RADIO TEST REPORT

No. 1718082STO-002, Ed. 2

RF Performance

EQUIPMENT UNDER TEST

Equipment:	Resusci manikins
Type/Model:	Resusci Junior QCPR
Additional type/model*:	Resusci Anne QCPR
Manufacturer:	LAERDAL MEDICAL AS
Tested by request of:	LAERDAL MEDICAL AS

*See opinions and interpretations clause 2.4

SUMMARY

Referring to the emission limits, and the operating mode during the tests specified in this report, the equipment complies with the requirements according to the following standards:

47 CFR Part 15 (2017): Subpart C: Intentional radiators. Section 15.247

47 CFR Part 15 (2017): Subpart B: Unintentional radiators

RSS-GEN Issue 5 (2018): General requirements of compliance of radio apparatus (2018)

RSS-247 Issue 2 (2017): Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

For details, see clause 2 – 4.

Date of issue: 2018-07-03

Tested by: Robert Hietala

Approved by: Matti Virkki

Revision History

Edition	Date	Description	Changes
1	2017-12-14	First release	
2	2018-07-03	Second release	Updated type/model information and edition/issues of standards

CONTENTS

1 CLIENT INFORMATION

The EUT has been tested by request of

Company	LAERDAL MEDICAL AS P.O. Box 377 Tanke Svilandsgt. 30 4002 Stavanger Norway
Name of contact	Eivin Tonnessen

2 EQUIPMENT UNDER TEST (EUT)

2.1 Identification of the EUT

Equipment:	Resusci manikins	
Type/Model:	Resusci Junior QCPR	
Brand name:	Laerdal	
Serial number:	C04698-0008 and C04698-0015	
Manufacturer:	LAERDAL MEDICAL AS	
Transmitter frequency range:	2402 – 2480 MHz	
Receiver frequency range:	2402 – 2480 MHz	
Frequency agile or hopping:	☐ Yes	☒ No
Antenna:	☒ Internal antenna	☐ External antenna
Antenna connector:	☒ None, internal antenna	☐ Yes
Antenna gain:	-0,5 dBi	
Rating RF output power:	-3.1 dBm (measured conducted)	
Type of modulation:	GFSK	
Temperature range:	☐ Category I (General): -20°C to +55°C ☐ Category II (Portable equipment): -10°C to +55°C ☐ Category III (Equipment for normal indoor use): +5°C to +35°C ☒ Other: 0°C to +40°C	
Transmitter standby mode supported:	☒ Yes	☐ No

2.2 Additional information about the EUT

The EUT consists of the following units:

Unit	Part number	Serial number	Comment
Resusci Junior QCPR	20-10494	C04698-0008	Radiated testing
Resusci Junior QCPR	20-10494	C04698-0015	Conducted testing

During the tests the EUT supported following software:

Software	Version	Comment
nRFgo Studio	1.21.2.10	For use of 'Direct Test Mode'

The EUT was tested with the following cables:

Port:	Type:	Length: [m]	Specifications:
AC/DC	USB cable	1.8	--

2.3 Test signals and operation modes

Continuously modulated signal with PRBS9 as payload model and 37 bytes as payload length.

2.4 Opinions and interpretations

The following types/type are/is also included as additional types/type in this test report:

Resusci Anne QCPR

The difference as compared to the tested type is (according to the manufacturer):

While the manikins vary in size (adult and pediatric) and on configurations (full body, torso only or torso with arms; regular head or airway head for intubation training), the placement and use of the QCPR Main Board is the same.

In addition to the QCPR Main Board, the AED version of the QCPR manikins have an AED link board and AED electrodes glued to the inside of the chest skin. This functionality does not affect the performance of the QCPR Main Board.

Resusci Anne QCPR is a manikin representing an adult; the Resusci Junior QCPR is the same as Resusci Anne QCPR except that it is a smaller manikin, representing a child.

The difference is considered not to imply different radio-characteristics when compared to the tested type. Therefore, this type is/these types are not tested, but considered to have the same radio-characteristics as the tested type(s).

3 TEST SPECIFICATIONS

3.1 Standards

Requirements:

47 CFR Part 15 (2017): Subpart C: Intentional radiators. Section 15.247

47 CFR Part 15 (2017): Subpart B: Unintentional radiators

RSS-GEN Issue 5 (2018): General requirements of compliance of radio apparatus (2018).

RSS-247 Issue 2 (2017): Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

Test methods:
ANSI C63.10-2013: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

3.2 Additions, deviations and exclusions from standards and accreditation

RSS-GEN Issue 5 (2018) and RSS-247 Issue 2 (2017) are not within Intertek's scope of accreditation.

No other additions, deviations or exclusions have been made from standards and accreditation.

3.3 Test site

Measurements were performed at:

Intertek Semko AB.
Torshamnsgatan 43,
Box 1103
SE-164 22 Kista

Intertek Semko AB is a FCC listed test site with site registration number 90913
Intertek Semko AB is a FCC accredited conformity assessment body with designation number SE0002
Intertek Semko AB is an Industry Canada listed test facility with IC assigned code 2042G

Measurement chambers

Measurement Chamber	Type of chamber	IC Site filing #
5 m CHAMBER	Semi-anechoic 5 m	2042G-3

4 TEST SUMMARY

The results in this report apply only to sample tested:

Requirement	Description	Result
FCC §15.203 **RSS-GEN 8.3**	**Antenna requirement** The EUT has integrated non detachable antenna which can't be remove without breaking the EUT.	**PASS**
FCC §15.207, 15.107 **RSS-GEN 8.8 table 3**	**Conducted continuous emission in the frequency range 150 kHz to 30 MHz, AC Power input port** The margin to the limit was at least 20 dB. See clause 5.3.	**PASS**
FCC §15.247 (d), 15.209(a) **RSS-GEN 8.9** **RSS-247 5.5**	**Radiated emission of electromagnetic fields in the frequency range 30 – 1000 MHz** The EUT complies with the limits. The margin to the limit was at least 10.8 dB at 956.704 MHz. See clause 6.4 – 6.5.	**PASS**
FCC §15.247(d), 15.209(a) **RSS-GEN 8.9** **RSS-247 5.5**	**Radiated emission of electromagnetic fields in the frequency range above 1 GHz** The EUT complies with the limits. The margin to the limit was at least 22.4 dB at 2484.0 MHz. See clause 6.6 – 6.7.	**PASS**
FCC §15.247(a)(2) **RSS-GEN 6.6** **RSS-247 5.2(1)**	**Occupied bandwidth** The EUT complies with the limits. The margin to the limit is at least 226.4 kHz See clause 9.4.	**PASS**
FCC §15.247(b) **RSS-247 5.4(4)**	**Conducted output power** The EUT complies with the limits. The margin to the limit was at least 10 dB. See clause 8.4.	**PASS**
FCC §15.247(e) **RSS-247 5.2(2)**	**Peak power spectral density** The EUT complies with the limits. The margin to the limit was at least 10 dB. See clause 11.4.	**PASS**
FCC §15.247(e) **RSS-247 5.5**	**Band edge** The EUT complies with the limits. The margin to the limit was at least 20 dB. See clause 7.4.	**PASS**

5 CONDUCTED CONTINUOUS DISTURBANCES IN THE FREQUENCY-RANGE 0.15 TO 30 MHZ

Date of test:	2017-12-13	**Test location:**	BUR 1
EUT Serial:	C04698-0008	**Ambient temp:**	23 °C
Tested by:	Robert Hietala	**Relative humidity:**	16 %
Test result:	Pass	**Margin:**	> 10 dB

5.1 Test set-up and test procedure

The test method is in accordance with ANSI C63.10-2013 section 6.2.

The EUT was connected to the power via Artificial Mains Networks AMN.

The EUT was placed on an insulating support 0.8 m above the floor, 0.4 m from the vertical reference ground plane (RGP) and 0.8 m from the AMN/ISN.

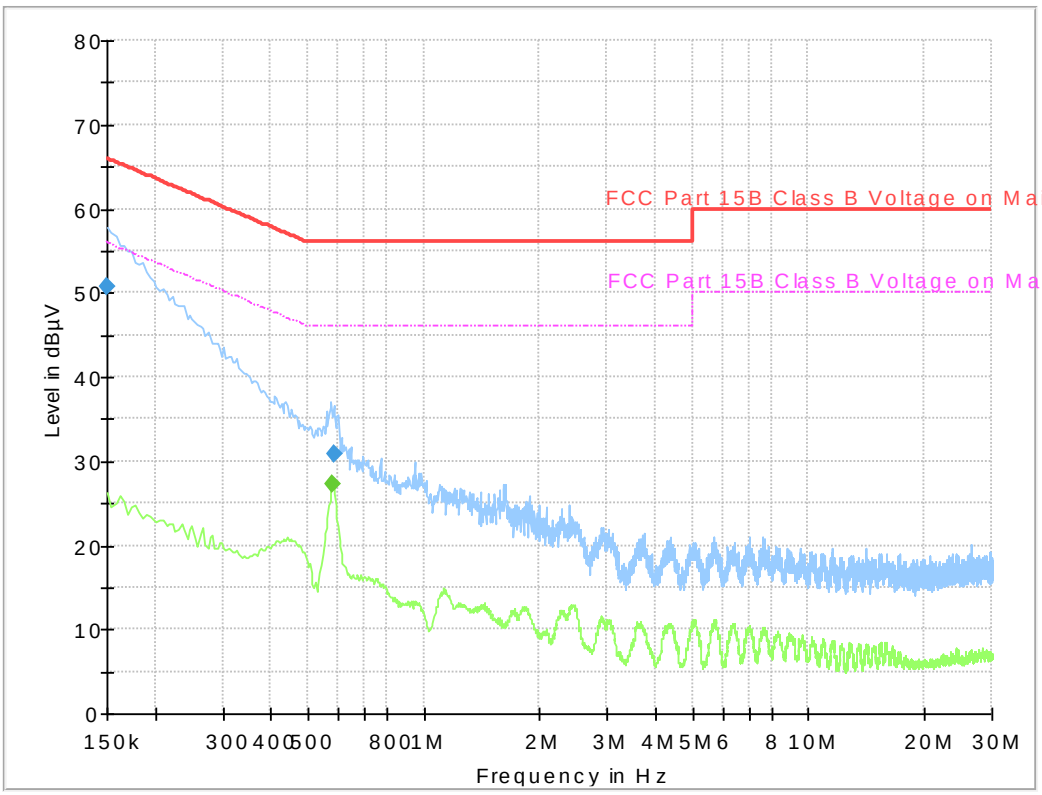
Overview sweeps were performed for each lead.
During the tests the EUT was operated according to the mode of operation mentioned in clause 2.3, on middle channel.

5.2 Requirement

Limits for conducted emission from AC mains
The EUT shall meet the limits for the standards.
Reference: 47 CFR §15.207
RSS-GEN, section 8.8 table 3

Frequency range [MHz]	Limits [dBµV]	
	Quasi-Peak	Average
0.15 – 0.50	66 – 56	56 – 46
0,50 – 5.00	56	46
5.00 – 30.0	60	50

5.3 Test results



Diagram, Peak and Average overview sweep

Measurement results, Quasi-peak

All measured disturbances have a margin of more than 20 dB to the limits.

6 RADIATED RF EMISSION IN THE FREQUENCY-RANGE 30 MHZ TO 26.5 GHZ

Date of test:	2017-11-14	**Test location:**	5mSAC
EUT Serial:	C04698-0008	**Ambient temp:**	22 °C
Tested by:	Robert Hietala	**Relative humidity:**	21 %
Test result:	Pass	**Margin:**	> 10 dB

6.1 Test set-up and test procedure.

The test method is in accordance with ANSI C63.10-2013.
The EUT was set up in order to emit maximum disturbances.

The EUT was placed on an insulating support 0.8 and 1.5 m above the turntable which is part of the reference ground plane.

Overview sweeps were performed with the measurement receiver in max-hold mode and the peak detector activated in the frequency-range 30 – 1000 MHz. Above 1 GHz additionally the average detector was activated.

Portable device: Pre scan was made in three orthogonal EUT orientations.

6.2 Test conditions

Test set-up:	**30 MHz to 1000 MHz**		
Test receiver set-up:			
Preview test:	Peak,	RBW 120 kHz	VBW 1 MHz
Final test:	Quasi-Peak,	RBW 120 kHz	VBW 1 MHz
EUT height above ground plane:	0.8 m		
Measuring distance:	3 m		
Measuring angle:	0 – 359°		
Antenna			
Height above ground plane:	1 – 4 m		
Polarisation:	Vertical and Horizontal		
Type:	Bilog		

Test set-up:	**1 GHz – 26.5 GHz**		
Test receiver set-up:			
Preview test:	Peak,	RBW 1 MHz	VBW 3 MHz
	Average,	RBW 1 MHz	VBW 3 MHz
Final test:	Peak,	RBW 1 MHz	VBW 3 MHz
	Average	RBW 1 MHz	VBW 3 MHz
EUT height above ground plane:	1.5 m		
Measuring distance:	3 m		
Measuring angle:	0 – 359°		
Antenna			
Height above ground plane:	1 – 4 m		
Polarisation:	Vertical and Horizontal		
Type:	Horn		
Antenna tilt:	Activated		

6.3 Requirements

Within restricted bands and receive mode:
Reference: CFR 47 §15.209, §15.109, RSS-Gen section 8.9

Field strength of emissions must comply with limits shown in table below

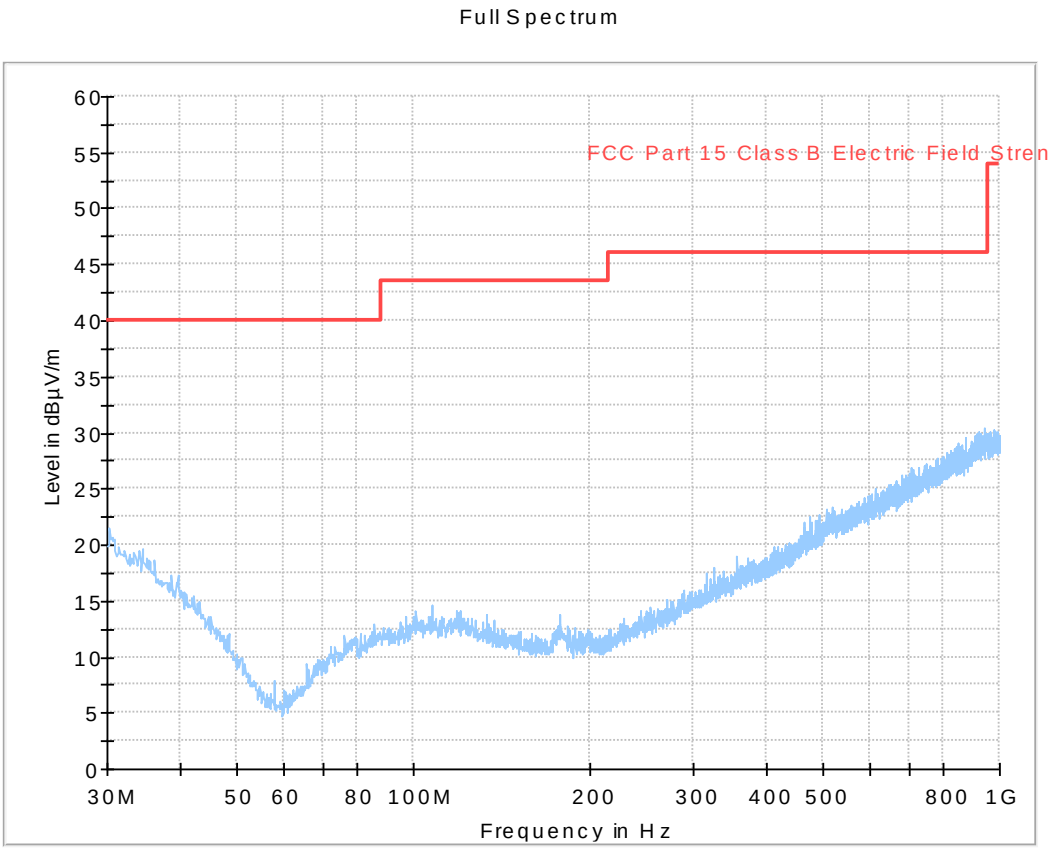
Frequency range [MHz]	Field strength at 3 m (dBµV/m)	Field strength at 10 m (dBµV/m)	Detector (dBµV/m)
30 – 88	40.0	29.5	Quasi Peak
88 – 216	43.5	33.0	Quasi Peak
216 – 960	46.0	35.5	Quasi Peak
960 – 1000	54.0	43.5	Quasi Peak
Above 1000	54.0 / 74.0	43.5 / 63.5	Average / Peak

