

RADIO TEST REPORT

No. 1713667STO-002, Ed. 2

RF Performance

EQUIPMENT UNDER TEST

Equipment: Sander
Type/Model: AROS-B 150NV
Additional type/model* AOS-B 130NV
Manufacturer: Mirka Ltd.
Tested by request of: Mirka Ltd.

*See opinions and interpretations clause 2.5

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: Subpart C: Intentional radiators. Section 15.247

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: 2018-10-30

Tested by:



Robert Hietala

Approved by:



Stefan Andersson

Revision History

Edition	Date	Description	Changes
1	2018-01-23	First release	
2	2018-10-30	Second release	Updated RSS versions

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1 CLIENT INFORMATION

The EUT has been tested by request of

Company Mirka Ltd.
Pensalavägen 210
66850 Jeppo
FINLAND

Name of contact Tomas Södergård
Phone +35 8406695225

2 EQUIPMENT UNDER TEST (EUT)

2.1 Identification of the EUT

Equipment:	Sander	
Type/Model:	AROS-B 150NV	
Brand name:	Mirka	
Serial number:	703290090237	
Manufacturer:	Mirka Ltd.	
Transmitter frequency range:	2402 – 2480 MHz	
Receiver frequency range:	2402 – 2480 MHz	
Frequency agile or hopping:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Antenna:	<input checked="" type="checkbox"/> Internal antenna	<input type="checkbox"/> External antenna
Antenna connector:	<input checked="" type="checkbox"/> None, internal antenna	<input type="checkbox"/> Yes
Antenna gain:	2 dBi	
Rating RF output power:	1 dBm (measured conducted)	
Type of modulation:	GFSK	
Temperature range:	<input type="checkbox"/> Category I (General): -20°C to +55°C <input type="checkbox"/> Category II (Portable equipment): -10°C to +55°C <input type="checkbox"/> Category III (Equipment for normal indoor use): +5°C to +35°C <input checked="" type="checkbox"/> Other: 0°C to +40°C	
Transmitter stand by mode supported:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

2.2 Additional information about the EUT

Sander designed for sanding all types of materials such as paints, metals, wood, stone, plastics etc, using abrasives specially designed for this purpose.

The EUT consists of the following units:

Unit	Type	Serial number	Marking	Comment
Sander	AROS-B 150NV	703290090237	Sample #2	
Sander	AROS-B 150NV	No visible	Sample #3	With external antenna connector

The EUT was tested with the following cables:

Port:	Type:	Length: [m]	Specifications:
Signal input	USB	1,5	Shielded

2.3 Peripheral equipment

Peripheral equipment is equipment needed for correct operation of the EUT, but not included as part of the testing and evaluation of the EUT.

Equipment	Type / Model	Manufacturer
Bluethooth USB dongle	BLED112	Bluegiga
Laptop	6530b	Compaq

2.4 Test signals and operation modes

Continuous signal BLE.

2.5 Opinions and interpretations

The following type is also included as additional type in this report:

AOS-B 130NV

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

AOS-B 130NV use the same type of PCB and radio and but has minor mechanical differences.

The difference is considered not to imply different Radio-characteristics when compared to the tested type. Therefore, this type is not tested, but considered to have the same Radio-characteristics as the tested type.

3 TEST SPECIFICATIONS

3.1 Standards

Requirements:

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

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

No 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 #
BJÖRKHALLEN	Semi-anechoic 3 m	2042G-1

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 Battery operated equipment.	NA
FCC §15.247 (b)(4) RSS-247 5.4(d), 5.4(e)	Field strength of fundamental and antenna gain The EUT complies with the limits. Antenna gain is less than 6 dBi.	NA
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 11.3 dB at 931.885 MHz. See clause 6.4.	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 8.9 dB at 7440.1 MHz. See clause 6.5.	PASS
FCC §15.247(a)(2) RSS-GEN 6.7 RSS-247 5.2(a)	Occupied bandwidth The EUT complies with the limits. The margin to the limit is at least 0.2 MHz See clause 9.4.	PASS
RSS-GEN, 6.6	Occupied bandwidth RSS-GEN section 6.6 has no limit for 99% occupied band width	-
FCC §15.247(b) RSS-247 5.4(d)	Conducted output power The EUT complies with the limits. The margin to the limit was at least 28.4 dB at 2440 MHz. See clause 8.4.	PASS
FCC §15.247(e) RSS-247 5.2(b)	Peak power spectral density The EUT complies with the limits. The margin to the limit was at least 8.2 dB at 2402 MHz. 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 18.8 dB at 2402 MHz. See clause 7.4.	PASS

5 RADIATED BAND EDGE

Date of test:	2017-10-02	Test location:	3m SAC
EUT Serial:	Sample#1	Ambient temp:	22 °C
Tested by:	PLA	Relative humidity:	45 %
Test result:	Pass	Margin:	8.9 dB

5.1 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 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 and average detector was activated.

EUT was evaluated in three orthogonal orientations.

5.2 Test conditions

Test set-up:	1 GHz – 18 GHz		
Test receiver set-up:			
Preview test:	Peak,	RBW 1 MHz	VBW 3 MHz
Final test:	Peak,	RBW 1 MHz	VBW 3 MHz
	Average	RBW 1 MHz	VBW 3 MHz
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		

5.3 Requirement

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.

Within restricted bands:

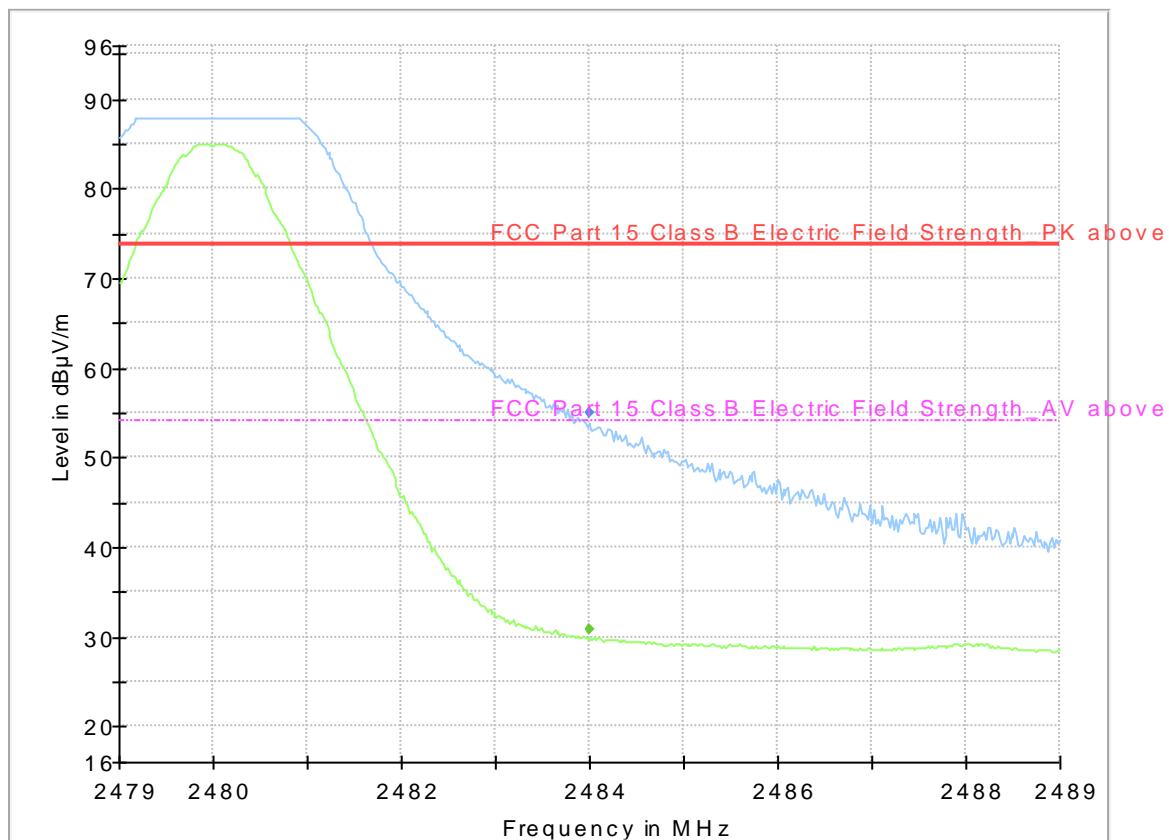
Reference: CFR 47 §15.209, RSS-Gen section 8.9

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

Frequency range [MHz]	Field strength at 3 m (dB μ V/m)	Field strength at 10 m (dB μ V/m)	Detector (dB μ V/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

5.4 Test results

Full Spectrum



Upper band edge sweep, EUT in horizontal position, 3 m.

Field strength band edge, high channel, EUT in horizontal position.

Frequency [MHz]	Level [dB μ V/m]	Limit [dB μ V/m]	Detector	Polarization H/V	Margin [dB]
2484.0	55.0	73.9	Peak	V	18.9
2484.0	30.7	54.0	Avg	V	23.3

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

Date of test:	2017-10-02	Test location:	3m SAC
EUT Serial:	Sample#1	Ambient temp:	22 °C
Tested by:	PLA	Relative humidity:	45 %
Test result:	Pass	Margin:	8.9 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, and worst case orientation is presented in this report.

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	Peak value + 20 x LOG (Duty cycle) / 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:

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 (dB μ V/m)	Field strength at 10 m (dB μ V/m)	Detector (dB μ V/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

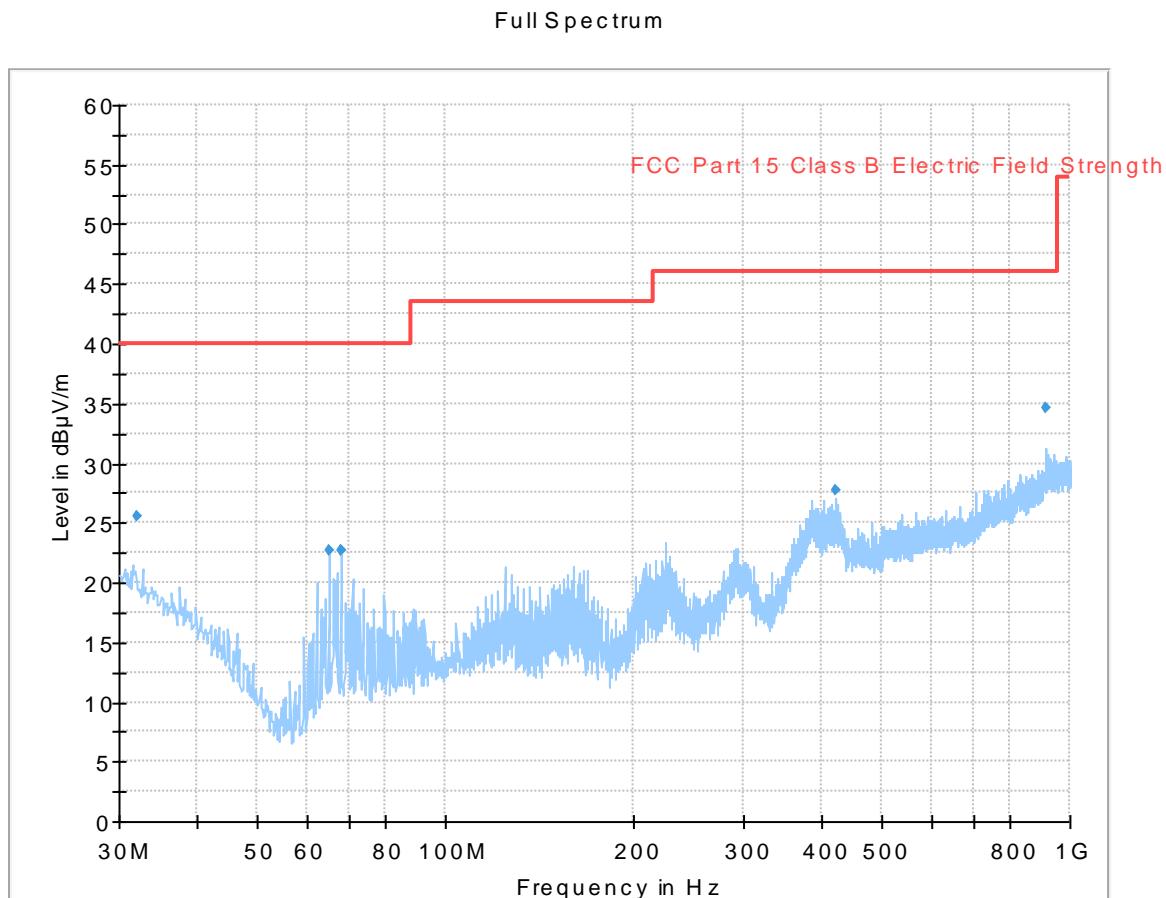
The values for 10 m measuring distance are calculated by subtracting 10.5 dB from the 3 m limit.
(i.e. an extrapolation factor of 20 dB/decade according to CFR 47 §15.31(f)(1))

