

Annex 1: Measurement diagrams to Test Report 19-1-0130001T13a-A1

Number of pages:	52	Date of Report:	2021-Mar-24
Testing company:	CETECOM GmbH Im Teelbruch 116 45219 Essen Germany Tel. + 49 (0) 20 54 / 95 19-0 Fax: + 49 (0) 20 54 / 95 19-150	Applicant:	ORTOVOX Sportartikel GmbH
Product: Model:	Avalanche Transceiver DIRACT VOICE		
FCC ID:	KF5DIR1	IC:	26906-DIR1
Testing has been carried out in accordance with:	Title 47 CFR, Chapter I FCC Regulations, Subchapter A Subpart C: §15.247 (DTS) , RSS-247, Issue 2 (DTS) RSS-Gen., Issue 5 Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".		



Table of Contents

1.1 EMI Conducted emissions3

1.2 Radiated measurements.....5

1.3 Conducted measurements31

1 Measurement diagrams

1.1 EMI Conducted emissions

1.01_15C_BT

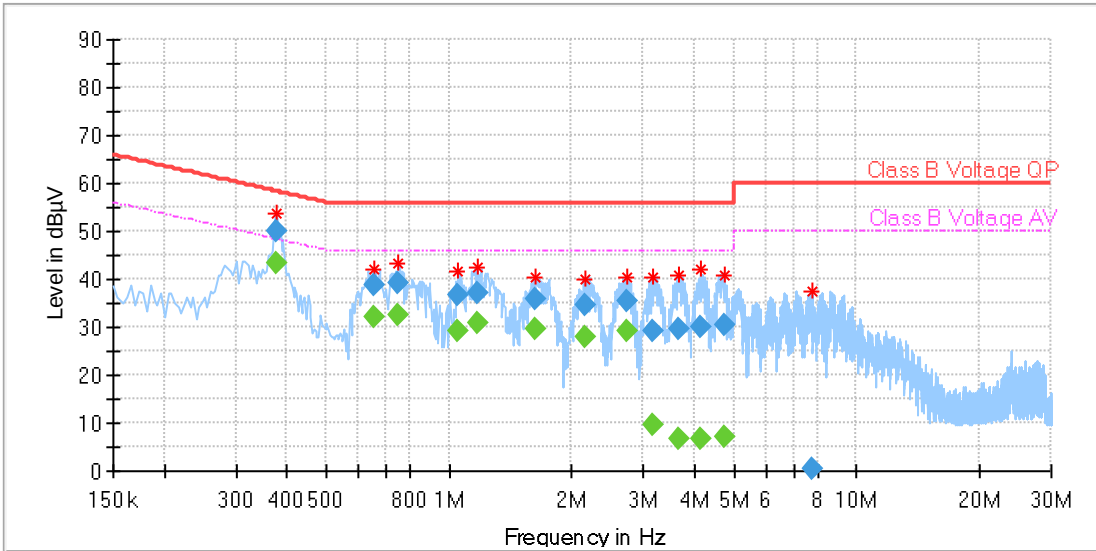
Common Information

Test Description:	Conducted Voltage Measurement Class B
Test Site Location:	Conducted Emission, CETECOM GmbH Essen
Test Software:	R&S EMC32 v9.15
Test Standard:	FCC 15.207
Operating Mode:	BLE
Measured on line:	N/L1
Diagram details:	Shows the peak values as a sum of measured ports in maxhold mode
Environmental Conditions:	Humidity: 51%rH; Temperature: 20°C
Comments:	-
Verdict:	Passed