The values for 10 m measuring distance are calculated by subtracting 10.5 dB from the 3 m limit. (i.e. an extrapolation factor of 20 dB/decade according to CFR 47 §15.31(f)(1))

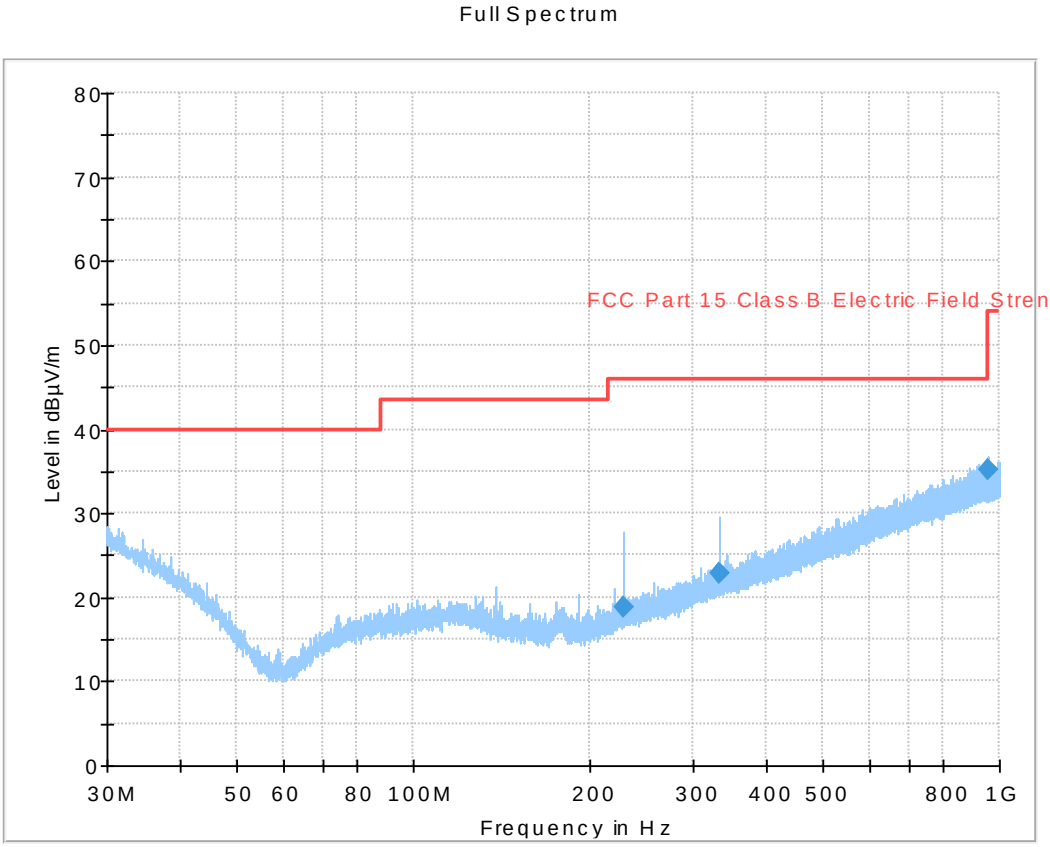
Outside the restricted bands:
Reference: CFR 47 §15.247(d), RSS-247 5.5,

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits.

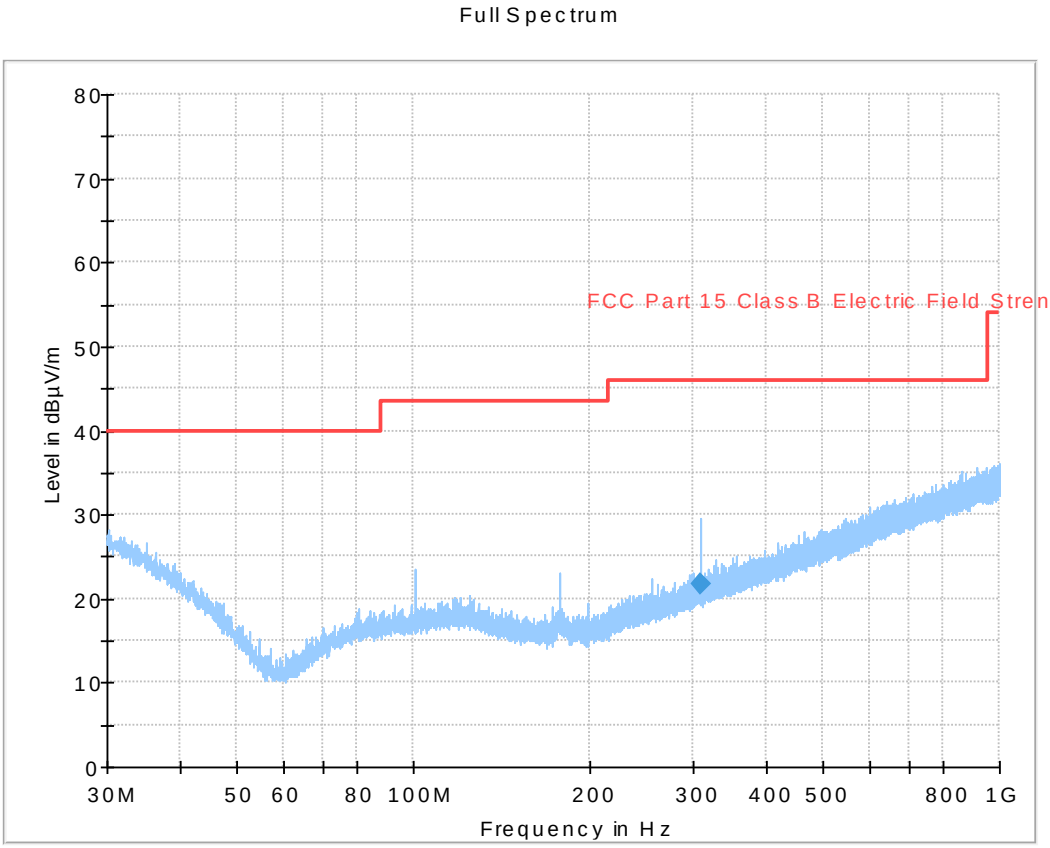
6.4 Test results 30 MHz – 1000 MHz, TX



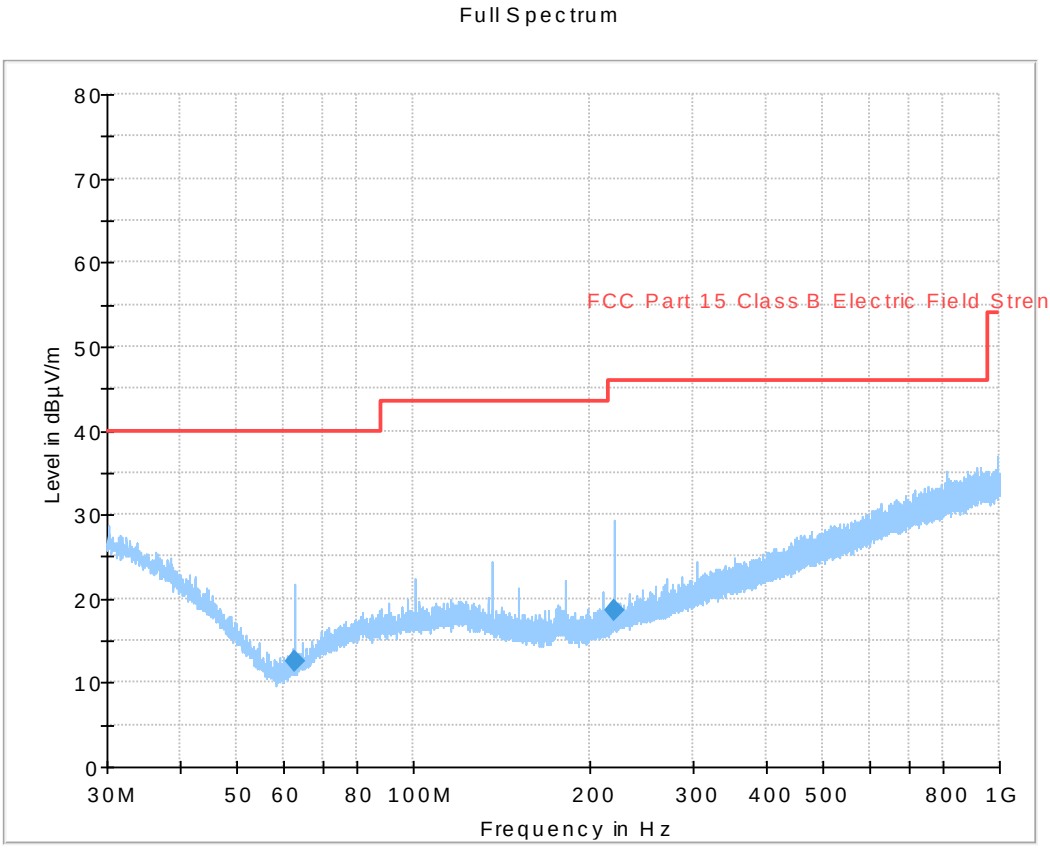
Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX low channel, EUT orientation X.



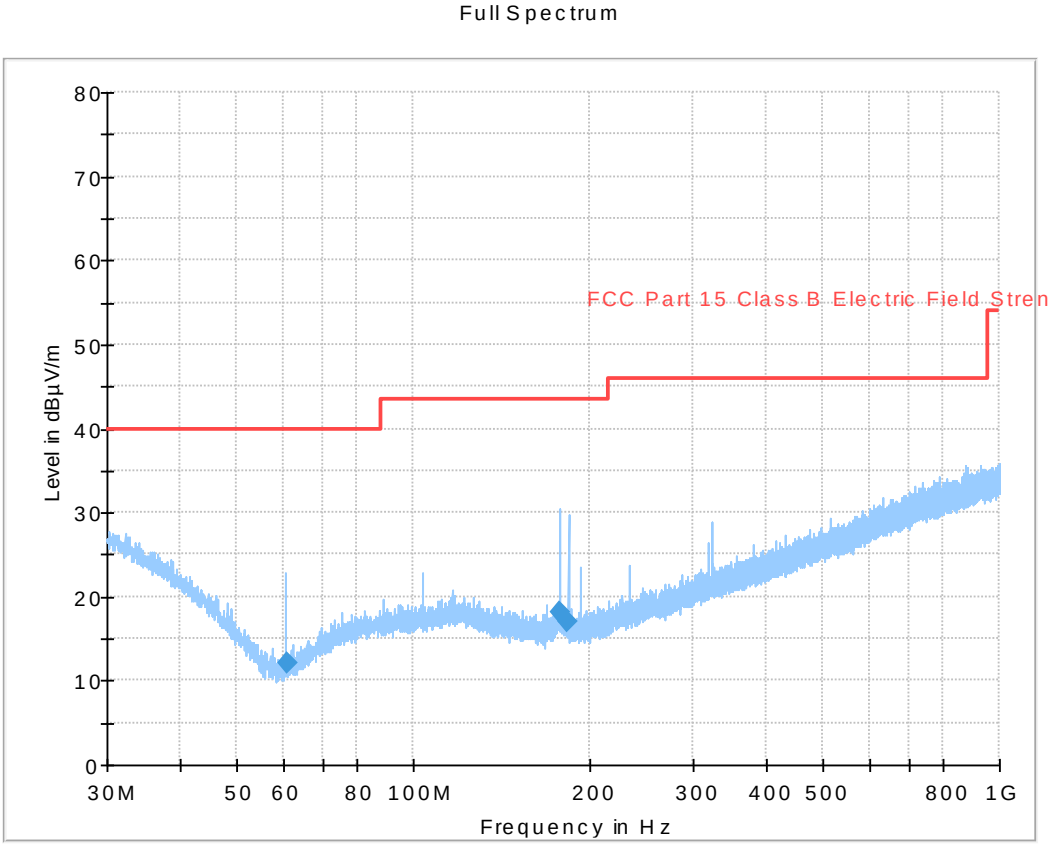
Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX middle channel, EUT orientation X.



Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX high channel, EUT orientation X.



Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX high channel, EUT orientation Y.



Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. TX high channel, EUT orientation Z.

