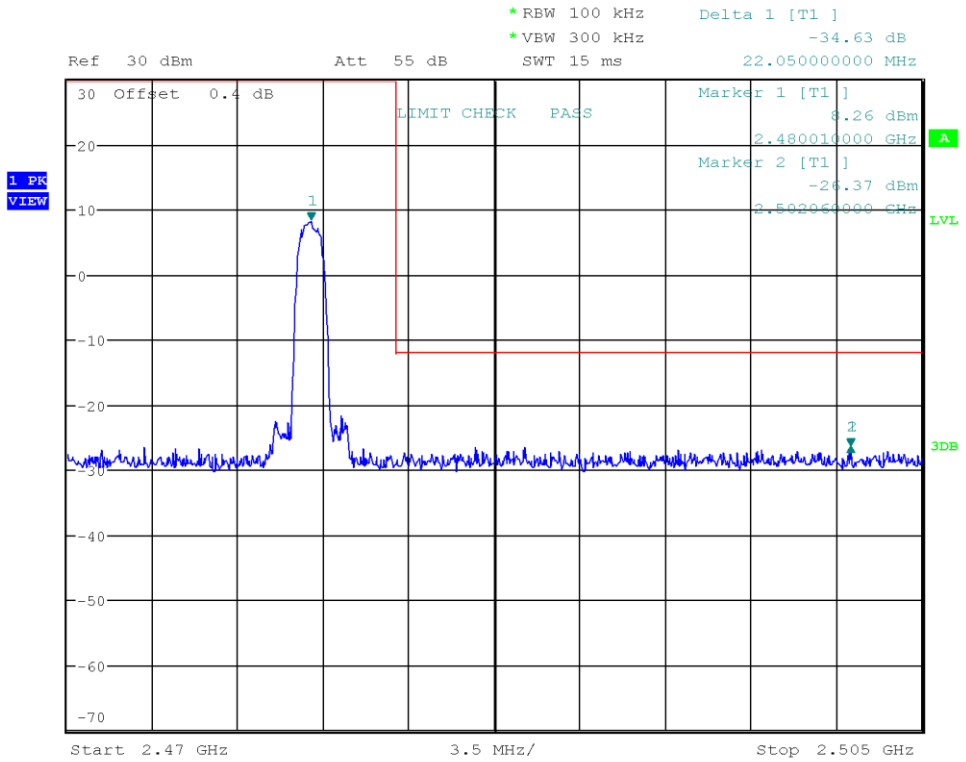
Emissions in nonrestricted frequency bands at the Band-edge

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.6, 6.10.4
Operational Mode:	2-DH5, Channel: 0, 2402 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Band-edge	Lower
In-band Frequency [MHz]:	2402.176
Max. in-band Level [dBm/100 kHz]:	9.468
Out-of-band Frequency [MHz]:	2382.24
Max. out-of-band Level [dBm/100 kHz]:	-26.224
Attenuation [dB]:	-35.69



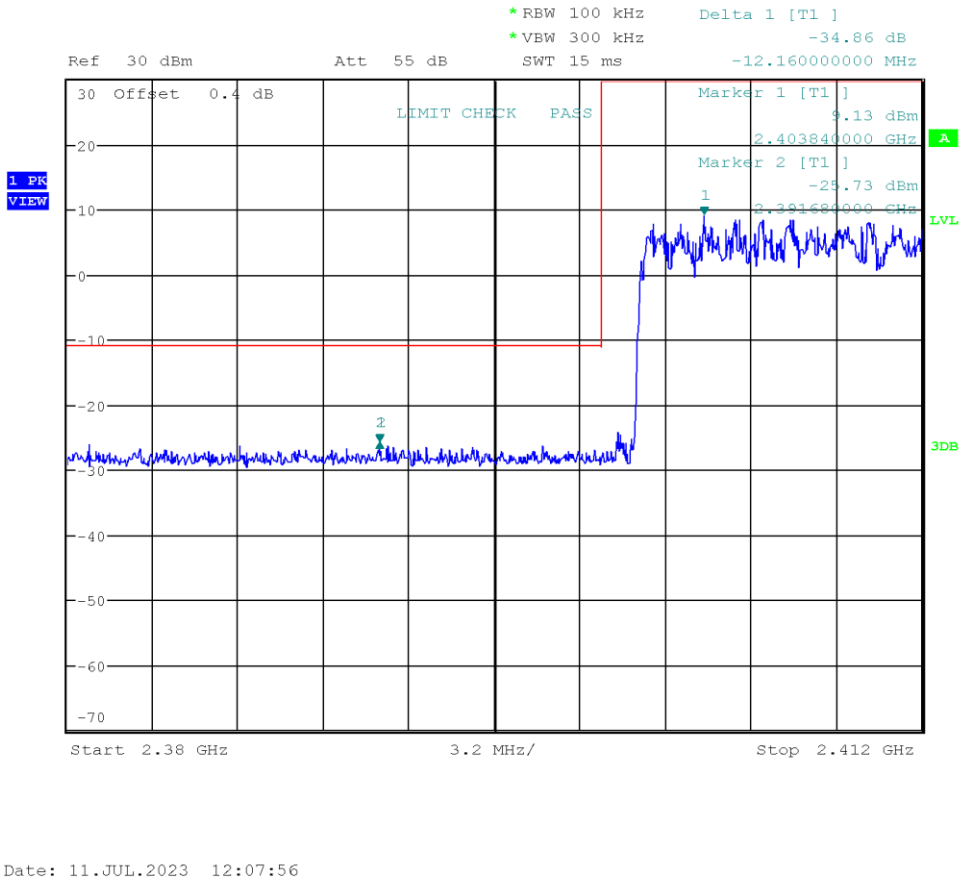
Emissions in nonrestricted frequency bands at the Band-edge

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.6, 6.10.4
Operational Mode:	2-DH5, Channel: 78, 2480 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Band-edge	Upper
In-band Frequency [MHz]:	2480.01
Max. in-band Level [dBm/100 kHz]:	8.258
Out-of-band Frequency [MHz]:	2502.06
Max. out-of-band Level [dBm/100 kHz]:	-26.369
Attenuation [dB]:	-34.63



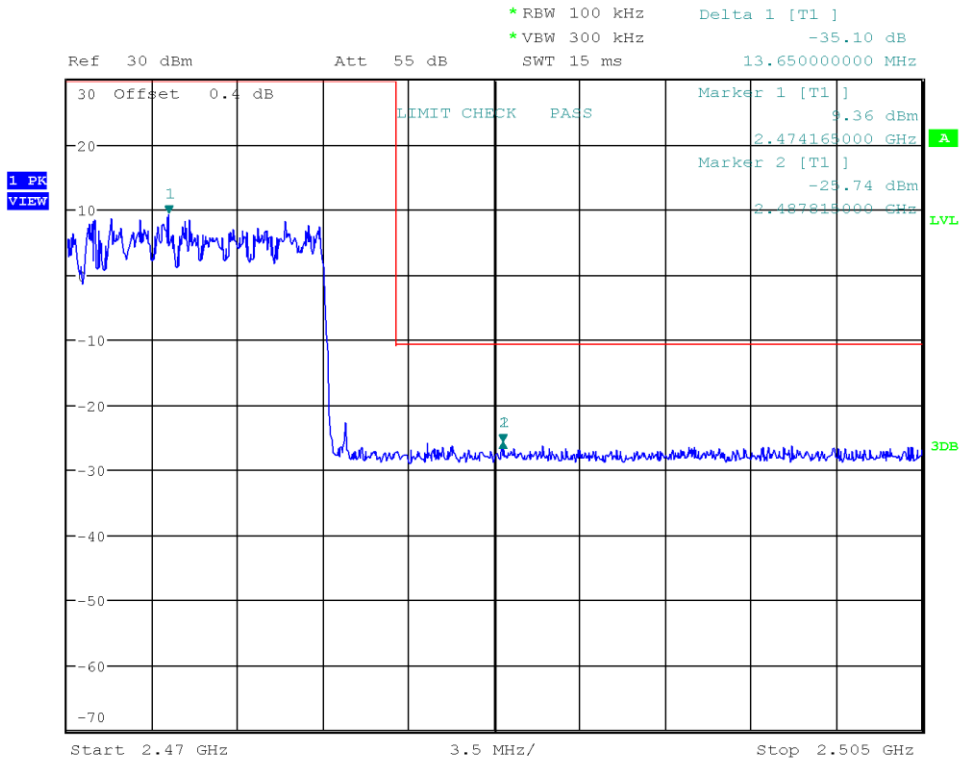
Emissions in nonrestricted frequency bands at the Band-edge

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.6, 6.10.4
Operational Mode:	2-DH5, Hopping
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Band-edge	Lower
In-band Frequency [MHz]:	2403.84
Max. in-band Level [dBm/100 kHz]:	9.134
Out-of-band Frequency [MHz]:	2391.68
Max. out-of-band Level [dBm/100 kHz]:	-25.727
Attenuation [dB]:	-34.86



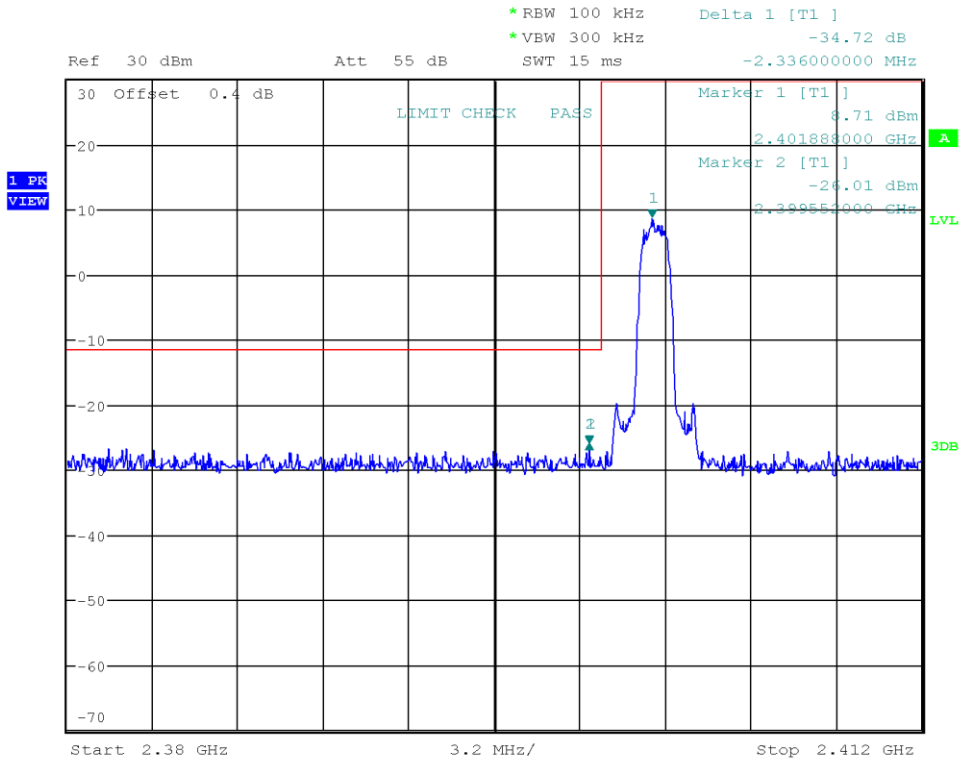
Emissions in nonrestricted frequency bands at the Band-edge

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.6, 6.10.4
Operational Mode:	2-DH5, Hopping
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Band-edge	Upper
In-band Frequency [MHz]:	2474.165
Max. in-band Level [dBm/100 kHz]:	9.36
Out-of-band Frequency [MHz]:	2487.815
Max. out-of-band Level [dBm/100 kHz]:	-25.742
Attenuation [dB]:	-35.1



Emissions in nonrestricted frequency bands at the Band-edge

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.6, 6.10.4
Operational Mode:	3-DH5, Channel: 0, 2402 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Band-edge	Lower
In-band Frequency [MHz]:	2401.888
Max. in-band Level [dBm/100 kHz]:	8.711
Out-of-band Frequency [MHz]:	2399.552
Max. out-of-band Level [dBm/100 kHz]:	-26.005
Attenuation [dB]:	-34.72



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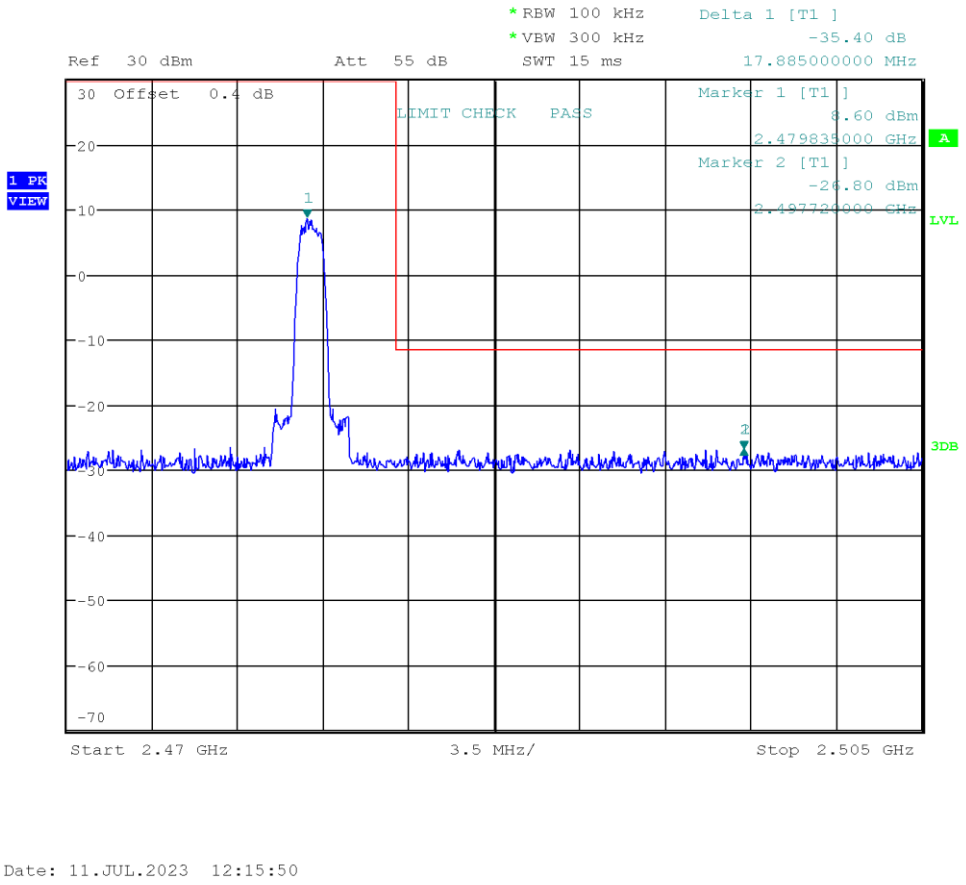
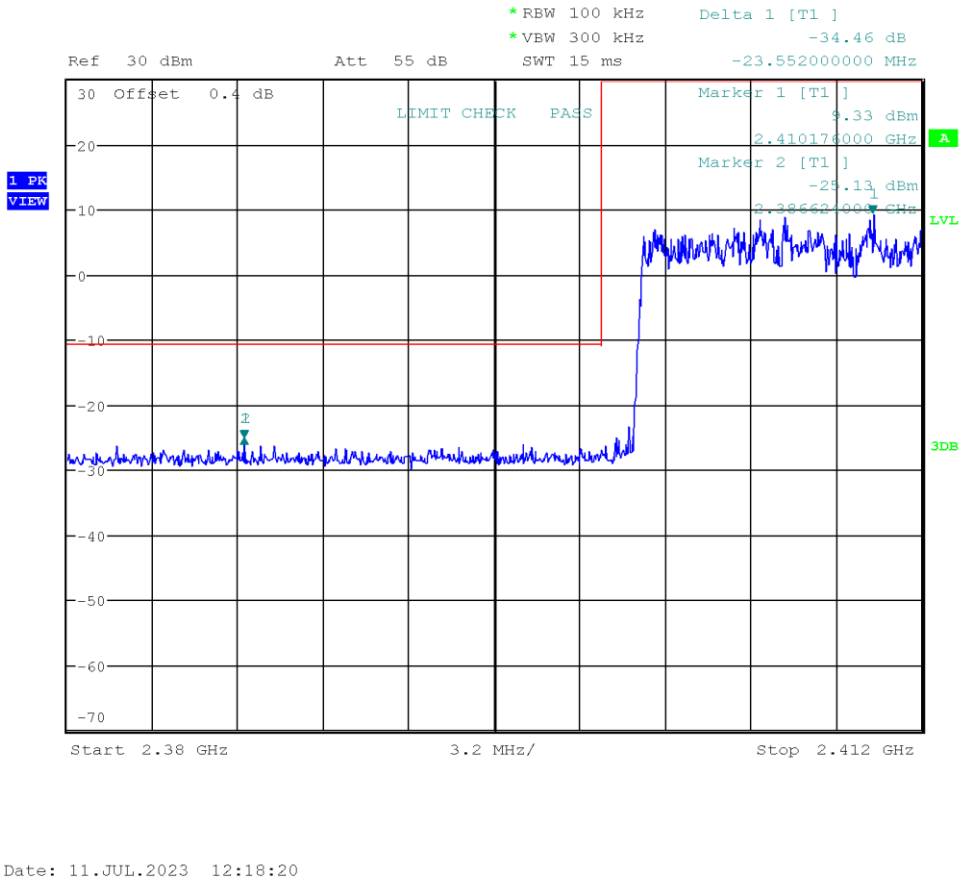
Emissions in nonrestricted frequency bands at the Band-edge

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.6, 6.10.4
Operational Mode:	3-DH5, Channel: 78, 2480 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Band-edge	Upper
In-band Frequency [MHz]:	2479.835
Max. in-band Level [dBm/100 kHz]:	8.595
Out-of-band Frequency [MHz]:	2497.72
Max. out-of-band Level [dBm/100 kHz]:	-26.803
Attenuation [dB]:	-35.4



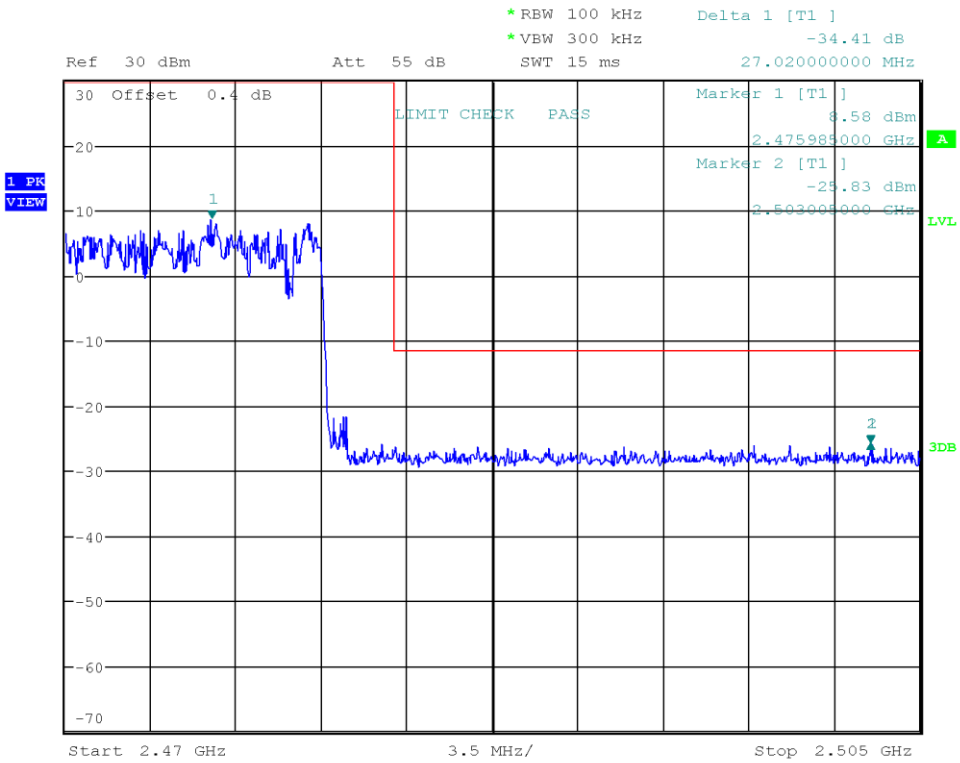
Emissions in nonrestricted frequency bands at the Band-edge

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.6, 6.10.4
Operational Mode:	3-DH5, Hopping
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Band-edge	Lower
In-band Frequency [MHz]:	2410.176
Max. in-band Level [dBm/100 kHz]:	9.33
Out-of-band Frequency [MHz]:	2386.624
Max. out-of-band Level [dBm/100 kHz]:	-25.127
Attenuation [dB]:	-34.46



Emissions in nonrestricted frequency bands at the Band-edge

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.6, 6.10.4
Operational Mode:	3-DH5, Hopping
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Band-edge	Upper
In-band Frequency [MHz]:	2475.985
Max. in-band Level [dBm/100 kHz]:	8.584
Out-of-band Frequency [MHz]:	2503.005
Max. out-of-band Level [dBm/100 kHz]:	-25.825
Attenuation [dB]:	-34.41



3.9 Test Conditions and Results - Conducted spurious emissions

3.9.1 Information

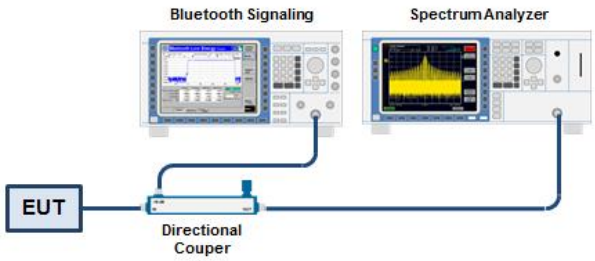
Test Information	
Reference	FCC § 15.247(d); ISED RSS-247, Issue 2 (section 5.5)
Measurement Uncertainty	± 4.25 dB
Measurement Method	ANSI C63.10 6.10
Operator	Ehsan Sohrabi
Date	2023-07-11

3.9.2 Limits

Limits	
Power Measurement	Out-of-band attenuation [dB]
Peak	20
RMS	30

3.9.3 Setup

Test Setup



3.9.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyser	R&S	FSU 26	EF01003	2022-07	2023-07
Blutooth signaling	R&S	CMW 270	EF01169	2023-04	2024-04
Cable (CAABY)	Sucoflex	SUCOFLEX 1102EA	EF00779	2023-03	2024-03

3.9.5 Procedure

Test Procedure

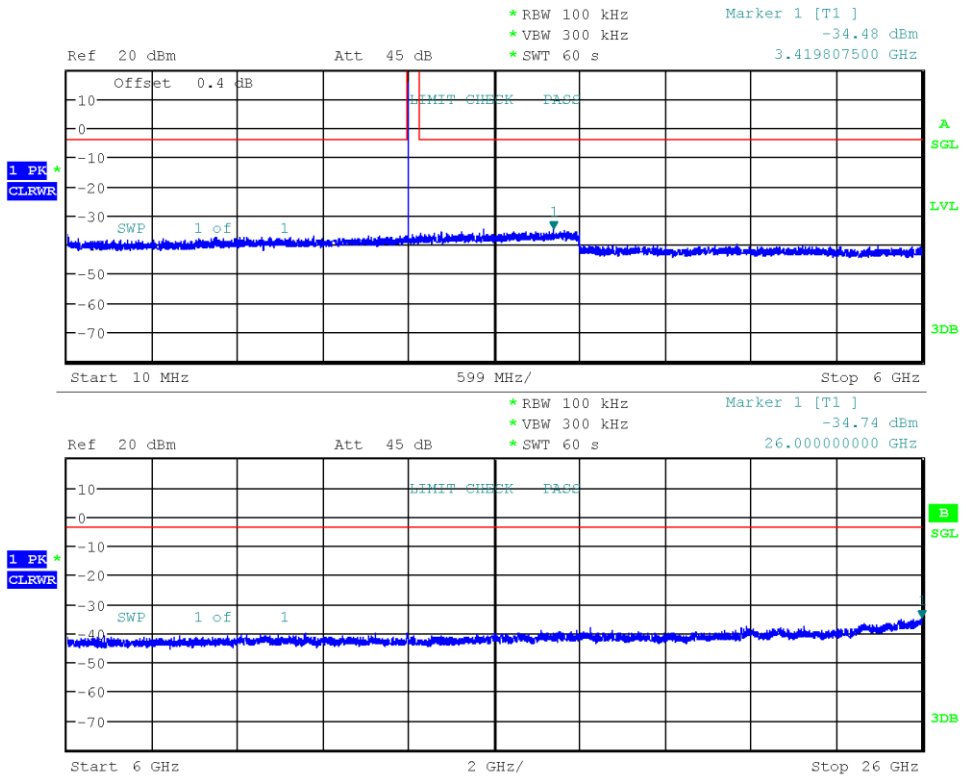
1. EUT set to test mode (Communication tester is used if needed)
2. Span set around lower band edge and detector is set to peak and max hold
3. Resolution bandwidth is set to 100 kHz
4. Markers are set to peak emission levels outside frequency band