EUT Information

PMT number:	19-1-01300S06_C01
Date received:	--

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	PE	Corr. (dB)
0.379063	---	43.46	48.30	4.84	1000.0	9.000	L1	GN	0.1
0.379063	50.00	---	58.30	8.30	1000.0	9.000	L1	GN	0.1
0.655938	---	32.12	46.00	13.88	1000.0	9.000	L1	GN	0.3
0.655938	38.59	---	56.00	17.41	1000.0	9.000	L1	GN	0.3
0.747969	---	32.44	46.00	13.56	1000.0	9.000	L1	GN	0.2
0.747969	39.31	---	56.00	16.69	1000.0	9.000	L1	GN	0.2
1.051563	---	29.35	46.00	16.65	1000.0	9.000	L1	GN	0.3
1.051563	36.55	---	56.00	19.45	1000.0	9.000	L1	GN	0.3
1.175313	---	31.04	46.00	14.96	1000.0	9.000	L1	GN	0.3
1.175313	37.25	---	56.00	18.75	1000.0	9.000	L1	GN	0.3
1.634063	---	29.47	46.00	16.53	1000.0	9.000	L1	GN	0.3
1.634063	35.74	---	56.00	20.26	1000.0	9.000	L1	GN	0.3
2.160781	---	28.02	46.00	17.98	1000.0	9.000	L1	GN	0.3
2.160781	34.51	---	56.00	21.49	1000.0	9.000	L1	GN	0.3
2.734531	---	28.98	46.00	17.02	1000.0	9.000	L1	GN	0.3
2.734531	35.27	---	56.00	20.73	1000.0	9.000	L1	GN	0.3
3.163594	---	9.45	46.00	36.55	1000.0	9.000	L1	GN	0.4
3.163594	28.98	---	56.00	27.02	1000.0	9.000	L1	GN	0.4
3.660781	---	6.52	46.00	39.48	1000.0	9.000	L1	GN	0.3
3.660781	29.63	---	56.00	26.37	1000.0	9.000	L1	GN	0.3
4.165313	---	6.87	46.00	39.13	1000.0	9.000	L1	GN	0.3
4.165313	30.02	---	56.00	25.98	1000.0	9.000	L1	GN	0.3
4.727188	---	7.20	46.00	38.80	1000.0	9.000	L1	GN	0.4
4.727188	30.54	---	56.00	25.46	1000.0	9.000	L1	GN	0.4
7.758438	---	-3.89	50.00	53.89	1000.0	9.000	L1	GN	0.4
7.758438	0.49	---	60.00	59.51	1000.0	9.000	L1	GN	0.4

1.2 Radiated measurements

2.01a_BLE_low_standing

Common Information

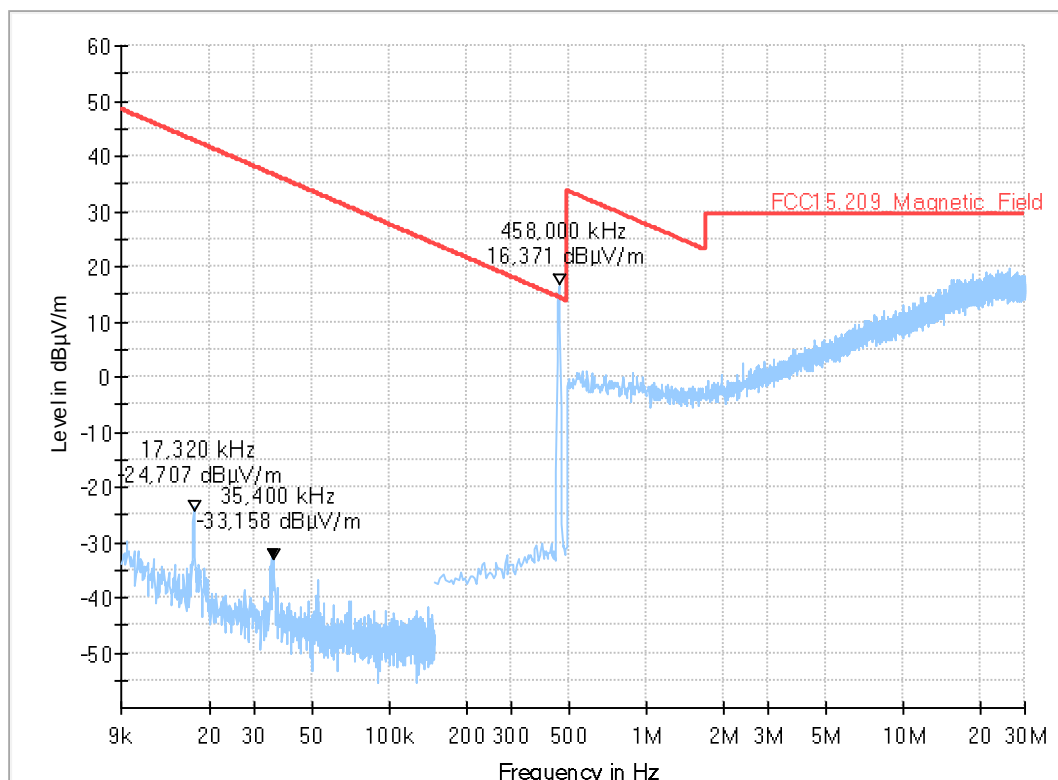
Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.50.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5

Operator:	GHu
Operating Mode:	BLE_low_Position :Standing
Power during tests:	full loaded batteries
Comment 1:	-
Environmental Conditions:	Humidity : 41 %rH; Temperature: 21 °C
EUT Setup:	1
Verdict:	Passed
Comment:	

EUT Information

PMT number:	19-1-01300S06_C03
Manufacturer:	x-log Elektronik GmbH

Full Spectrum



Remark: The peak at 458 kHz is different internal transceiver of EUT and does not come from BLE module. This is not evaluated within this test report.