Measurement results, Quasi Peak, TX middle channel

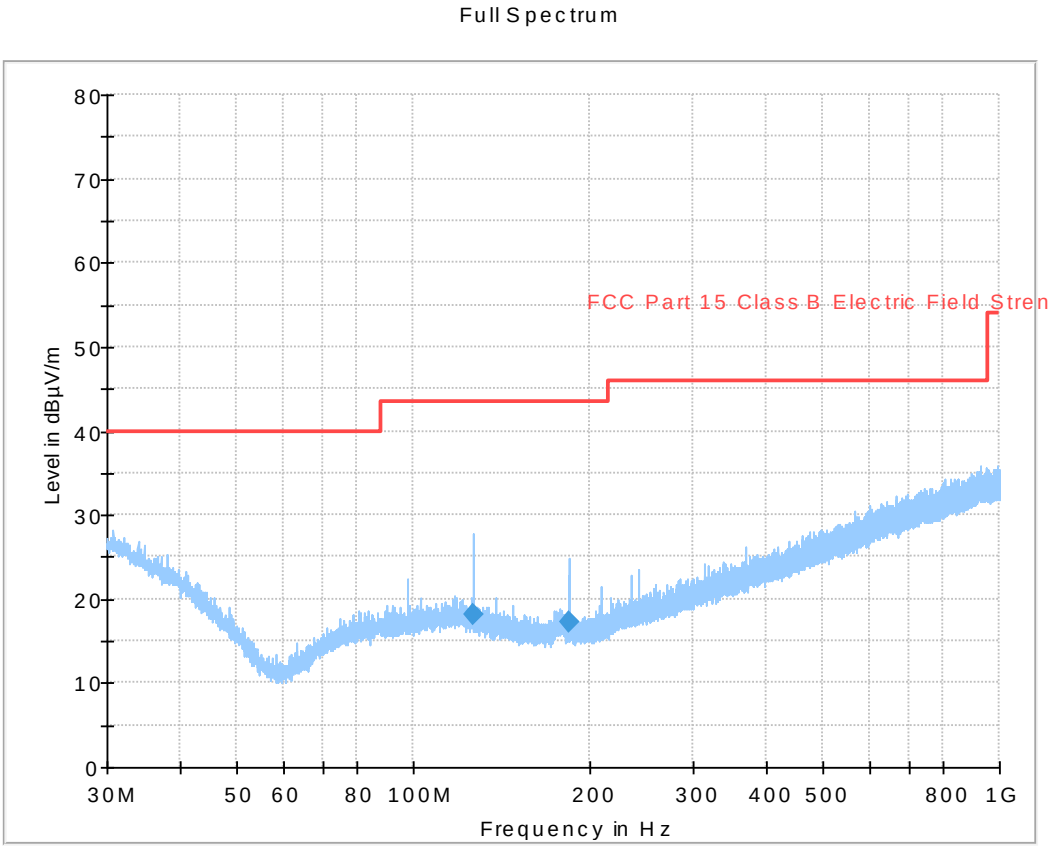
Frequency [MHz]	Level [dBµV/m]	Limit [dBµV/m]	EUT orientation X/Y/Z	Polarization H/V	Margin [dB]
228.871	18.8	46.0	X	V	27.2
334.103	22.8	46.0	X	V	23.2
956.704	35.2	46.0	X	H	10.8

Measurement results, Quasi Peak, TX high channel

Frequency [MHz]	Level [dBµV/m]	Limit [dBµV/m]	EUT orientation X/Y/Z	Polarization H/V	Margin [dB]
61.115	12.1	40.0	Z	V	27.9
62.672	12.6	40.0	Y	V	27.4
177.988	18.2	43.5	Z	V	25.3
183.665	17.1	43.5	Z	V	26.4
220.523	18.7	46.0	Y	V	27.3
308.574	21.7	46.0	X	V	24.3

Result [dBµV/m] = Analyser reading [dBµV] + Antenna factor [1/m] - Amplifier gain [dB] + Cable loss [dB]

6.5 Test results 30 MHz – 1000 MHz, RX



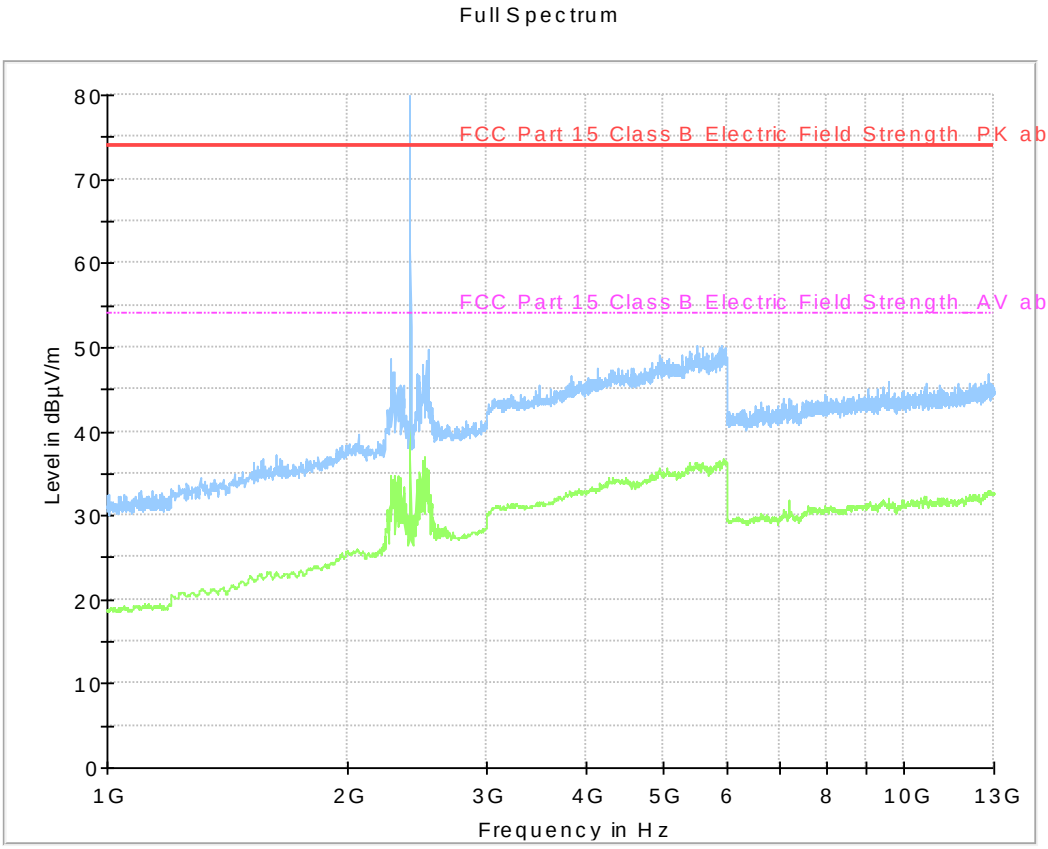
Diagram, Peak overview sweep, 30 – 1000 MHz at 3 m distance. RX high channel, EUT orientation X.

Measurement results, Quasi Peak, RX high channel

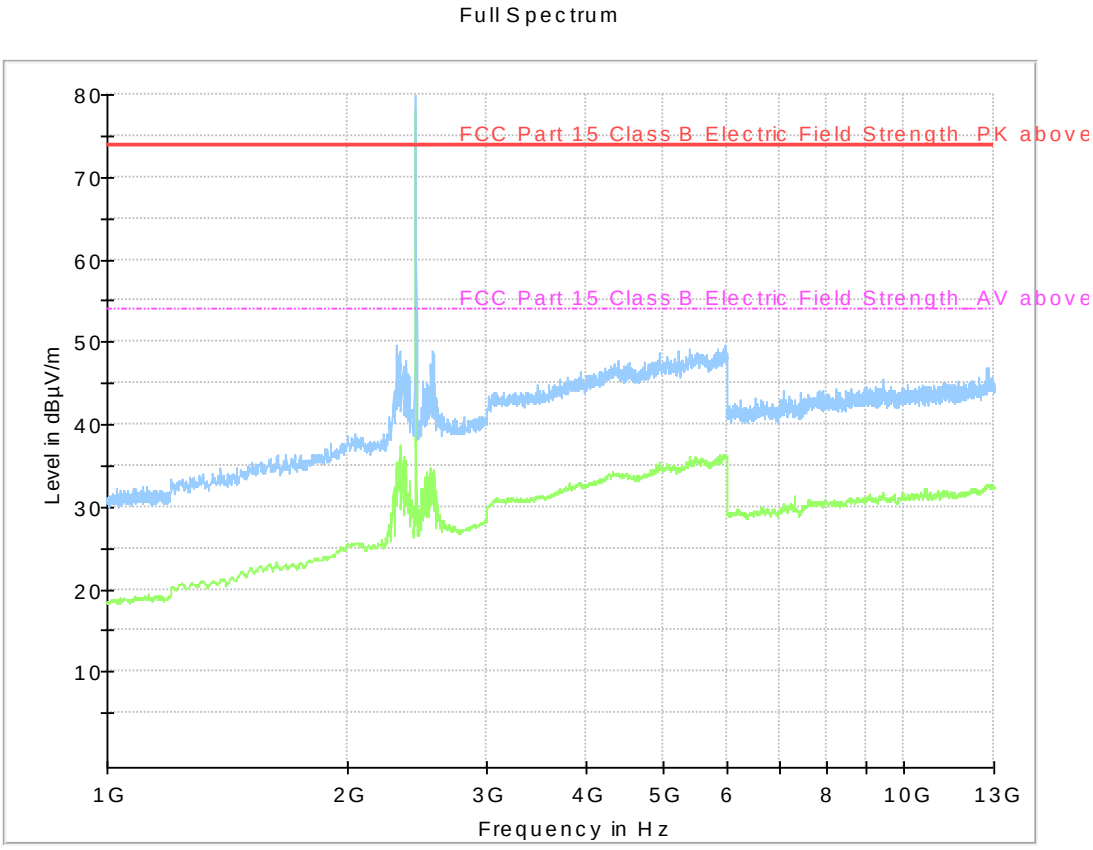
Frequency [MHz]	Level [dBµV/m]	Limit [dBµV/m]	EUT orientation X/Y/Z	Polarization H/V	Margin [dB]
126.749	18.1	43.5	X	V	25.4
184.275	17.2	43.5	X	V	26.3

Result [dBµV/m] = Analyser reading [dBµV] + Antenna factor [1/m] - Amplifier gain [dB] + Cable loss [dB]

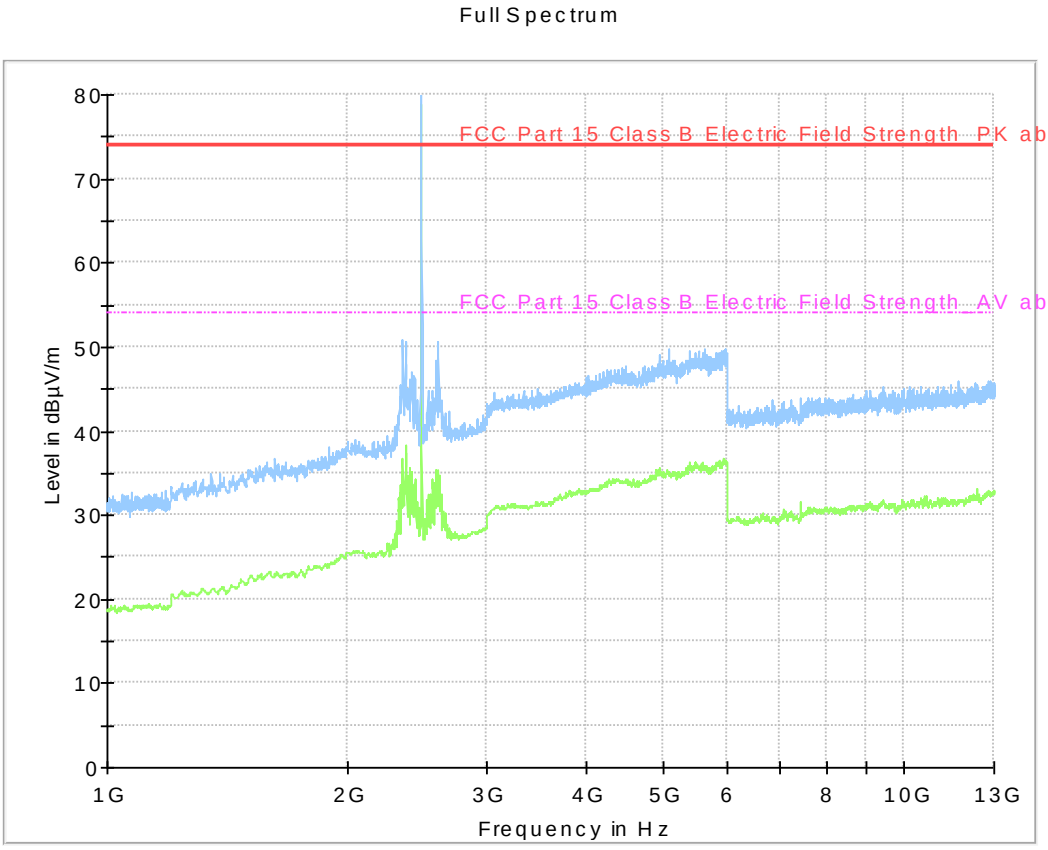
6.6 Test results 1 GHz – 26.5 GHz, TX



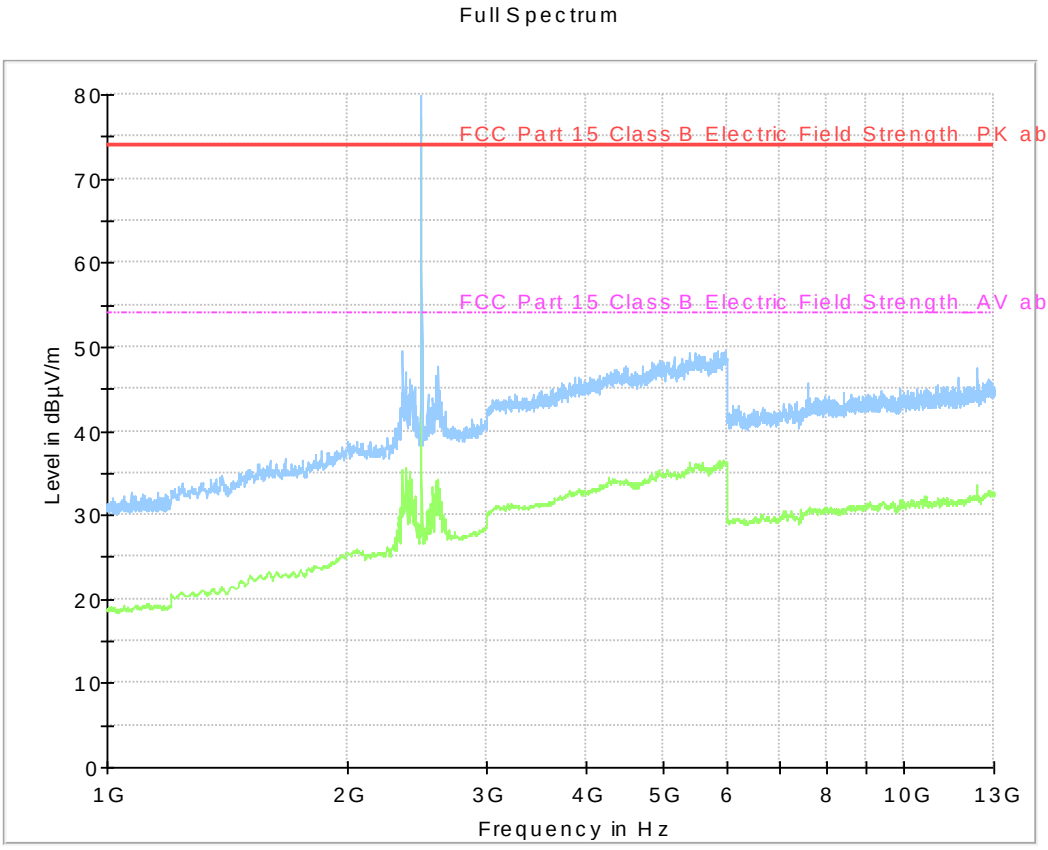
Diagram, Peak overview sweep, 1– 13 GHz at 3 m distance. TX low channel, EUT orientation X.