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

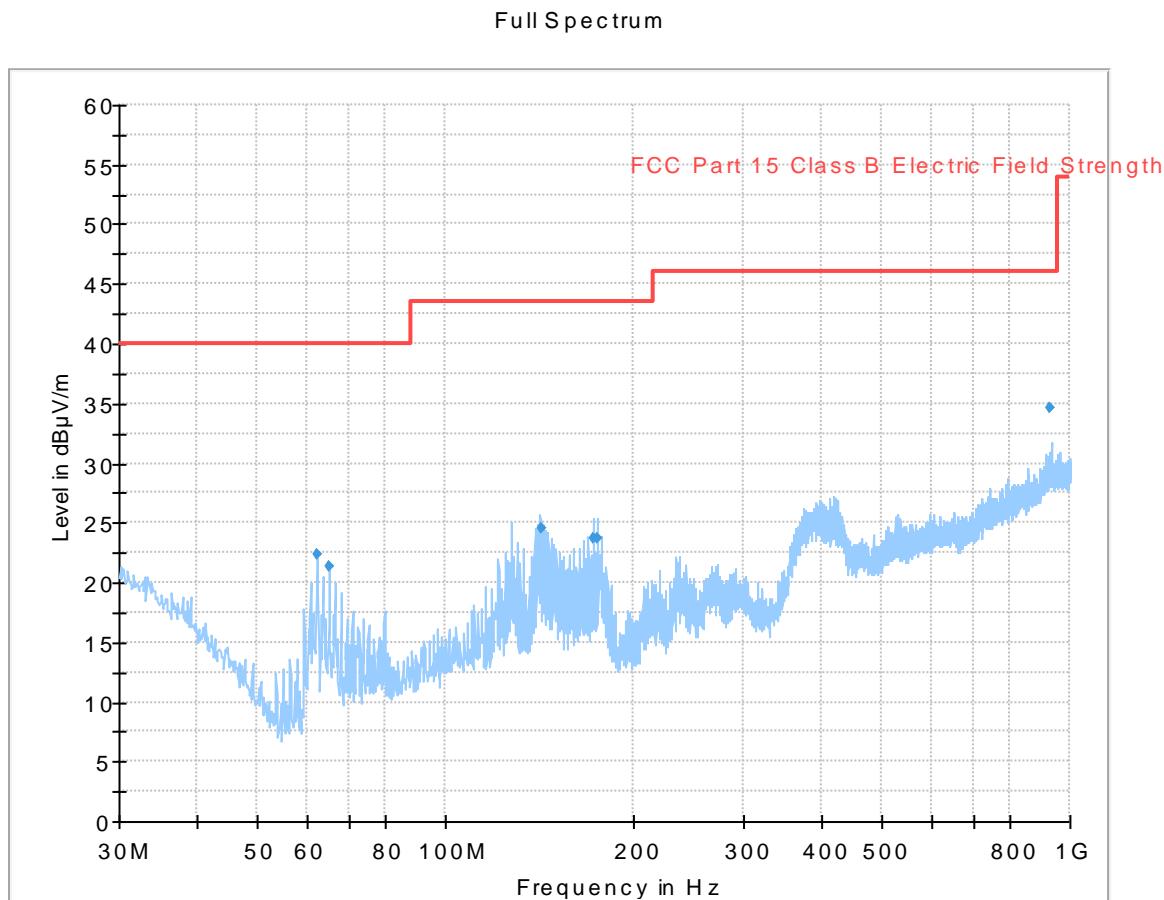


Diagram, Peak overview sweep, 30 – 1000 MHz at 3 distance. TX low channel, EUT vertical.

Measurement results, Quasi Peak

Frequency [MHz]	Level [dB μ V/m]	Limit [dB μ V/m]	Polarization H/V	Margin [dB]
32.003	25.6	40.0	H	14.4
65.090	22.8	40.0	V	17.3
67.994	22.7	40.0	V	17.3
67.996	22.6	40.0	V	17.4
422.585	27.7	46.0	V	18.3
917.774	34.6	46.0	V	11.5

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

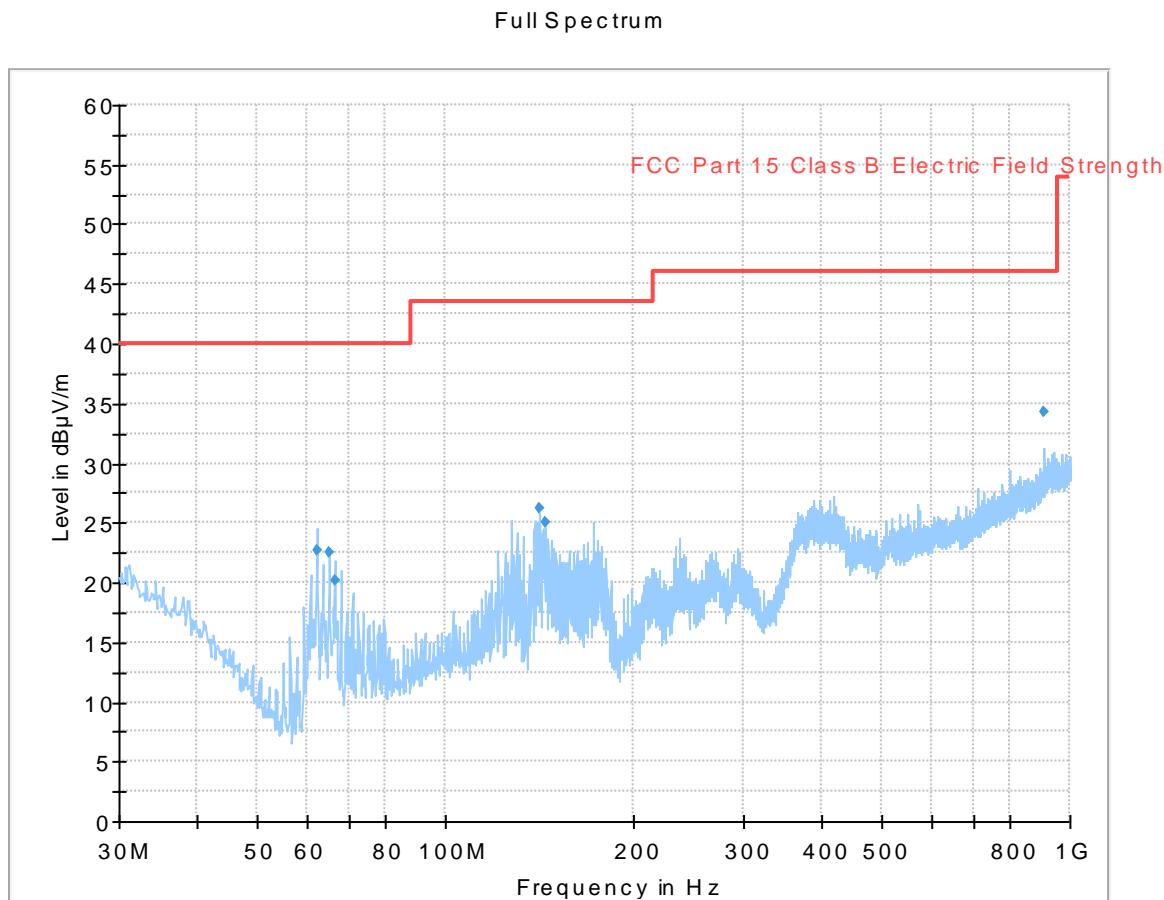


Diagram, Peak overview sweep, 30 – 1000 MHz at 3 distance. TX mid channel, EUT vertical.

Measurement results, Quasi Peak

Frequency [MHz]	Level [dB μ V/m]	Limit [dB μ V/m]	Polarization H/V	Margin [dB]
62.205	22.4	40.0	V	17.6
65.130	21.4	40.0	V	18.7
141.924	24.6	43.5	H	18.9
172.084	23.7	43.5	H	19.8
175.010	23.7	43.5	H	19.8
931.885	34.7	46.0	H	11.3

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



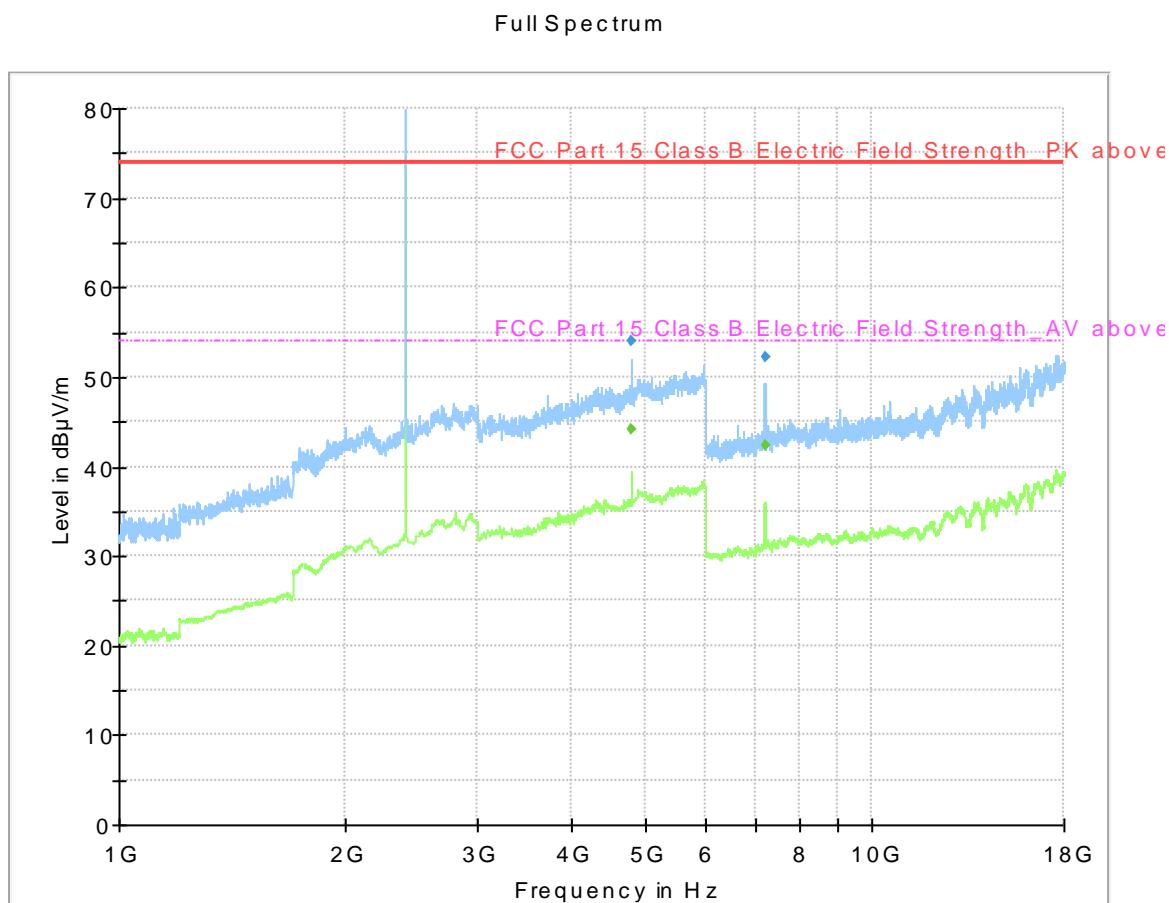
Diagram, Peak overview sweep, 30 – 1000 MHz at 3 distance. TX high channel, EUT vertical.