3.9.6 Results

Test Results		
Mode	Channel [MHz]	Verdict
DH5	2402	PASS
DH5	2441	PASS
DH5	2480	PASS
2-DH5	2402	PASS
2-DH5	2441	PASS
2-DH5	2480	PASS
3-DH5	2402	PASS
3-DH5	2441	PASS
3-DH5	2480	PASS

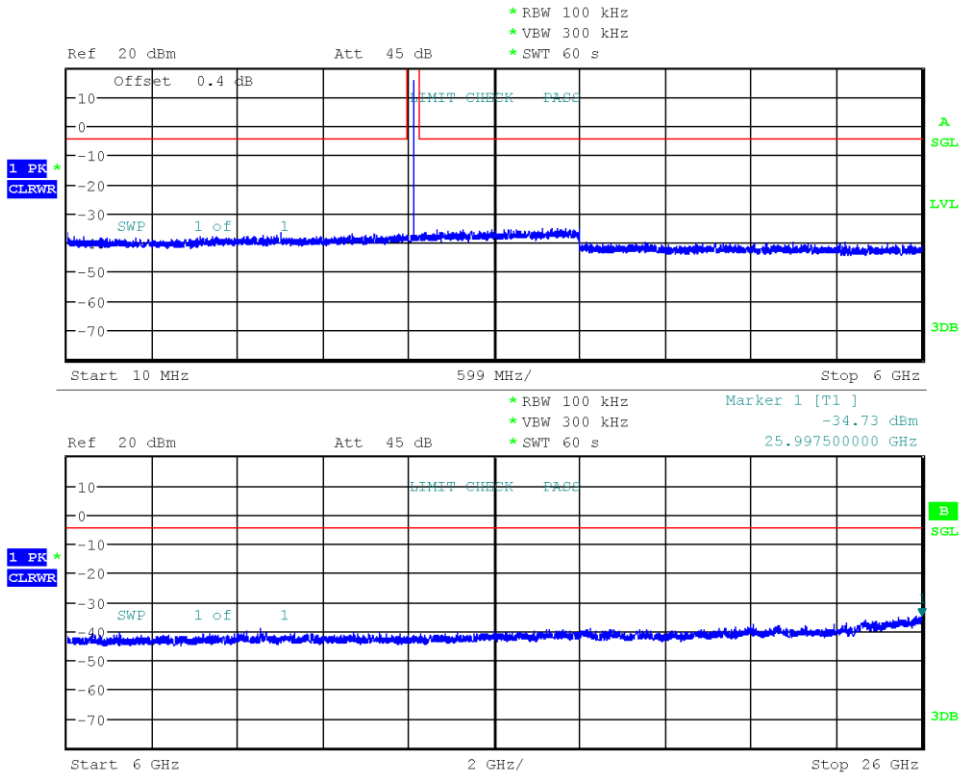
Conducted Spurious Emissions

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.8
Operational Mode:	DH5, Channel: 0, 2402 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Max. in-band Frequency [MHz]:	2402.2
Max. in-band Level [dBm/100 kHz]:	16.1
Out-of-band Limit [dBm/100 kHz]:	-3.9



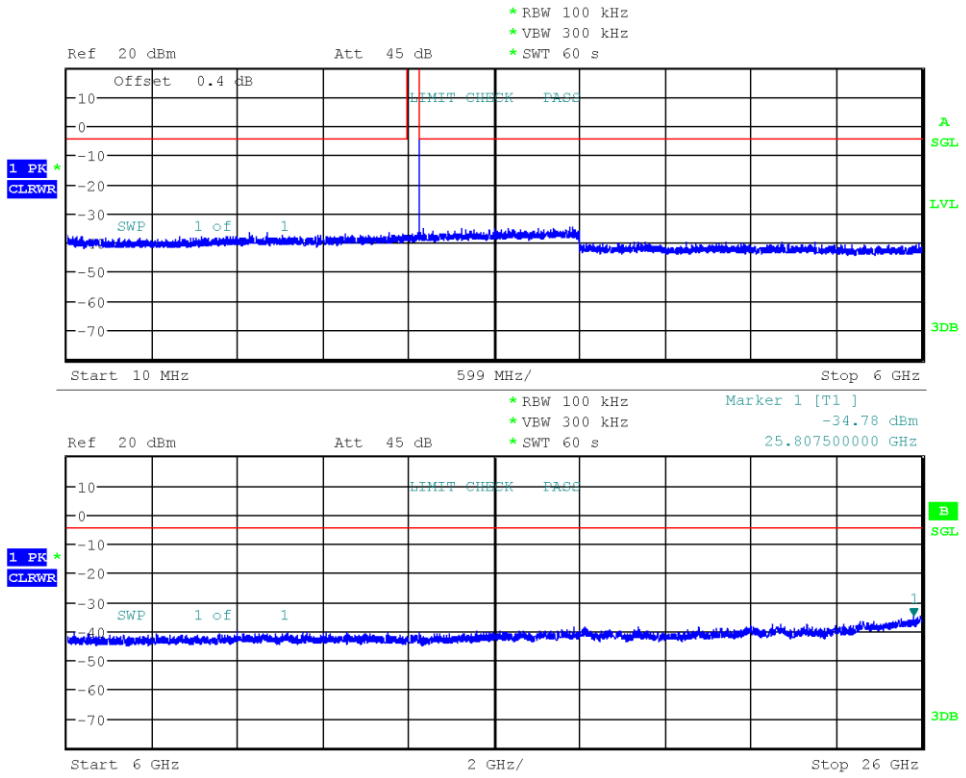
Conducted Spurious Emissions

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.8
Operational Mode:	DH5, Channel: 39, 2440 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Max. in-band Frequency [MHz]:	2440.8
Max. in-band Level [dBm/100 kHz]:	15.7
Out-of-band Limit [dBm/100 kHz]:	-4.3



Conducted Spurious Emissions

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.8
Operational Mode:	DH5, Channel: 78, 2480 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Max. in-band Frequency [MHz]:	2480.2
Max. in-band Level [dBm/100 kHz]:	15.7
Out-of-band Limit [dBm/100 kHz]:	-4.3



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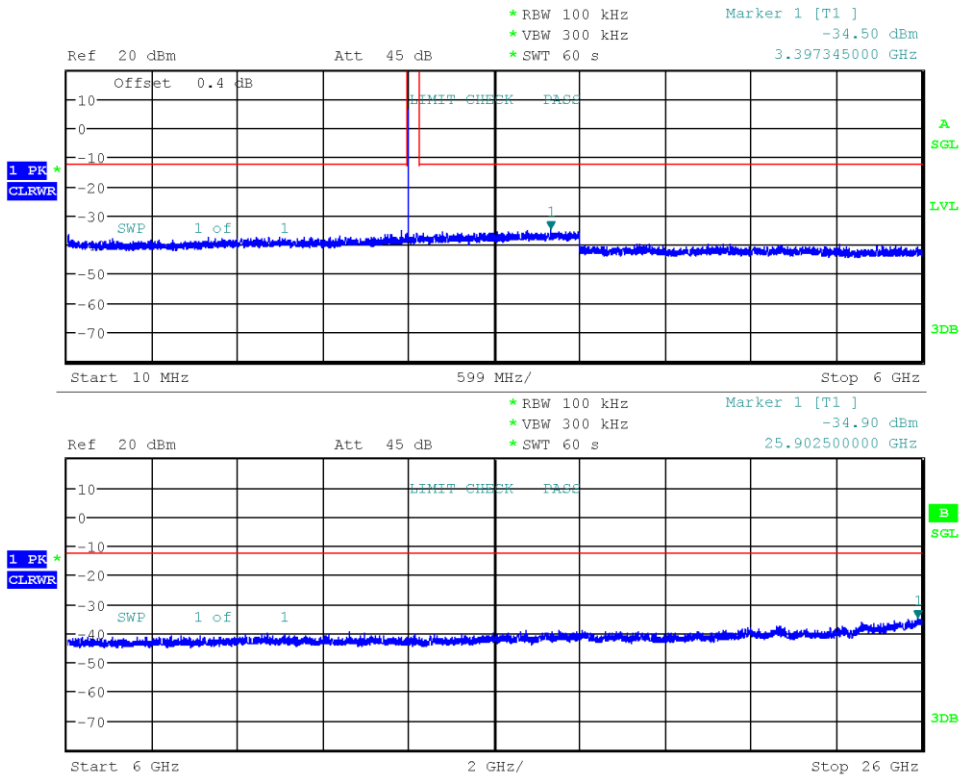
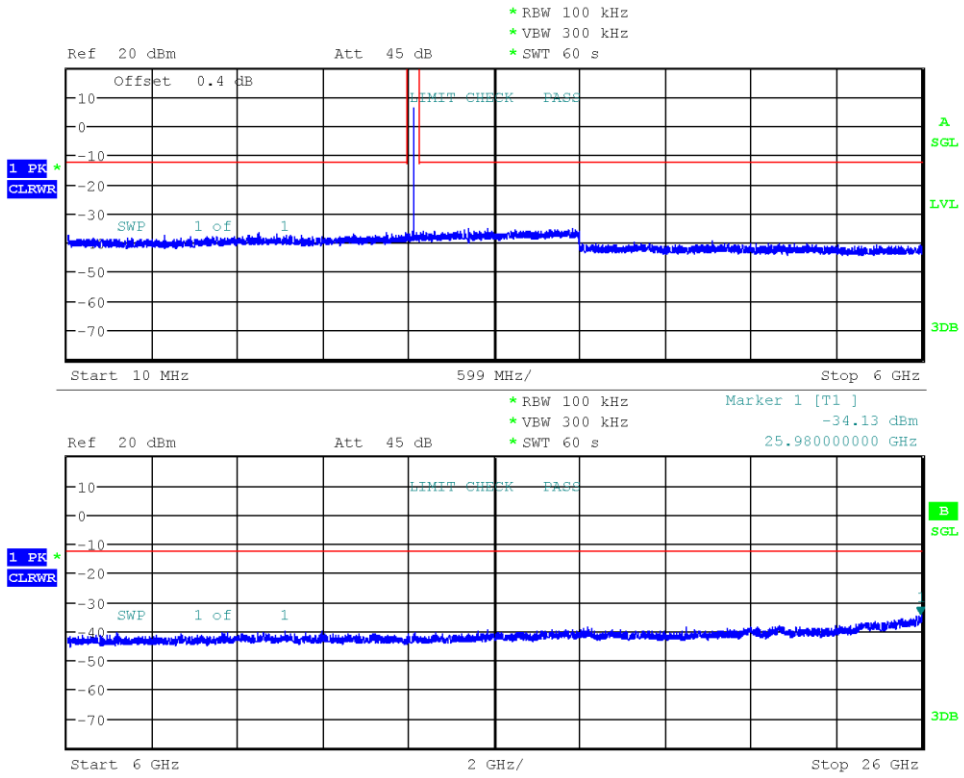
Conducted Spurious Emissions

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.8
Operational Mode:	2-DH5, Channel: 0, 2402 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Max. in-band Frequency [MHz]:	2402.0
Max. in-band Level [dBm/100 kHz]:	7.7
Out-of-band Limit [dBm/100 kHz]:	-12.3



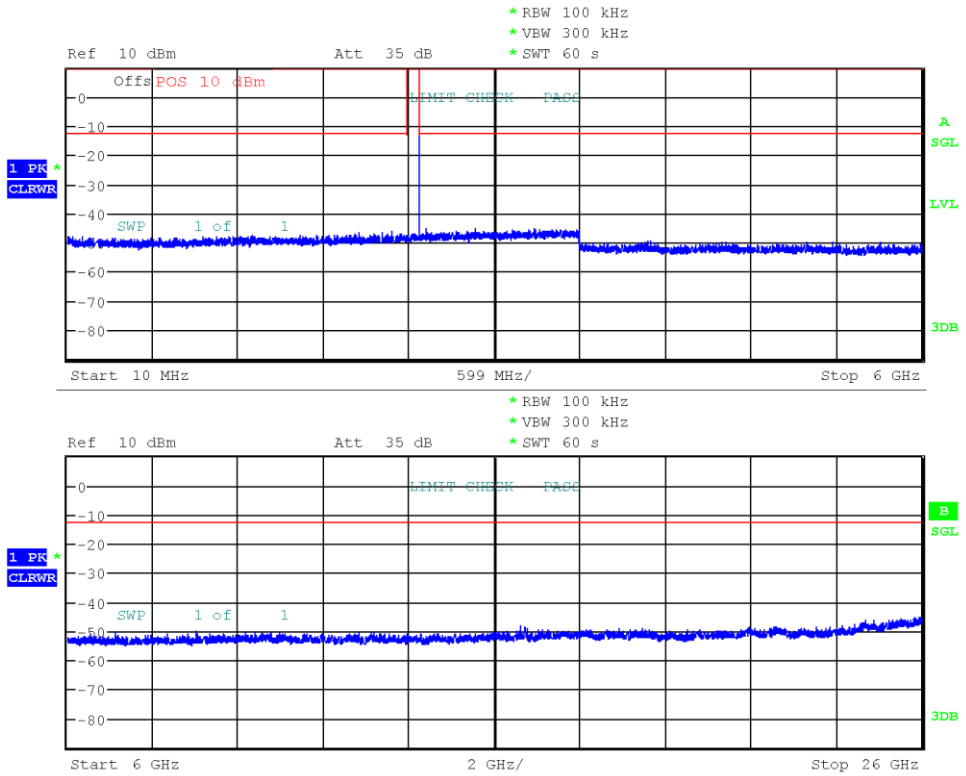
Conducted Spurious Emissions

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.8
Operational Mode:	2-DH5, Channel: 39, 2440 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Max. in-band Frequency [MHz]:	2440.8
Max. in-band Level [dBm/100 kHz]:	7.8
Out-of-band Limit [dBm/100 kHz]:	-12.2



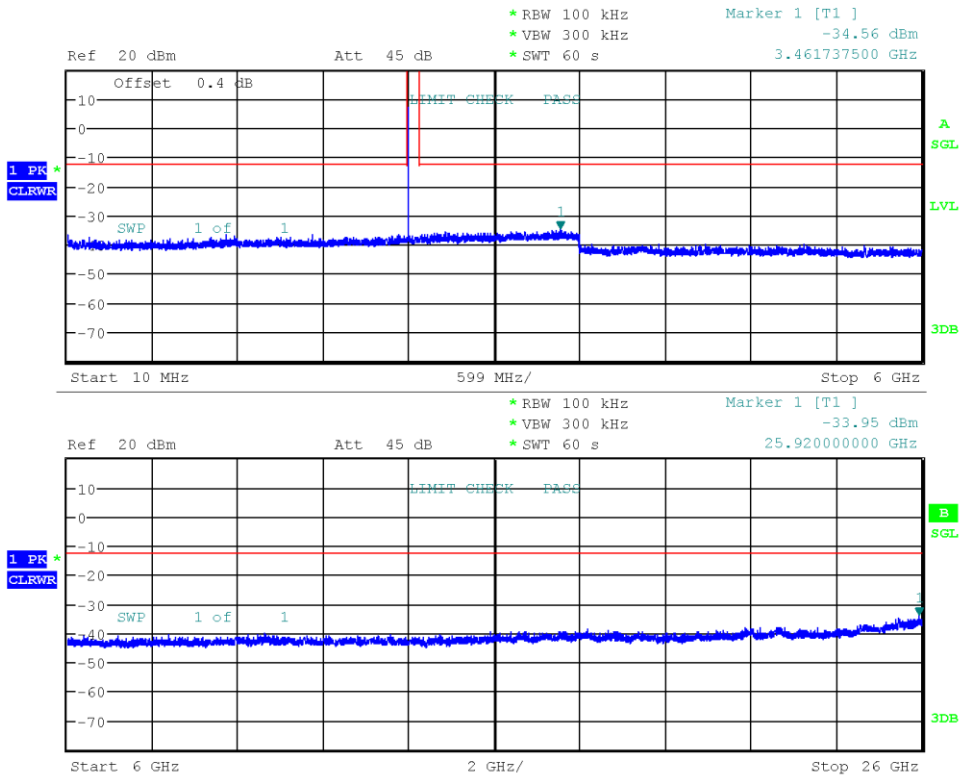
Conducted Spurious Emissions

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.8
Operational Mode:	2-DH5, Channel: 78, 2480 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Max. in-band Frequency [MHz]:	2479.9
Max. in-band Level [dBm/100 kHz]:	7.6
Out-of-band Limit [dBm/100 kHz]:	-12.4



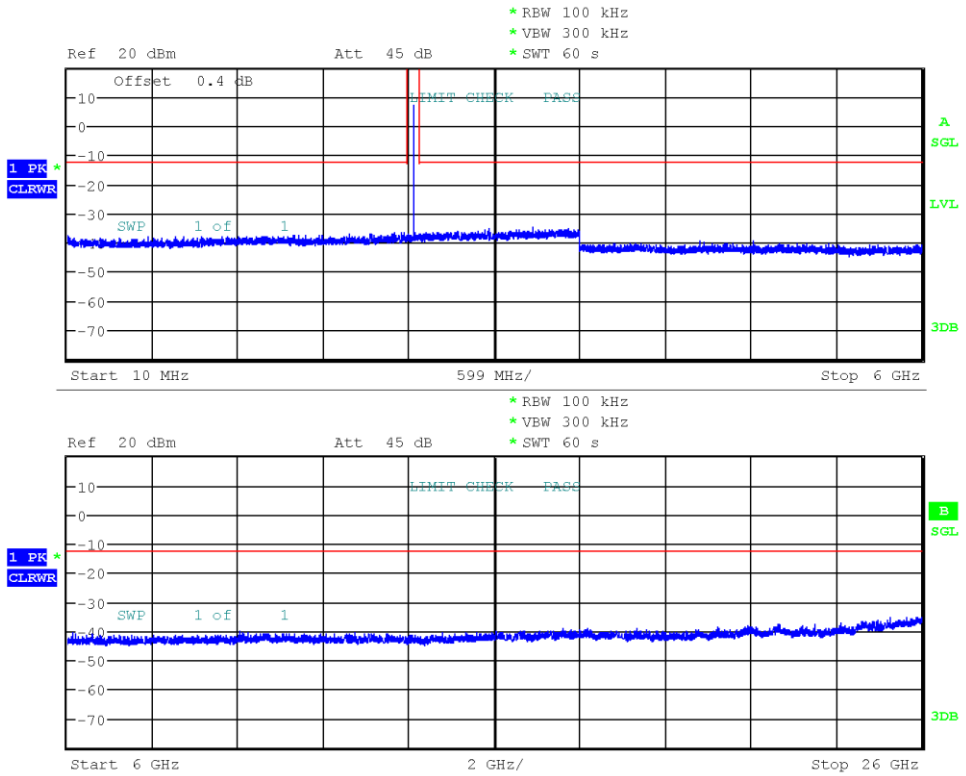
Conducted Spurious Emissions

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.8
Operational Mode:	3-DH5, Channel: 0, 2402 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Max. in-band Frequency [MHz]:	2401.8
Max. in-band Level [dBm/100 kHz]:	7.8
Out-of-band Limit [dBm/100 kHz]:	-12.2



Conducted Spurious Emissions

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.8
Operational Mode:	3-DH5, Channel: 39, 2440 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Max. in-band Frequency [MHz]:	2440.8
Max. in-band Level [dBm/100 kHz]:	7.8
Out-of-band Limit [dBm/100 kHz]:	-12.2



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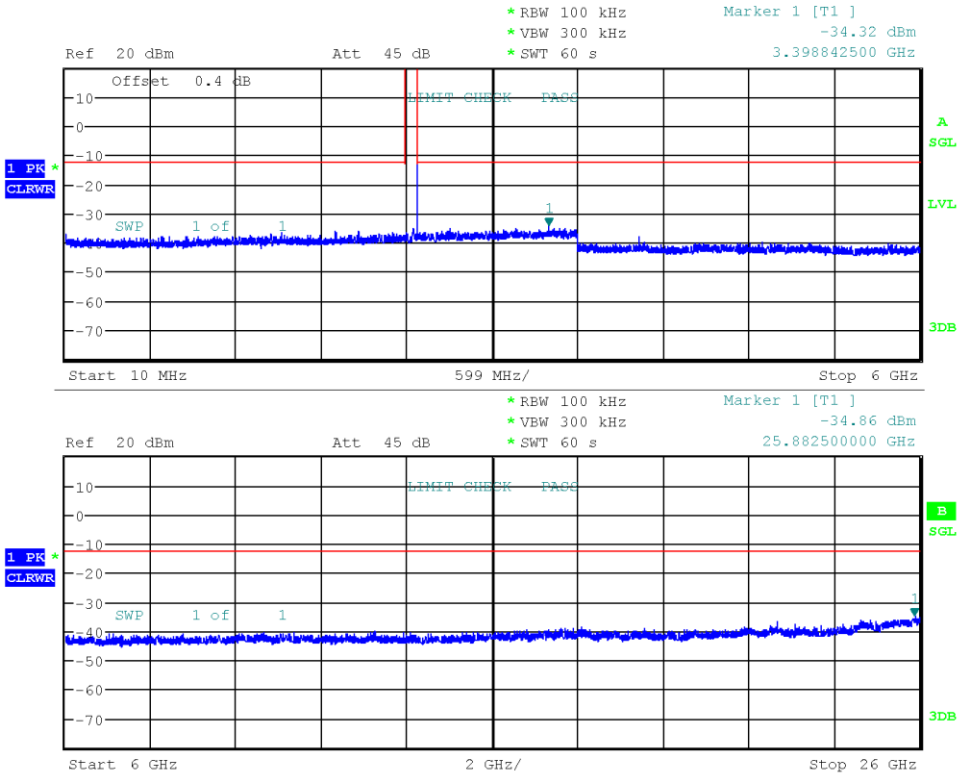
Conducted Spurious Emissions

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Reference Standards:	FCC 15.247, RSS-247
Reference Method:	ANSI C63.10:2013, Section 7.8.8
Operational Mode:	3-DH5, Channel: 78, 2480 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Radwan Jaafar
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-11
Max. in-band Frequency [MHz]:	2480.2
Max. in-band Level [dBm/100 kHz]:	7.8
Out-of-band Limit [dBm/100 kHz]:	-12.2



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3.10 Test Conditions and Results - Transmitter radiated emissions