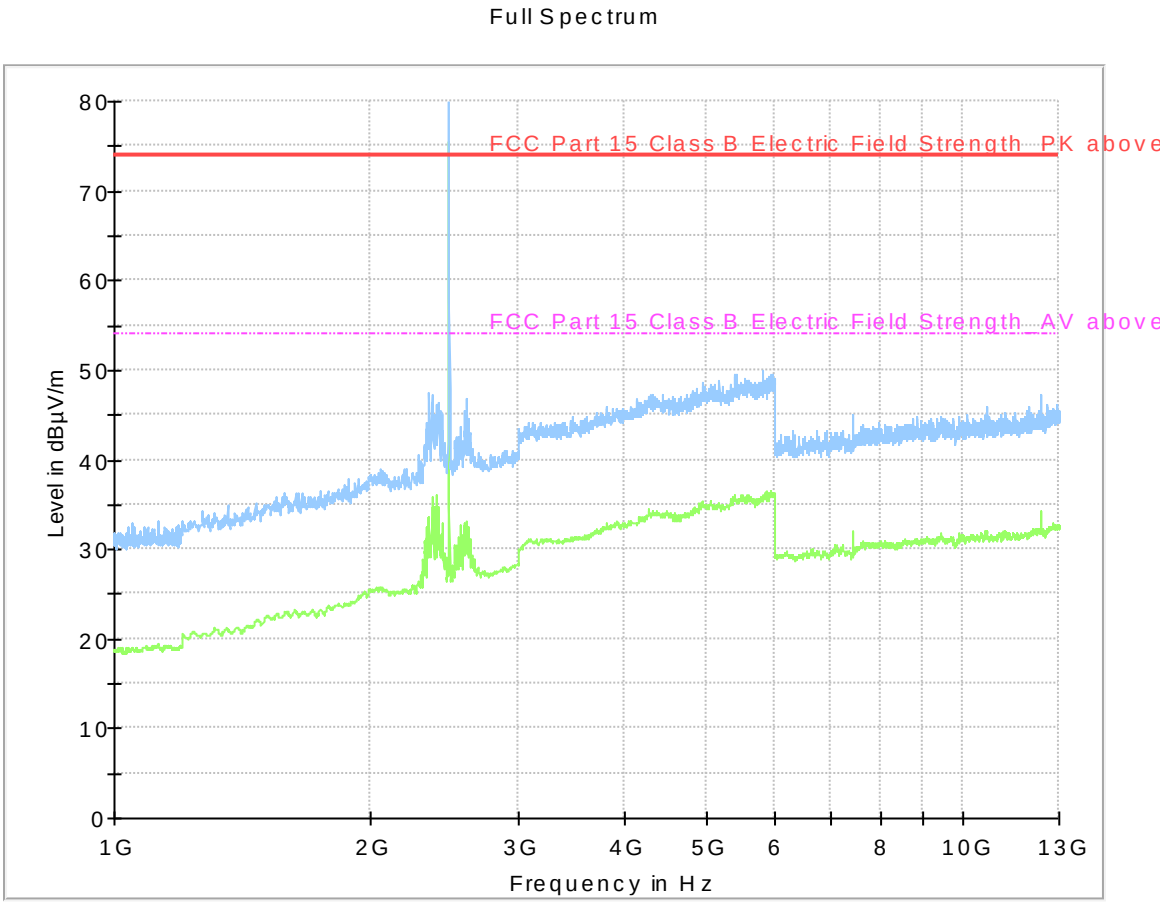
Diagram, Peak overview sweep, 1– 13 GHz at 3 m distance. TX middle channel, EUT orientation X.



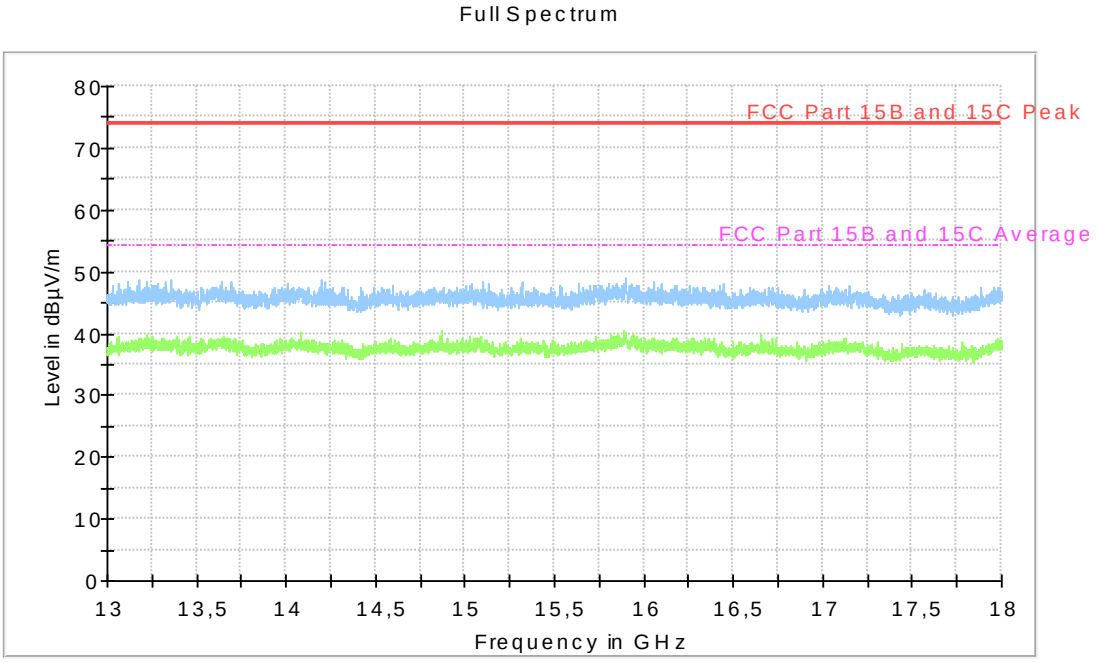
Diagram, Peak overview sweep, 1– 13 GHz at 3 m distance. TX high channel, EUT orientation X.



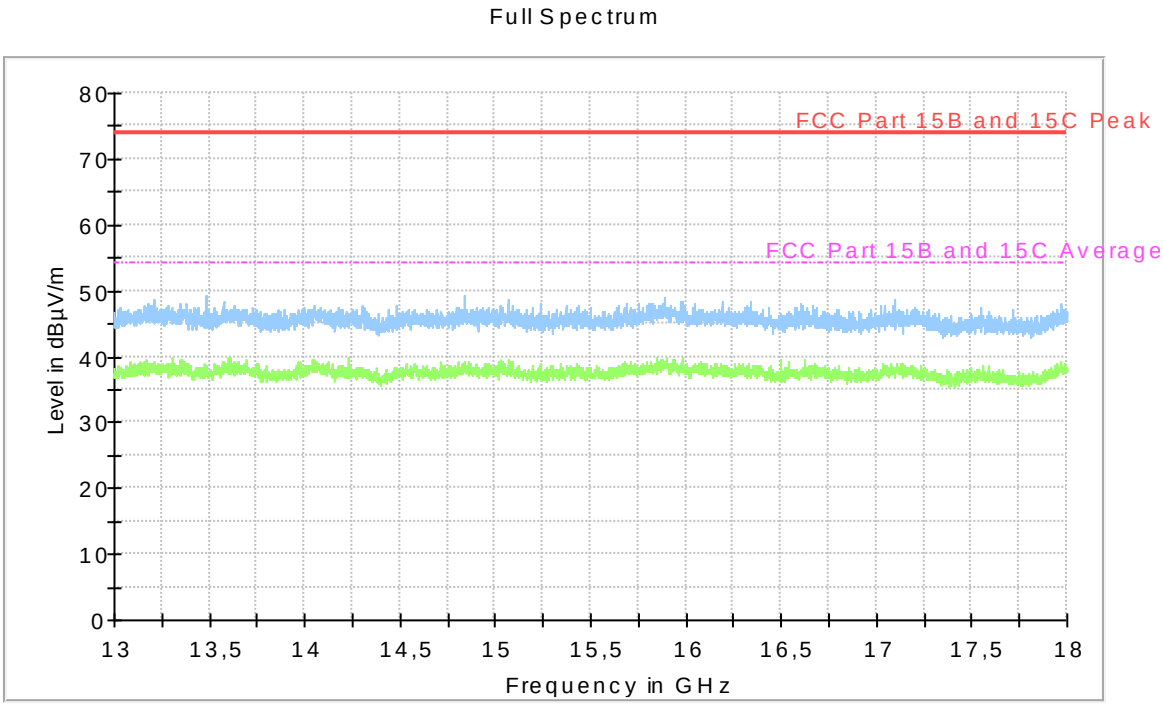
Diagram, Peak overview sweep, 1– 13 GHz at 3 m distance. TX high channel, EUT orientation Y.



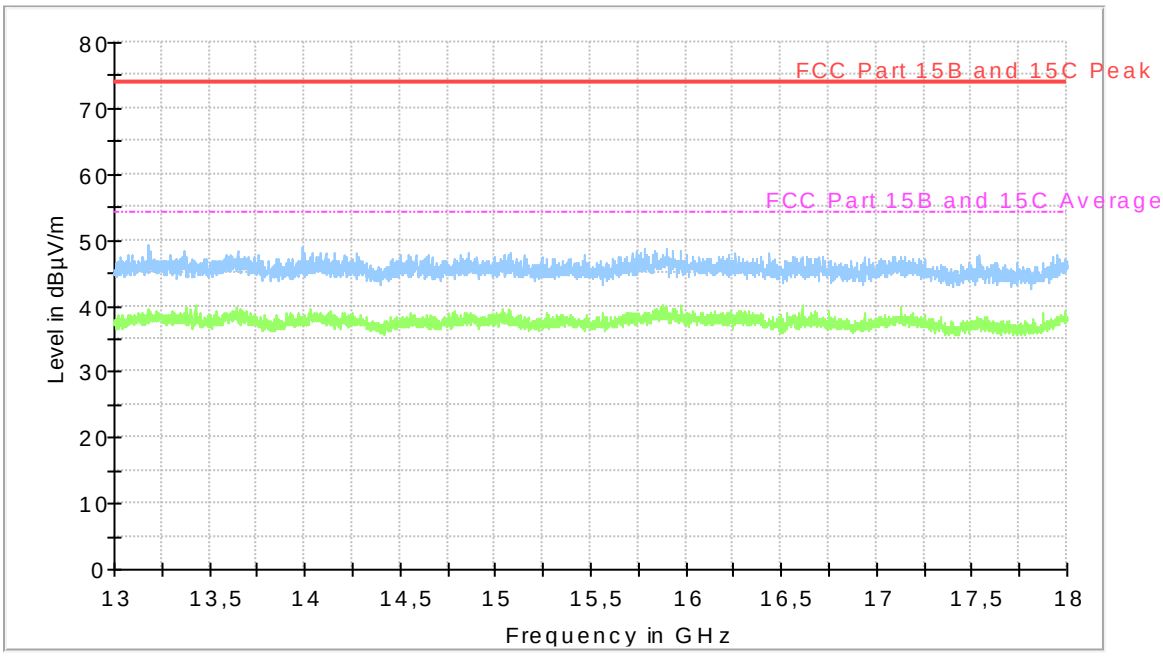
Diagram, Peak overview sweep, 1– 13 GHz at 3 m distance. TX high channel, EUT orientation Z.



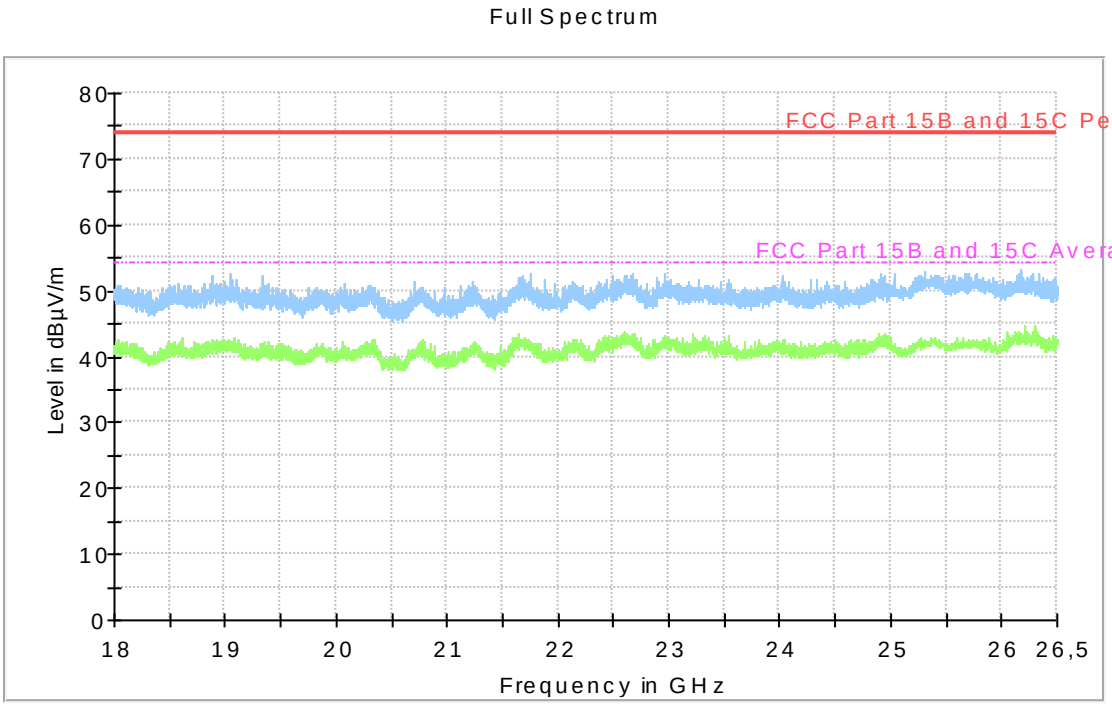
Diagram, Peak overview sweep, 13 – 18 GHz at 3 m distance. TX low channel, EUT orientation X.



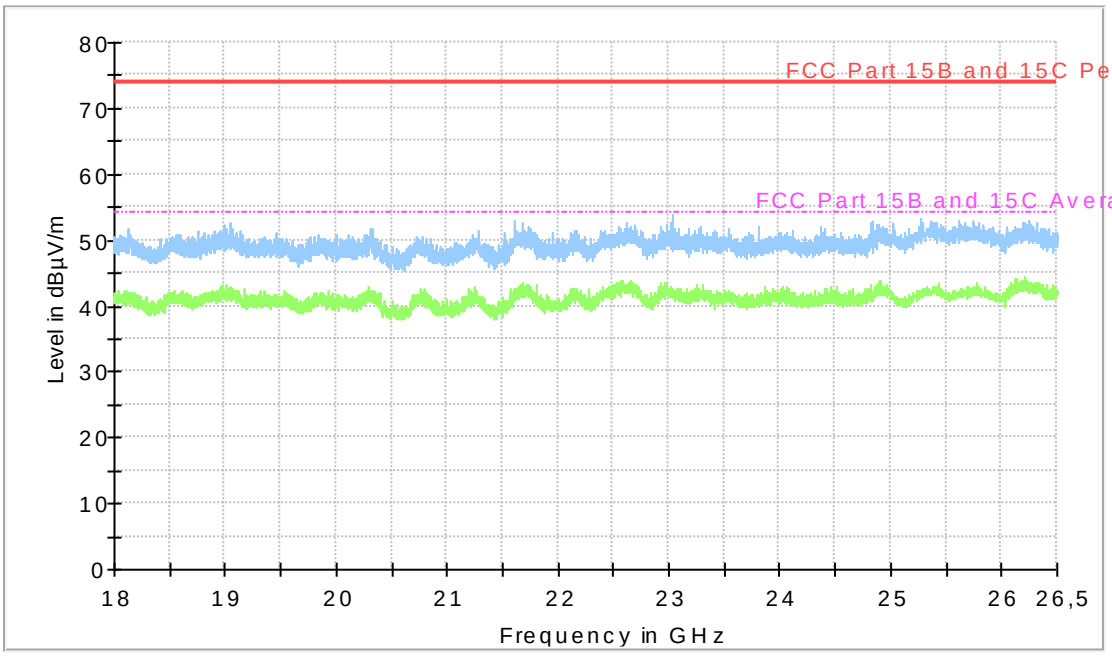
Diagram, Peak overview sweep, 13 – 18 GHz at 3 m distance. TX middle channel, EUT orientation X.