Measurement results, Quasi Peak

Frequency [MHz]	Level [dB μ V/m]	Limit [dB μ V/m]	Polarization H/V	Margin [dB]
62.205	22.7	40.0	V	17.3
65.090	22.6	40.0	V	17.4
66.553	20.2	40.0	V	19.8
141.844	26.3	43.5	H	17.3
144.729	25.0	43.5	H	18.5
910.759	34.3	46.0	H	11.7

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

6.5 Test results 1 GHz – 26,5 GHz, TX



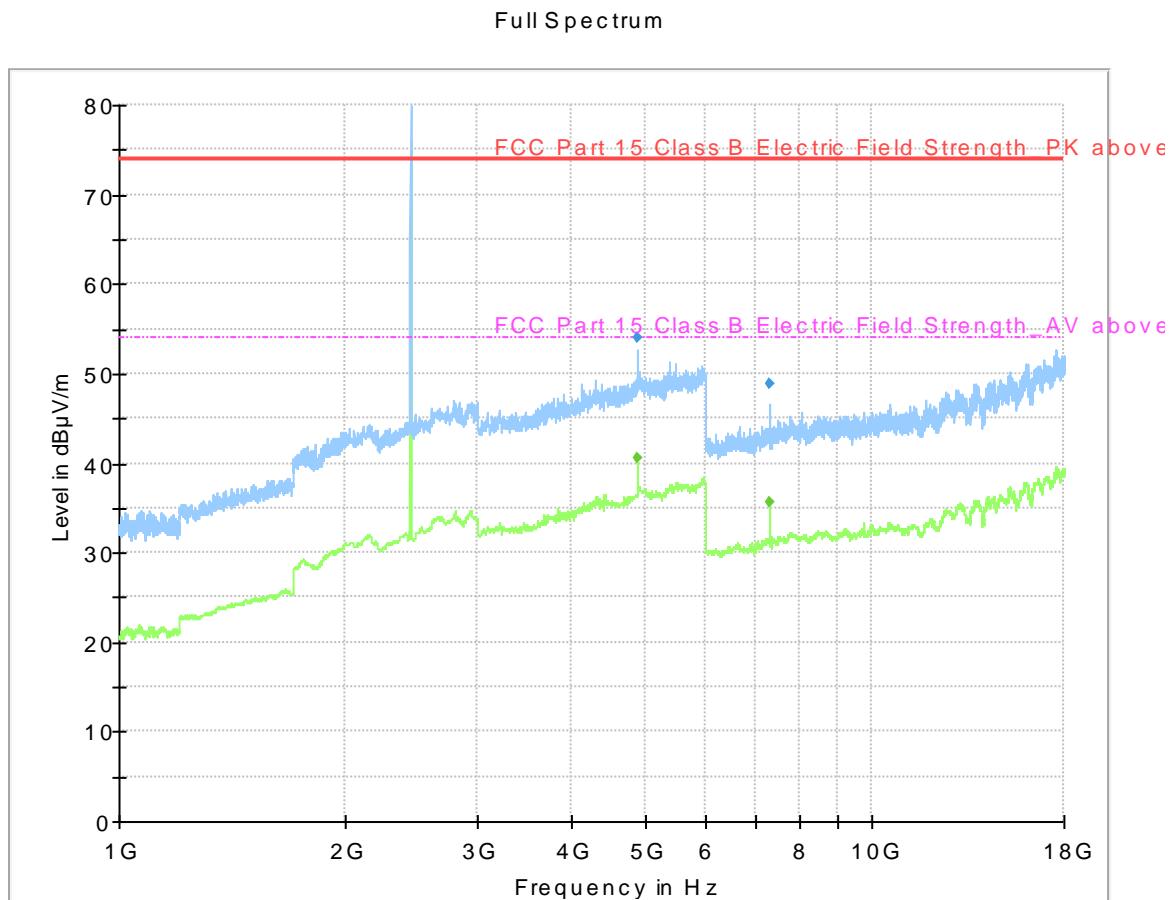
Diagram, Peak overview sweep, 1– 18 GHz at 3 m distance. TX low channel, EUT horizontal.

Measurement results, Peak, TX low channel, EUT horizontal

Frequency [MHz]	Level [dB μ V/m]	Limit [dB μ V/m]	Polarization H/V	Margin [dB]
4804.0	53.9	73.9	H	20.0
7205.8	52.2	73.9	V	11.6

Measurement results, Average, TX low channel, EUT horizontal

Frequency [MHz]	Level [dB μ V/m]	Limit [dB μ V/m]	Polarization H/V	Margin [dB]
4804.0	44.2	54.0	H	9.8
7205.8	42.4	54.0	V	11.6



Diagram, Peak overview sweep, 1– 18 GHz at 3 m distance. TX middle channel, EUT horizontal.

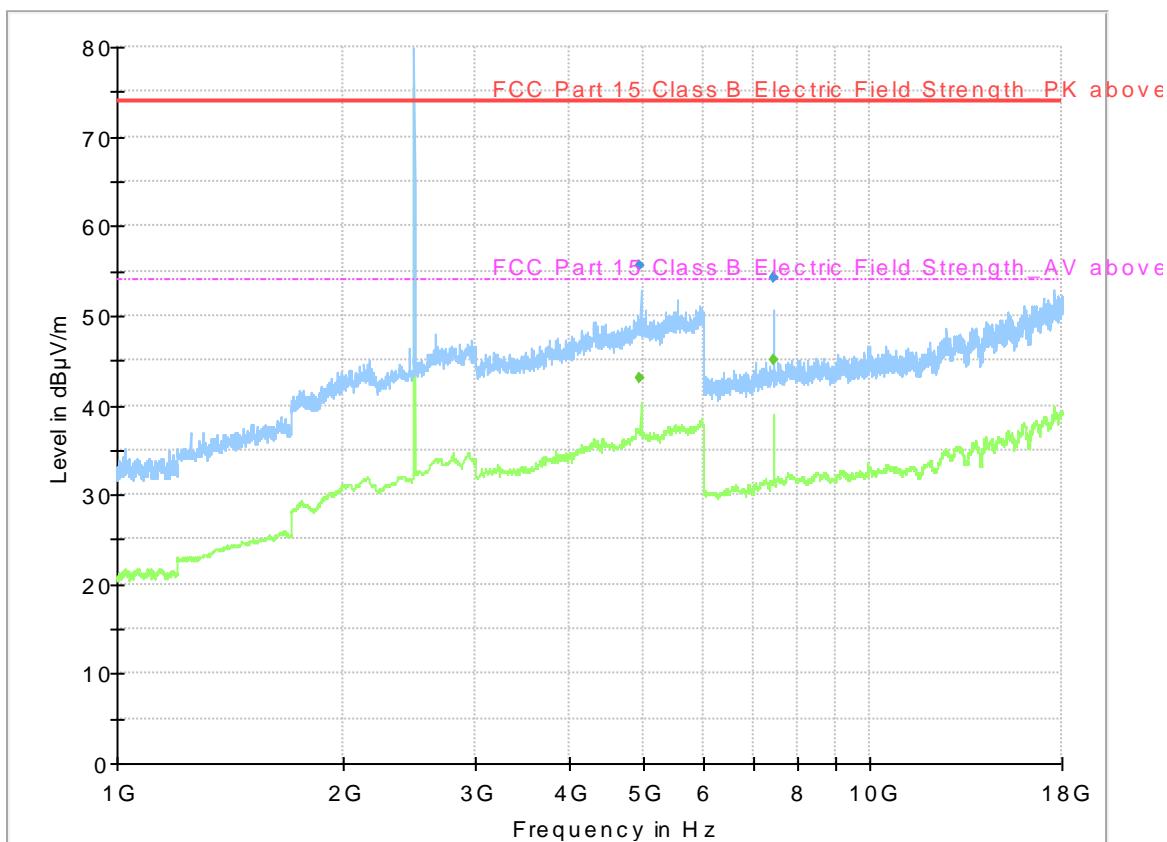
Measurement results, Peak, TX middle channel, EUT horizontal

Frequency [MHz]	Level [dB μ V/m]	Limit [dB μ V/m]	Polarization H/V	Margin [dB]
4880.8	54.1	73.9	H	19.8
7319.2	48.9	73.9	H	25.0

Measurement results, Average, TX middle channel, EUT horizontal

Frequency [MHz]	Level [dB μ V/m]	Limit [dB μ V/m]	Polarization H/V	Margin [dB]
4880.8	40.5	54.0	H	13.5
7319.2	35.7	54.0	H	18.3

Full Spectrum



Diagram, Peak overview sweep, 1–18 GHz at 3 m distance. TX high channel, EUT horizontal.