2.01b_BLE_low_laying

Common Information

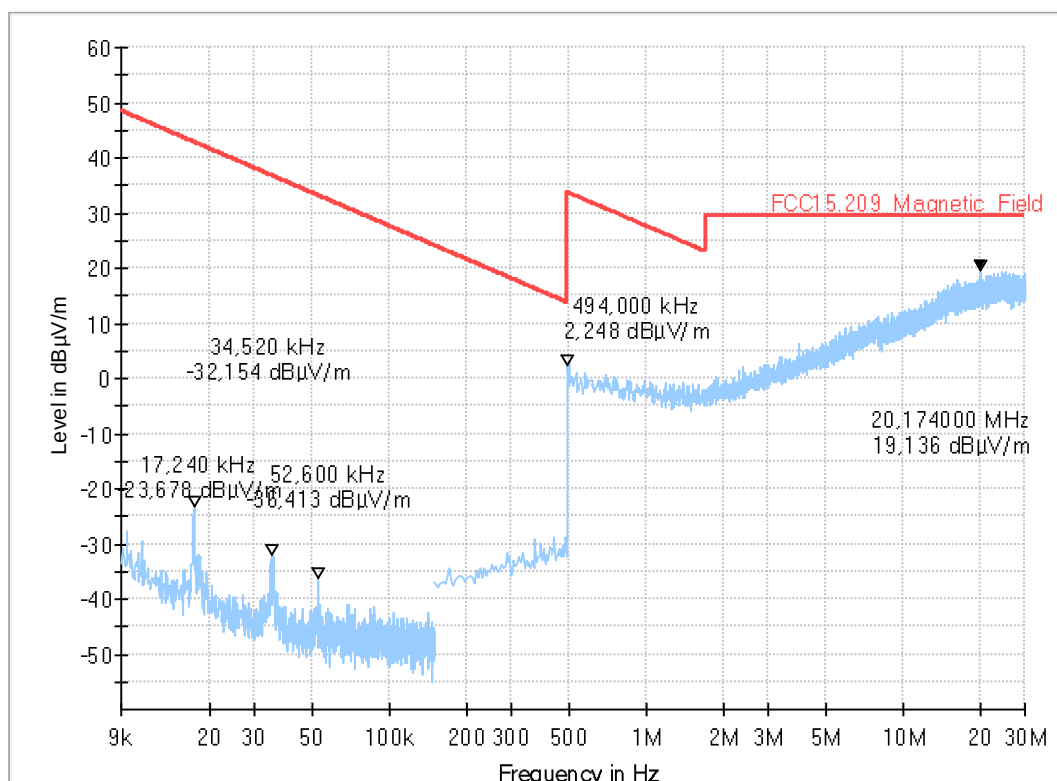
Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.50.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5

Operator:	GHu
Operating Mode:	BLE_low_Position :Laying
Power during tests:	full loaded batteries
Comment 1:	-
Environmental Conditions:	Humidity : 41 %rH; Temperature: 21 °C
EUT Setup:	1
Verdict:	Passed
Comment:	