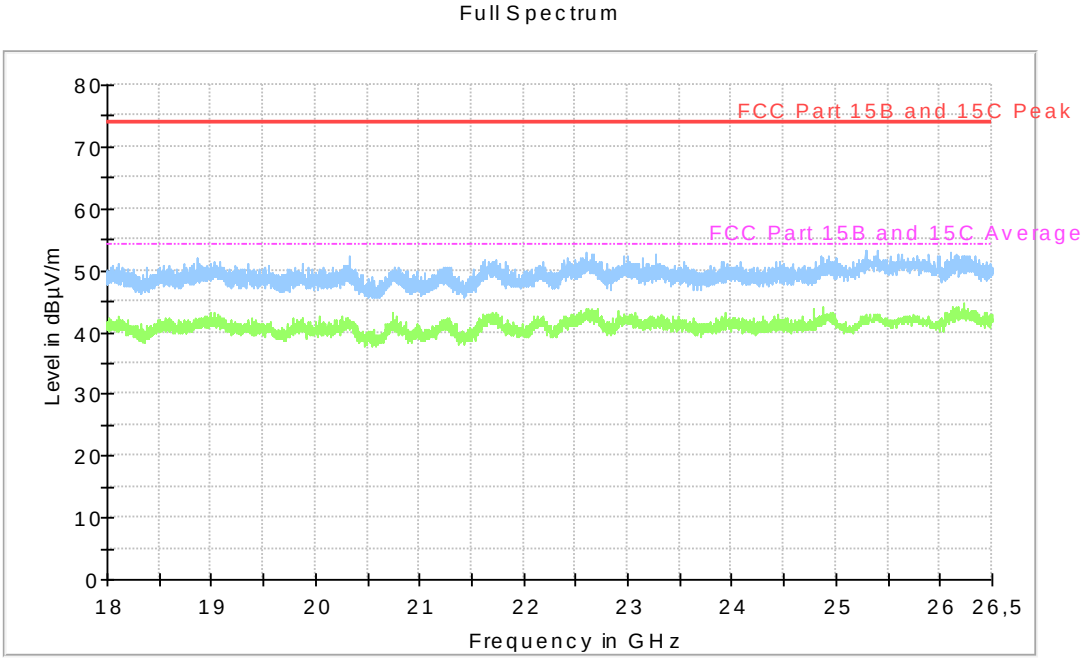
Diagram, Peak overview sweep, 13 – 18 GHz at 3 m distance. TX high channel, EUT orientation X.



Diagram, Peak overview sweep, 18 – 26.5 GHz at 3 m distance. TX low channel, EUT orientation X.



Diagram, Peak overview sweep, 18 – 26.5 GHz at 3 m distance. TX middle channel, EUT orientation X.



Diagram, Peak overview sweep, 18 – 26.5 GHz at 3 m distance. TX high channel, EUT orientation X.

Measurement results, Peak, TX high channel

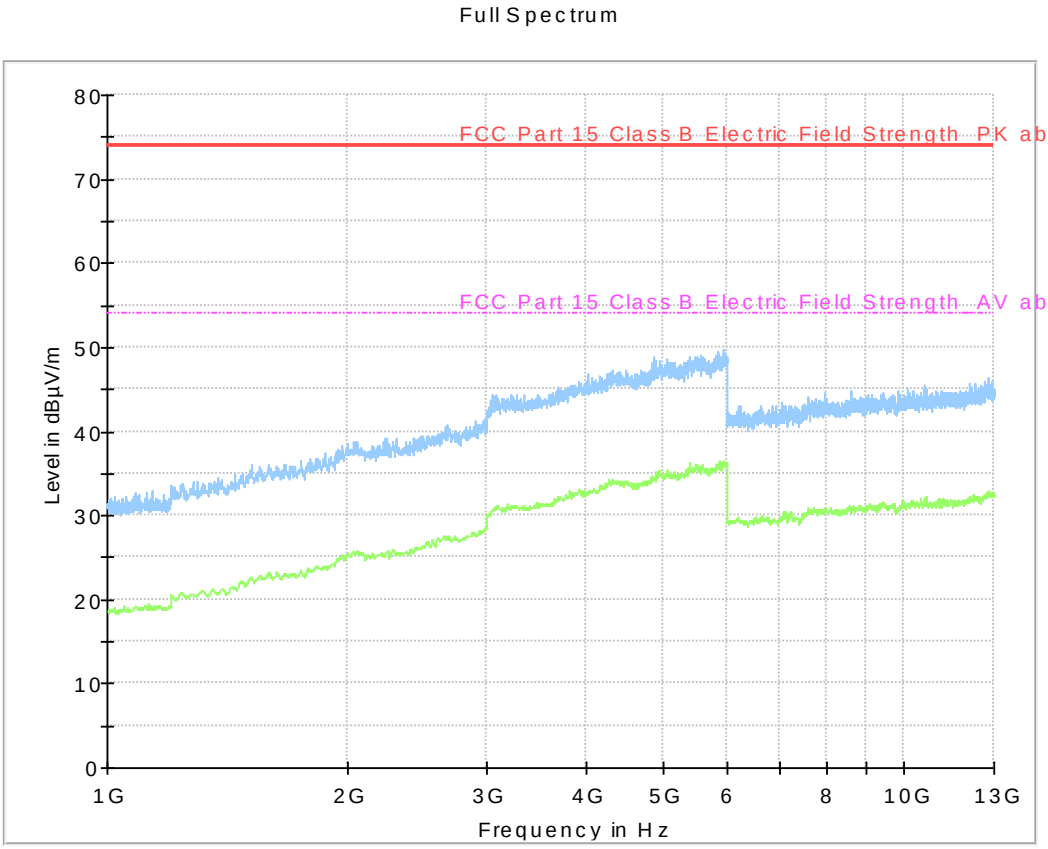
Frequency [MHz]	Level [dBµV/m]	Limit [dBµV/m]	EUT orientation X/Y/Z	Polarization H/V	Margin [dB]
2484.0	51.6	74.0	X	H	22.4

Measurement results, Average, TX high channel

Frequency [MHz]	Level [dBµV/m]	Limit [dBµV/m]	EUT orientation X/Y/Z	Polarization H/V	Margin [dB]
2484.0	28.4	54.0	X	H	25.6

Result [dBµV/m] = Analyser reading [dBµV] + Antenna factor [1/m] - Amplifier gain [dB] + Cable loss [dB]

6.7 Test results 1 GHz – 13 GHz, RX



Diagram, Peak overview sweep, 1– 13 GHz at 3 m distance. RX high channel, EUT orientation X.

Measurement results

No emissions are found above noise floor or closer than 20 dB from limit.

Result [dBµV/m] = Analyser reading [dBµV] + Antenna factor [1/m] - Amplifier gain [dB] + Cable loss [dB]

7 CONDUCTED BAND EDGE MEASUREMENT

Date of test:	2017-11-13	**Test location:**	Wireless Center
EUT Serial:	C04698-0015	**Ambient temp:**	22 °C
Tested by:	Robert Hietala	**Relative humidity:**	23 %
Test result:	Pass	**Margin:**	> 10 dB

7.1 Test set-up and test procedure.

The test method is in accordance with ANSI C63.10-2013 section 6.10.4.

The EUT was connected to spectrum analyser via rf-cable and attenuator.

The EUT was set up in order to emit maximum disturbances.

7.2 Test conditions

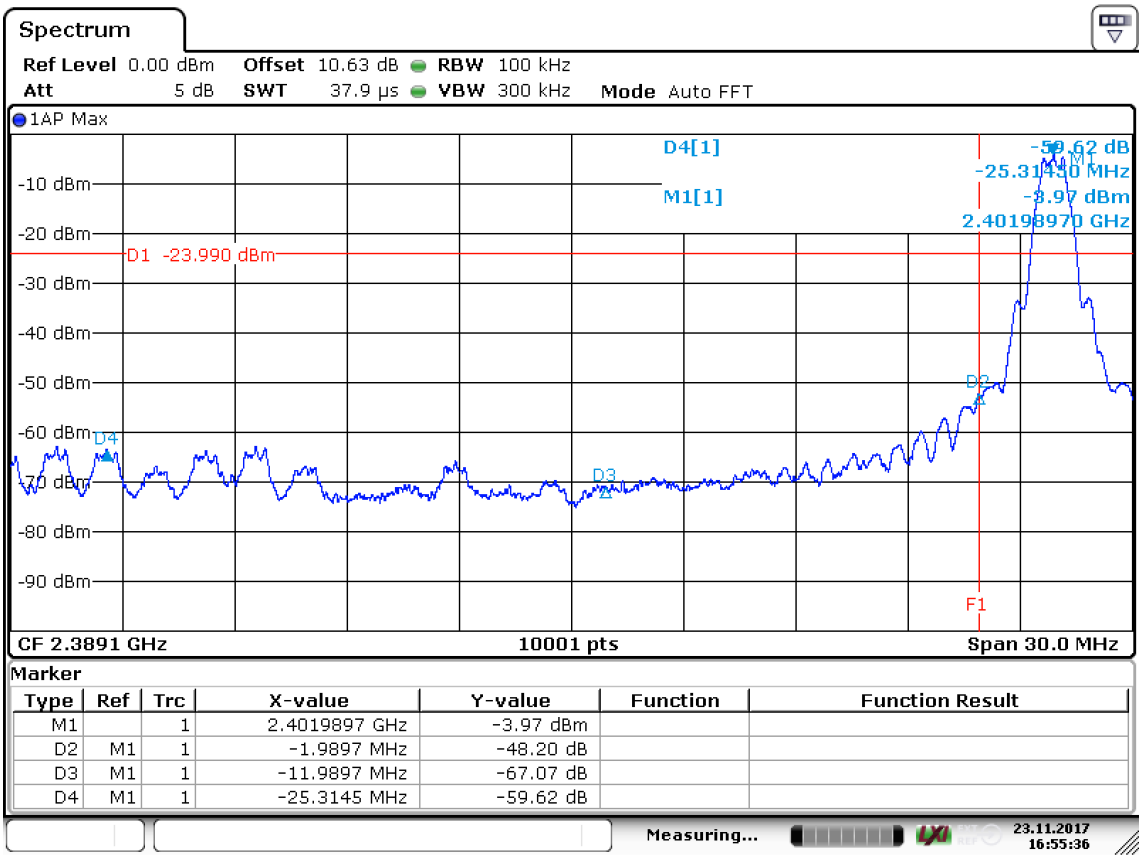
Detector: Peak
RBW: 100 kHz
VBW: 300 kHz
Span: 30 MHz

7.3 Requirement

Reference: CFR 47 §15.247(d), RSS-247 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits.

7.4 Test results



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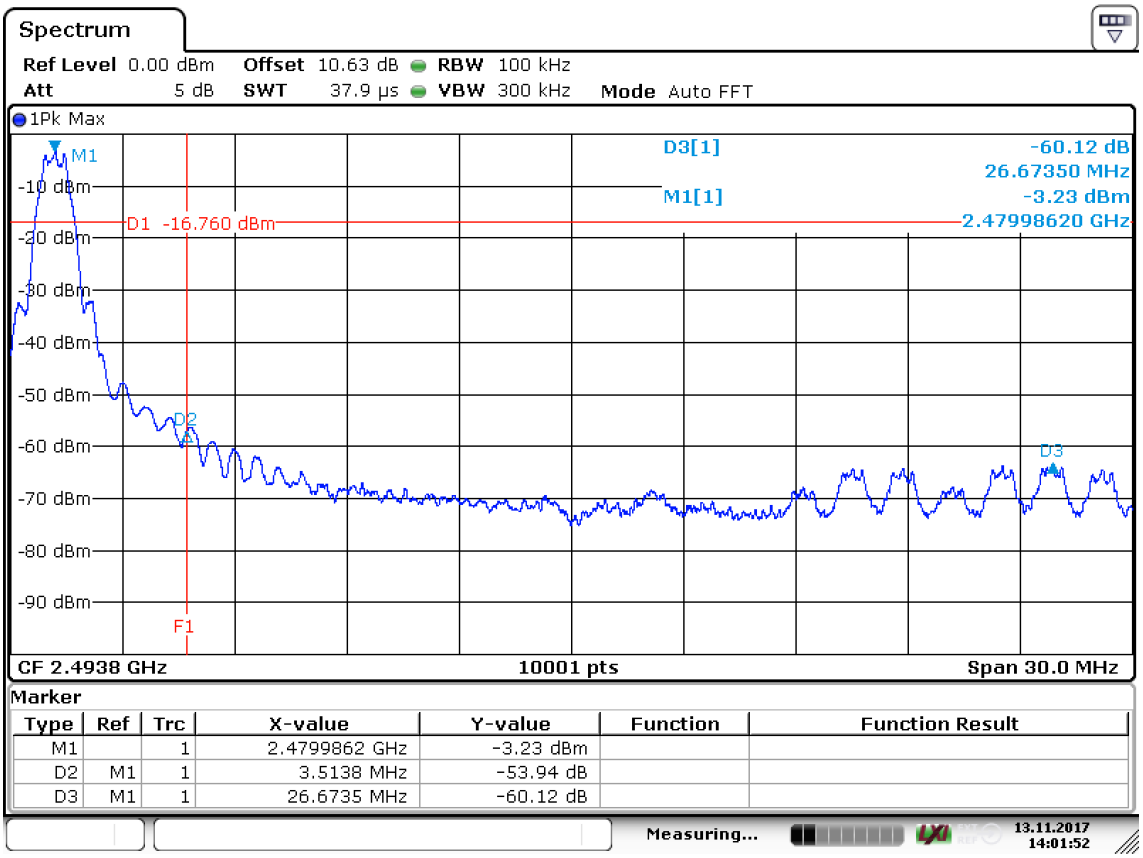
Screenshot: Lower band edge sweep, single channel



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Screenshot: Upper band edge sweep, single channel

Test results

Band edge	Delta [dBc]	Limit [dBc]	Margin [dB]
Lower	48.2	20.0	28.2
Upper	53.9	20.0	33.9

8 PEAK CONDUCTED OUTPUT POWER

Date of test:	2017-11-13	**Test location:**	Wireless Center
EUT Serial:	C04698-0015	**Ambient temp:**	22 °C
Tested by:	Robert Hietala	**Relative humidity:**	23 %
Test result:	Pass	**Margin:**	> 10 dB

8.1 Test set-up and test procedure.

The test method is in accordance with ANSI C63.10-2013 section 11.9.1.1.