Measurement results, Peak, TX high channel

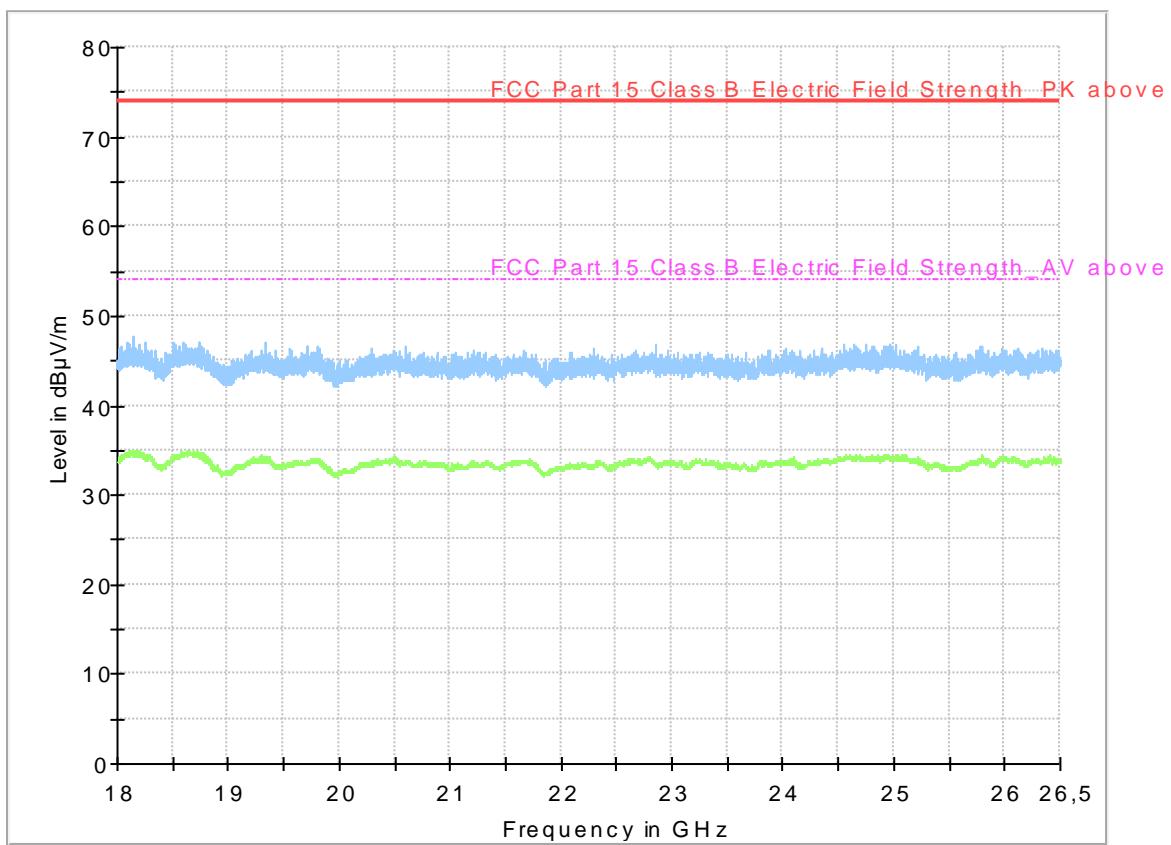
Frequency [MHz]	Level [dB μ V/m]	Limit [dB μ V/m]	Polarization H/V	Margin [dB]
4959.5	55.5	73.9	H	18.4
7440.1	54.1	73.9	V	19.8

Measurement results, Average, TX high channel

Frequency [MHz]	Level [dB μ V/m]	Limit [dB μ V/m]	Polarization H/V	Margin [dB]
4959.5	43.1	54.0	H	10.9
7440.1	45.1	54.0	V	8.9

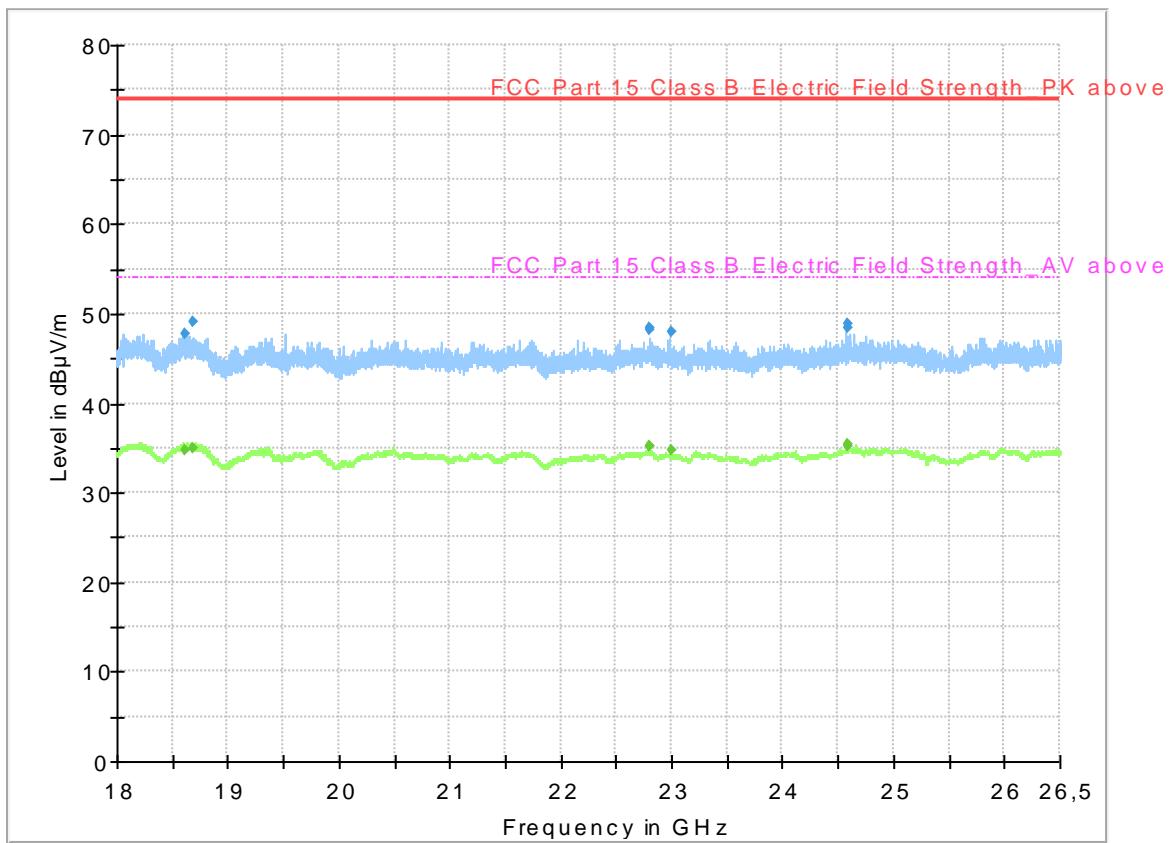
Result [dB μ V/m] = Analyser reading [dB μ V] + Antenna factor [1/m] - Amplifier gain [dB] + Cable loss [dB]

Full Spectrum

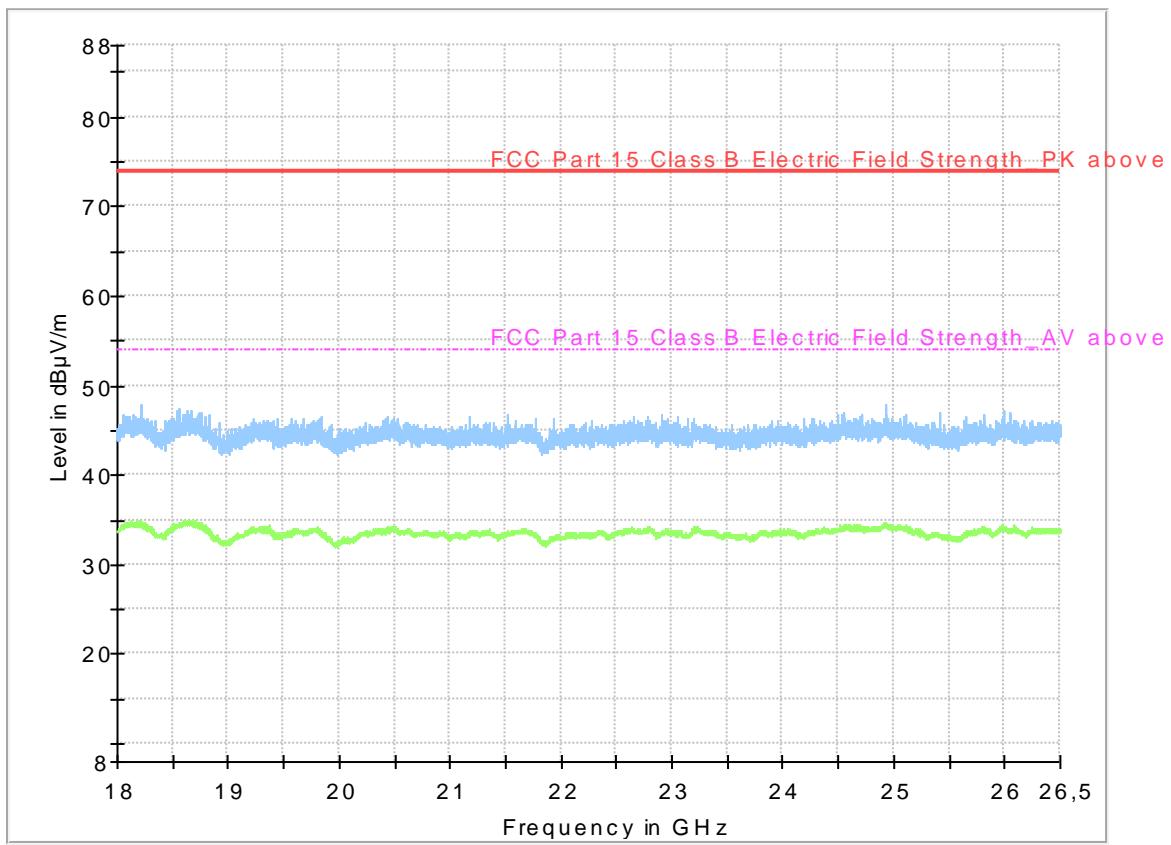


Diagram, Peak overview sweep, 18 - 26.5 GHz at 3 m distance. TX low channel, EUT horizontal.

Full Spectrum



Diagram, Peak overview sweep, 18 - 26.5 GHz at 3 m distance. TX middle channel, EUT horizontal.

Full Spectrum

Diagram, Peak overview sweep, 18 - 26.5 GHz at 3 m distance. TX high channel, EUT horizontal.

7 CONDUCTED BAND EDGE MEASUREMENT

Date of test:	2017-10-06	Test location:	Bur 4
EUT Serial:	Sample#2	Ambient temp:	21 °C
Tested by:	PLA	Relative humidity:	45 %
Test result:	Pass	Margin:	18.8 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

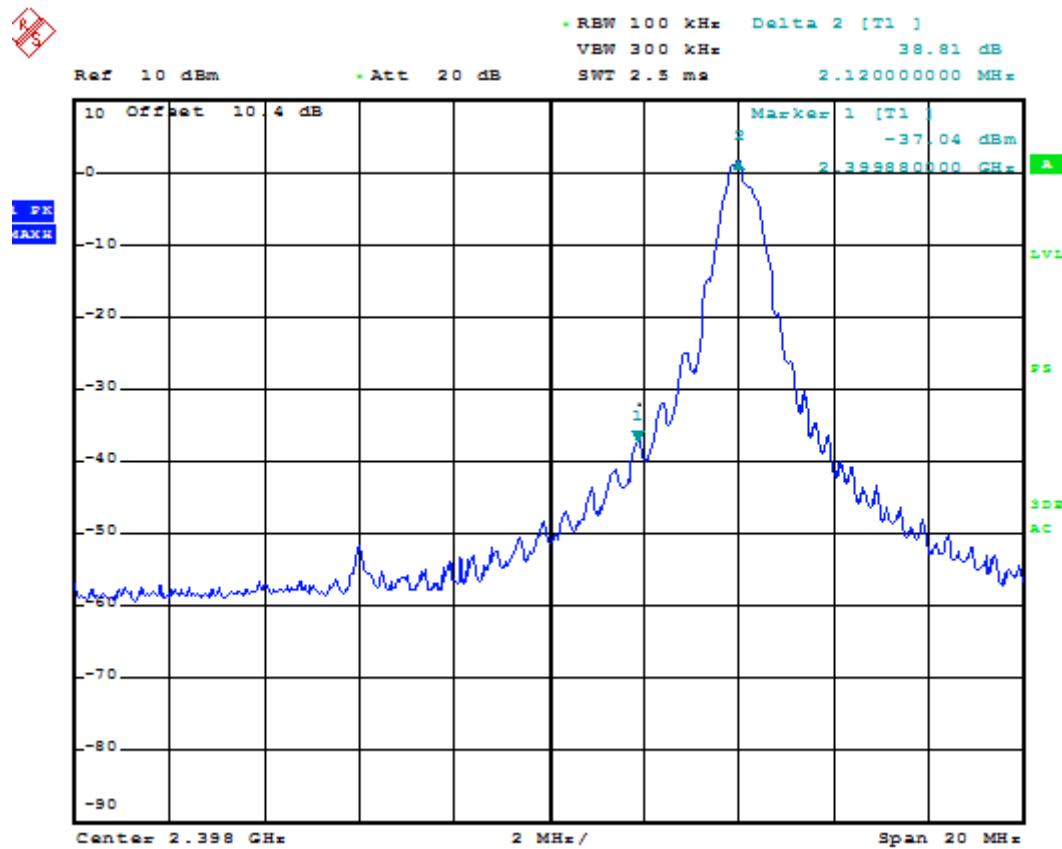
Detector: Peak,
RBW: 100 kHz
VBW: 300 kHz
Span: 20 MHz