3.10.1 Information

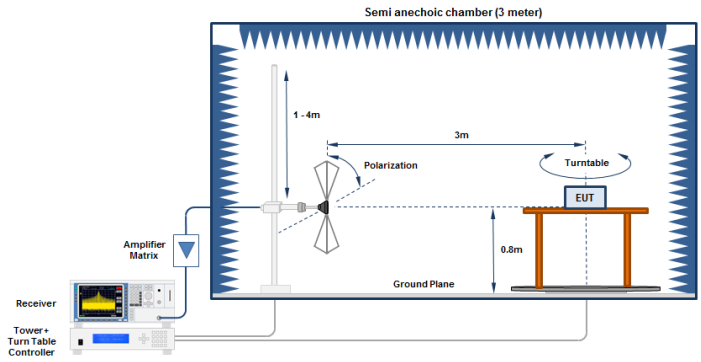
Test Information	
Reference	FCC § 15.247(d); FCC § 15.209; ISED RSS-Gen, Issue 5 A2 (section 6.13)
Measurement Uncertainty	± 5.95 dB
Measurement Method	ANSI C63.10 6.4, 6.5, 6.6
Operator	E. Sohrabi; I. Azamat
Date	2023-07-12 – 2023-07-14

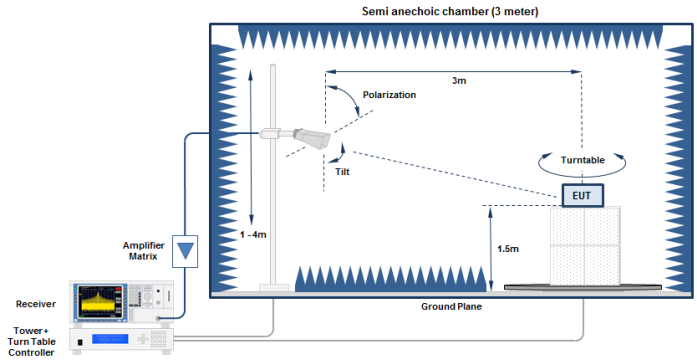
3.10.2 Limits

Limits			
Frequency range [MHz]	Detector	Field strength [µV/m]	Measurement distance [m]
0.009 - 0.09	Average	2400/F[kHz]	300
0.09 - 0.110	Quasi-Peak	2400/F[kHz]	300
0.110 - 0.490	Average	2400/F[kHz]	300
0.490 - 1.705	Quasi-Peak	24000/F[kHz]	30
1.705 - 30.0	Quasi-Peak	30	30
30 - 88	Quasi-Peak	100	3
88 - 216	Quasi-Peak	150	3
216 - 960	Quasi-Peak	200	3
960 - 1000	Quasi-Peak	500	3
>1000	Average	500	3

3.10.3 Setup

Test Setup 30 MHz - 1000 MHz



Test Setup > 1 GHz


3.10.4 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	RadiMation	2020.1.8

Test Equipment 30 MHz - 1000 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2022-11	2025-11
Measurement Receiver	Agilent	N9038A-526/WXP	EF01070	2023-02	2024-02
Antenna	Schwarzbeck	VULB 9168	EF01824	2022-10	2023-10

Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC2	EF01616	2022-10	2023-10
Spectrum analyzer	R&S	FSW43	EF00896	2022-08	2023-08
Antenna	Schwarzbeck	BBHA 9120B	EF01678	2021-03	2024-03
Antenna	Schwarzbeck	HWRD 650	EF01679	2021-03	2024-03
Antenna	Amplifier Research	AT4560	EF00302	2021-06	2023-09

3.10.5 Procedure

Test Procedure 30 MHz - 1000 MHz
1. EUT is placed on a non conducting support at the center of a turn table 0.8 m above the ground 2. EUT set to test mode 3. The receiver is set to peak detection with max hold 4. The EUT is rotated through 360° and the height of the antenna is varied from 1 m to 4 m 5. All significant emissions are measured again using the corresponding final detector

Test Procedure > 1 GHz
1. EUT is placed on a non conducting support at the center of a turn table 1.5 m above the ground 2. EUT set to test mode 3. The receiver is set to peak detection with max hold 4. The EUT is rotated through 360° and the height of the antenna is varied from 1 m to 4 m 5. All significant emissions are measured again using the corresponding final detector

3.10.6 Results

Test Results - DH5						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
2402	2362	57.31	pk	ver	74.00	-16.69
2402	2362	42.05	avg	ver	54.00	-11.95
2402	4803.7	46.59	pk	ver	74.00	-27.41
2402	4803.7	44.08	avg	ver	54.00	-09.92
2402	12010	46.06	pk	ver	74.00	-27.94
2402	12010	40.69	avg	ver	54.00	-13.31
2441	4882	46.64	pk	ver	74.00	-27.36
2441	4882	44.22	avg	ver	54.00	-09.78
2441	7323.6	48.54	pk	hor	74.00	-25.46
2441	7323.6	44.23	avg	hor	54.00	-09.77
2441	12204	42.41	pk	ver	74.00	-31.59
2441	12204	37.34	avg	ver	54.00	-16.66
2480	2483.6	53.49	pk	ver	74.00	-20.51
2480	2483.6	47.02	avg	ver	54.00	-06.98
2480	4960	49.09	pk	ver	74.00	-24.91
2480	4960	47.12	avg	ver	54.00	-06.88

Test Results - 2-DH5						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
2402	12011	44.31	pk	ver	74.00	-29.69
2402	12011	37.54	avg	ver	54.00	-16.46
2441	12204	42.61	pk	ver	74.00	-31.39
2441	12204	35.07	avg	ver	54.00	-18.93
2480	2483.6	61.59	pk	ver	74.00	-12.41
2480	2483.6	44.28	avg	ver	54.00	-09.72
2480	7440	45.09	pk	hor	74.00	-28.91
2480	7440	40.45	avg	hor	54.00	-13.55

Test Results - 3-DH5						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
2402	4804.1	42.49	pk	ver	74.00	-31.51
2402	4804.1	37.01	avg	ver	54.00	-16.99
2441	7322.9	46.83	pk	ver	74.00	-27.17
2441	7322.9	41.47	avg	ver	54.00	-12.53
2441	12205	41.67	pk	ver	74.00	-32.33
2441	12205	35.09	avg	ver	54.00	-18.91
2480	2208	49.98	pk	ver	74.00	-24.02
2480	2208	29.82	avg	ver	54.00	-24.18
2480	2483.6	56.98	pk	ver	74.00	-17.02
2480	2483.6	47.24	avg	ver	54.00	-06.76
2480	7440	40.01	avg	ver	54.00	-13.99

3.10.7 Setup Photos

Setup for measurements below 1 GHz (1)
Photos removed - refer to additional exhibit

Setup for measurements below 1 GHz (2)
Photos removed - refer to additional exhibit

EUT Test Setup below 1 GHz
Photos removed - refer to additional exhibit

Setup for measurements above 1 GHz
Photos removed - refer to additional exhibit

EUT Test Setup above 1 GHz
Photos removed - refer to additional exhibit

3.11 Test Conditions and Results - Receiver radiated emissions

3.11.1 Information

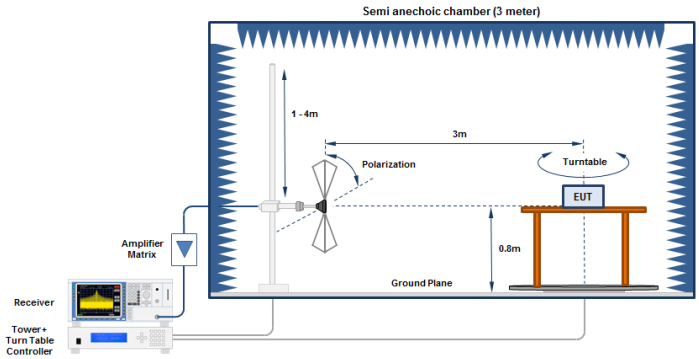
Test Information	
Reference	ISED RSS-247, Issue 2 (section 3.1)
Measurement Uncertainty	± 5.95 dB
Measurement Method	ANSI C63.4-2014 8.1-8.3
Operator	E. Sohrabi
Date	2023-07-12

3.11.2 Limits

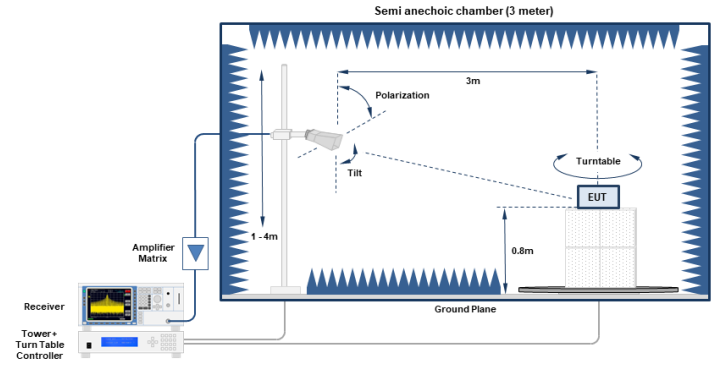
Limits			
Frequency range [MHz]	Detector	Field strength [µV/m]	Measurement distance [m]
30 - 88	Quasi-Peak	100	3
88 - 216	Quasi-Peak	150	3
216 - 960	Quasi-Peak	200	3
960 - 1000	Quasi-Peak	500	3
>1000	Average	500	3

3.11.3 Setup

Test Setup 30 MHz - 1000 MHz



Test Setup > 1 GHz



3.11.4 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	RadiMation	2020.1.8

Test Equipment 30 MHz - 1000 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2022-11	2025-11
Measurement Receiver	Agilent	N9038A-526/WXP	EF01070	2023-02	2024-02
Antenna	Schwarzbeck	VULB 9168	EF01824	2022-10	2023-10

Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF01011	2022-11	2023-11
Measurement Receiver	Agilent	N9038A-526/WXP	EF01070	2023-02	2024-02
Antenna	Schwarzbeck	BBHA 9120D	EF01561	2021-11	2024-11
Antenna	Schwarzbeck	HWRD 650	EF01679	2021-03	2024-03

3.11.5 Procedure

Test Procedure
1. EUT is placed on a non conducting support at the center of a turn table 0.8 m above the ground
2. EUT is set to test mode
3. The receiver is set to peak detection with max hold
4. The EUT is rotated through 360° and the height of the antenna is varied from 1 m to 4 m
5. All significant emissions are measured again using the corresponding final detector

3.11.6 Results

Test Results						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Det.	Pol.	Limit [dBµV/m]	Margin [dB]
Scan mode	640.0088	37.60	pk	ver	46.00	-08.44
Scan mode	640.0088	33.20	qpk	ver	46.00	-12.84
Scan mode	16478	46.06	pk	ver	74.00	-27.94
Scan mode	16478	28.59	avg	ver	53.98	-25.39

3.11.7 Setup Photos

Setup for measurements below 1 GHz (1)
Photos removed - refer to additional exhibit

Setup for measurements below 1 GHz (2)
Photos removed - refer to additional exhibit

EUT Test Setup
Photos removed - refer to additional exhibit

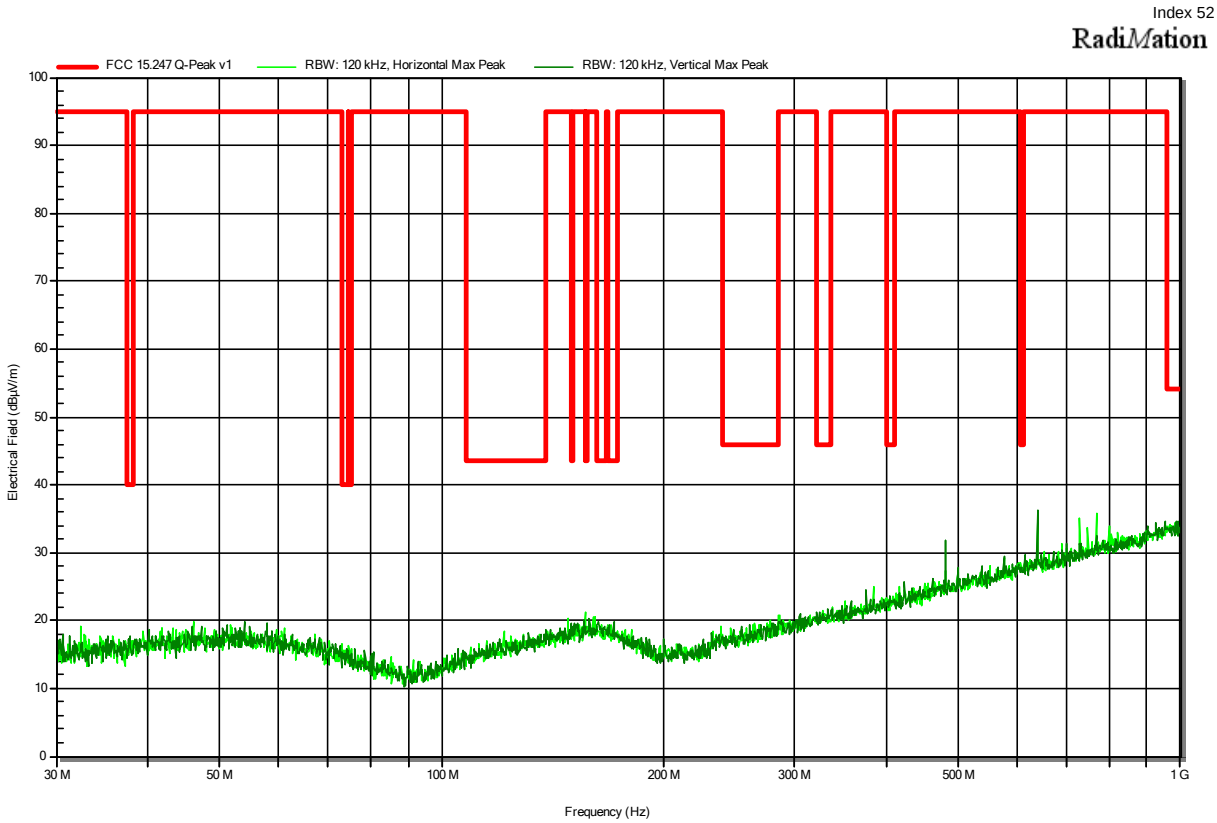
Setup for measurements above 1 GHz (1)
Photos removed - refer to additional exhibit

Setup for measurements above 1 GHz (2)
Photos removed - refer to additional exhibit

ANNEX A Transmitter spurious emissions

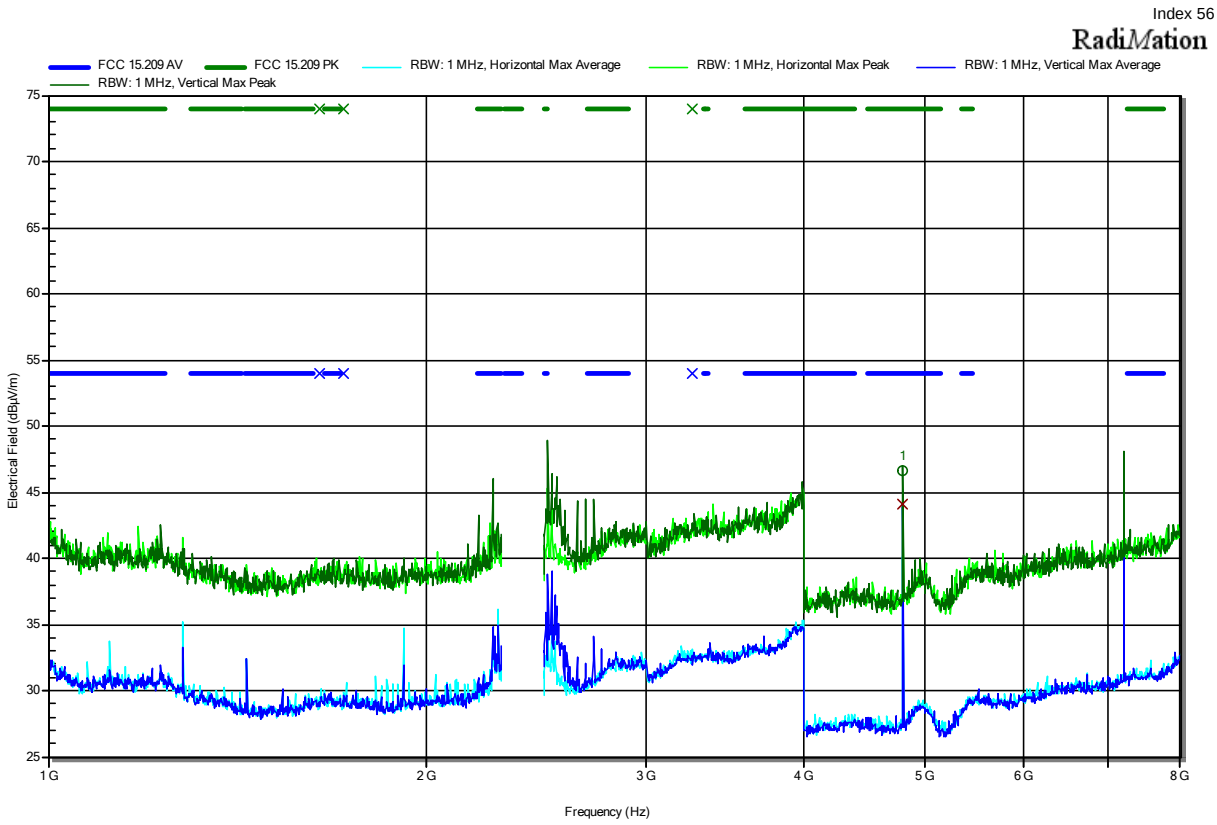
Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Sohrabi
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck VULB 9168
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2402 MHz, PRBS9, DH5, P = max
Test Date:	2023-07-12



Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Ibraimov Azamat
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck BBHA 9120B
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2402 MHz, PRBS9, DH5, P = max
Test Date:	2023-07-14

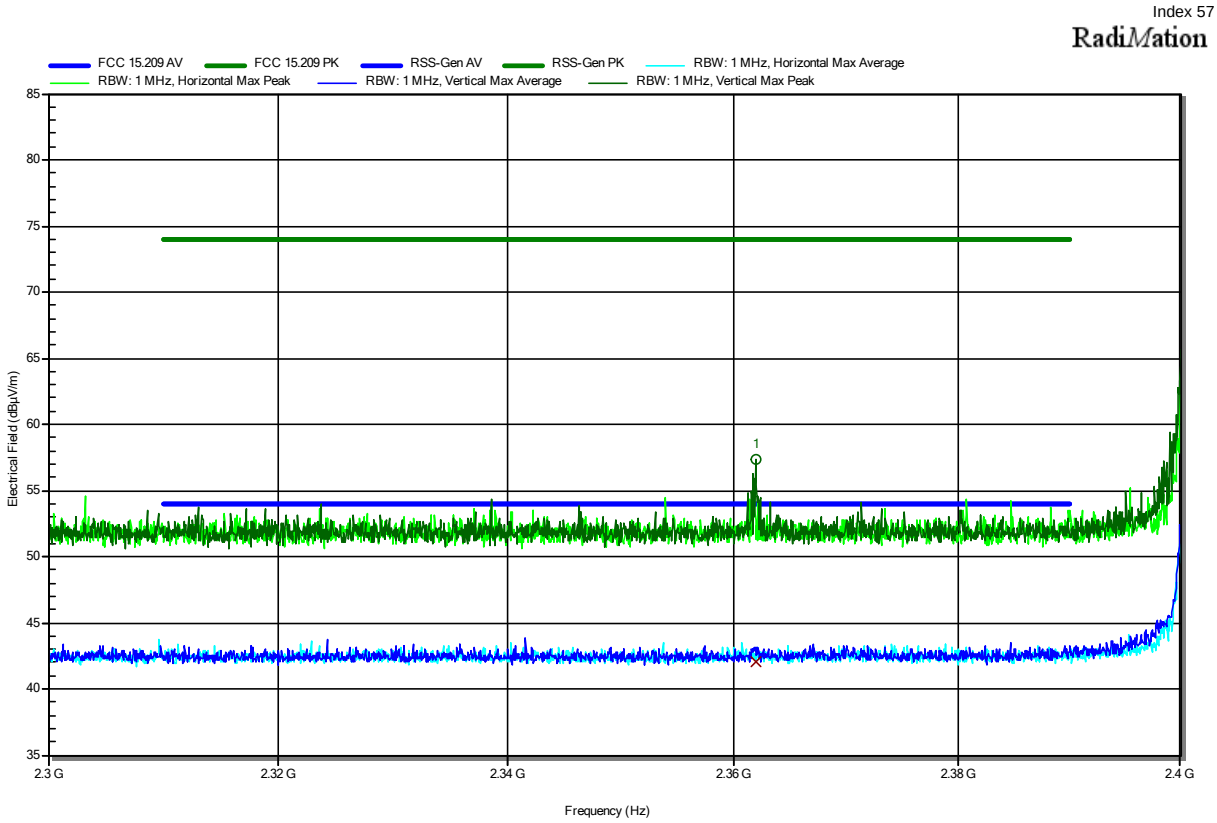


Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
4.8037 GHz	46.59 dBµV/m	74 dBµV/m	-27.41 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
4.8037 GHz	44.08 dBµV/m	54 dBµV/m	-9.92 dB	Pass	Vertical

Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Ibraimov Azamat
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck BBHA 9120B
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2402 MHz, PRBS9, DH5, P = max
Test Date:	2023-07-14
Note:	lower bandedge

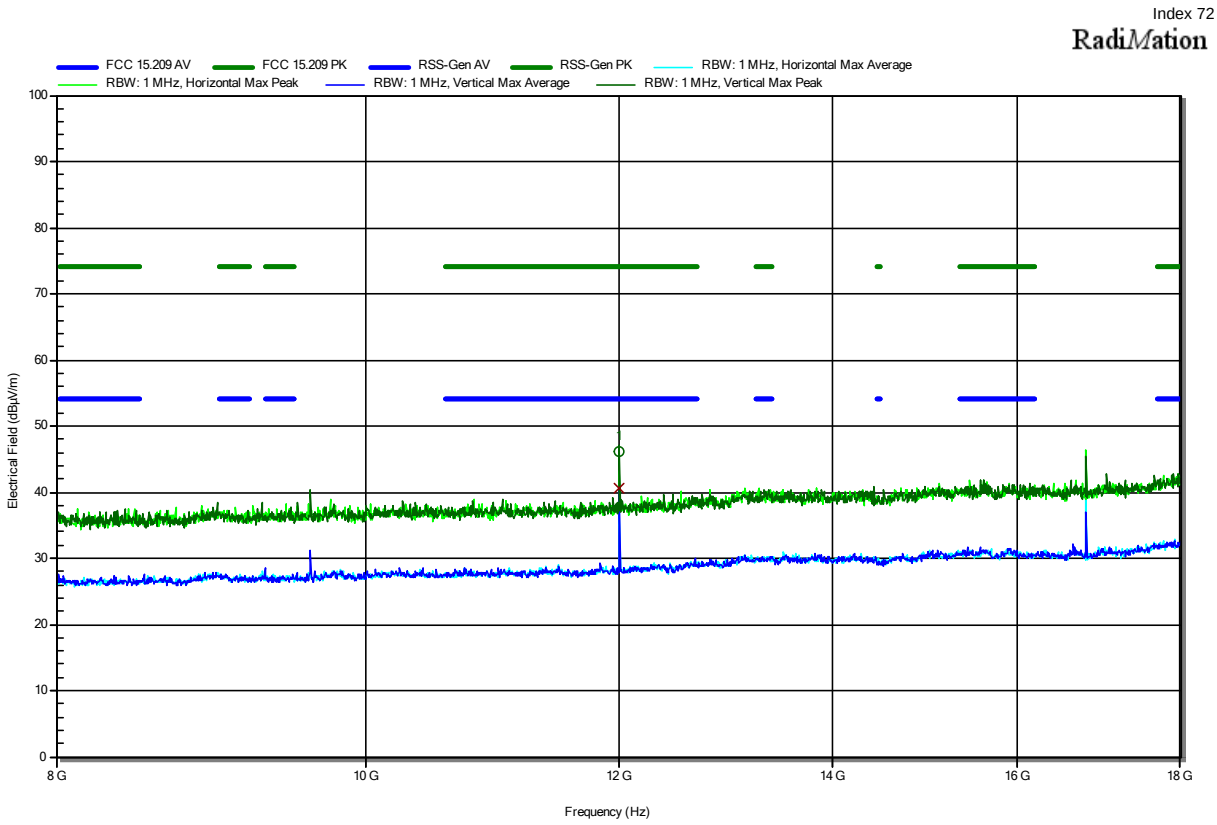


Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
2.362 GHz	57.31 dBµV/m	74 dBµV/m	-16.69 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
2.362 GHz	42.05 dBµV/m	54 dBµV/m	-11.95 dB	Pass	Vertical

Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Godson Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck HWRD 650
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2402 MHz, PRBS9, DH5, P = max
Test Date:	2023-07-14

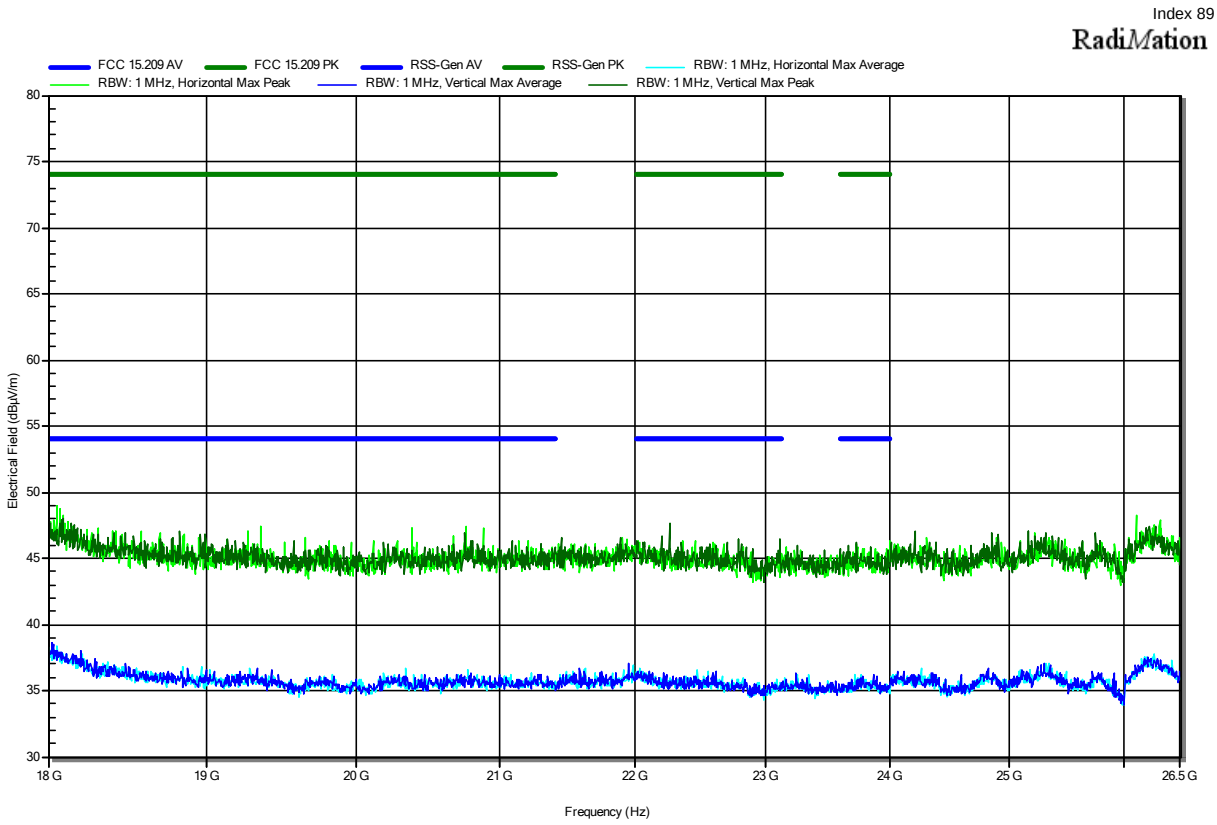


Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
12.01 GHz	46.06 dBµV/m	74 dBµV/m	-27.94 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
12.01 GHz	40.69 dBµV/m	54 dBµV/m	-13.31 dB	Pass	Vertical

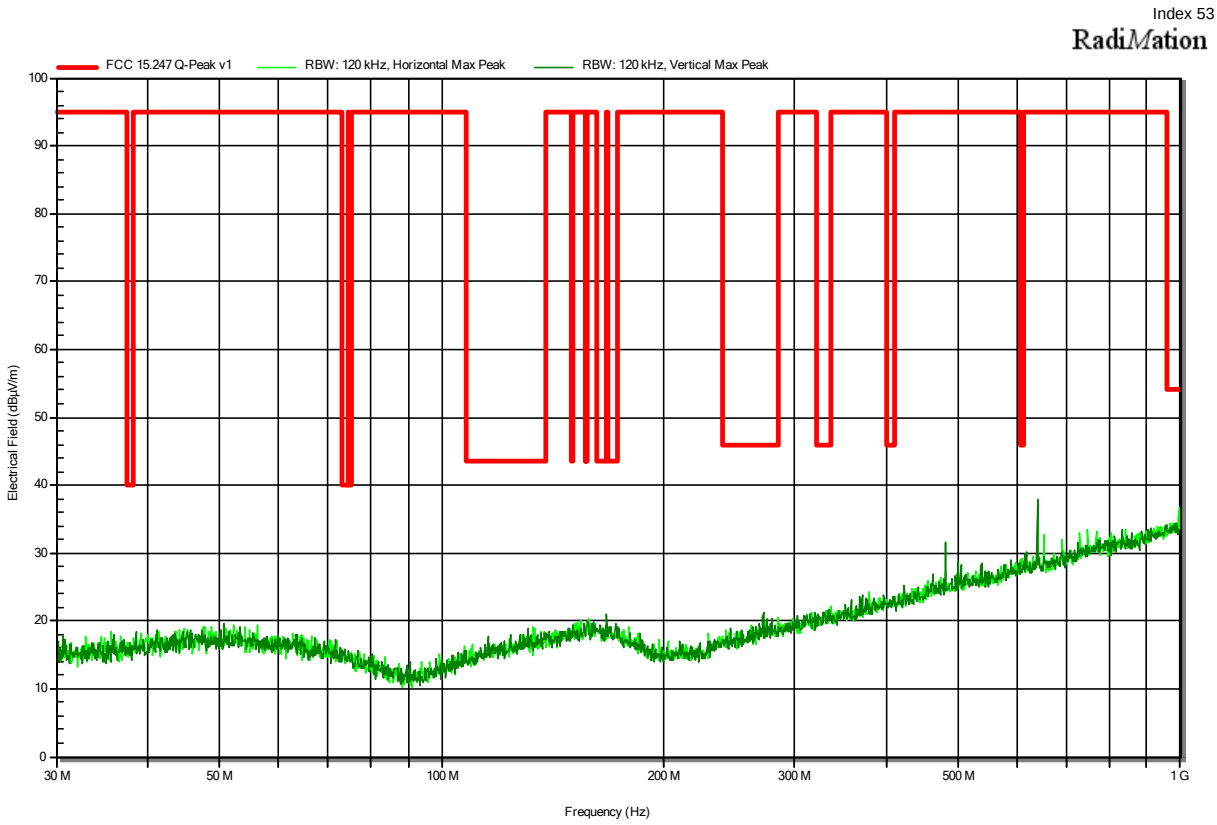
Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Godson Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Amplifier Research AT4560
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2402 MHz, PRBS9, DH5, P = max
Test Date:	2023-07-14



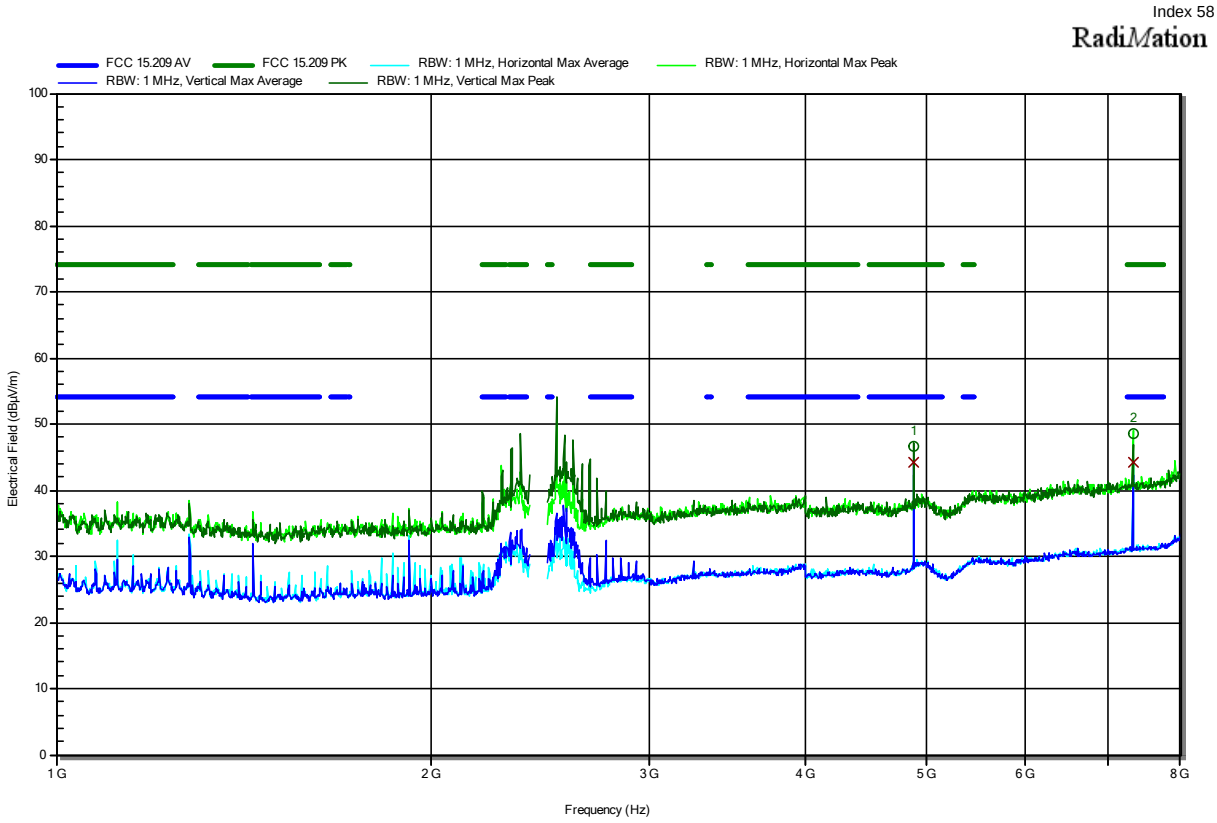
Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Sohrabi
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck VULB 9168
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2441 MHz, PRBS9, DH5, P = max
Test Date:	2023-07-12



Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Ibraimov Azamat
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck BBHA 9120B
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2441 MHz, PRBS9, DH5, P = max
Test Date:	2023-07-14

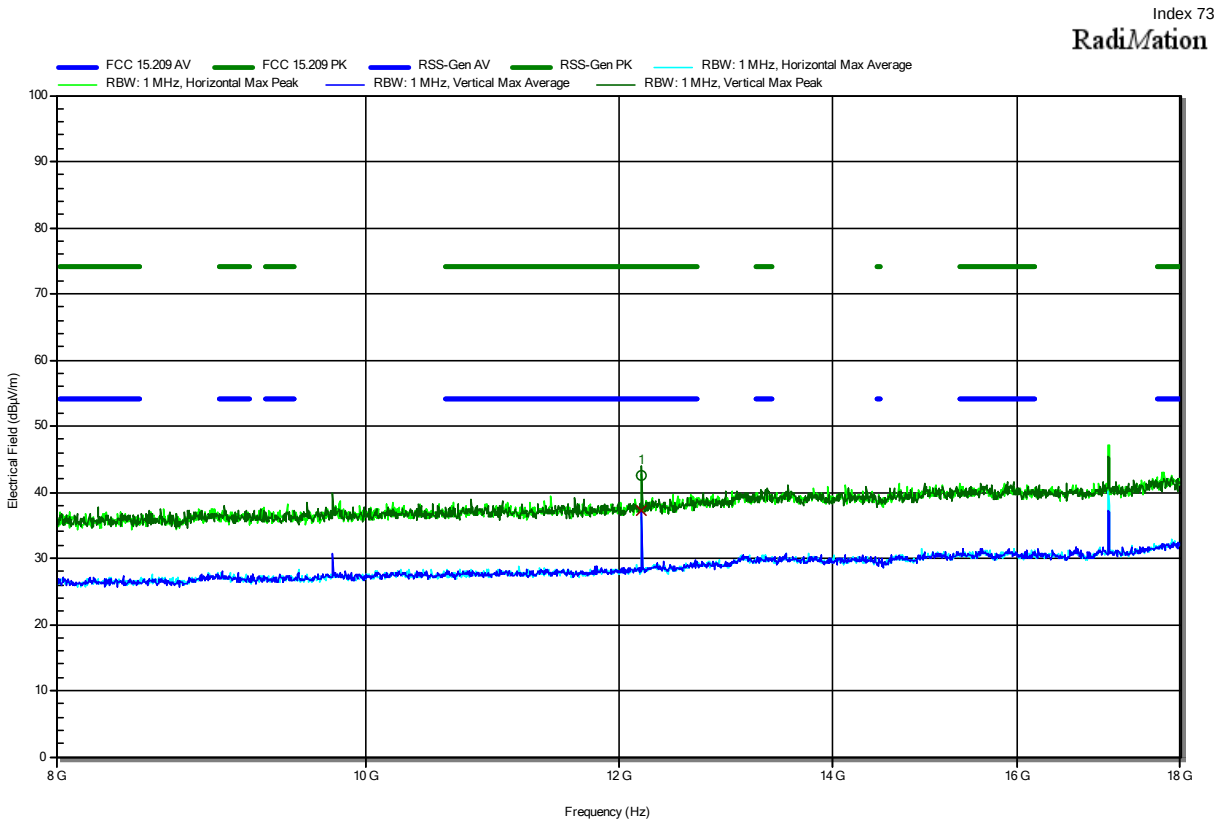


Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
4.882 GHz	46.64 dBµV/m	74 dBµV/m	-27.36 dB	Pass	Vertical
7.3236 GHz	48.54 dBµV/m	74 dBµV/m	-25.46 dB	Pass	Horizontal

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
4.882 GHz	44.22 dBµV/m	54 dBµV/m	-9.78 dB	Pass	Vertical
7.3236 GHz	44.23 dBµV/m	54 dBµV/m	-9.77 dB	Pass	Horizontal

Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Godson Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck HWRD 650
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2441 MHz, PRBS9, DH5, P = max
Test Date:	2023-07-14

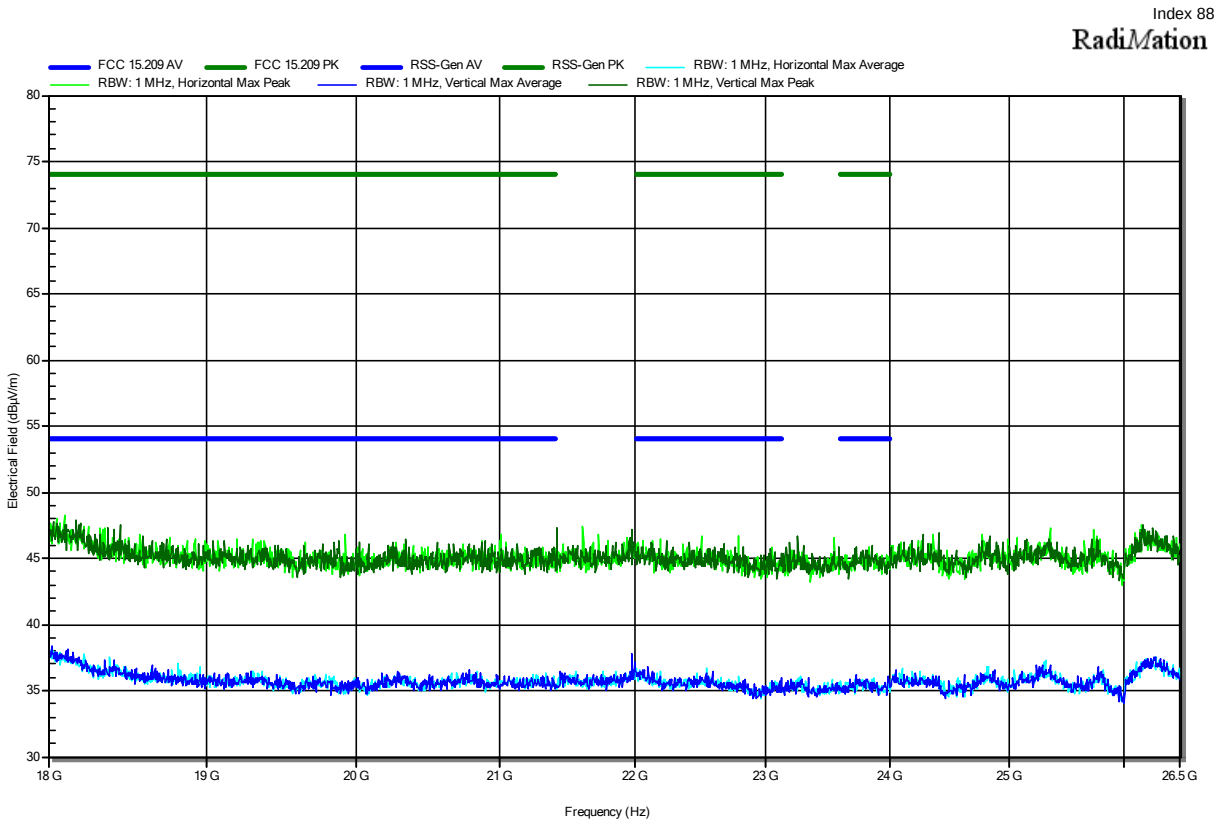


Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
12.204 GHz	42.41 dBµV/m	74 dBµV/m	-31.59 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
12.204 GHz	37.34 dBµV/m	54 dBµV/m	-16.66 dB	Pass	Vertical

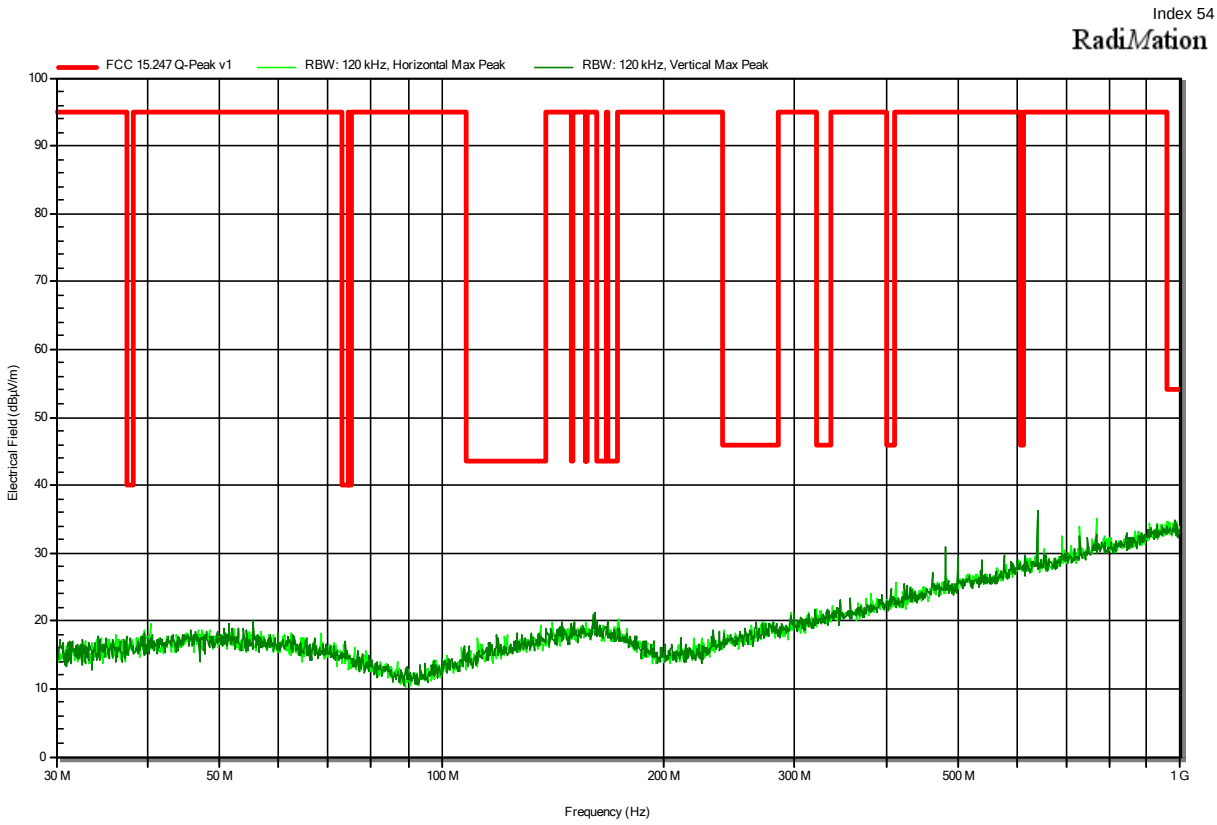
Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Godson Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Amplifier Research AT4560
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2441 MHz, PRBS9, DH5, P = max
Test Date:	2023-07-14



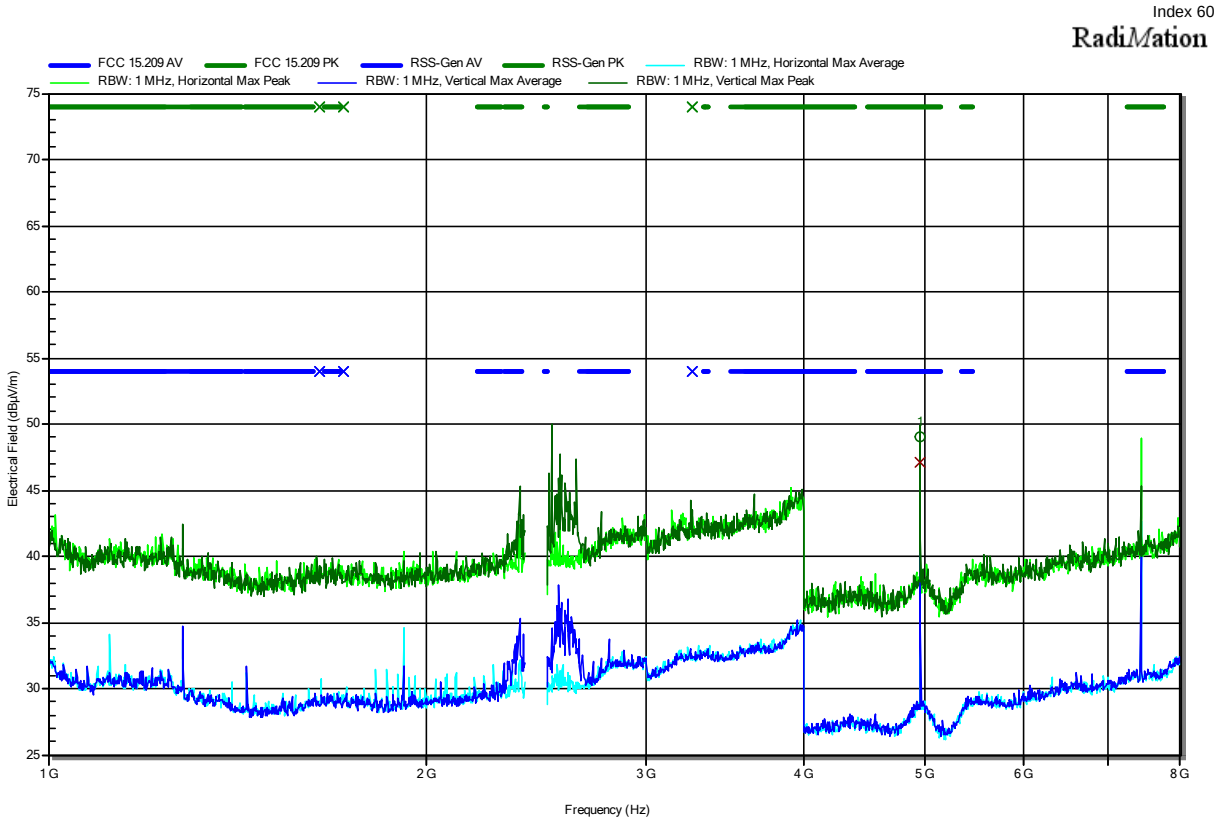
Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Sohrabi
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck VULB 9168
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2480 MHz, PRBS9, DH5, P = max
Test Date:	2023-07-12



Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Ibraimov Azamat
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck BBHA 9120B
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2480 MHz, PRBS9, DH5, P = max
Test Date:	2023-07-14



Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
4.96 GHz	49.09 dBµV/m	74 dBµV/m	-24.91 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
4.96 GHz	47.12 dBµV/m	54 dBµV/m	-6.88 dB	Pass	Vertical

Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Ibraimov Azamat
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck BBHA 9120B
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2480 MHz, PRBS9, DH5, P = max
Test Date:	2023-07-14
Note:	upper bandedge

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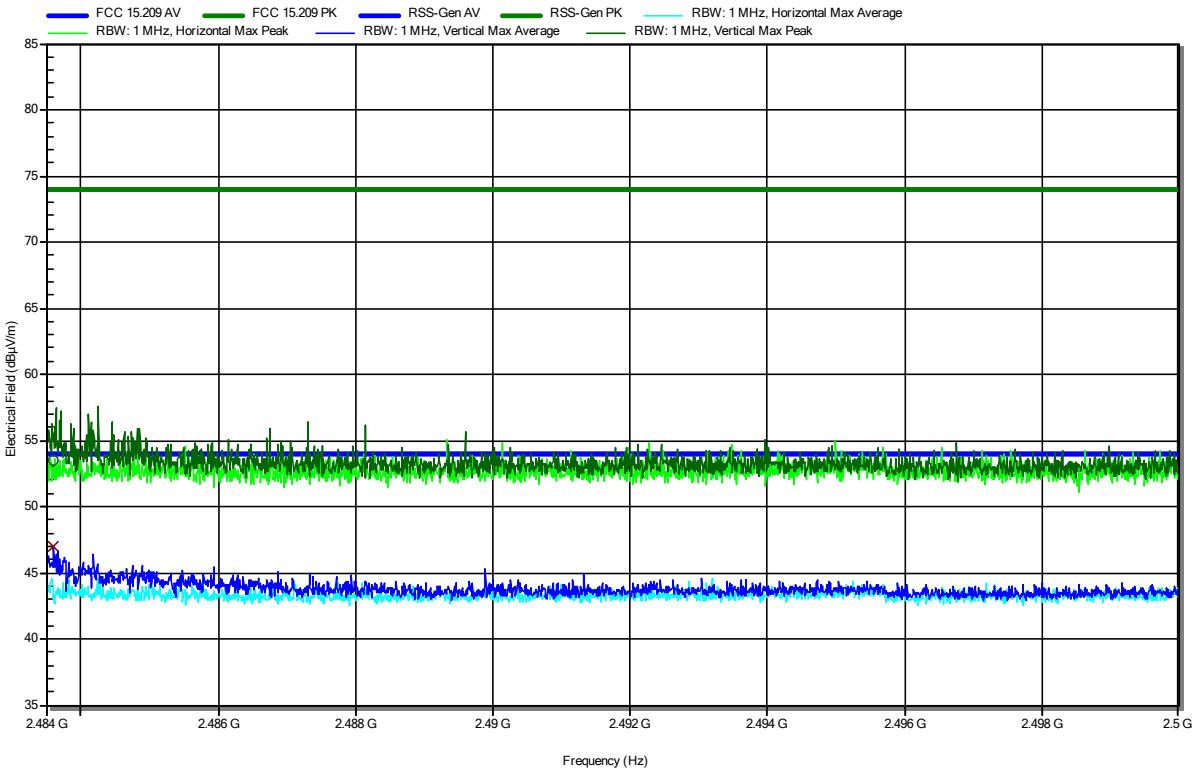
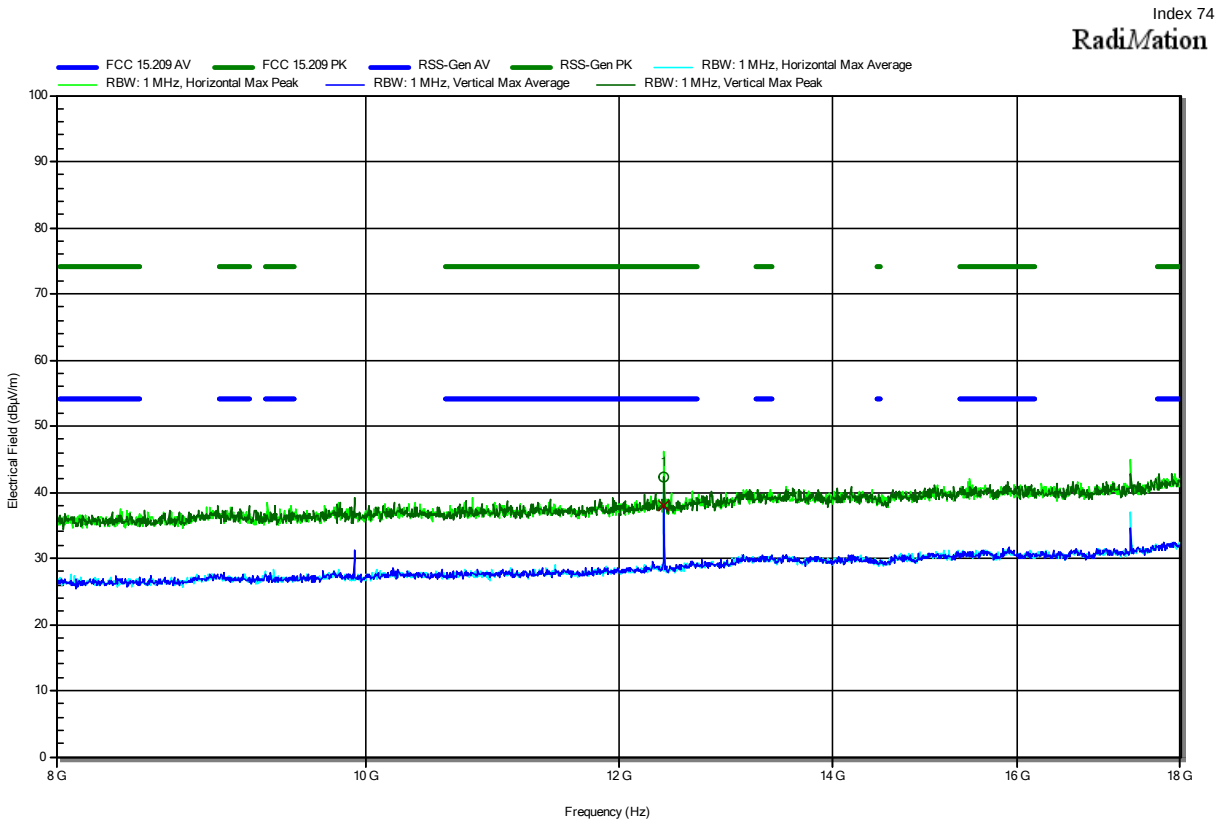


Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
2.4836 GHz	53.49 dBµV/m	74 dBµV/m	-20.51 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
2.4836 GHz	47.02 dBµV/m	54 dBµV/m	-6.98 dB	Pass	Vertical

Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Godson Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck HWRD 650
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2480 MHz, PRBS9, DH5, P = max
Test Date:	2023-07-14

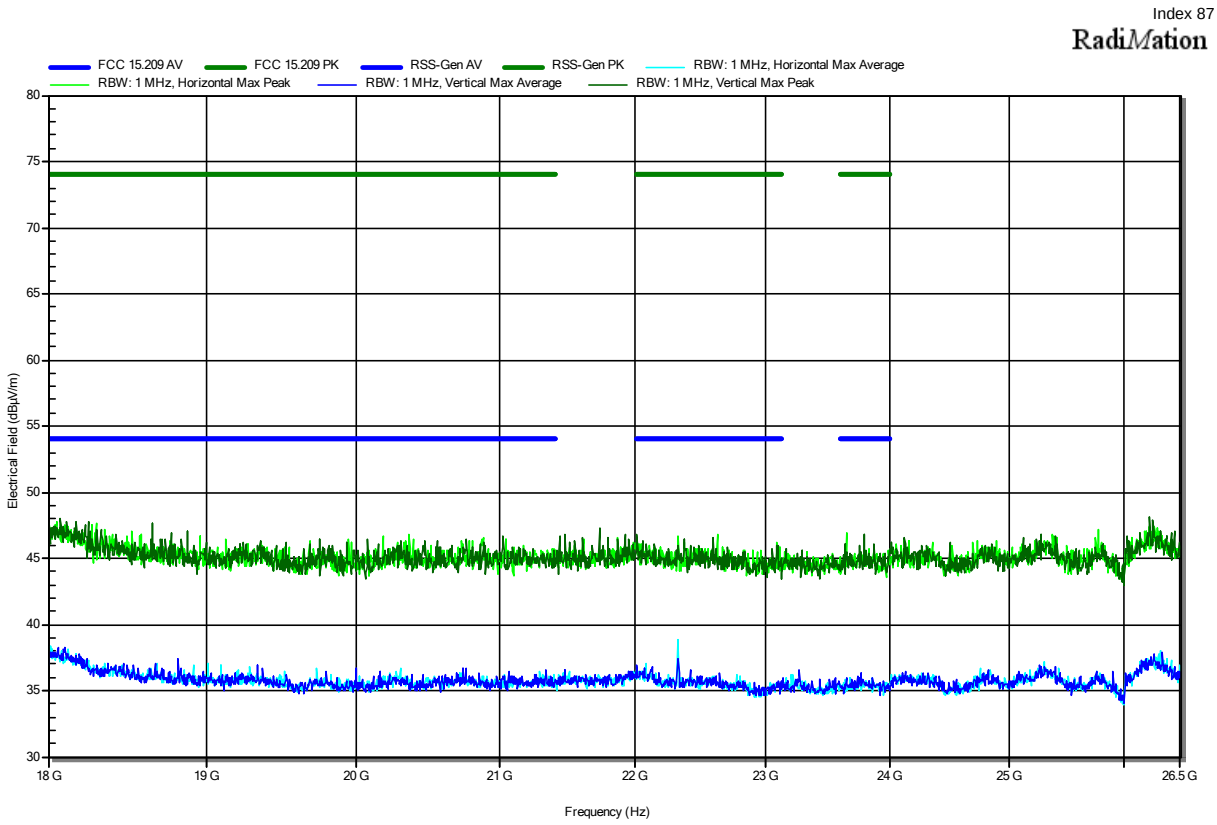


Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
12.399 GHz	42.36 dBµV/m	74 dBµV/m	-31.64 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
12.399 GHz	37.9 dBµV/m	54 dBµV/m	-16.1 dB	Pass	Vertical

Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Godson Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Amplifier Research AT4560
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2480 MHz, PRBS9, DH5, P = max
Test Date:	2023-07-14



Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Ibraimov Azamat
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck BBHA 9120B
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2402 MHz, PRBS9, 2-DH5, P = max
Test Date:	2023-07-14

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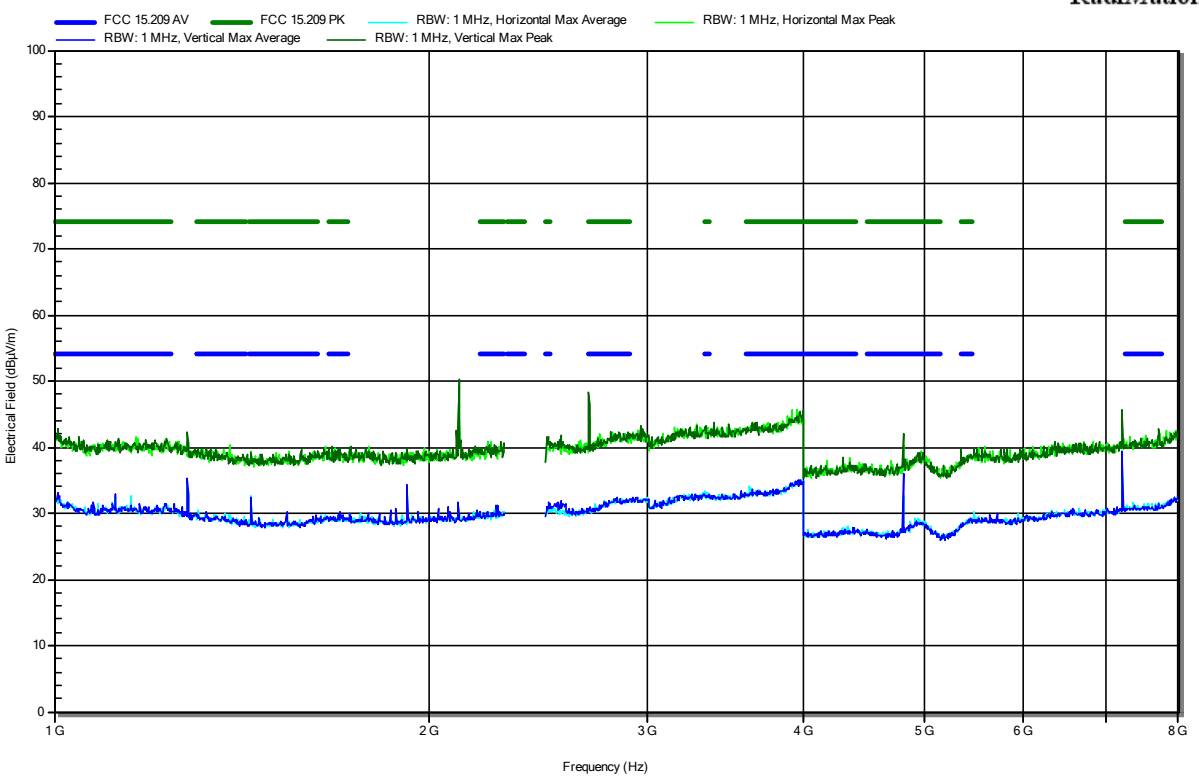

Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Ibraimov Azamat
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck BBHA 9120B
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2402 MHz, PRBS9, 2-DH5, P = max
Test Date:	2023-07-14
Note:	lower bandedge

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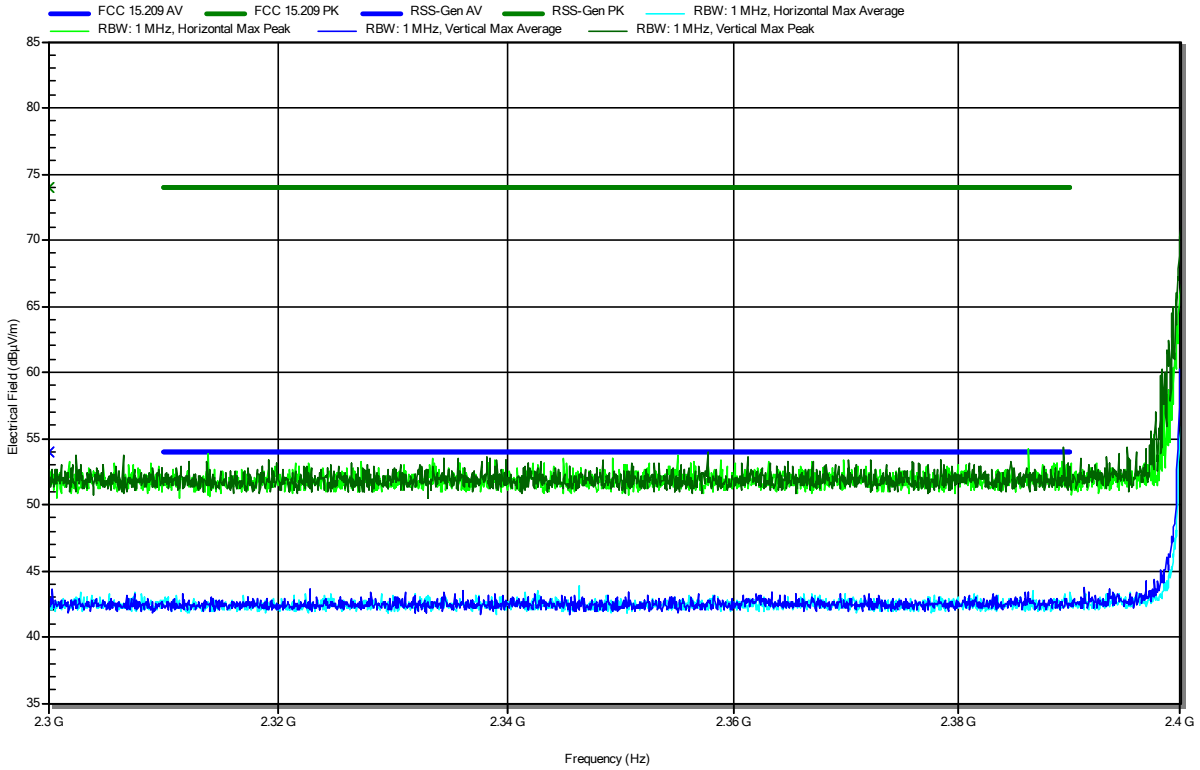
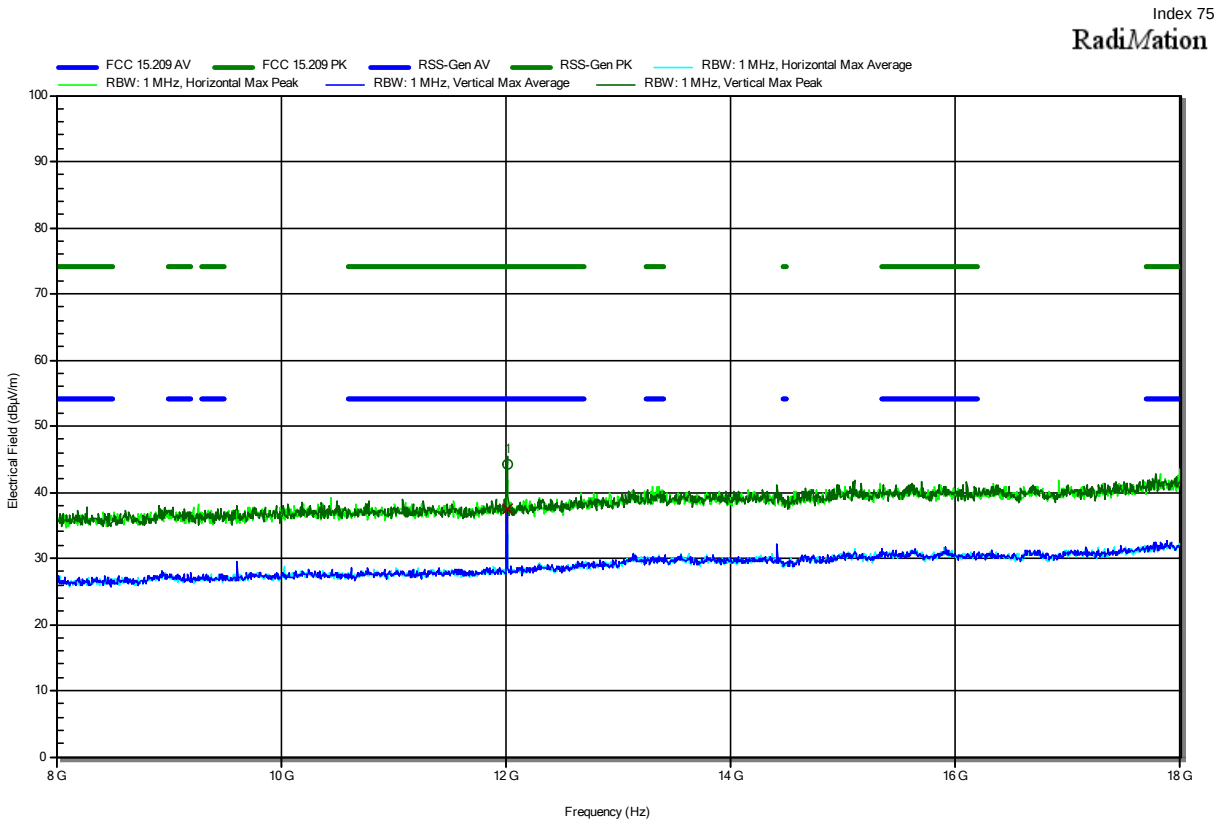
RadiMation



Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Godson Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck HWRD 650
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2402 MHz, PRBS9, 2-DH5, P = max
Test Date:	2023-07-14

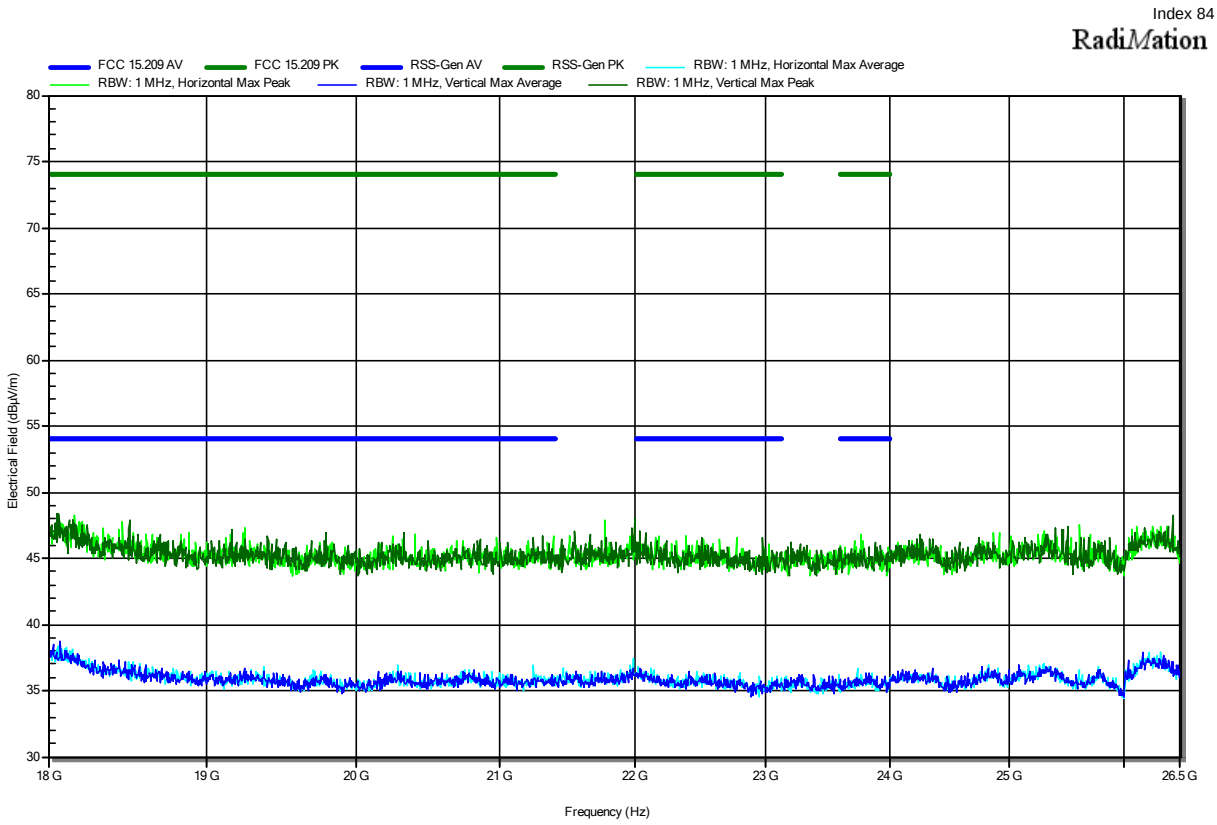


Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
12.011 GHz	44.31 dBµV/m	74 dBµV/m	-29.69 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
12.011 GHz	37.54 dBµV/m	54 dBµV/m	-16.46 dB	Pass	Vertical

Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Godson Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Amplifier Research AT4560
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2402 MHz, PRBS9, 2-DH5, P = max
Test Date:	2023-07-14



Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Ibraimov Azamat
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck BBHA 9120B
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2441 MHz, PRBS9, 2-DH5, P = max
Test Date:	2023-07-14

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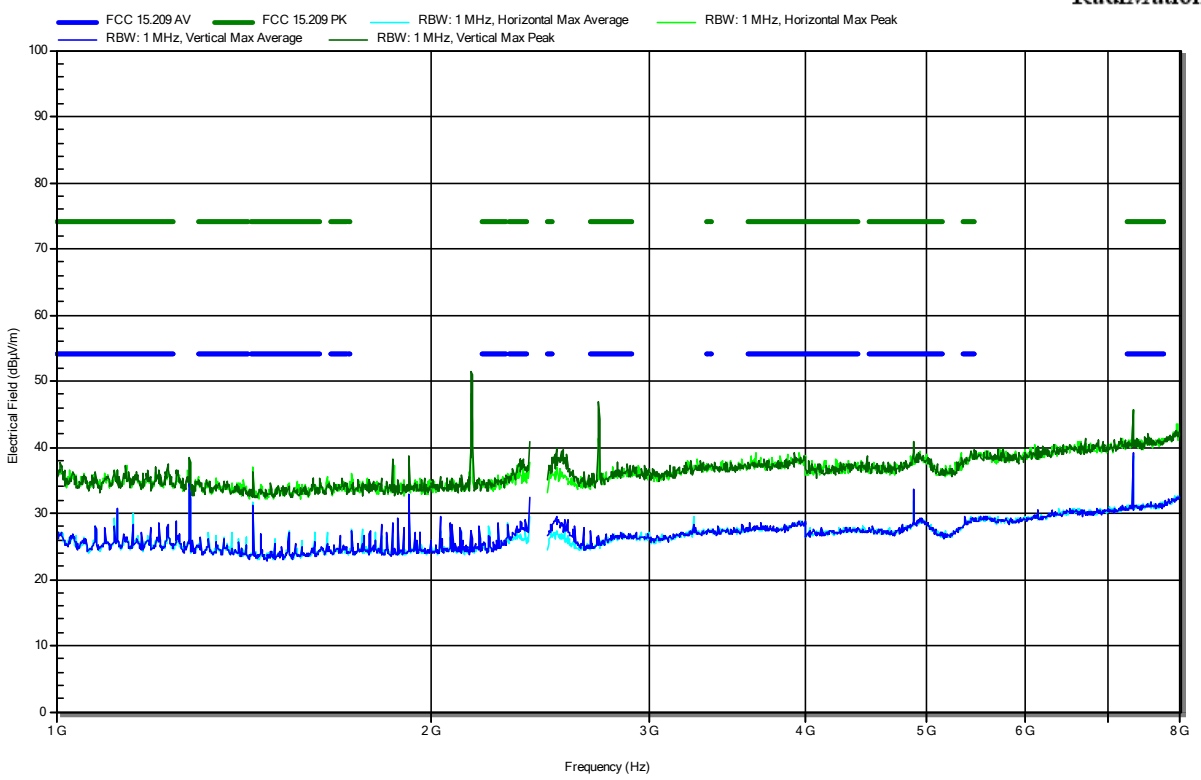
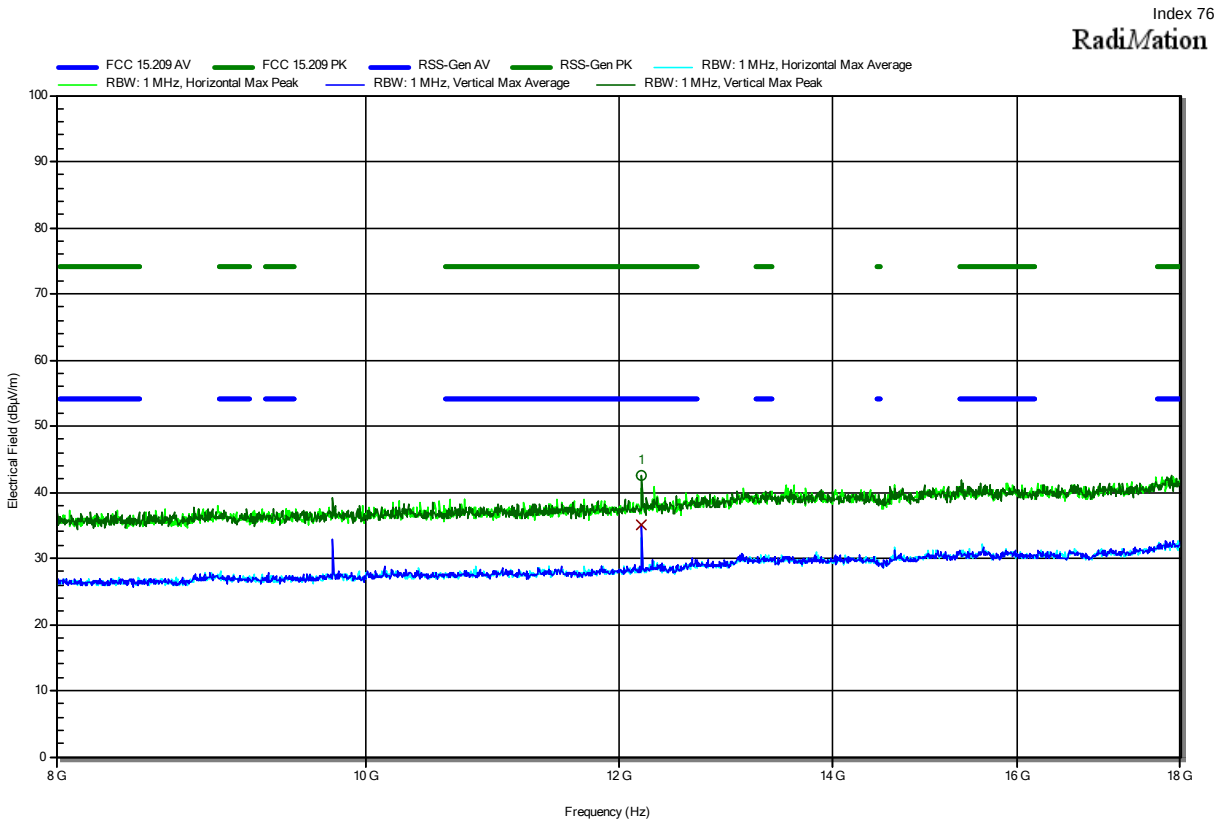
RadiMation



Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Godson Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck HWRD 650
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2441 MHz, PRBS9, 2-DH5, P = max
Test Date:	2023-07-14



Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
12.204 GHz	42.61 dBµV/m	74 dBµV/m	-31.39 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
12.204 GHz	35.07 dBµV/m	54 dBµV/m	-18.93 dB	Pass	Vertical

Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Godson Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Amplifier Research AT4560
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2441 MHz, PRBS9, 2-DH5, P = max
Test Date:	2023-07-14

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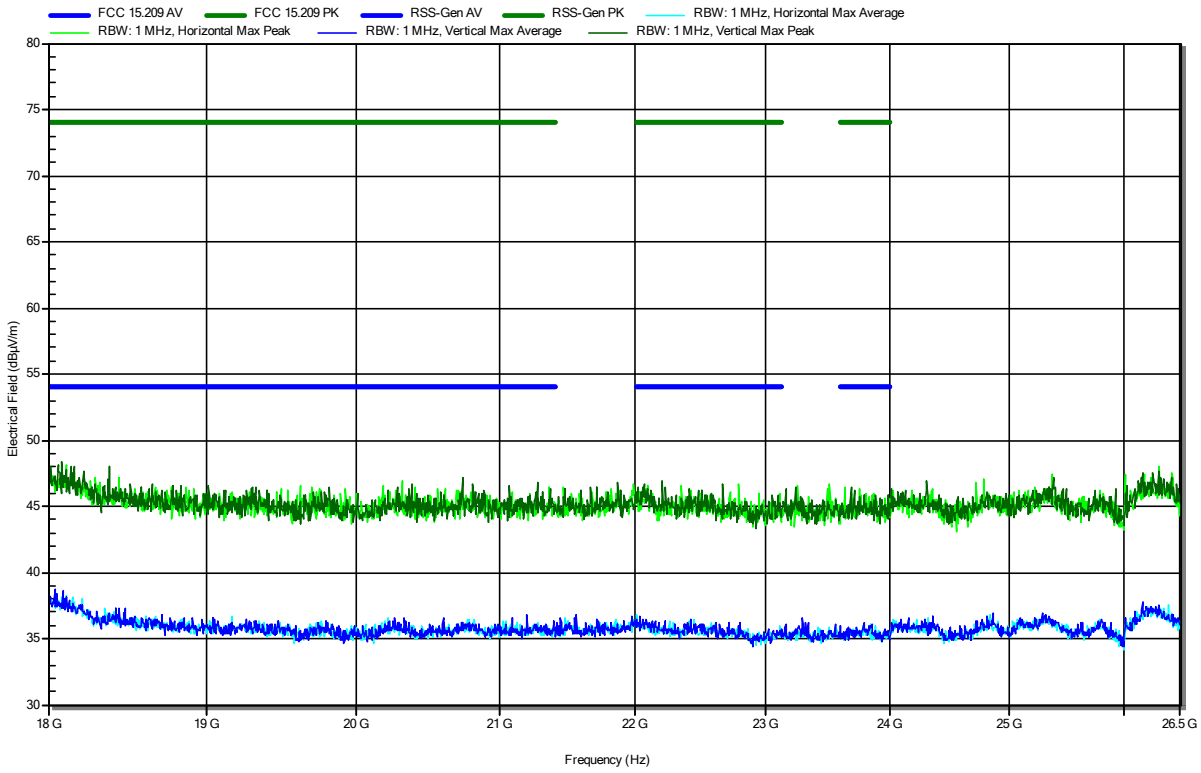
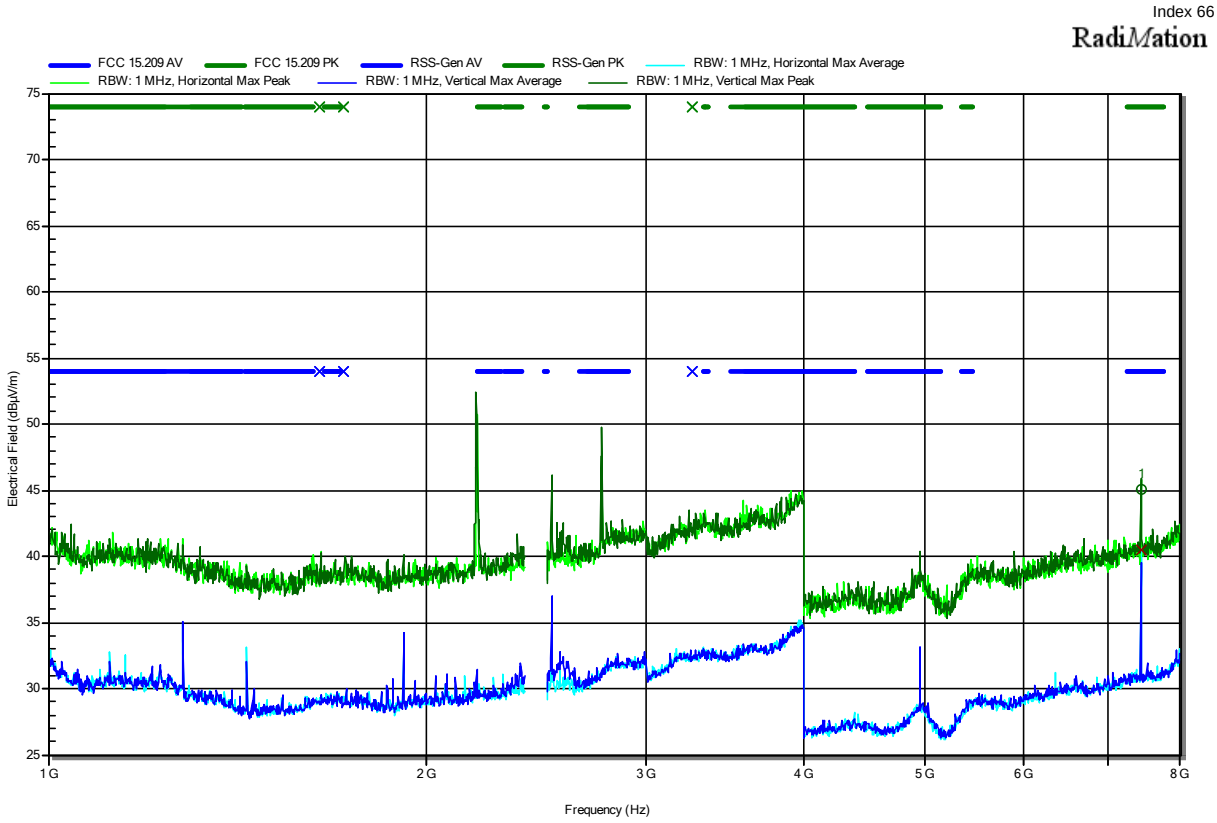
RadiMation



Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Ibraimov Azamat
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck BBHA 9120B
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2480 MHz, PRBS9, 2-DH5, P = max
Test Date:	2023-07-14



Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
7.44 GHz	45.09 dBµV/m	74 dBµV/m	-28.91 dB	Pass	Horizontal

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
7.44 GHz	40.45 dBµV/m	54 dBµV/m	-13.55 dB	Pass	Horizontal

Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Ibraimov Azamat
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck BBHA 9120B
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2480 MHz, PRBS9, 2-DH5, P = max
Test Date:	2023-07-14
Note:	upper bandedge

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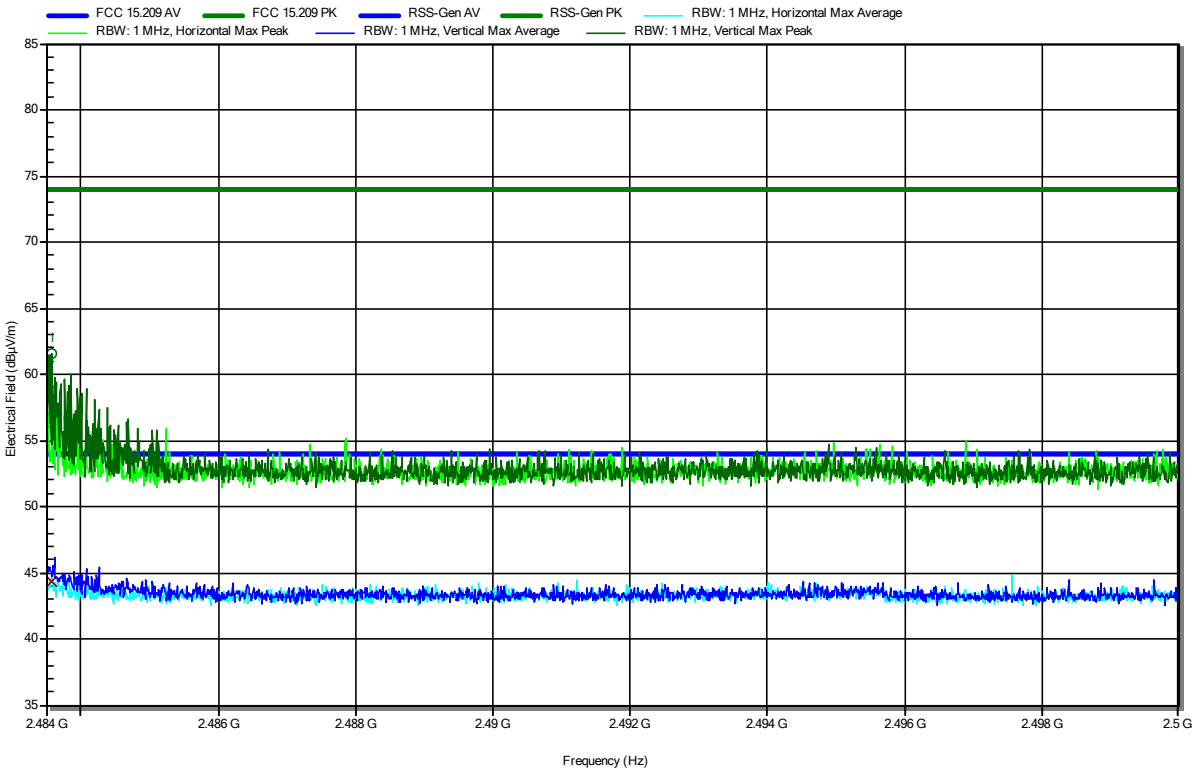
RadiMation



Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
2.4836 GHz	61.59 dBµV/m	74 dBµV/m	-12.41 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
2.4836 GHz	44.28 dBµV/m	54 dBµV/m	-9.72 dB	Pass	Vertical

Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Godson Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck HWRD 650
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2480 MHz, PRBS9, 2-DH5, P = max
Test Date:	2023-07-14

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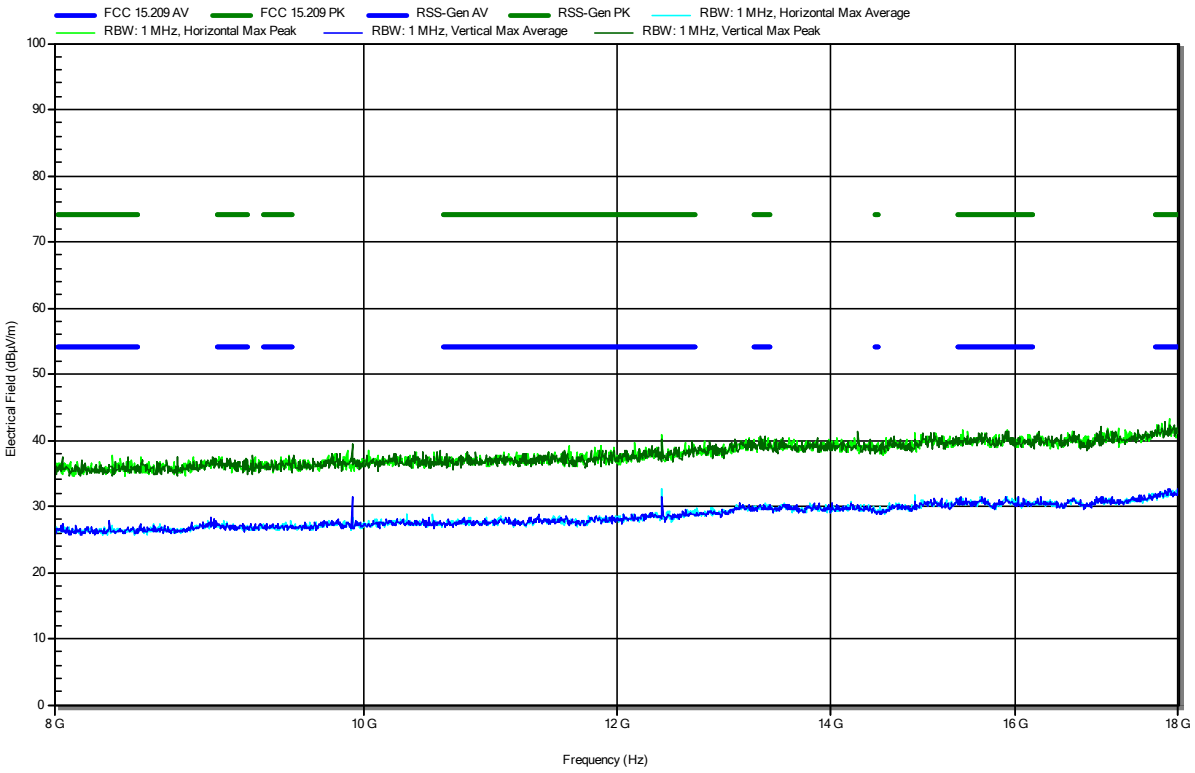
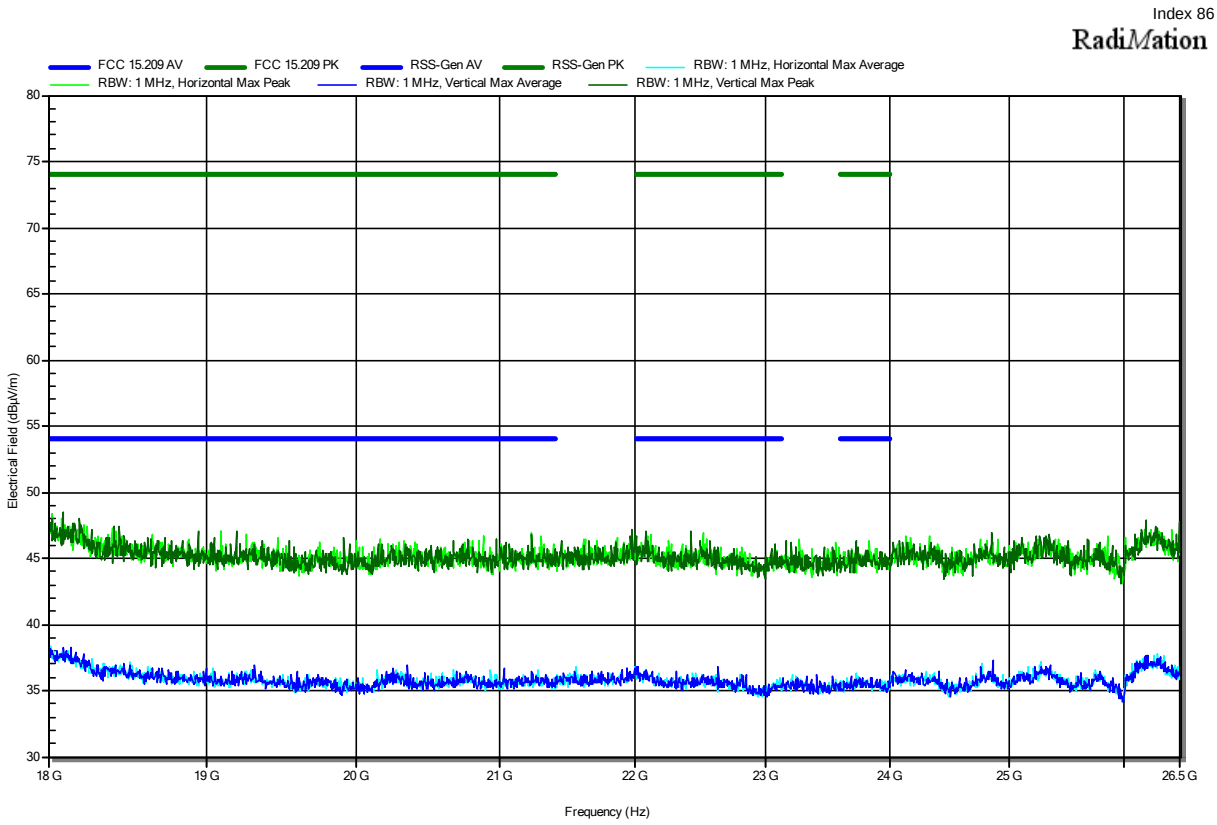
RadiMation