The EUT was connected to spectrum analyser via rf-cable and attenuator.

8.2 Test conditions

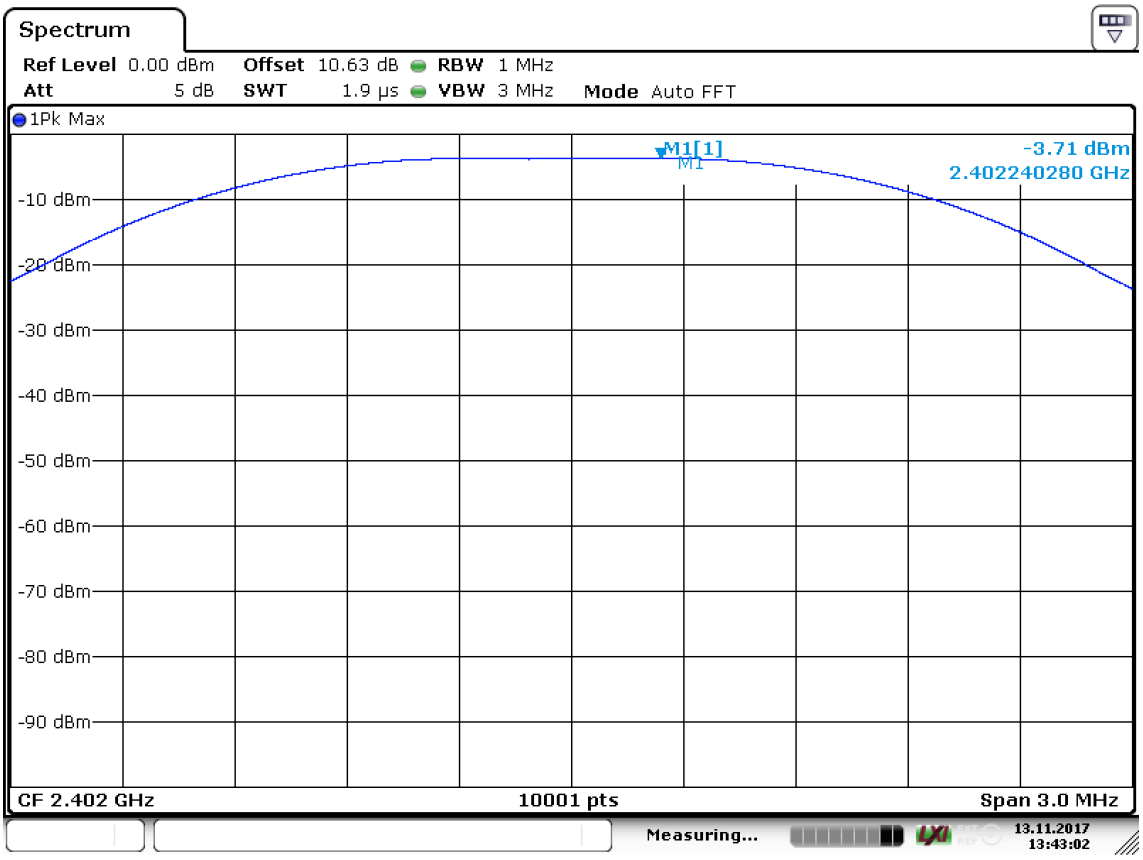
Detector: Peak,
RBW: >OBW
VBW: 3 x RBW
Span: >3 x OBW

The EUT was set up in order to emit maximum disturbances.

8.3 Requirements

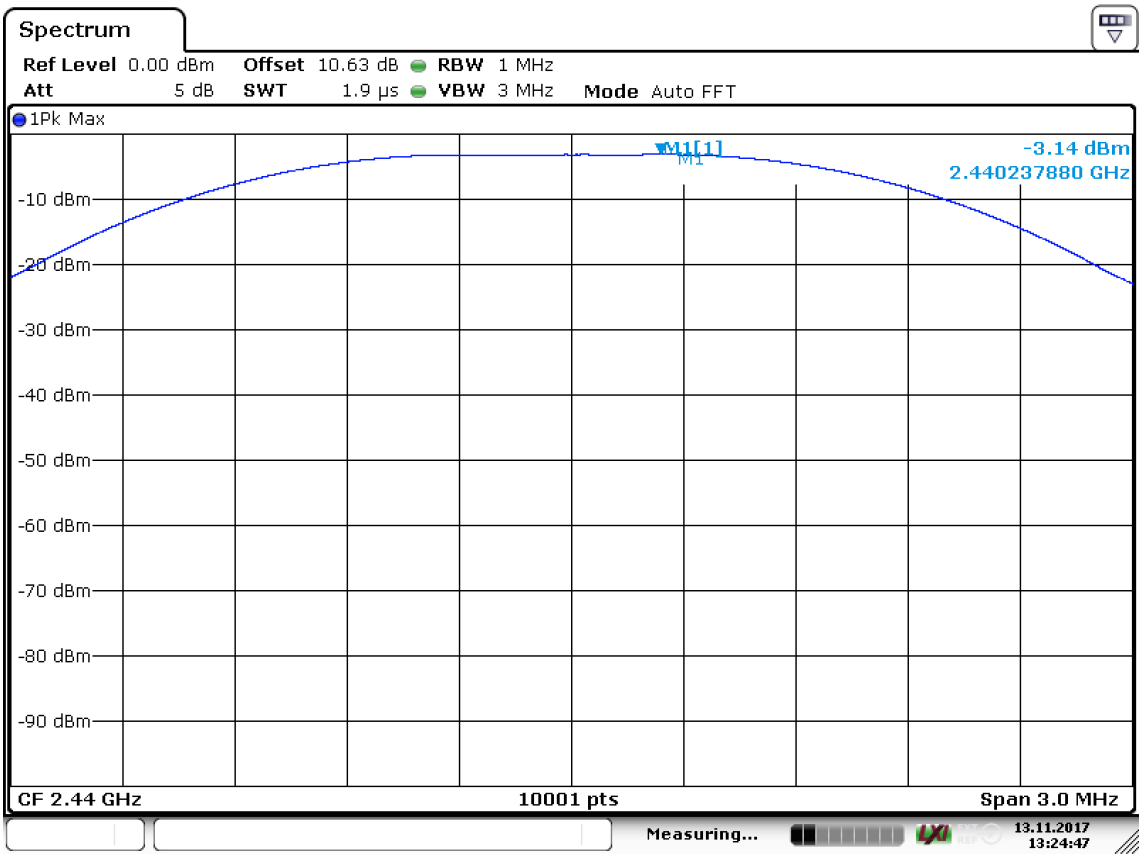
Reference: CFR 47§15.247(b)(3), RSS-247 5.4
For DTSs employing digital modulation techniques operating in the bands 902 – 128 MHz, 2400 – 2483.5 MHz and 5725 – 5850 MHz, the maximum peak conducted output power shall not exceed 1W.

8.4 Test results



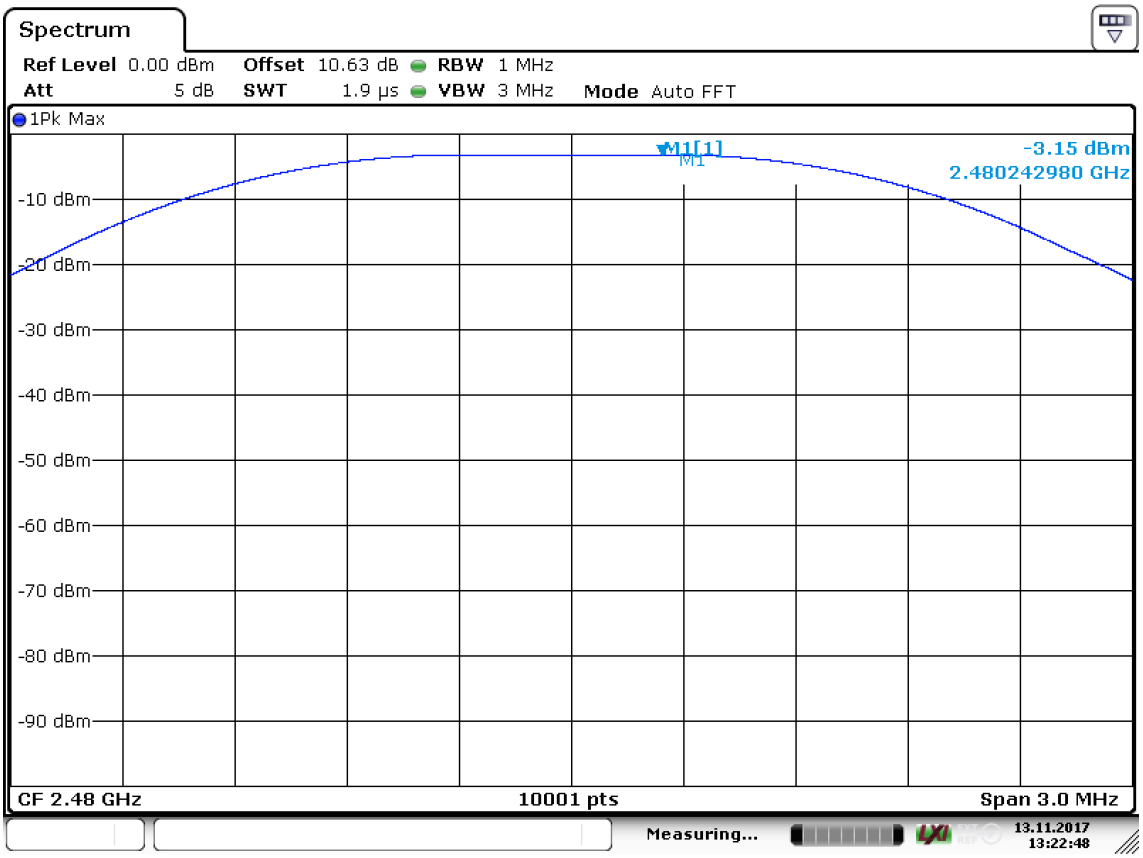
Date: 13.NOV.2017 13:43:03

Screenshot: Output power, low channel



Date: 13.NOV.2017 13:24:47

Screenshot: Output power, middle channel



Date: 13.NOV.2017 13:22:48

Screenshot: Output power, high channel

Test result

Channel [MHz]	Output power [dBm]
2402	-3.7
2440	-3.1
2480	-3.2

9 OCCUPIED 6 DB BANDWIDTH

Date of test:	2017-11-13	**Test location:**	Wireless Center
EUT Serial:	C04698-0015	**Ambient temp:**	22 °C
Tested by:	Robert Hietala	**Relative humidity:**	23 %
Test result:	Pass	**Margin:**	226.4 kHz

9.1 Test set-up and test procedure.

The test method is in accordance with ANSI C63.10-2013 section 11.8.1.

The EUT was connected to spectrum analyser via rf-cable and attenuator.

9.2 Test conditions

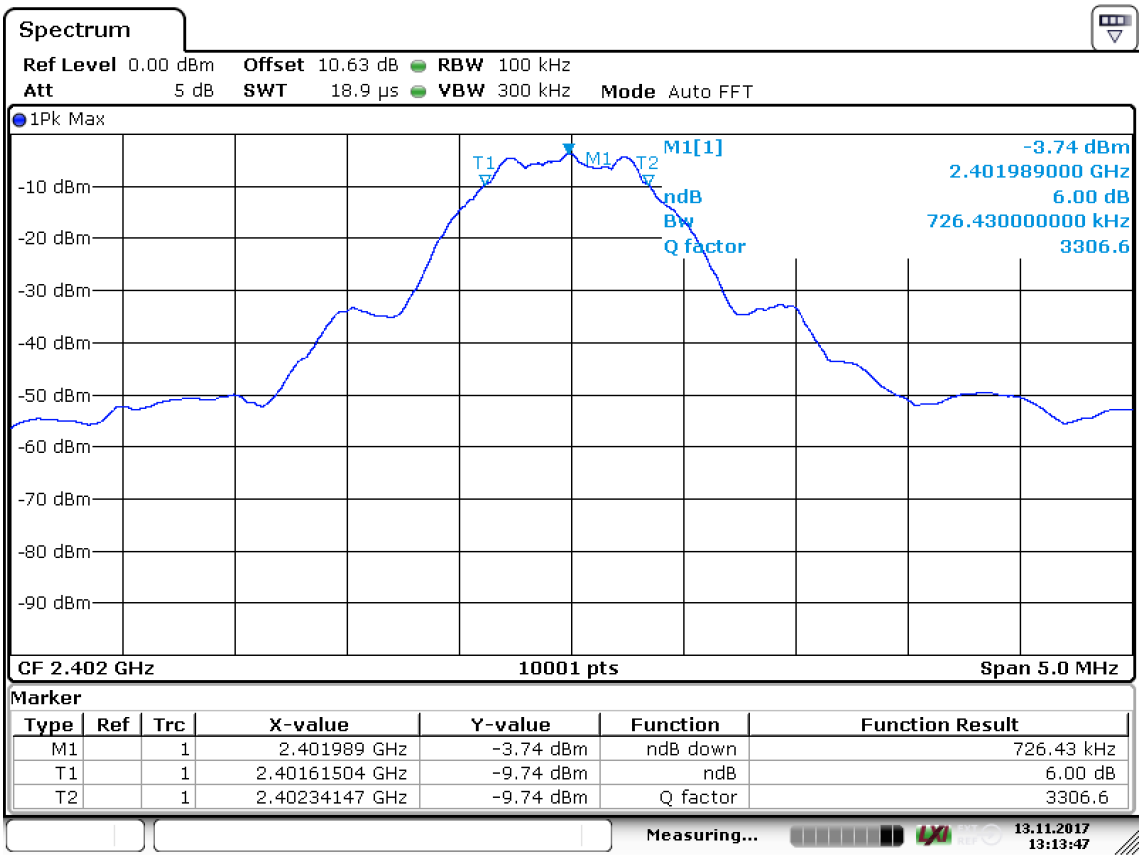
Detector: Peak,
RBW: 100 kHz
VBW: 3 x RBW
Span: >1,5 x OBW

The EUT was set up in order to emit maximum disturbances.