7.3 Requirement

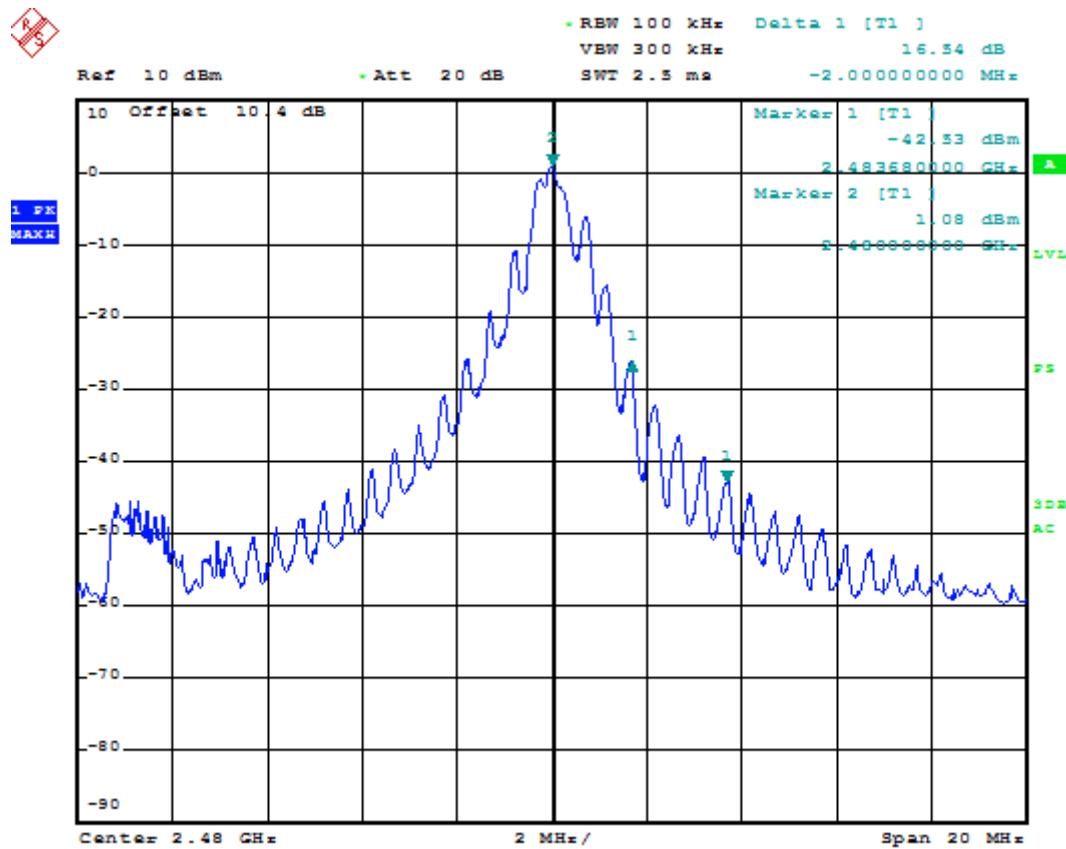
Reference: CFR 47 §15.247(d), RSS-247 5.5,

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



Screenshot: Lower band edge sweep, low channel channel



Screenshot: Upper band edge sweep, high channel

Test results

Band edge	Delta [dBc]	Limit [dBc]	Margin [dB]
Lower	38.8	20.0	18.8
Upper	43.5	20.0	23.5

8 PEAK CONDUCTED OUTPUT POWER

Date of test:	2017-10-06	Test location:	Bur 4
EUT Serial:	Sample#2	Ambient temp:	21 °C
Tested by:	PLA	Relative humidity:	45 %
Test result:	Pass	Margin:	18.8 dB

8.1 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.

8.2 Test conditions

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

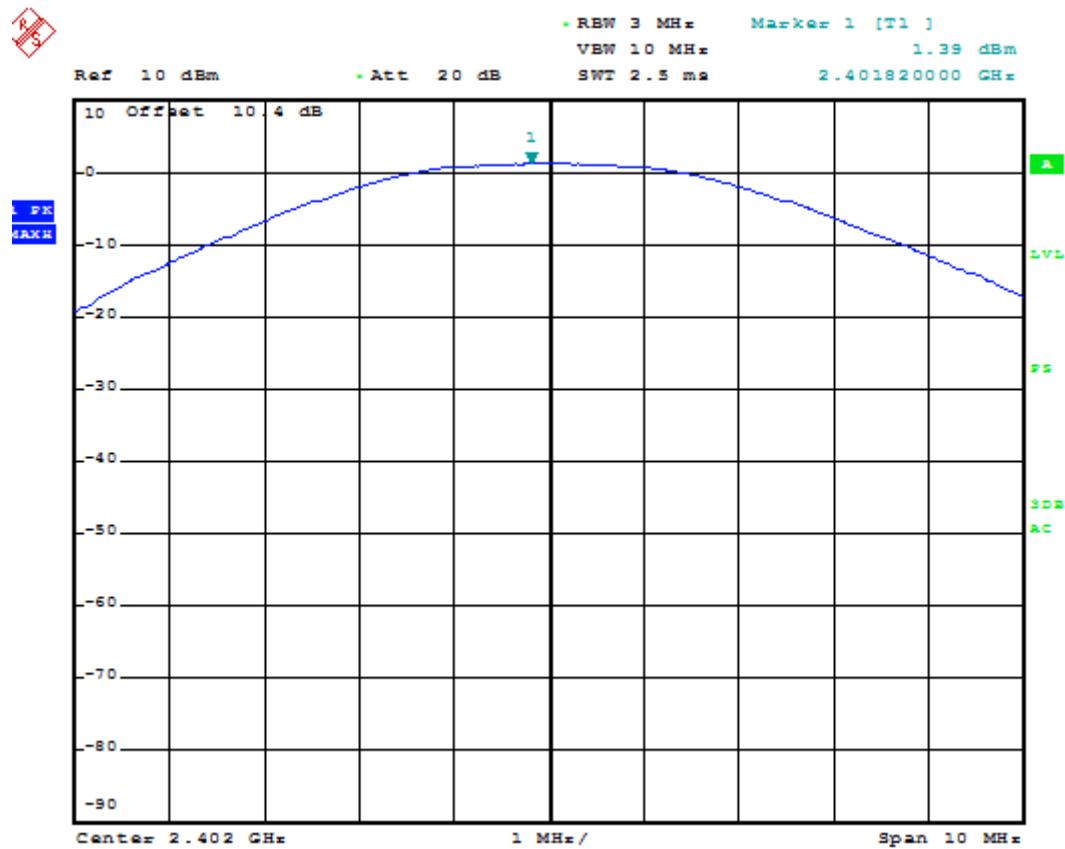
The EUT was set up in order to emit maximum disturbances.

8.3 Requirements

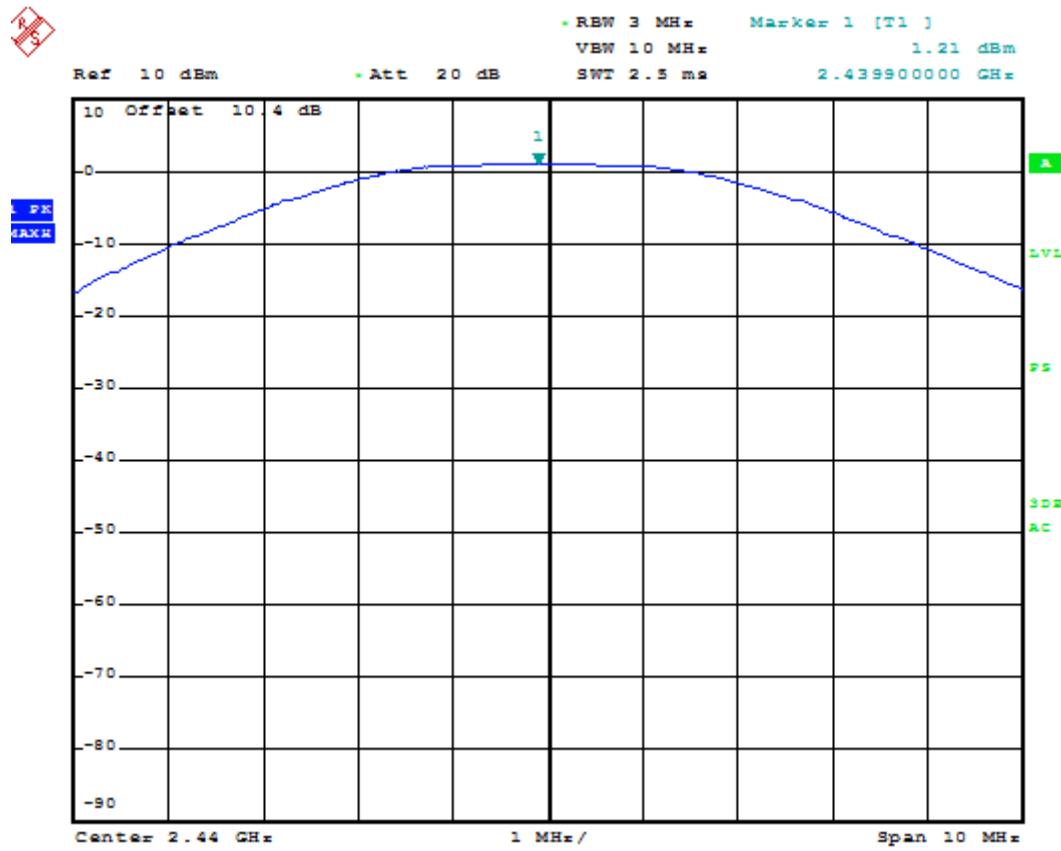
Reference: CFR 47§15.247(b)(3), RSS-247 5.4

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.