EUT Information

PMT number:	19-1-01300S06_C03
Manufacturer:	x-log Elektronik GmbH

Full Spectrum



2.02a_BLE_mid_standing

Common Information

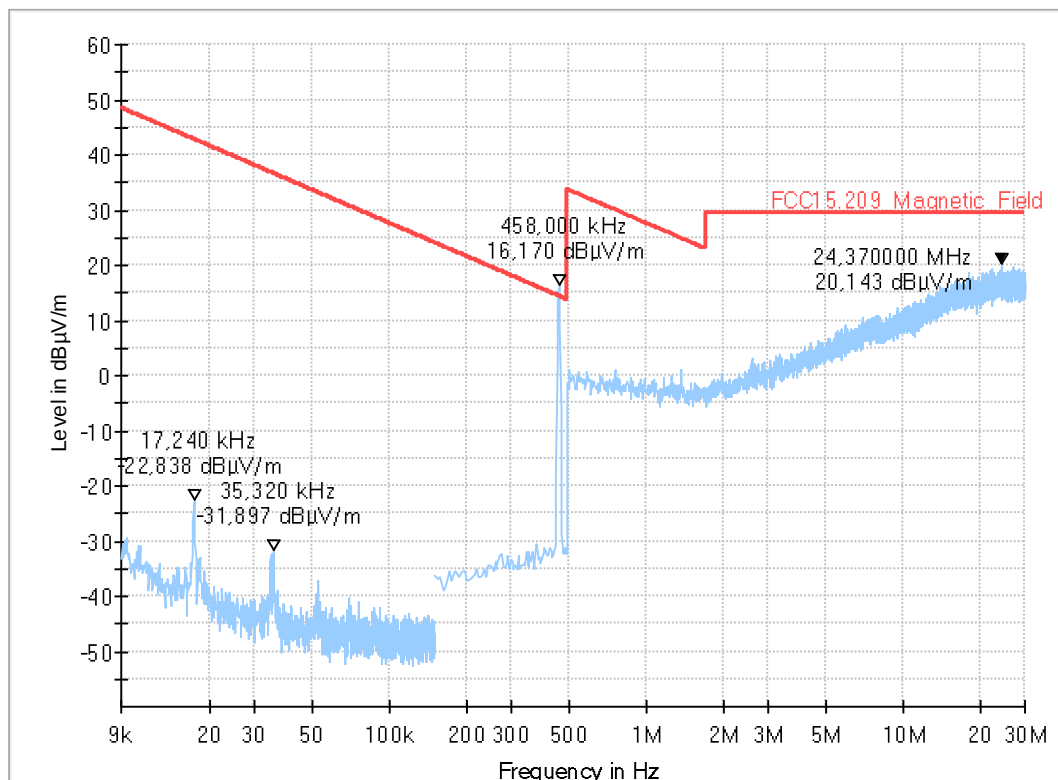
Test Description: Magnetic Field Strength Measurement related to 30/300 m distance
 Test Site Location: Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
 Version of Testsoftware: EMC32 V10.50.0
 Distance correction: used accord. table, pls. see test report
 Technical Data: Please see page 2 for detailed data of measurement setup
 Rec. antenna (pre-scan): height 1.00 m, parallel and 90° to EUT polarisation
 Used Filter: bypass
 Test Standard: FCC 15.205 § 15.209; RSS-Gen: Issue 5

Operator: HEI
 Operating Mode: BLE_mid_Position :Standing
 Power during tests: 12V DC, 110V/60Hz, full loaded batteries
 Comment 1: Channel middle
 Environmental Conditions: Humidity : 51%rH; Temperature: 21°C
 EUT Setup: 1
 Verdict: Passed
 Comment:

EUT Information

PMT number: 19-1-01300S06_C03
 Manufacturer: x-log Elektronik GmbH

Full Spectrum



Remark: The peak at 458 kHz is different internal transceiver of EUT and does not come from BLE module. This is not evaluated within this test report.

2.02b_BLE_mid_laying

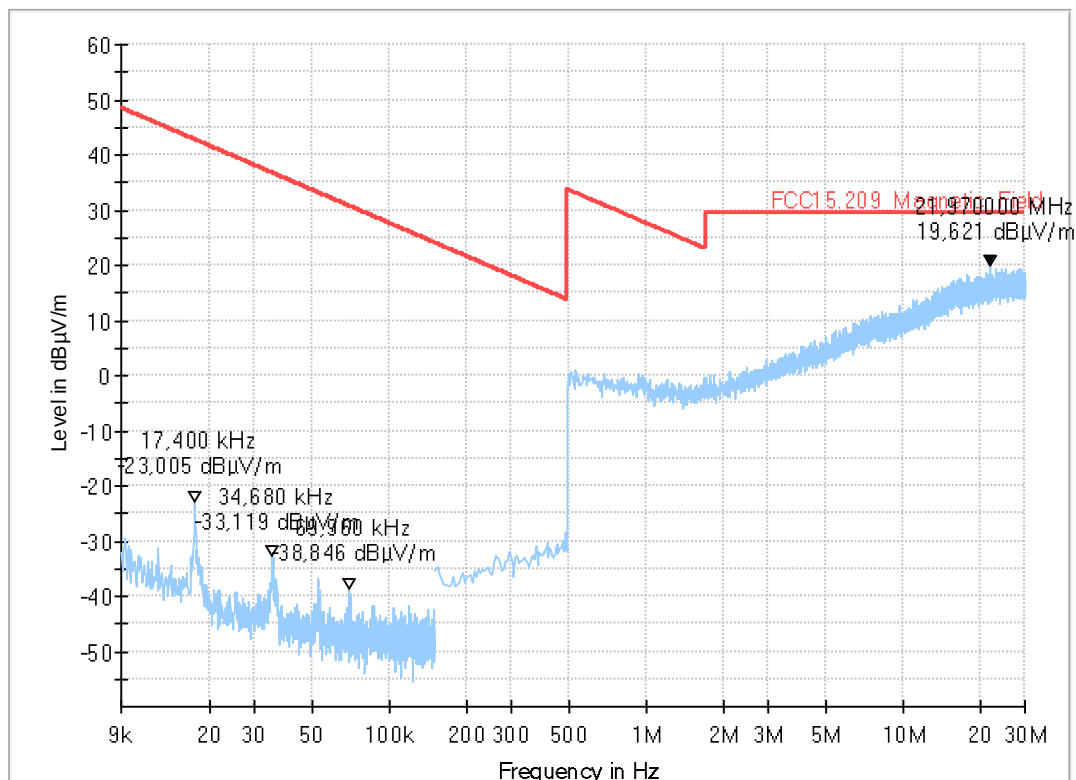
Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.50.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	HEI
Operating Mode:	BLE_mid_Position :Laying
Power during tests:	12V DC, 110V/60Hz, full loaded batteries
Comment 1:	Channel middle
Environmental Conditions:	Humidity : 45%rH; Temperature: 16°C
EUT Setup:	1
Verdict:	Passed
Comment:	