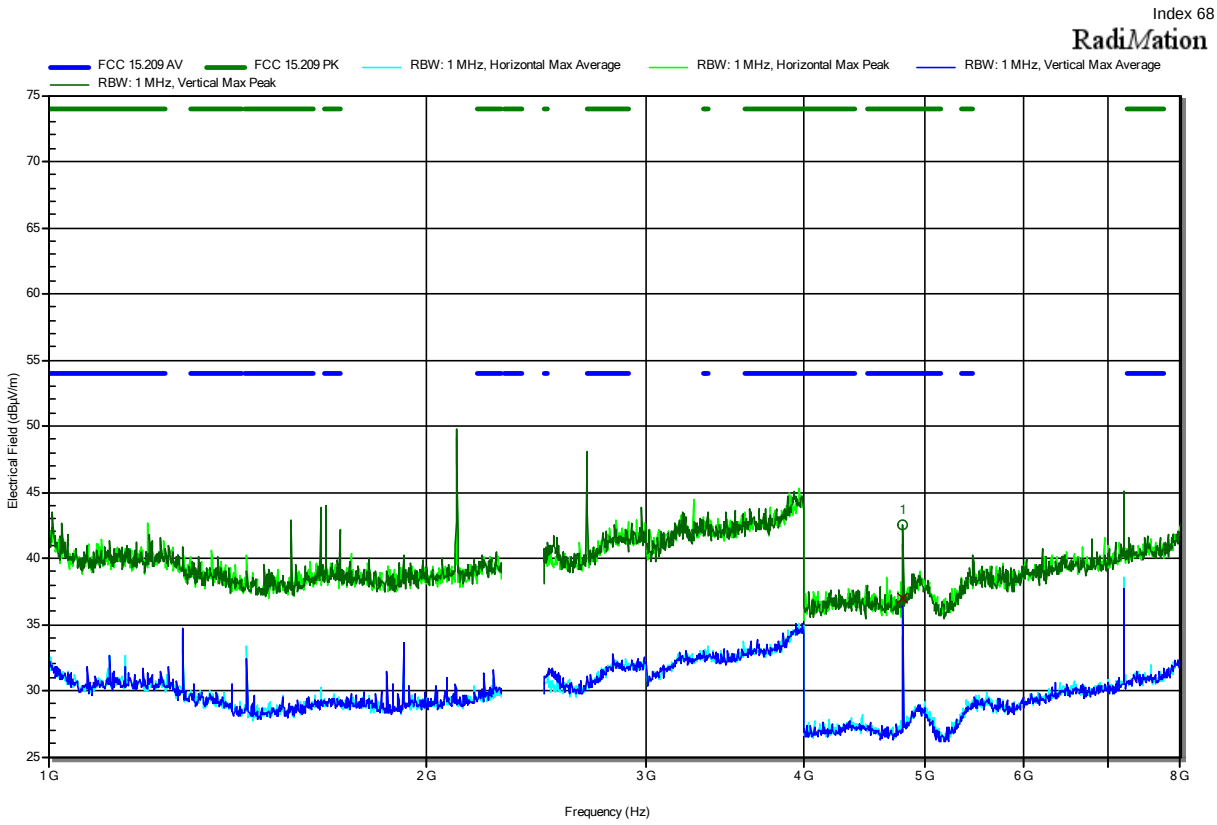
Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Godson Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Amplifier Research AT4560
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2480 MHz, PRBS9, 2-DH5, P = max
Test Date:	2023-07-14



Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Ibraimov Azamat
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck BBHA 9120B
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2402 MHz, PRBS9, 3-DH5, P = max
Test Date:	2023-07-14



Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
4.8041 GHz	42.49 dBµV/m	74 dBµV/m	-31.51 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
4.8041 GHz	37.01 dBµV/m	54 dBµV/m	-16.99 dB	Pass	Vertical

Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Ibraimov Azamat
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck BBHA 9120B
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2402 MHz, PRBS9, 3-DH5, P = max
Test Date:	2023-07-14
Note:	lower bandedge

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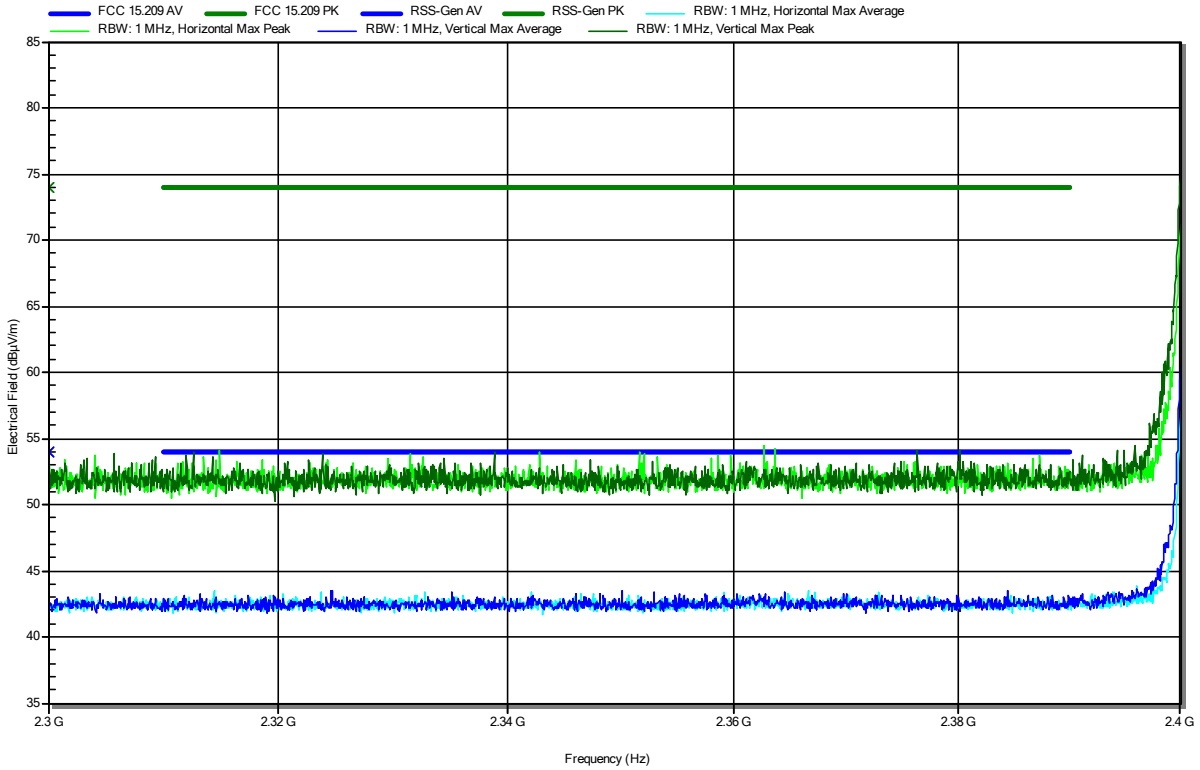
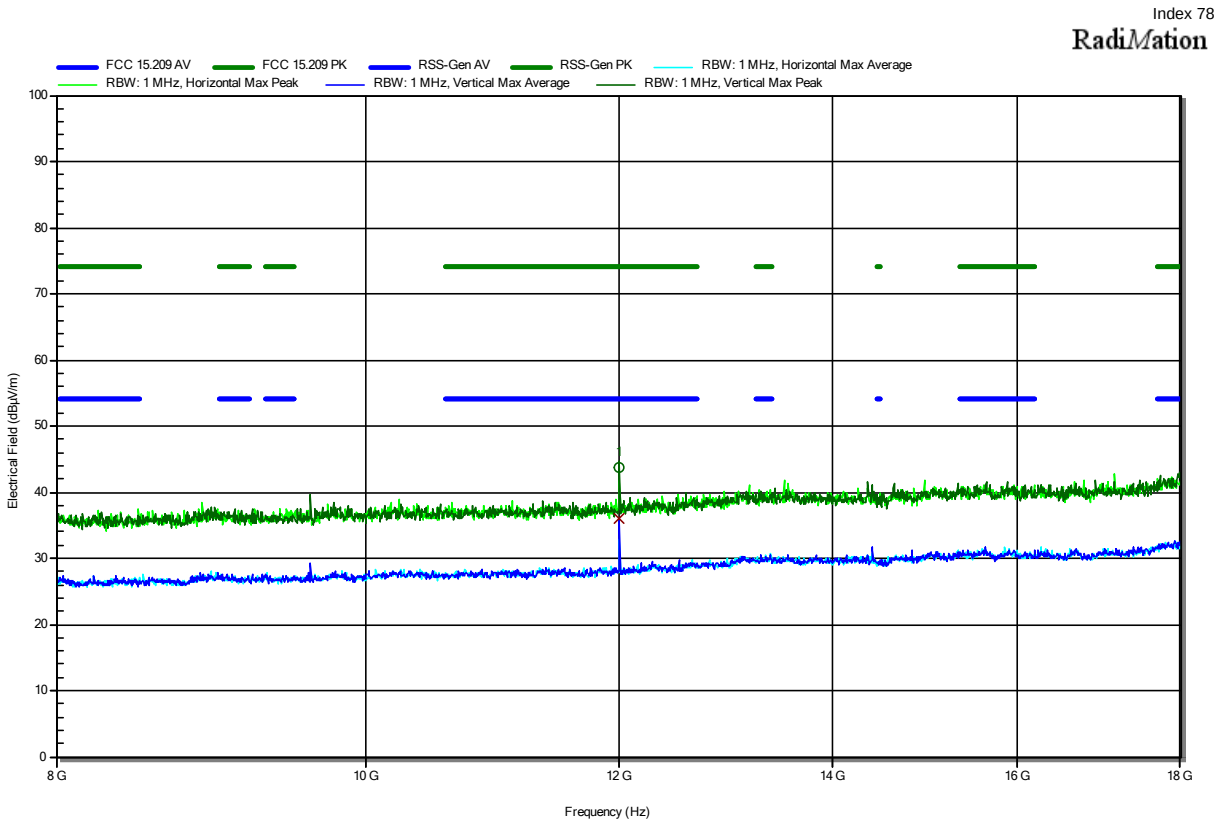
RadiMation



Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Godson Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck HWRD 650
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2402 MHz, PRBS9, 3-DH5, P = max
Test Date:	2023-07-14



Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
12.009 GHz	43.77 dBµV/m	74 dBµV/m	-30.23 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
12.009 GHz	36.01 dBµV/m	54 dBµV/m	-17.99 dB	Pass	Vertical

Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Godson Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Amplifier Research AT4560
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2402 MHz, PRBS9, 3-DH5, P = max
Test Date:	2023-07-14

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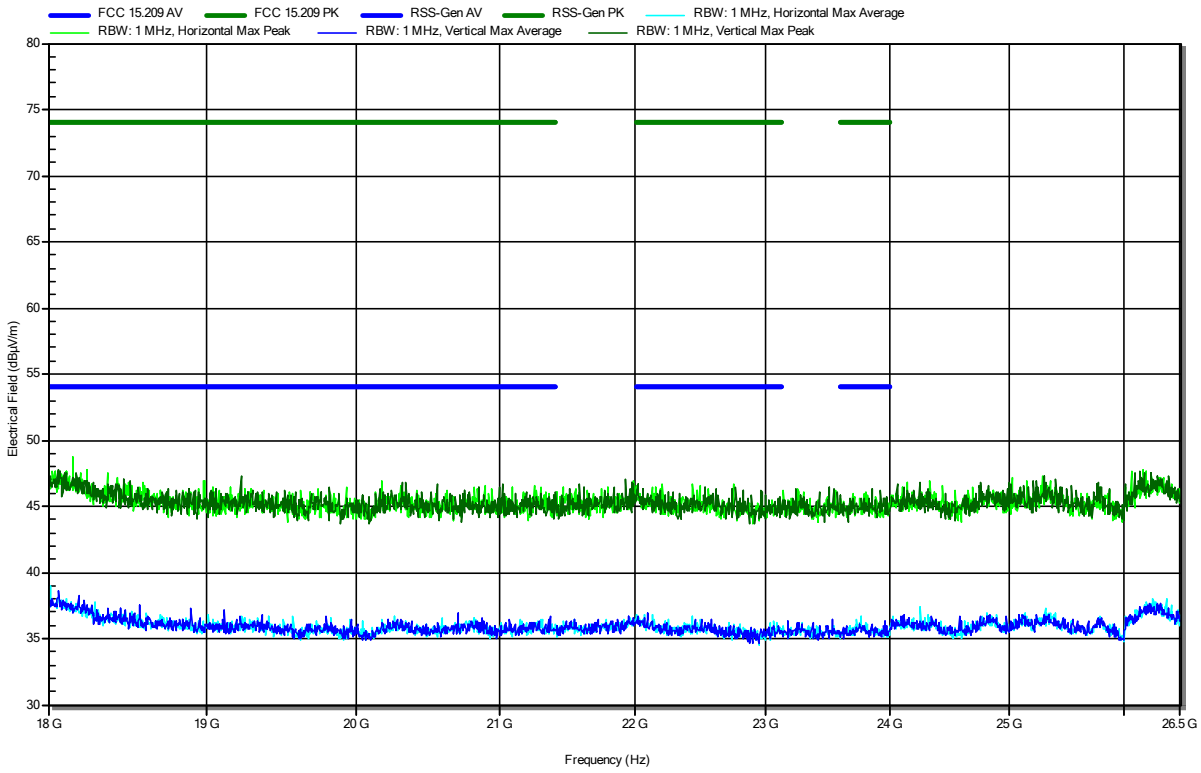
RadiMation



Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Ibraimov Azamat
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck BBHA 9120B
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2441 MHz, PRBS9, 3-DH5, P = max
Test Date:	2023-07-14

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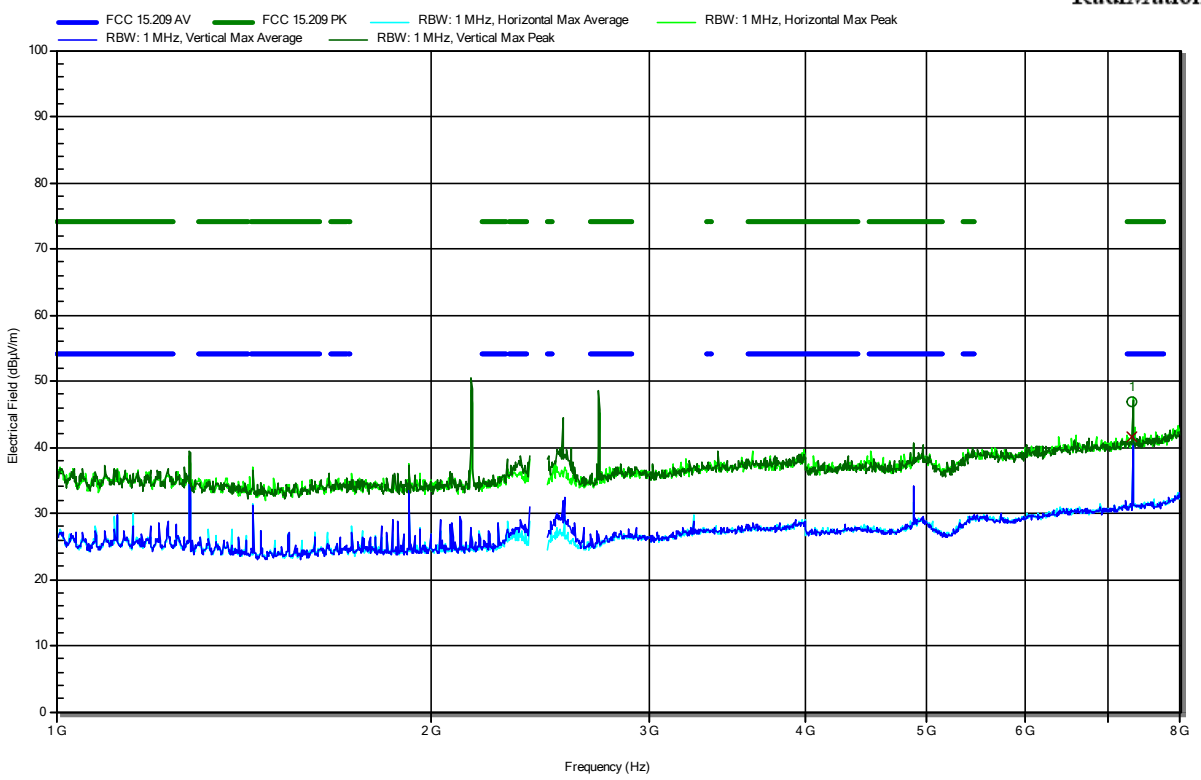
RadiMation

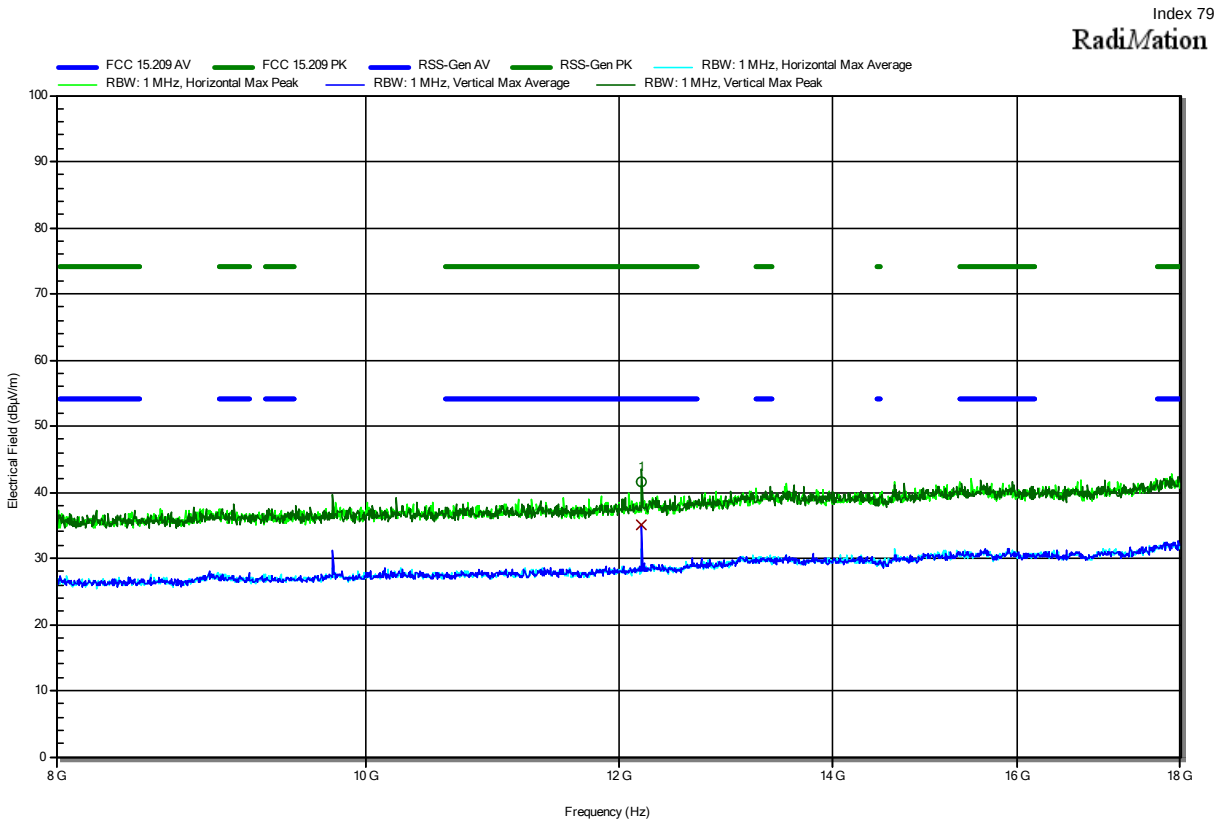


Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
7.3229 GHz	46.83 dBµV/m	74 dBµV/m	-27.17 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
7.3229 GHz	41.47 dBµV/m	54 dBµV/m	-12.53 dB	Pass	Vertical

Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Godson Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck HWRD 650
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2441 MHz, PRBS9, 3-DH5, P = max
Test Date:	2023-07-14

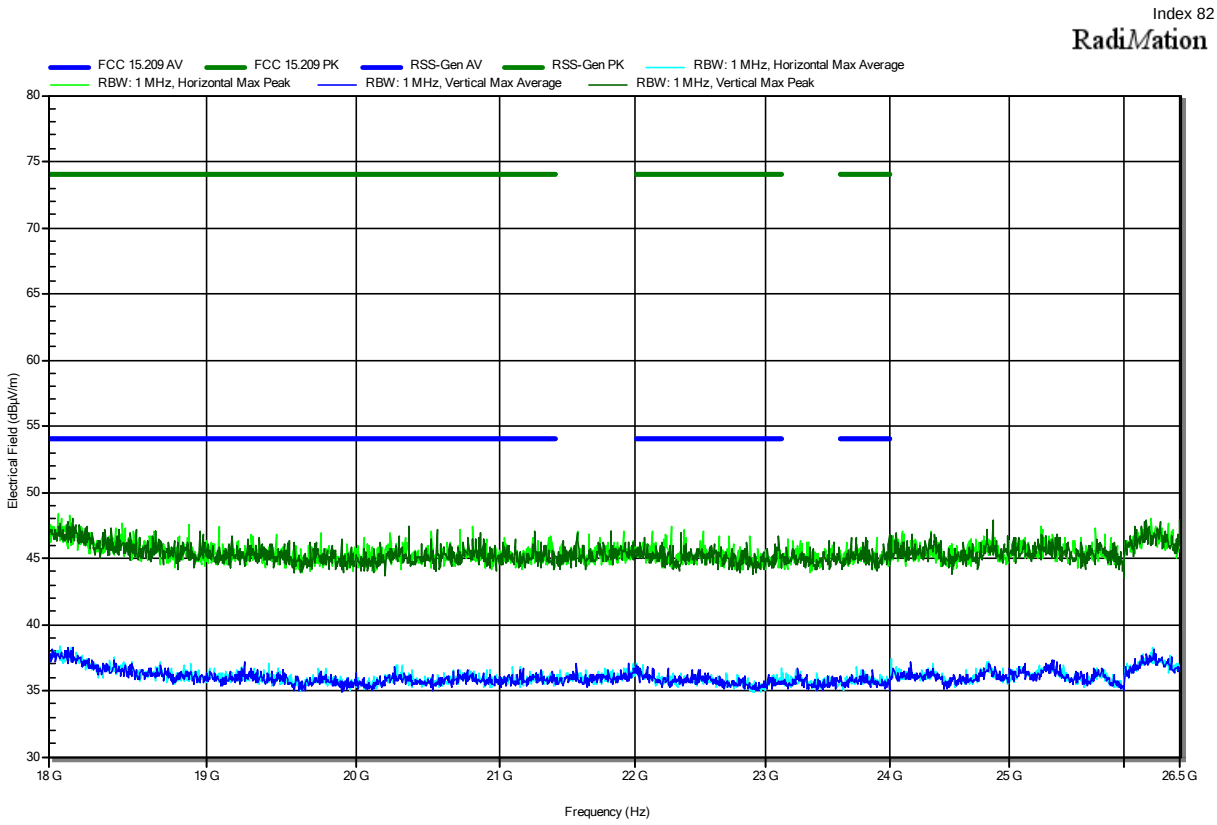


Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
12.205 GHz	41.67 dBµV/m	74 dBµV/m	-32.33 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
12.205 GHz	35.09 dBµV/m	54 dBµV/m	-18.91 dB	Pass	Vertical