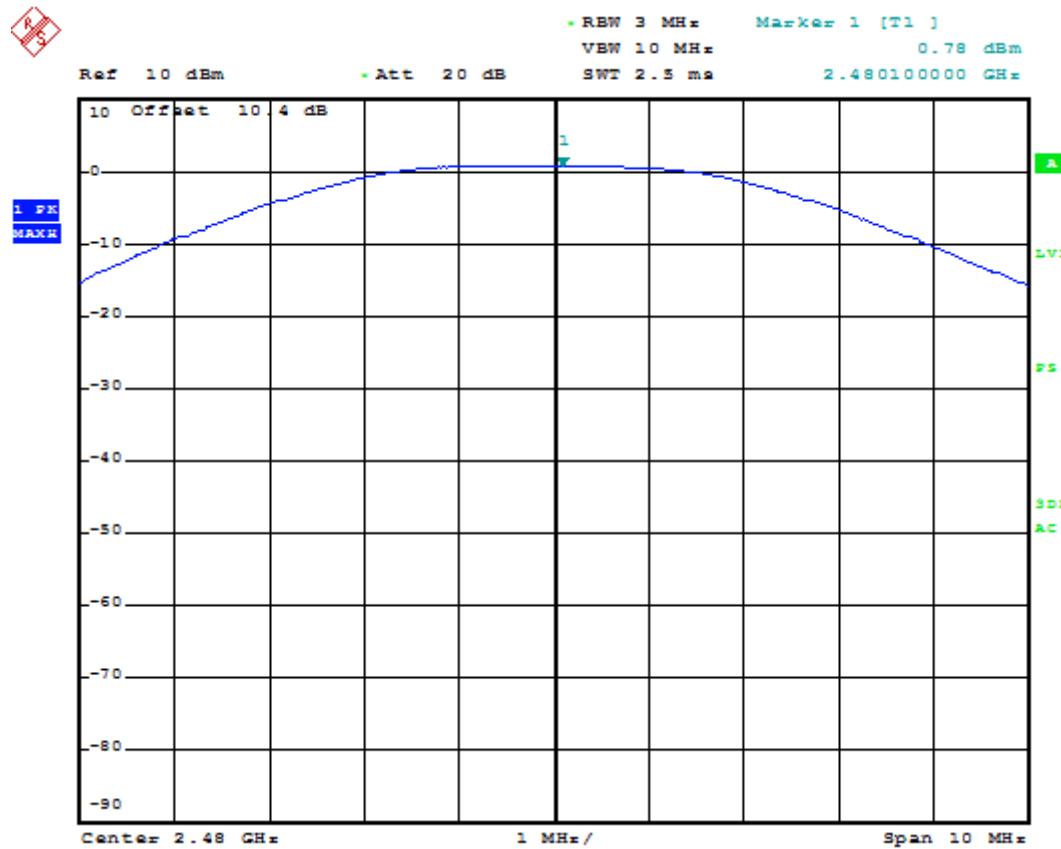
8.4 Test results



Screenshot: Output power, low channel



Screenshot: Output power, middle channel



Screenshot: Output power, high channel

Test result

Channel [MHz]	Output power [dBm]
2402	1.4
2440	1.2
2480	0.8

9 OCCUPIED 6 DB BANDWIDTH

Date of test:	2017-10-05	Test location:	Bur 4
EUT Serial:	Sample#2	Ambient temp:	21 °C
Tested by:	PLA	Relative humidity:	45 %
Test result:	Pass	Margin:	190 kHz

9.1 Test set-up and test procedure.

The test method is in accordance with ANSI C63.10-2013 section 6.9.2.

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

9.2 Test conditions

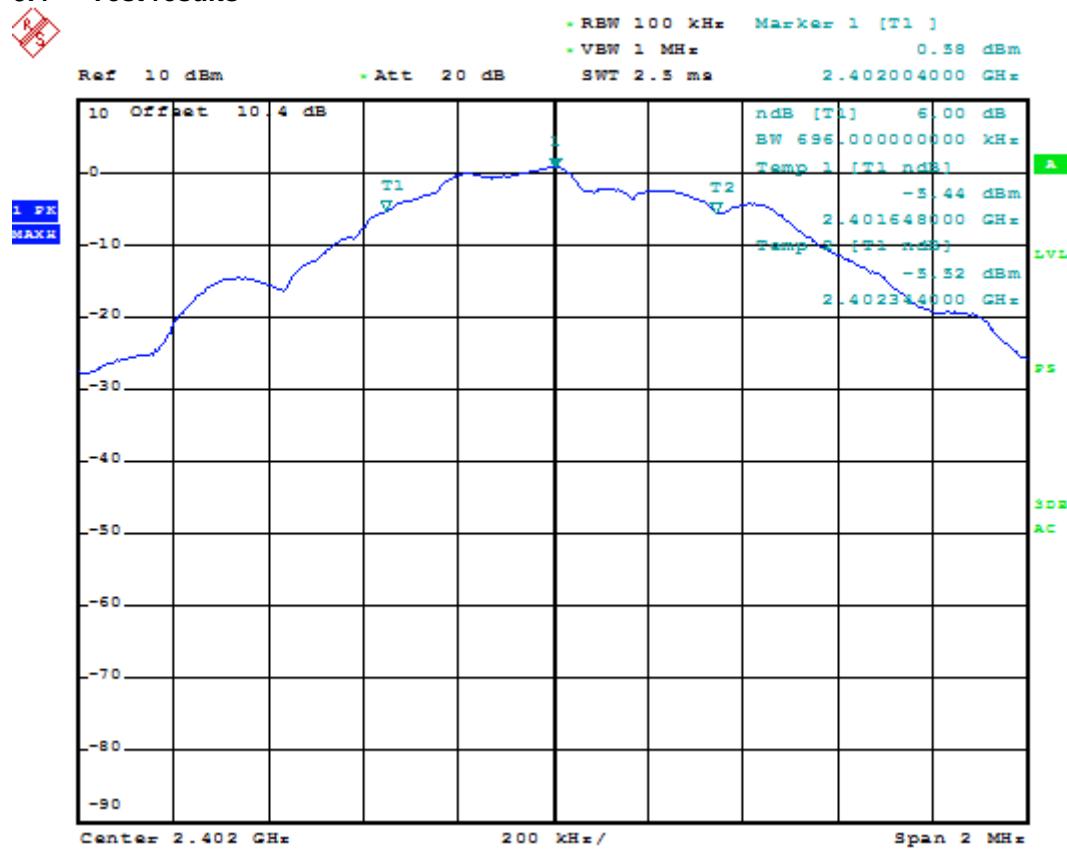
Detector: Peak,
RBW: 100 kHz
VBW: 3 x RBW
Span: >2.9 x OBW

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

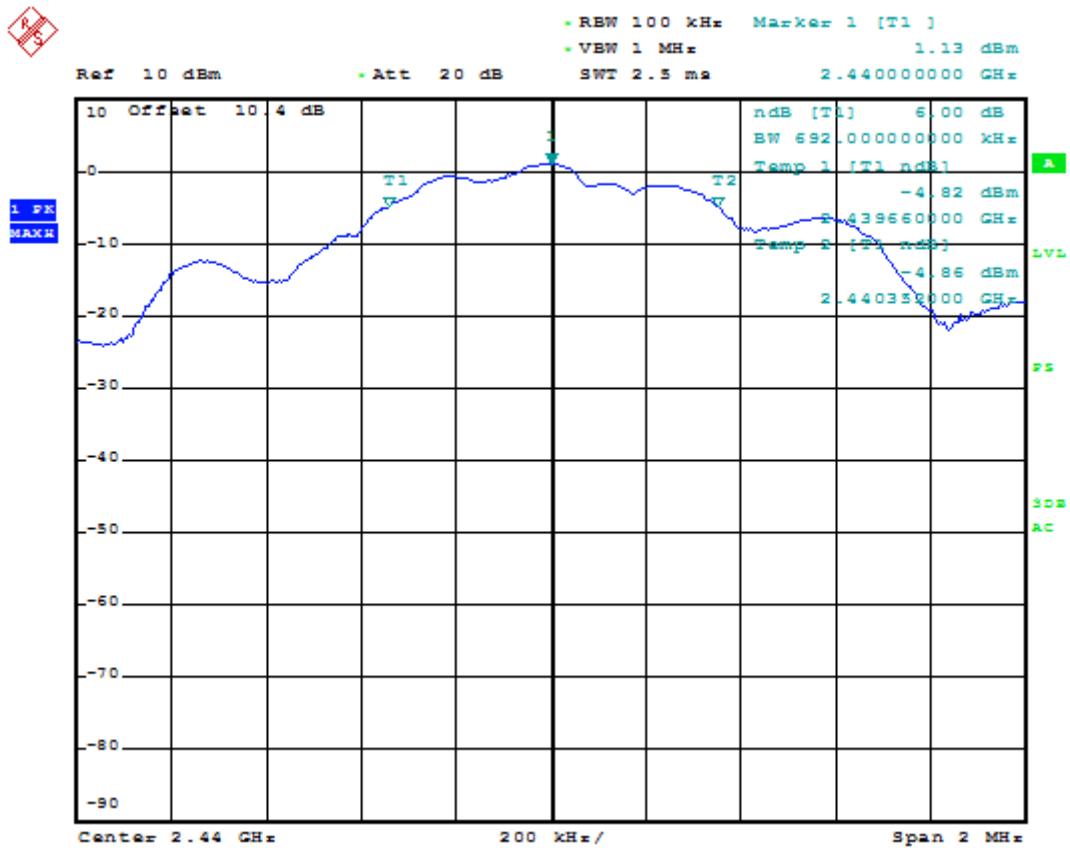
9.3 Requirements

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

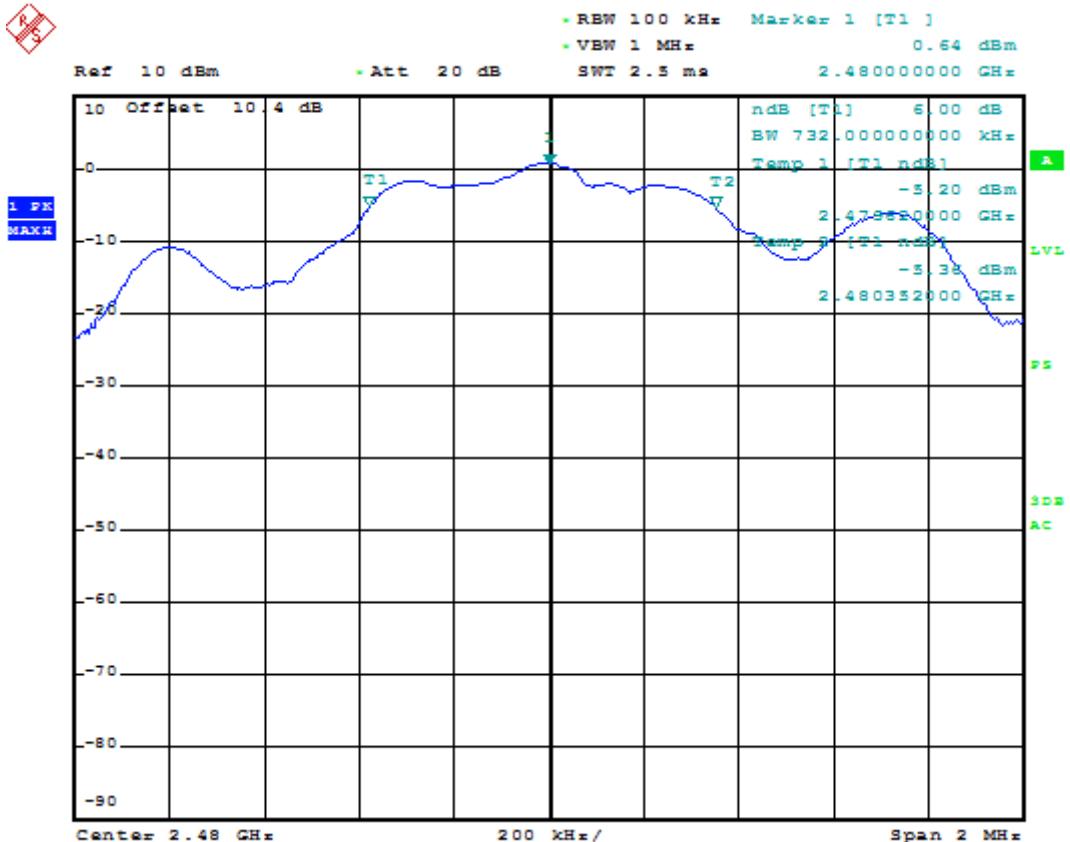
9.4 Test results



Screenshot: Occupied 6 dB bandwidth Measurement, low channel



Screenshot: Occupied 6 dB bandwidth Measurement, middle channel



Screenshot: Occupied 6 dB bandwidth Measurement, high channel

Test result

Channel [MHz]	6 dB BW [MHz]
2402	0.70
2440	0.69
2480	0.73

10 99 % BANDWIDTH

Date of test:	2017-11-09	Test location:	Bur 1
EUT Serial:	Sample#2	Ambient temp:	21 °C
Tested by:	PLA	Relative humidity:	35 %
Test result:	Pass	Margin:	N/A