9.3 Requirements

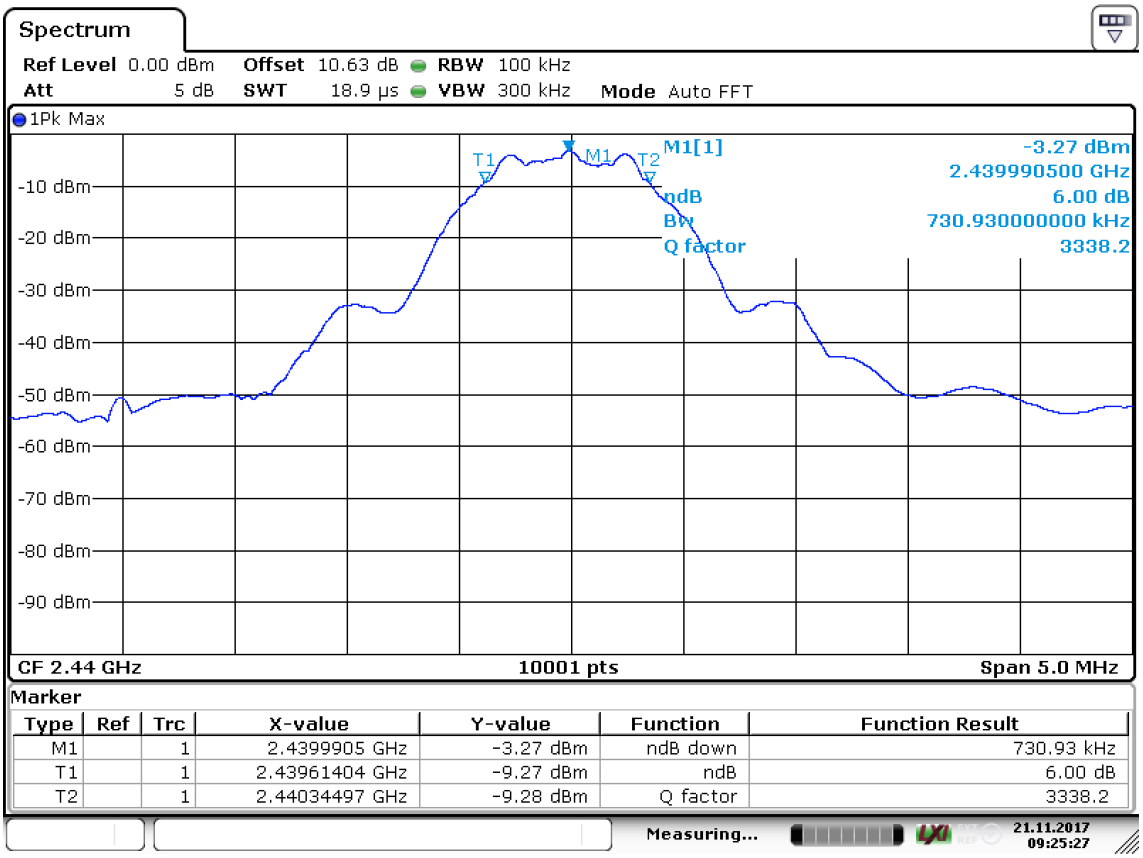
Reference: CFR 47§15.247(a)(2), RSS-247 5.2(1)
The minimum 6 dB bandwidth shall be 500 kHz.

9.4 Test results



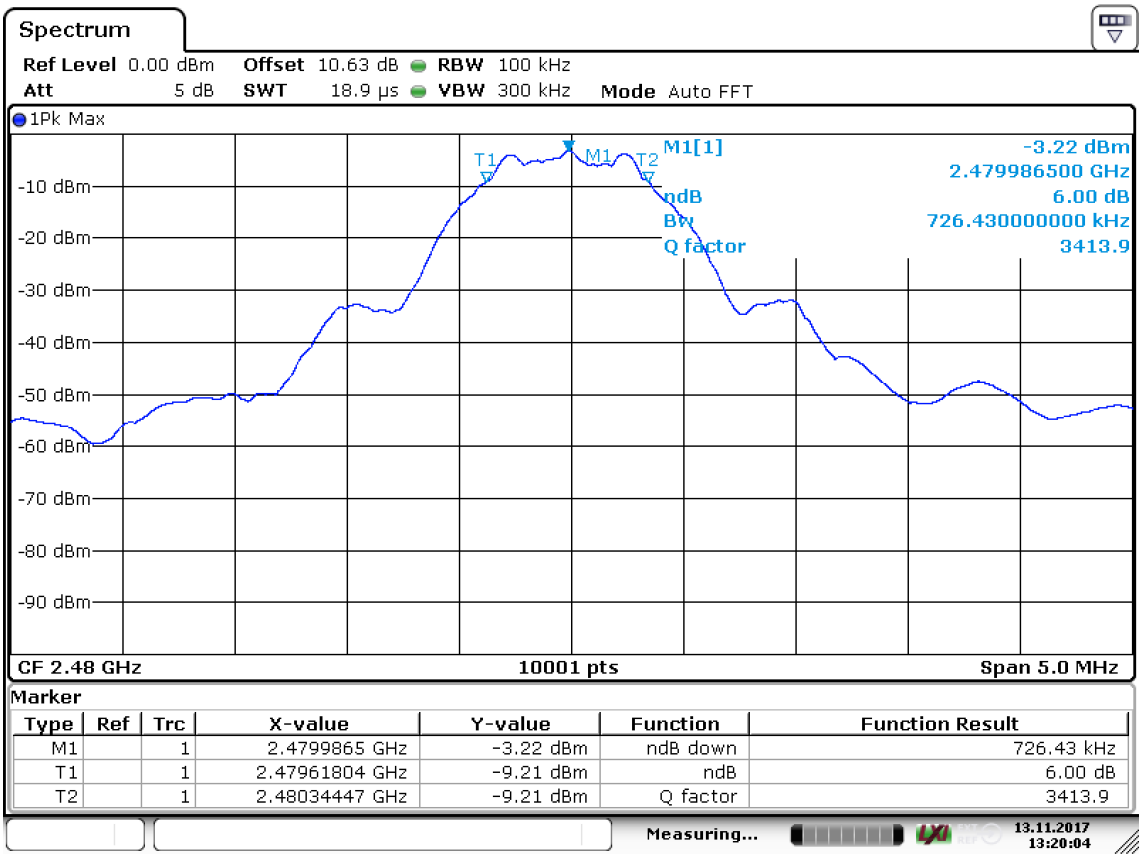
Date: 13.NOV.2017 13:13:47

Screenshot: Occupied 6 dB bandwidth Measurement, low channel



Date: 21.NOV.2017 09:25:27

Screenshot: Occupied 6 dB bandwidth Measurement, middle channel



Date: 13.NOV.2017 13:20:05

Screenshot: Occupied 6 dB bandwidth Measurement, high channel

Test result

Channel [MHz]	6 dB BW [kHz]
2402	726.4
2440	730.9
2480	726.4

10 99 % BANDWIDTH

Date of test:	2017-11-17	**Test location:**	Wireless Center
EUT Serial:	C04698-0015	**Ambient temp:**	22 °C
Tested by:	Robert Hietala	**Relative humidity:**	23 %
Test result:	Pass	**Margin:**	N/A

10.1 Test set-up and test procedure.

The test method is in accordance with RSS-GEN section 6.6.

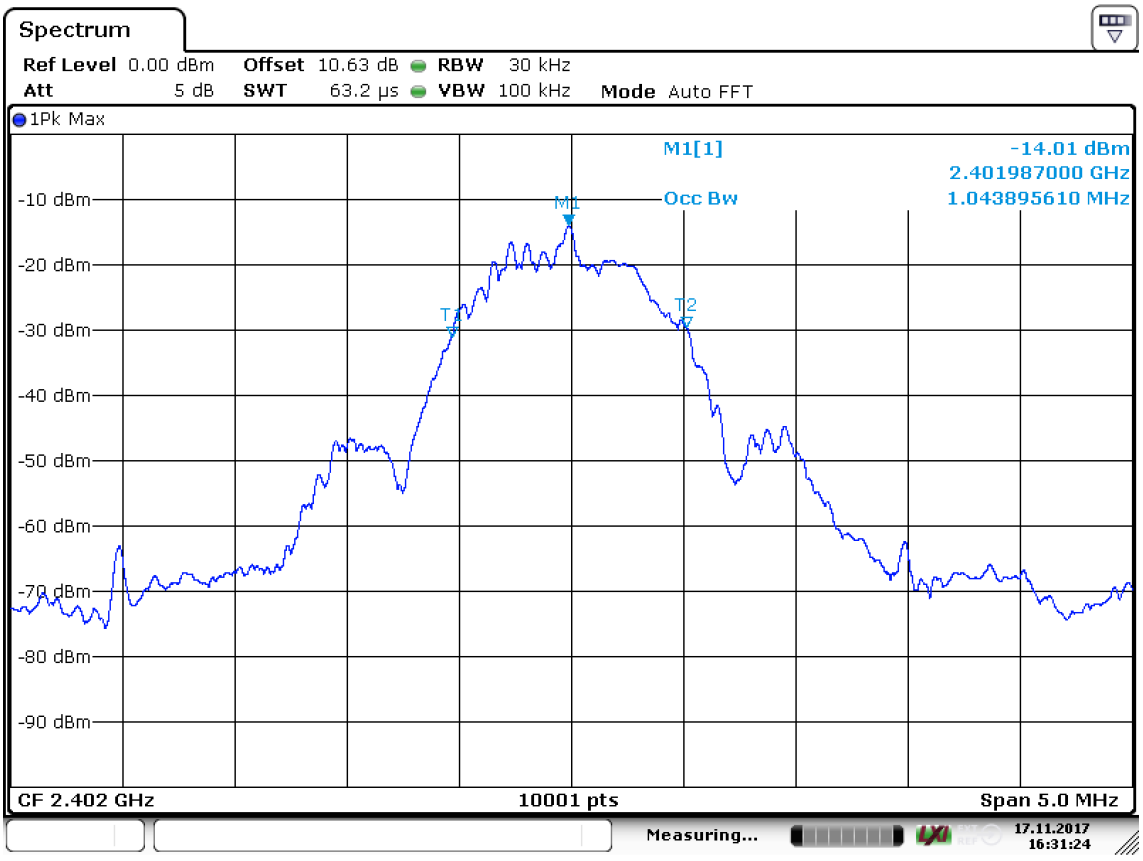
The EUT was connected to spectrum analyser via rf-cable and attenuator. Spectrum analyser with occupied bandwidth measurement function is used to determine the occupied bandwidth.

10.2 Test conditions

Detector: Peak,
RBW: 1 – 5 % of OBW
VBW: 3 x RBW

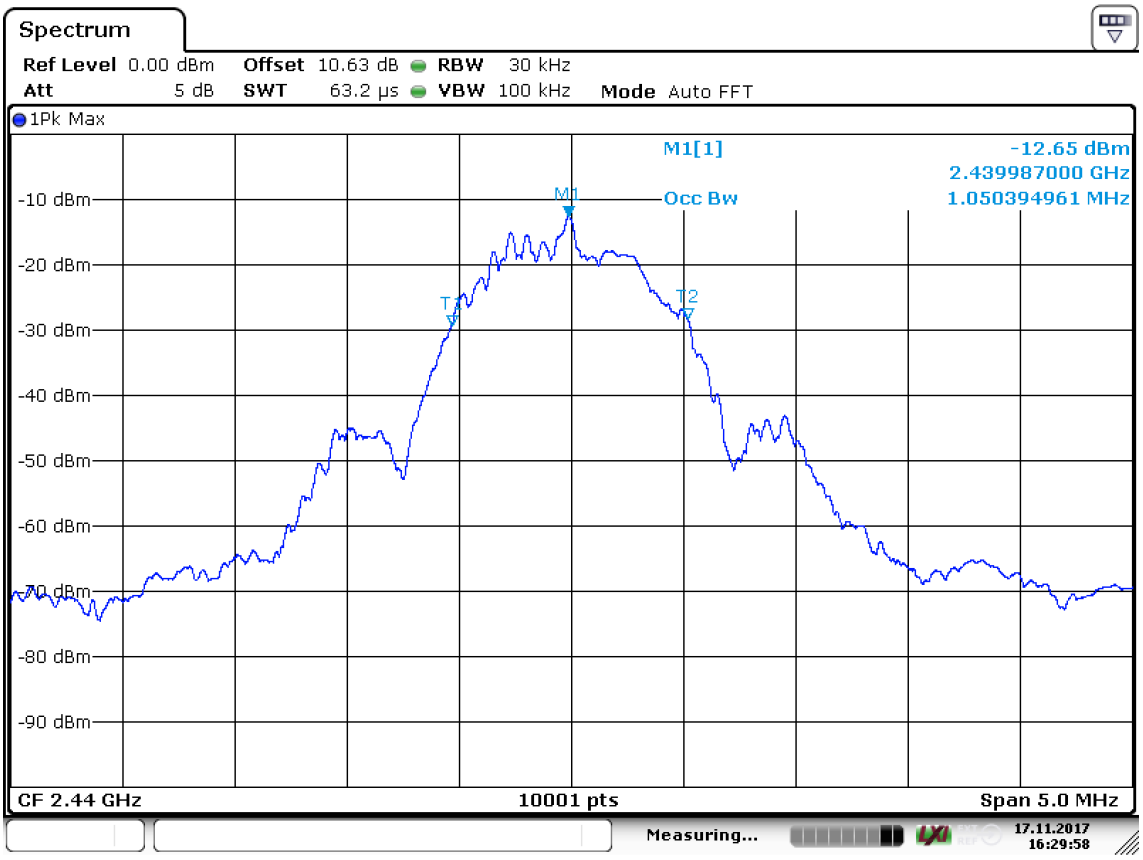
The EUT was set up in order to emit maximum disturbances.

10.3 Test results



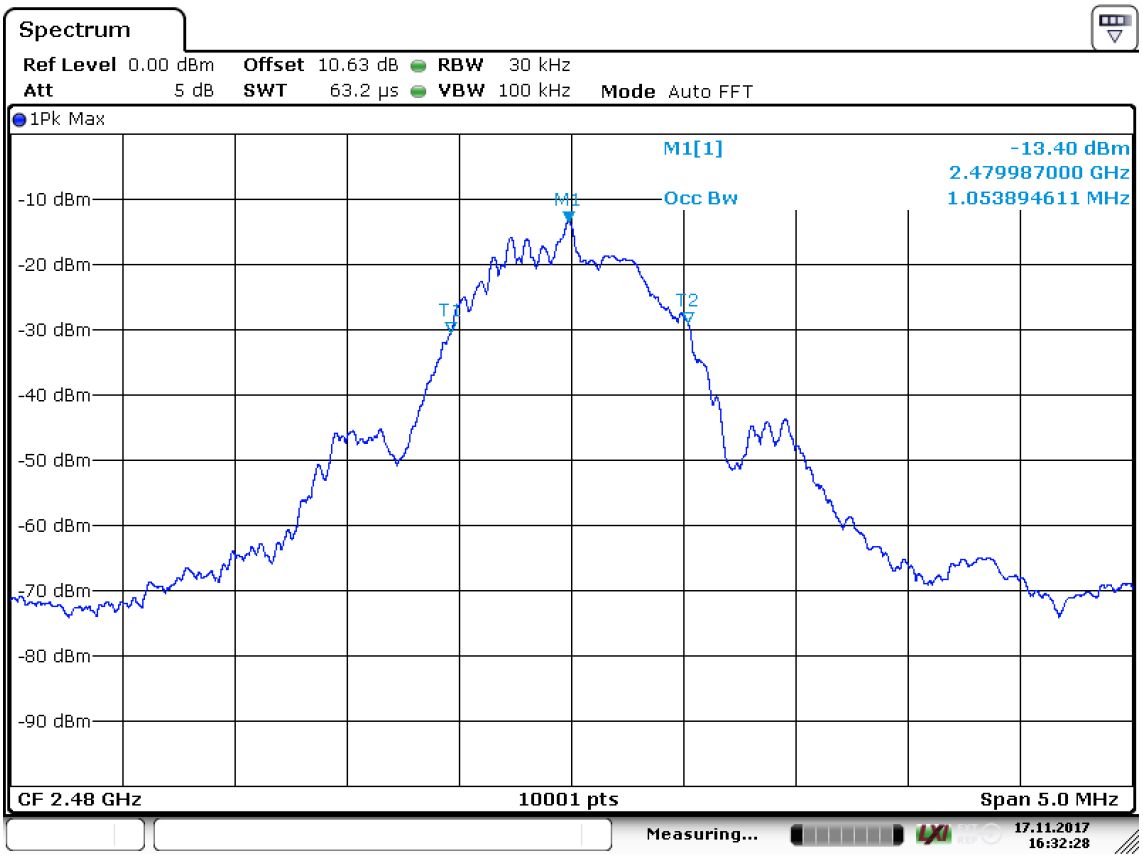
Date: 17.NOV.2017 16:31:25

Screenshot: 99 % bandwidth Measurement, low channel



Date: 17.NOV.2017 16:29:58

Screenshot: 99 % bandwidth Measurement, middle channel



Date: 17.NOV.2017 16:32:28

Screenshot: 99 % bandwidth Measurement, high channel

Test result

Channel [MHz]	99 % BW [MHz]
2402	1.04
2440	1.05
2480	1.05

11 PEAK POWER SPECTRAL DENSITY

Date of test:	2017-11-13	**Test location:**	Wireless Center
EUT number:	C04698-0015	**Ambient temp:**	22 °C
Tested by:	Robert Hietala	**Relative humidity:**	23 %
Test result:	Pass	**Margin:**	> 10 dB

11.1 Test set-up and test procedure.

The test method is in accordance with ANSI C63.10-2013 section 11.10.2.