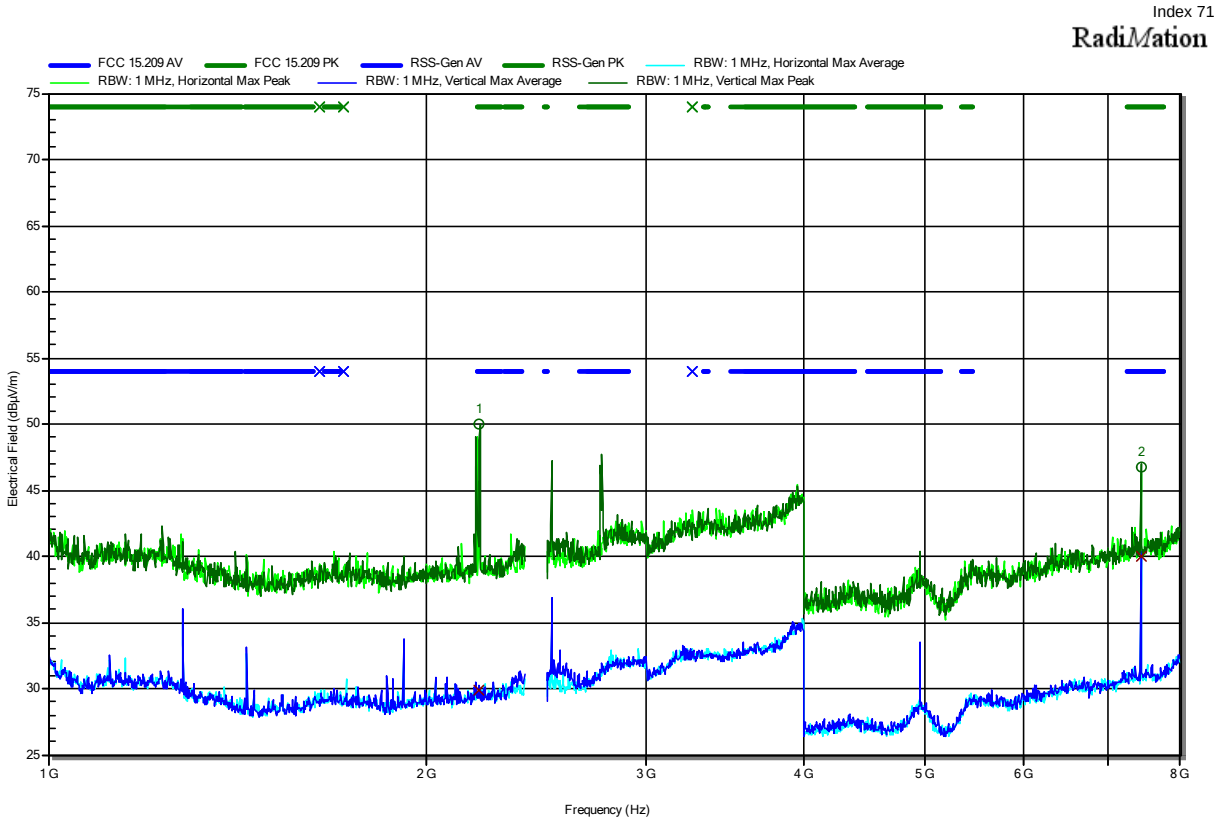
Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Godson Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Amplifier Research AT4560
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2441 MHz, PRBS9, 3-DH5, P = max
Test Date:	2023-07-14



Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Ibraimov Azamat
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck BBHA 9120B
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2480 MHz, PRBS9, 3-DH5, P = max
Test Date:	2023-07-14



Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
2.208 GHz	49.98 dBµV/m	74 dBµV/m	-24.02 dB	Pass	Vertical
7.44 GHz	46.79 dBµV/m	74 dBµV/m	-27.21 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
2.208 GHz	29.82 dBµV/m	54 dBµV/m	-24.18 dB	Pass	Vertical
7.44 GHz	40.01 dBµV/m	54 dBµV/m	-13.99 dB	Pass	Vertical

Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Ibraimov Azamat
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck BBHA 9120B
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2480 MHz, PRBS9, 3-DH5, P = max
Test Date:	2023-07-14
Note:	upper bandedge

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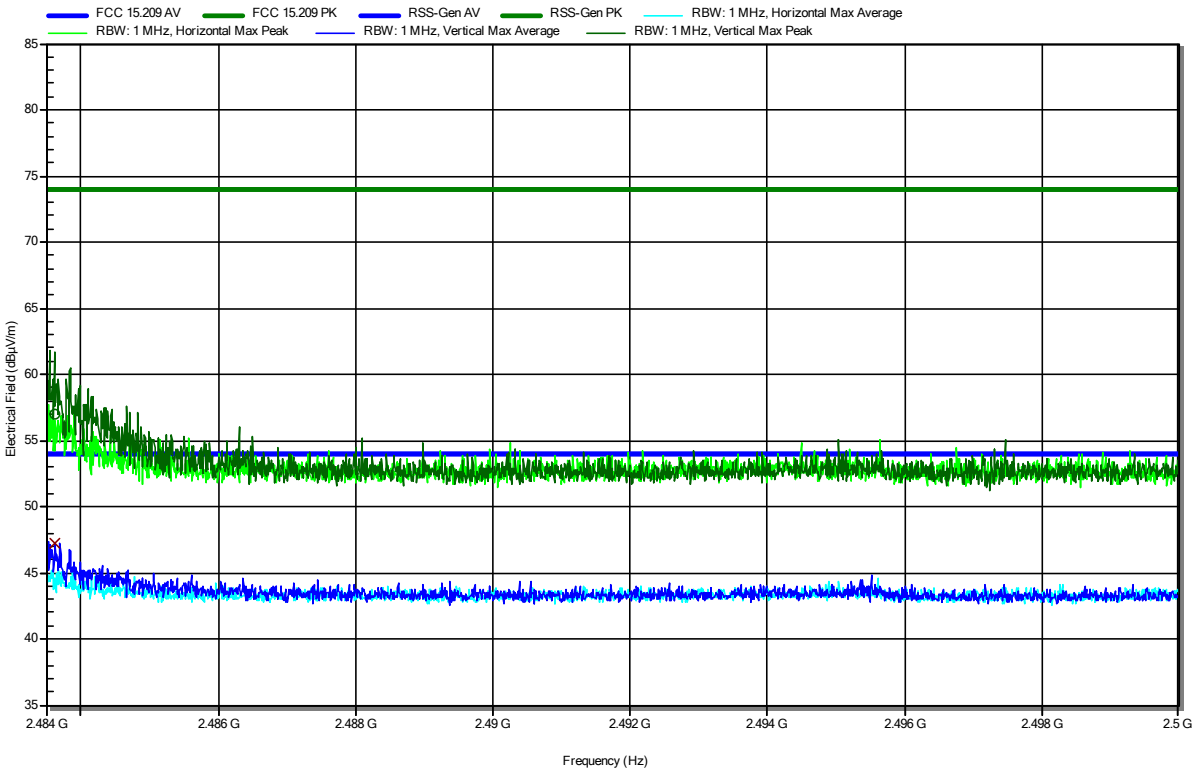
RadiMation

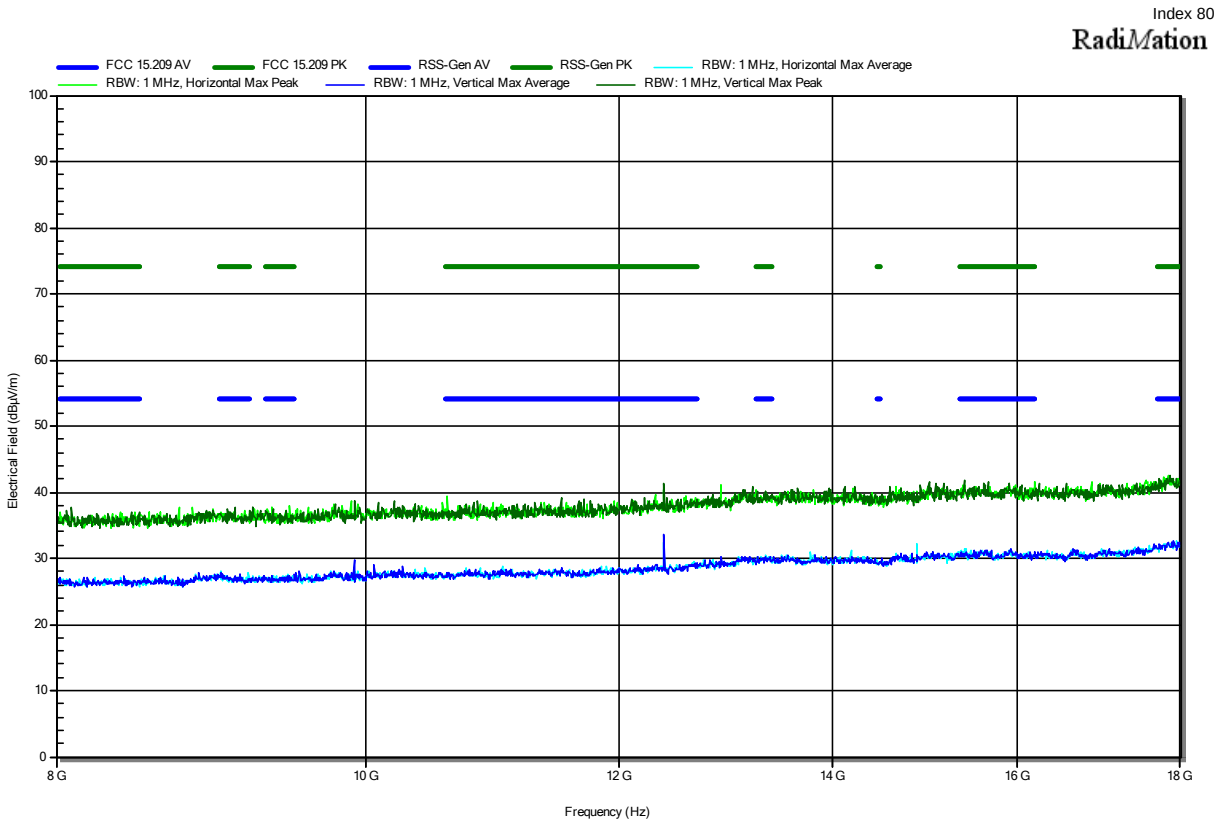


Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
2.4836 GHz	56.98 dBµV/m	74 dBµV/m	-17.02 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
2.4836 GHz	47.24 dBµV/m	54 dBµV/m	-6.76 dB	Pass	Vertical

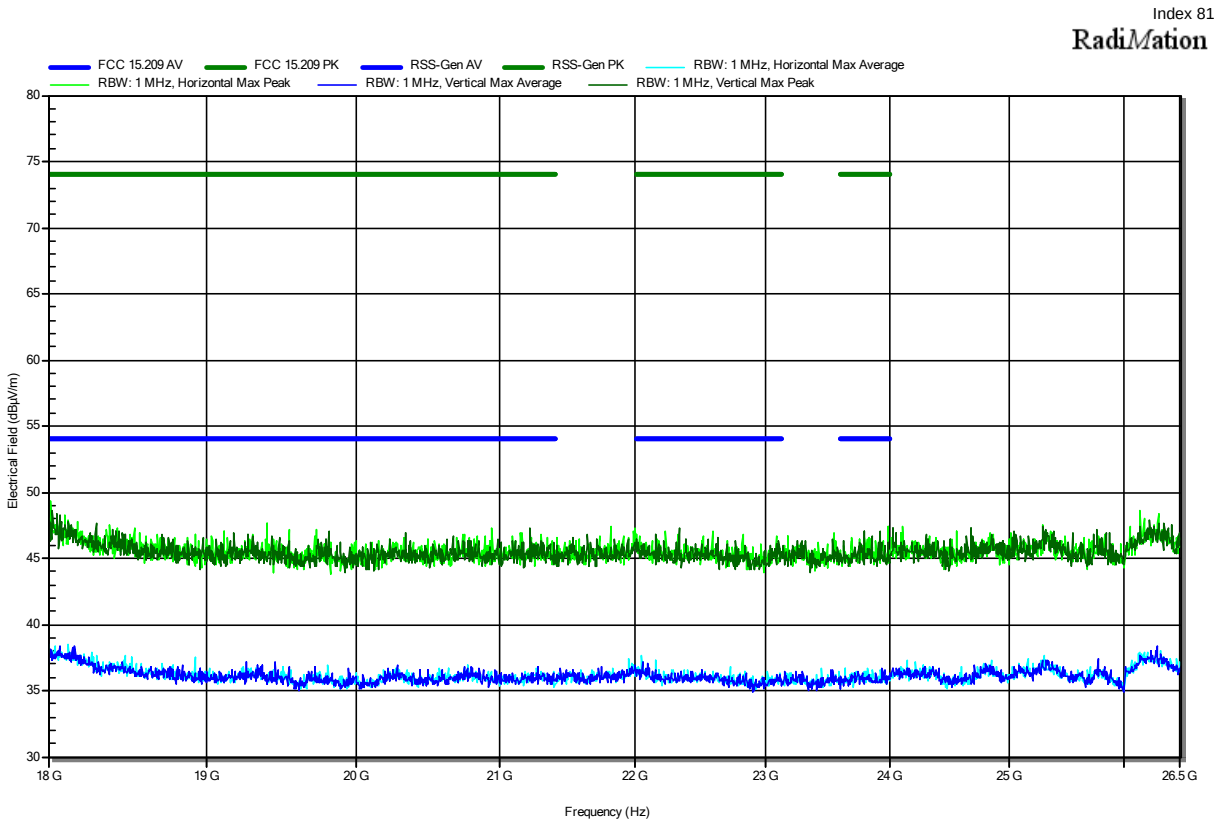
Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Godson Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Schwarzbeck HWRD 650
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2480 MHz, PRBS9, 3-DH5, P = max
Test Date:	2023-07-14



Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Godson Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC and 1.8 VDC
Antenna:	Amplifier Research AT4560
Measurement distance:	3 m
Mode:	Tx; BT 5.3, 2480 MHz, PRBS9, 3-DH5, P = max
Test Date:	2023-07-14



ANNEX B Receiver spurious emissions

Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Sohrabi
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC
Antenna:	Schwarzbeck VULB 9168
Measurement distance:	3 m
Mode:	Rx; BT 5.3, Scan mode
Test Date:	2023-07-12
Note:	

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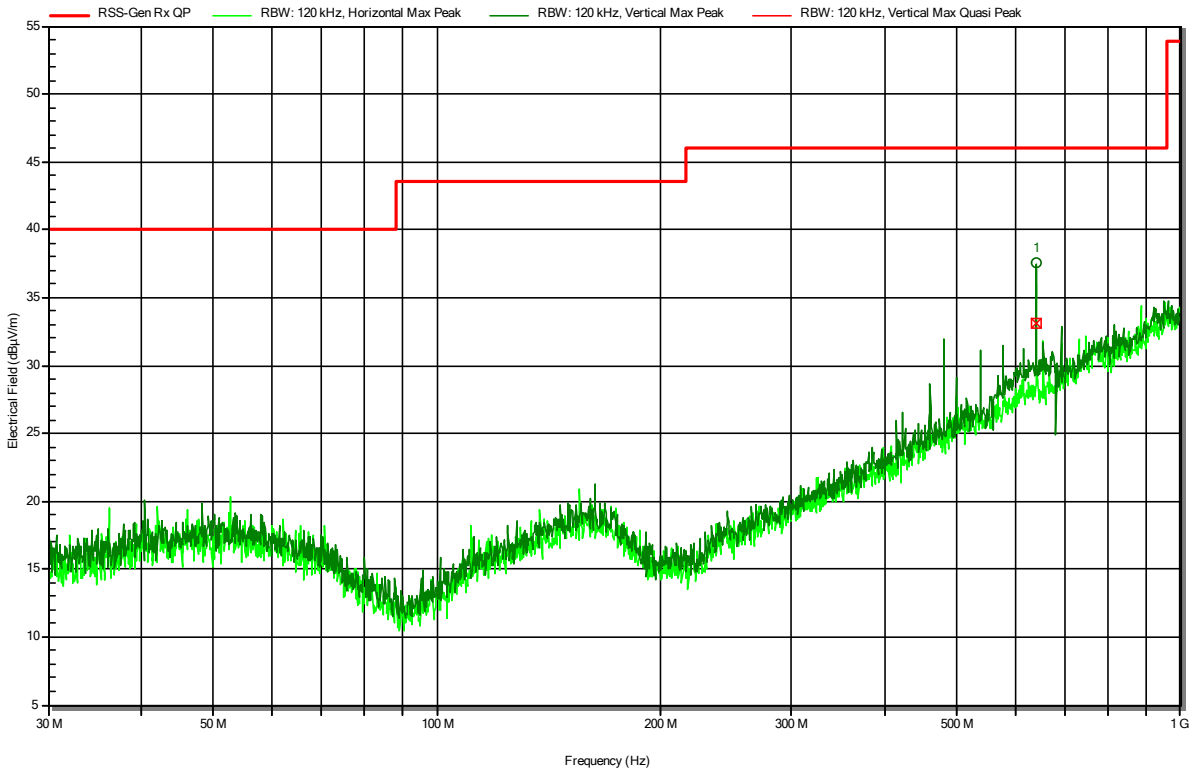
RadiMation



Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
640.0088 MHz	37.6 dBµV/m	46 dBµV/m	-8.44 dB	Pass	Vertical

Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Polarization
640.0088 MHz	33.2 dBµV/m	46 dBµV/m	-12.84 dB	Pass	Vertical

Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Sohrabi
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC
Antenna:	Schwarzbeck BBHA 9120D
Measurement distance:	3 m
Mode:	Rx; BT 5.3, Scan mode
Test Date:	2023-07-12
Note:	

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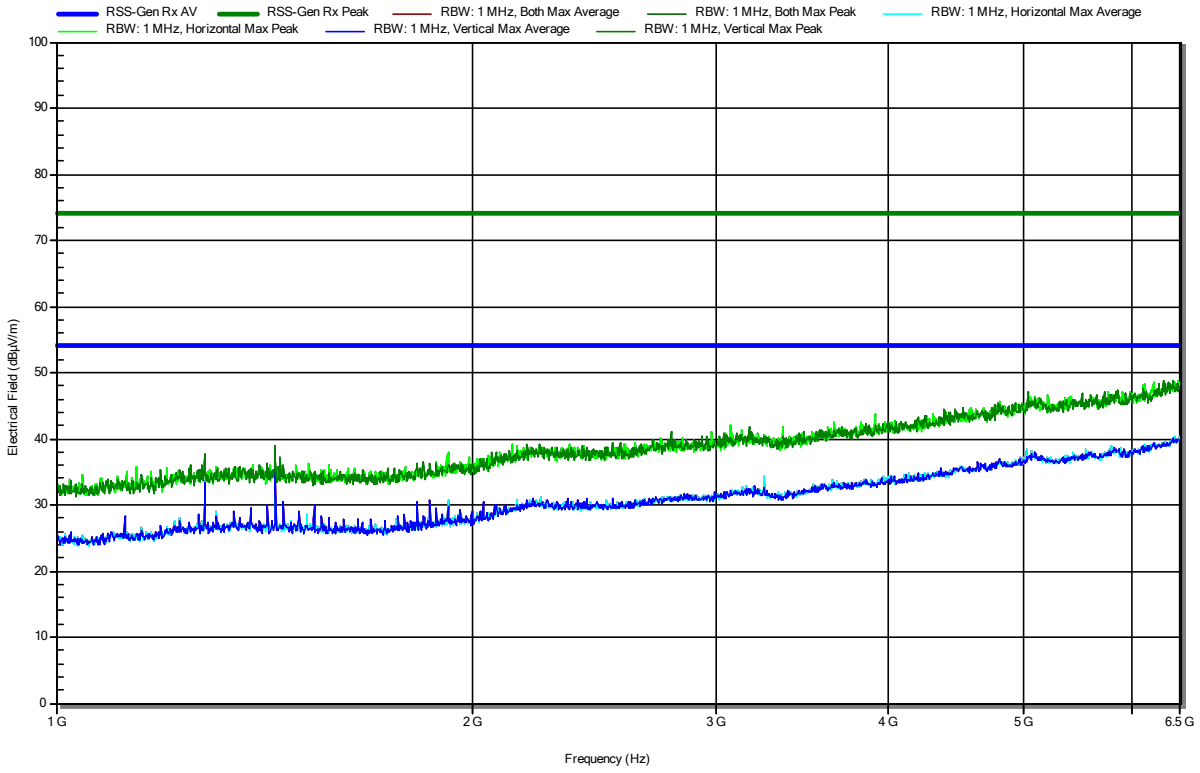
RadiMation



Radiated Spurious Emissions according to 47 CFR Part 15.247, RSS-247

Project Number:	G0M-2302-1881
Applicant:	u-blox AG
Model Description:	Host-based multiradio module
Model:	MAYA-W271-00B
Test Sample ID:	43093
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Sohrabi
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 3.3 VDC
Antenna:	Schwarzbeck HWRD 650
Measurement distance:	3 m
Mode:	Rx; BT 5.3, Scan mode
Test Date:	2023-07-12
Note:	

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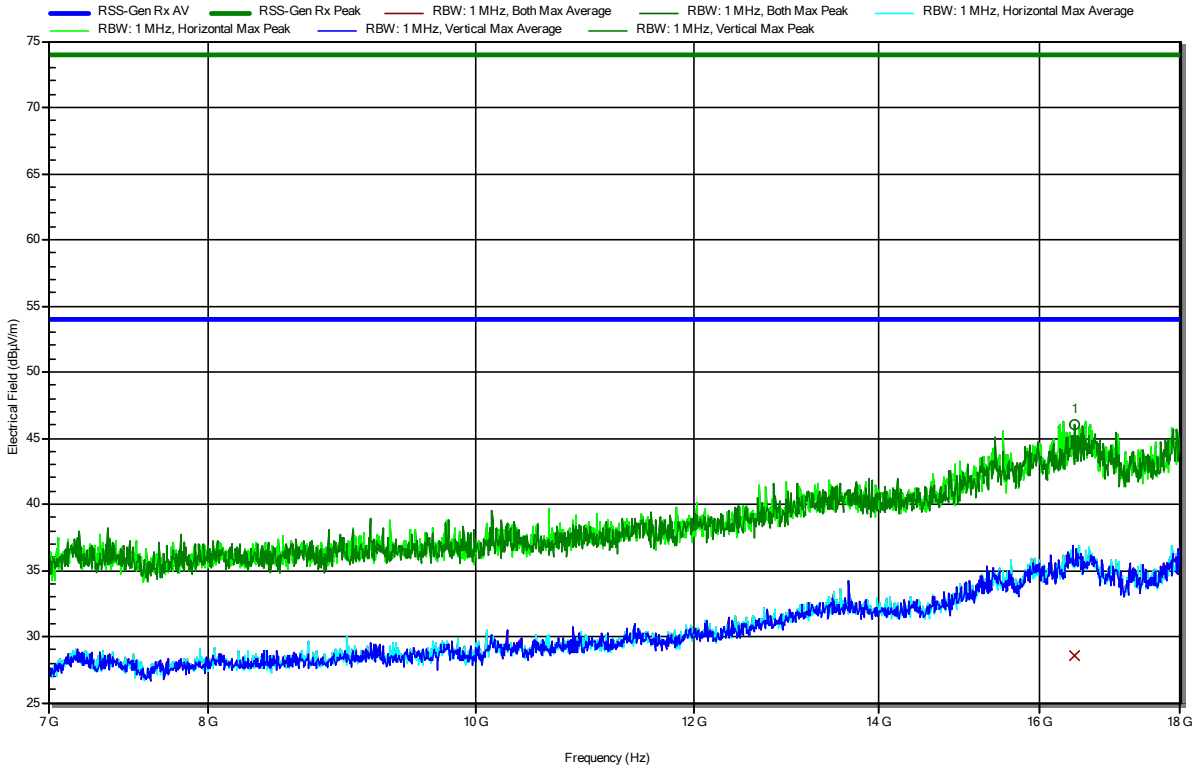
RadiMation



Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
16.478 GHz	46.06 dBµV/m	74 dBµV/m	-27.94 dB	Pass	Vertical

Frequency	Average	Average Limit	Average Difference	Average Status	Polarization
16.478 GHz	28.59 dBµV/m	53.98 dBµV/m	-25.39 dB	Pass	Vertical

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