10.1 Test set-up and test procedure.

The test method is in accordance with RSS-GEN section 6.7.

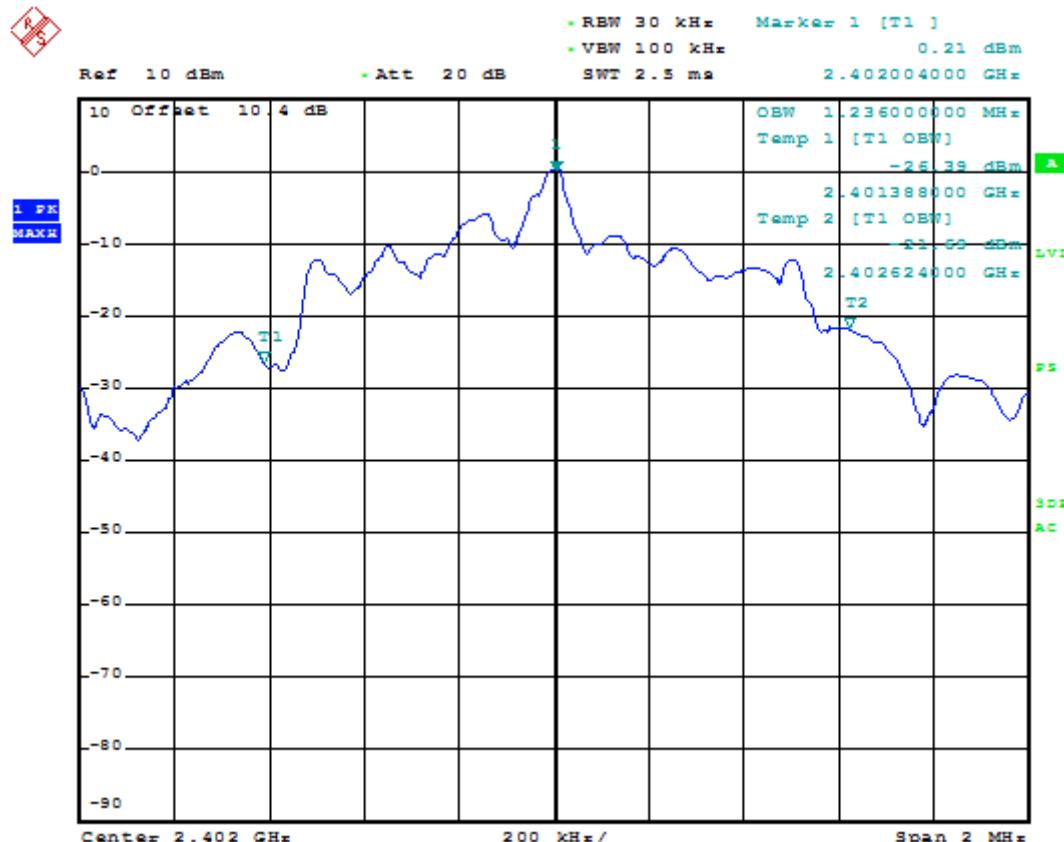
The EUT was connected to spectrum analyser via rf-cable and attenuator. Spectrum analyser with occupied bandwidth measurement function is used to determine the occupied bandwidth.

10.2 Test conditions

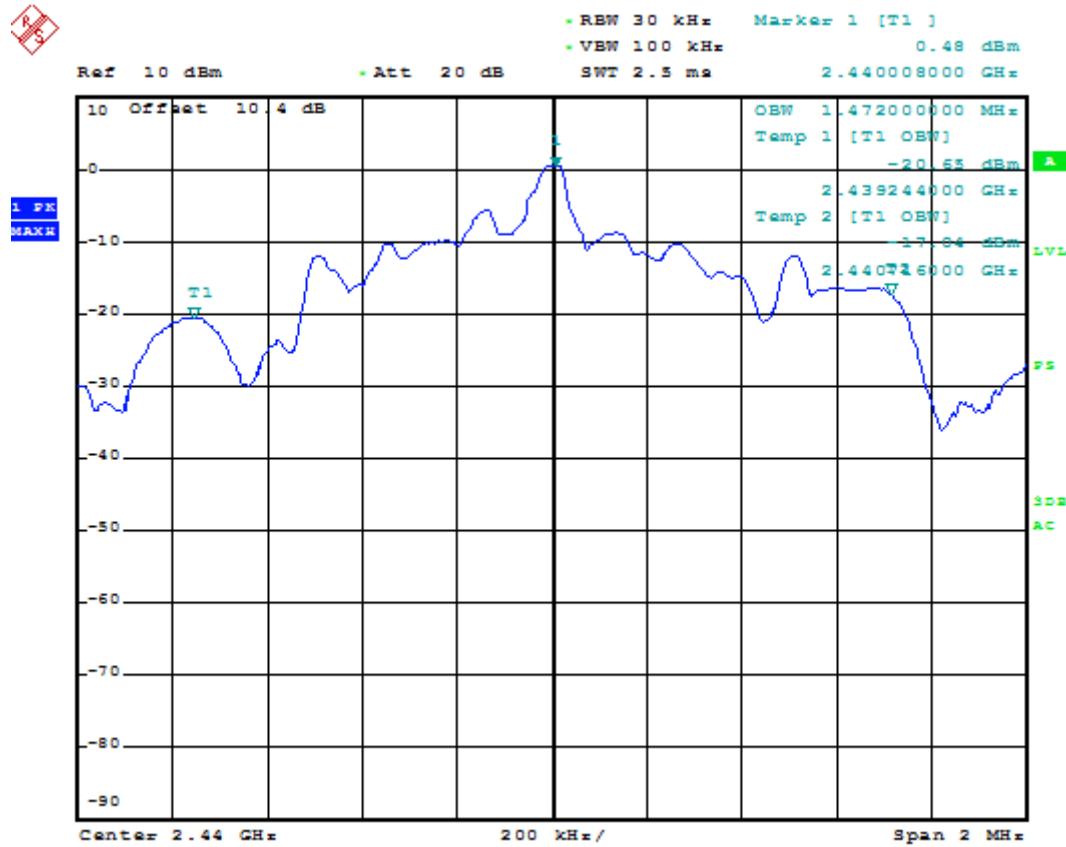
Detector: Peak,
RBW: 1 – 5 % of OBW
VBW: 3 x RBW

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

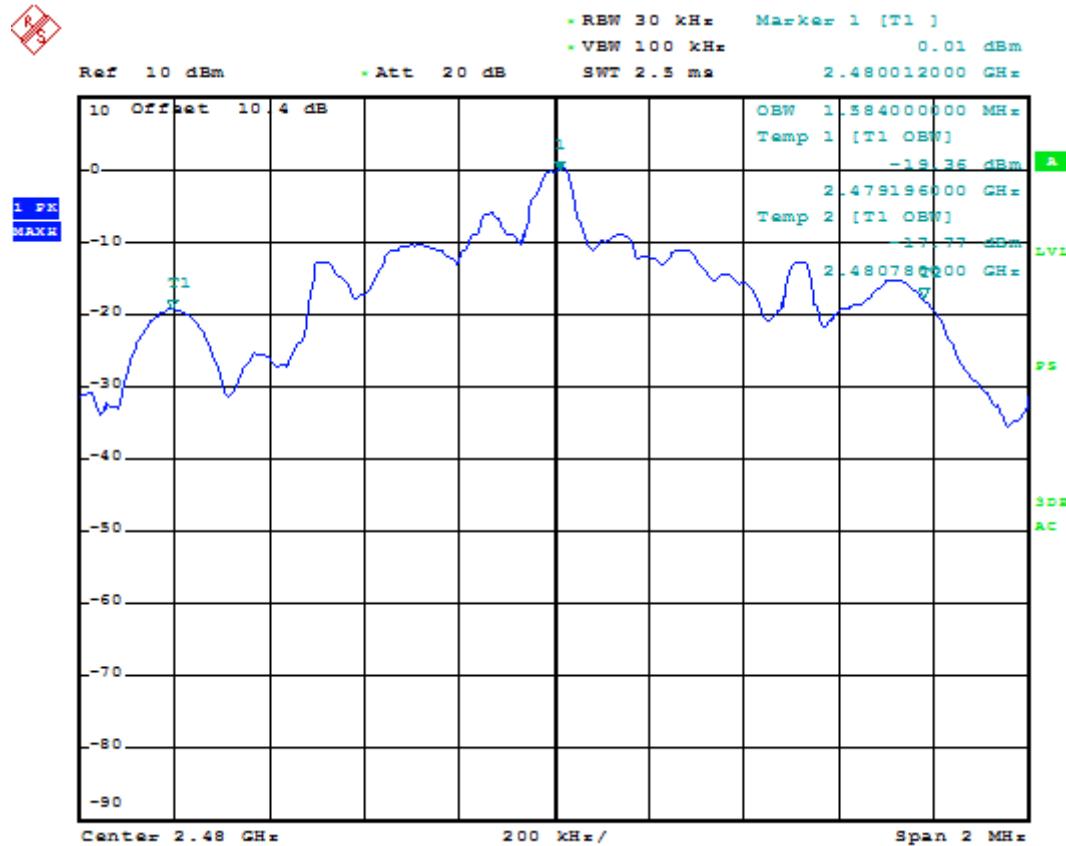
10.3 Test results



Screenshot: 99 % bandwidth Measurement, low channel



Screenshot: 99 % bandwidth Measurement, middle channel



Screenshot: 99 % bandwidth Measurement, high channel

Test result

Channel [MHz]	99 % BW [MHz]
2402	1.24
2440	1.47
2480	1.58

11 PEAK POWER SPECTRAL DENSITY

Date of test:	2017-11-10	Test location:	Bur 1
EUT Serial:	Sample#2	Ambient temp:	21 °C
Tested by:	PLA	Relative humidity:	45 %
Test result:	Pass	Margin:	18.8 dB

11.1 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.