The EUT was connected to spectrum analyser via rf-cable and attenuator.

11.2 Test conditions

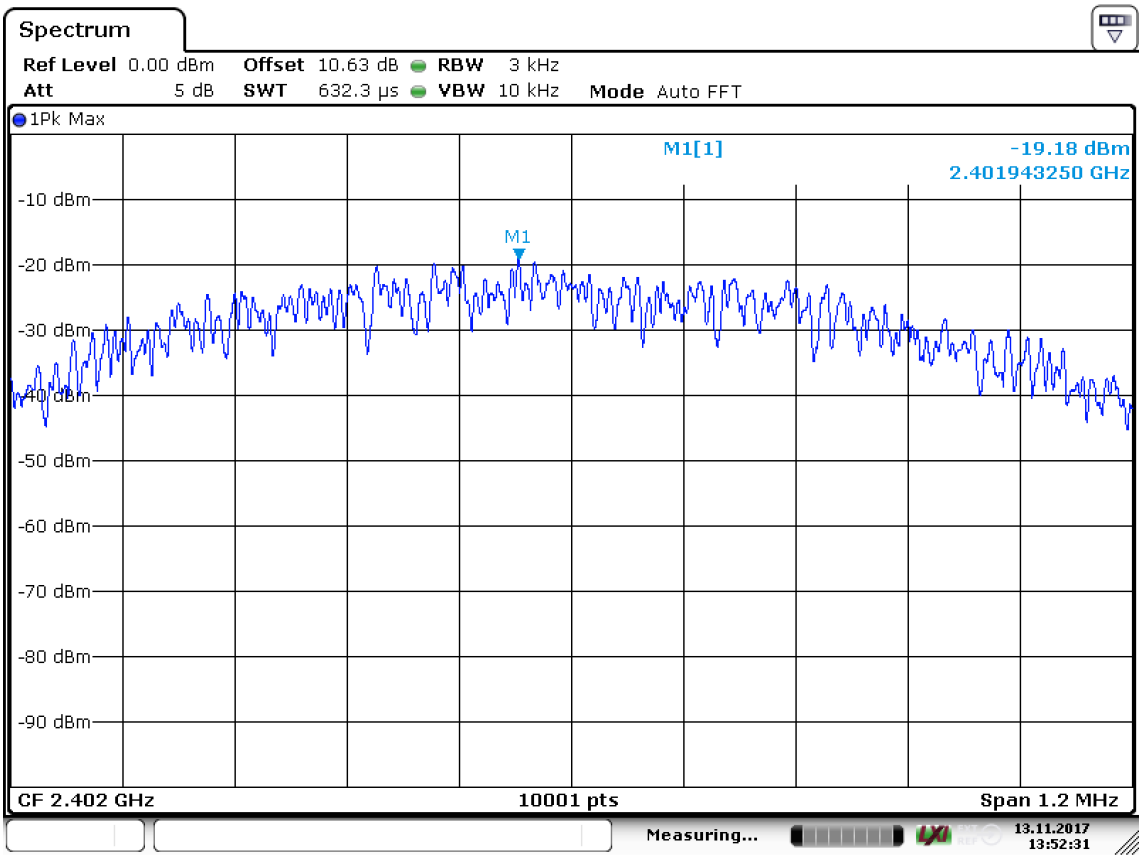
Detector: Peak,
RBW: 3 kHz
VBW: >3 x RBW
Span: 1.5 x 6 dB bandwidth

The EUT was set up in order to emit maximum disturbances.

11.3 Requirements

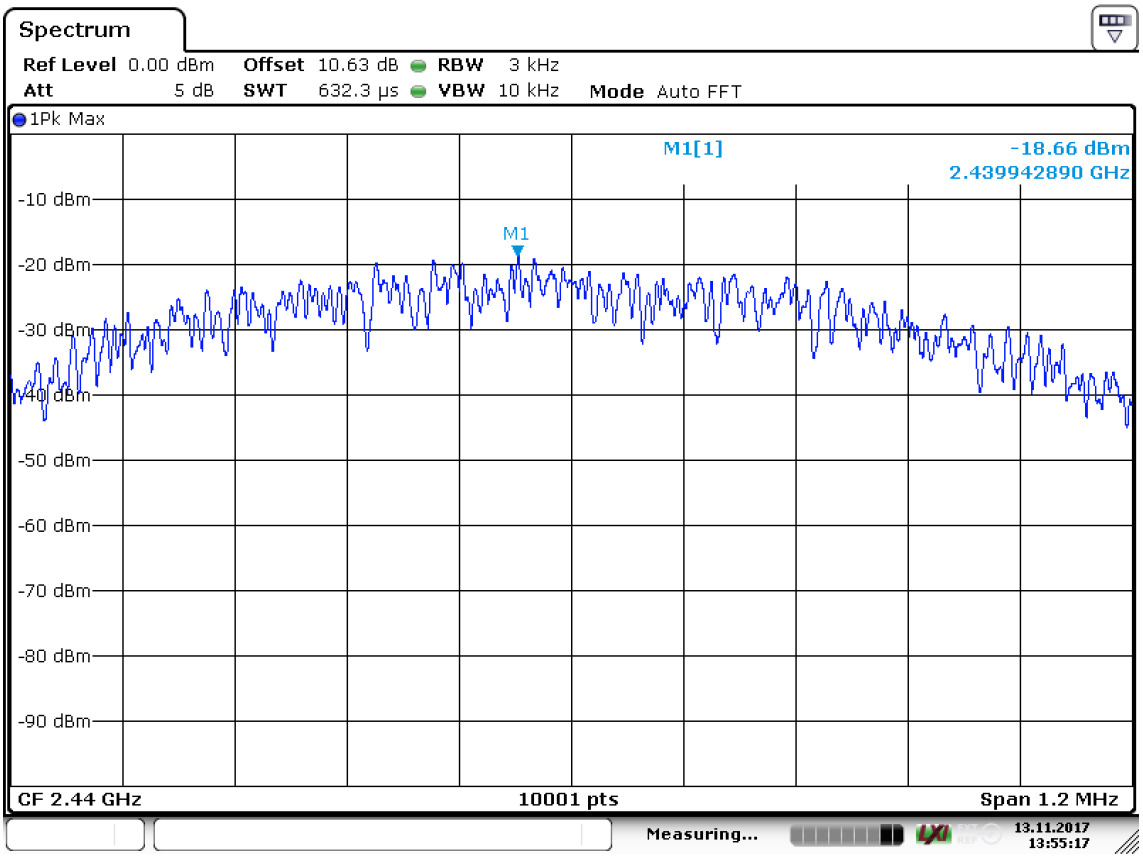
Reference: CFR 47§15.247(3), RSS-247 5.2(2)
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

11.4 Test results



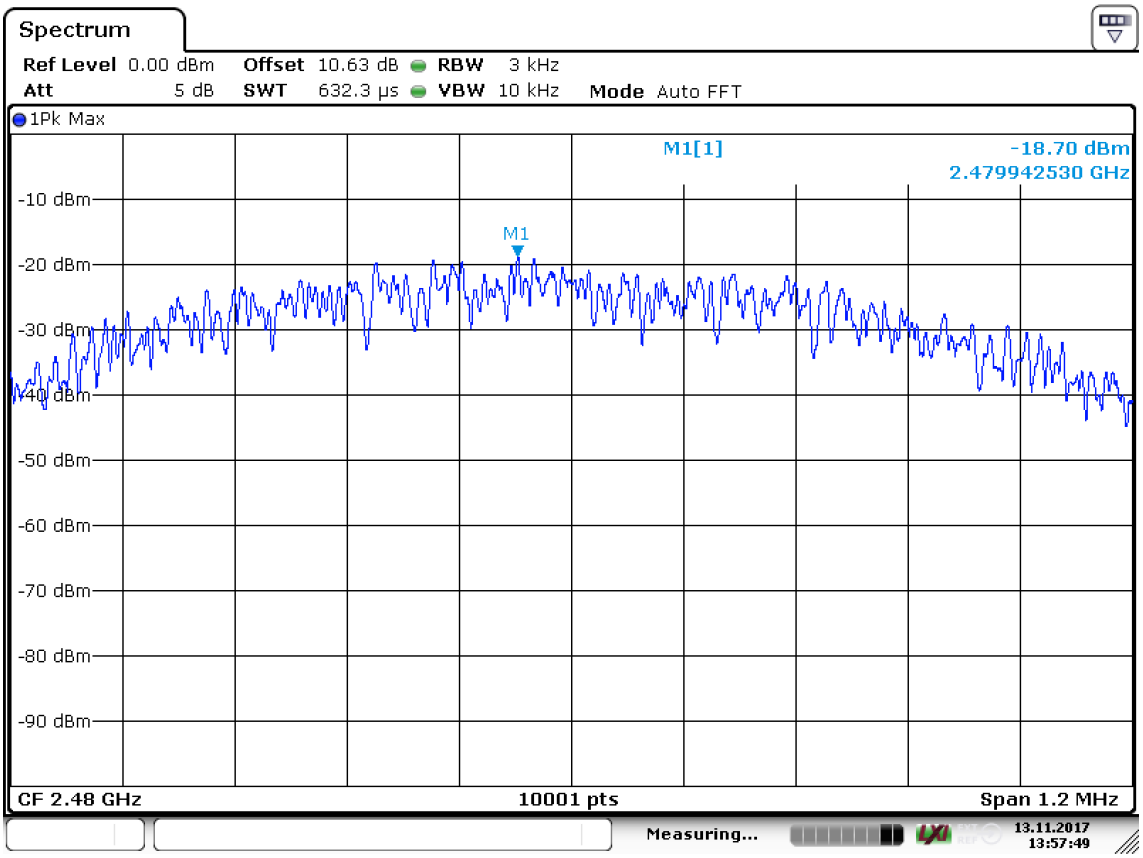
Date: 13.NOV.2017 13:52:31

Screenshot: Peak power spectral density, low channel



Date: 13.NOV.2017 13:55:17

Screenshot: Peak power spectral density, middle channel



Date: 13.NOV.2017 13:57:49

Screenshot: Peak power spectral density, high channel

Test result

Channel [MHz]	PSD [dBm/3kHz]
2402	-19.2
2440	-18.7
2480	-18.7

12 TEST EQUIPMENT

Conducted emission test site BUR 1

Equipment type	Manufacturer	Model	Inv. No.	Last Cal. date	Cal. interval
Measurement software	Rohde & Schwarz	EMC32 – 9.26.01	--	--	--
Receiver	Rohde & Schwarz	ESCI	12741	07-2017	1 year
AMN / LISN	Rohde & Schwarz	ESH3-Z5	5875	07-2017	1 year

5m SAC

Equipment type	Manufacturer	Model	Inv. No.	Last Cal. date	Cal. interval
Measurement software	Rohde & Schwarz	EMC32 - 9.12.10	--	--	--
Receiver	Rohde & Schwarz	ESBI 26	32286	07-2017	1 year
BiLog antenna	Rohde & Schwarz	HL562	32310	03-2017	1 year
Horn antenna	Rohde & Schwarz	HF907	32296	12-2016	3 years
2,4 GHz band reject filter:	K&L MICROWAVE INC	6N45-2450/T100-0/0	12389	03-2017	1 year
4 GHz high pass filter	K&L MICROWAVE INC	4410-X4500/18000-0/0	5133	08-2017	1 year

Wireless Center and 3m FAC

Equipment type	Manufacturer	Model	Inv. No.	Last Cal. date	Cal. interval
Measurement software	Rohde & Schwarz	EMC32 - 9.21.0	--	--	--
Signal analyzer	Rohde & Schwarz	FSIQ 40	12493	07-2017	1 year
Horn antenna	EMCO	3115	4936	07-2017	3 years
Pre amplifier	Sangus	00101400-23-10P -6-S ; AFS44-12002400-32-10P -44	12335	07-2017	1 year
Horn antenna	EMCO	3160-08	30099	10-2016	3 years
Horn antenna	EMCO	3160-09	30101	10-2016	3 years
Signal analyzer:	Rohde & Schwarz	FSV	32594	07-2017	1 year
Signal generator:	Rohde & Schwarz	SMB100A	32592	07-2017	1 year
2,4 GHz band reject filter:	K&L MICROWAVE INC	6N45-2450/T100-0/0	12389	03-2017	1 year
4 GHz high pass filter	K&L MICROWAVE INC	4410-X4500/18000-0/0	5133	08-2017	1 year

13 MEASUREMENT UNCERTAINTY

Continuous conducted disturbances with AMN in the frequency range 9 kHz to 30 MHz ± 3.7 dB

Measurement uncertainty for radiated disturbance

Uncertainty for the frequency range 30 to 1000 MHz at 3 m	± 5.1 dB
Uncertainty for the frequency range 30 to 1000 MHz at 10 m	± 5.0 dB
Uncertainty for the frequency range 1.0 to 18 GHz at 3 m	± 4.7 dB
Uncertainty for the frequency range 18 to 26 GHz at 3 m	± 4.8 dB
Uncertainty for the frequency range 26 to 40 GHz at 3 m	± 5.7 dB

Measurement uncertainty is calculated in accordance with CISPR 16-4-2:2011.
The measurement uncertainty is given with a confidence of 95 %.

14 TEST SET UP AND EUT PHOTOS

EUT photos are in separate document 1718082STO-002 Annex 1.
Test set up photos are in separate document 1718082STO-002 Annex 2.