11.2 Test conditions

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

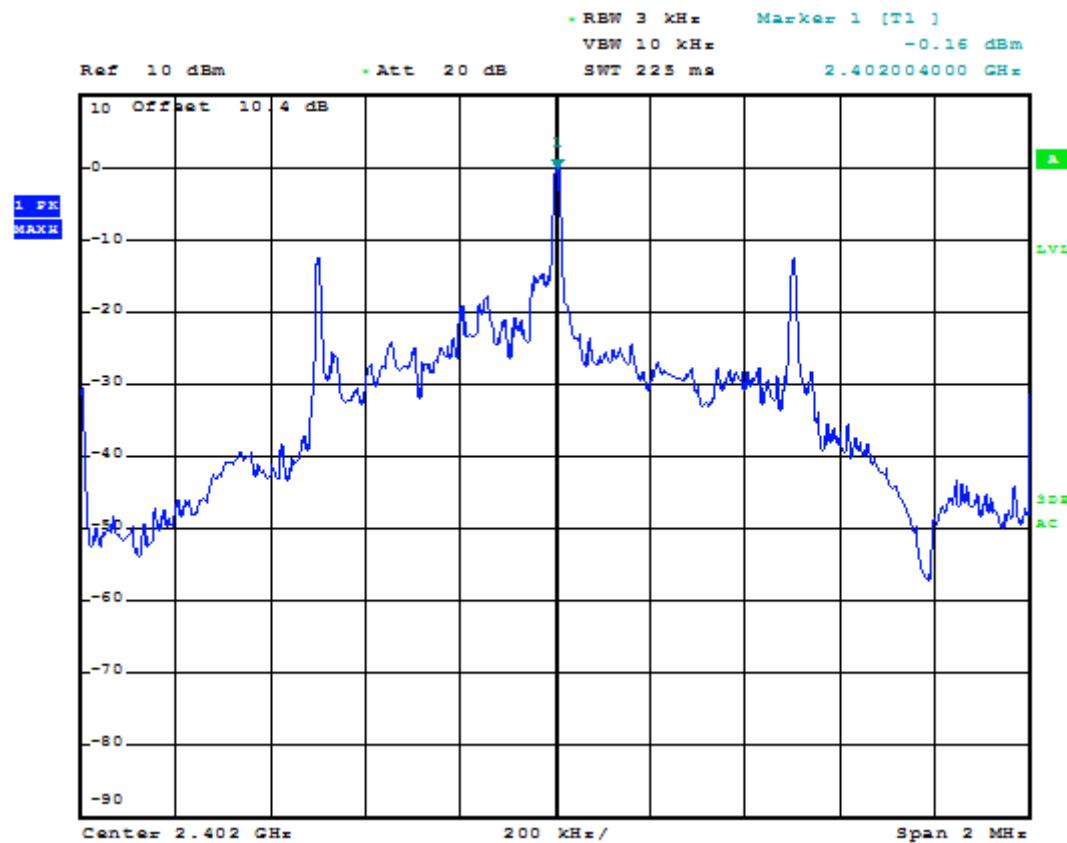
The EUT was set up in order to emit maximum disturbances.

11.3 Requirements

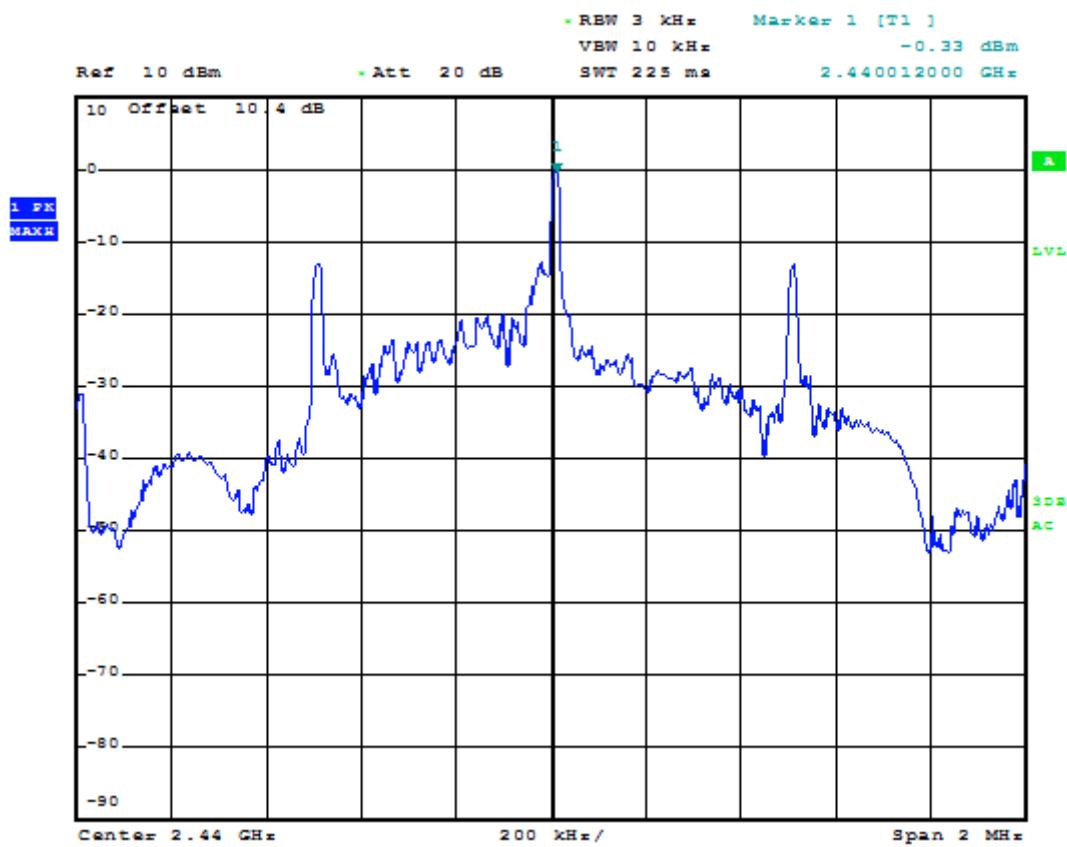
Reference: CFR 47§15.247(3), RSS-247 5.2(2)

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.

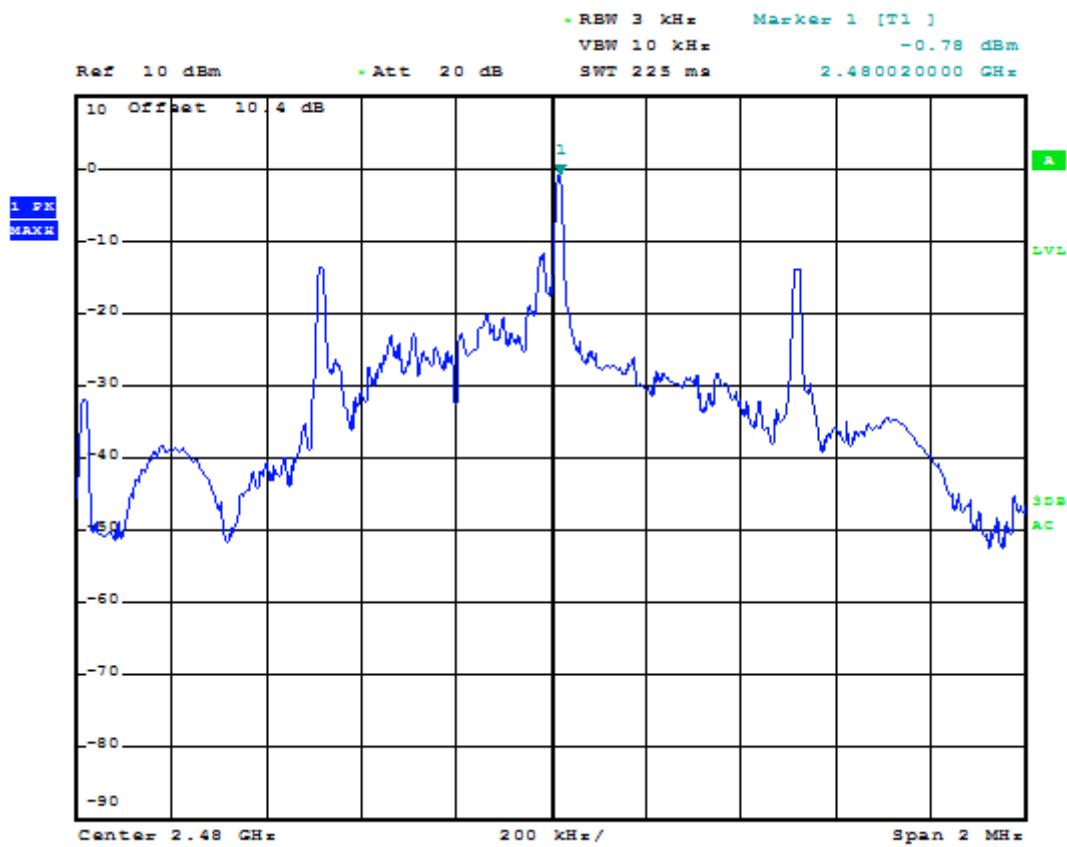
11.4 Test results



Screenshot: Peak power, spectral density low channel



Screenshot: Peak power spectral density, middle channel



Screenshot: Peak power spectral density, high channel

Test result

Channel [MHz]	PSD [dBm/3kHz]
2402	-0.2
2440	-0.3
2480	-0.8

12 TEST EQUIPMENT

Conducted emission test site BUR 4

Equipment type	Manufacturer	Model	Inv. No.	Last Cal. date	Cal. interval
Receiver	Rohde & Schwarz	ESCI	12798	July-2017	1 year
10 dB Attenuator	Ae. Weichel	J1	9444	June-2016	2 year
Coaxial cable	Huber + Suhner	Sucoflex 100	39094	July-2017	1 year

3m SAC

Equipment type	Manufacturer	Model	Inv. No.	Last Cal. date	Cal. interval
Measurement software	Rohde & Schwarz	EMC32 - 9	--	--	--
Receiver	Rohde & Schwarz	ESU40	13178	July-2017	1 year
Receiver	Rohde & Schwarz	ESIB26	32288	July-2017	1 year
Horn antenna with preamplifier	Bonn	31247	4936	Jan-2017	3 years
Antenna	Rohde & Schwarz	HL562	30711	Dec-1014	3 years
Coaxial cable	Huber + Suhner	Sucoflex 104	39138	July-2017	1 year
Coaxial cable	Huber + Suhner	Sucoflex 104	39131	July-2017	1 year
Preamplifier	Rohde & Schwarz	TS-PRE1	32306	July-2017	1 year
Horn antenna	Bonn	BLMA	31247	Jan-2017	3 years
Coaxial cable	Huber+Suhner	Sucoflex	39057	April-2017	1 year
Coaxial cable	Huber+Suhner	Sucoflex	39054	April-2017	1 year
Coaxial cable	Huber+Suhner	Sucoflex	39057	April-2017	1 year
Horn antenna	Rohde & Schwarz	HF907	32307	July-2017	3 years
Preamplifier	Rohde & Schwarz	TS-Pre1	32306	July-2017	3 years

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 1713667STO-002 Annex 1.

Test set up photos are in separate document 1713667STO-002 Annex 2.