EUT Information

PMT number:	19-1-01300S06_C03
Manufacturer:	x-log Elektronik GmbH

Full Spectrum



2.03a_BLE_high_standing

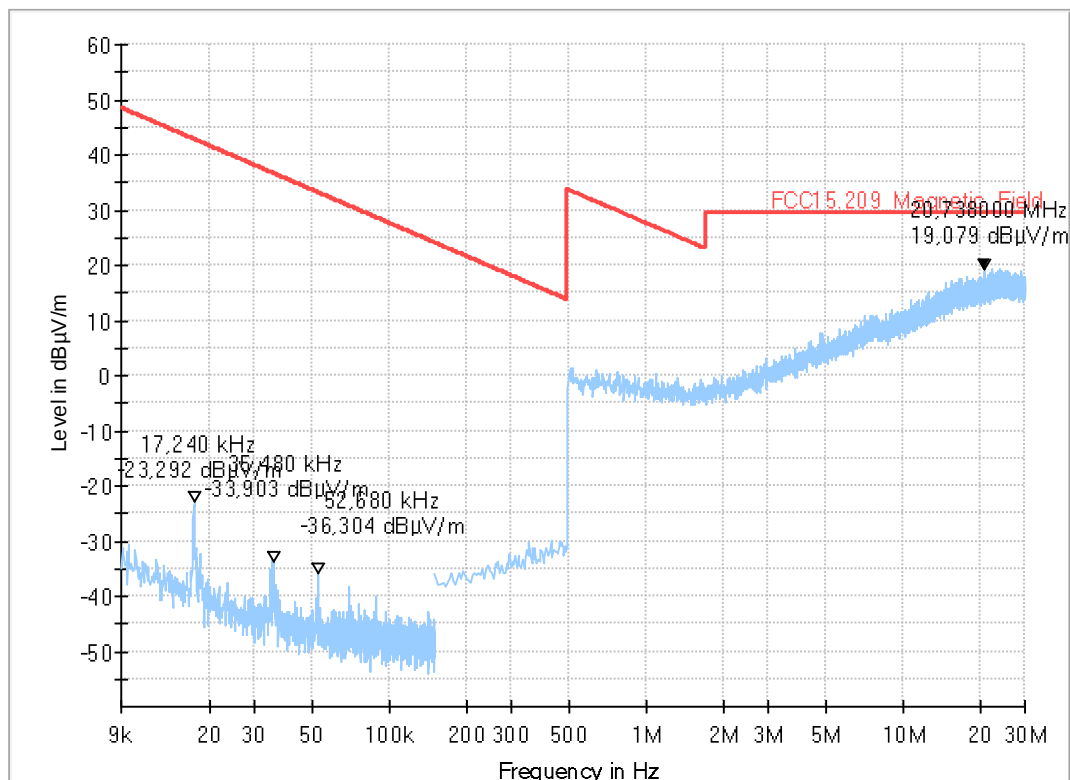
Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.50.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	GHu
Operating Mode:	BLE_high_Position :Standing
Power during tests:	12V DC, 110V/60Hz, full loaded batteries
Comment 1:	Channel high
Environmental Conditions::	Humidity : 41 %rH; Temperature: 21 °C
EUT Setup:	1
Verdict:	Passed
Comment:	

EUT Information

PMT number:	19-1-01300S06_C03
Manufacturer:	x-log Elektronik GmbH

Full Spectrum



2.03b_BLE_high_laying

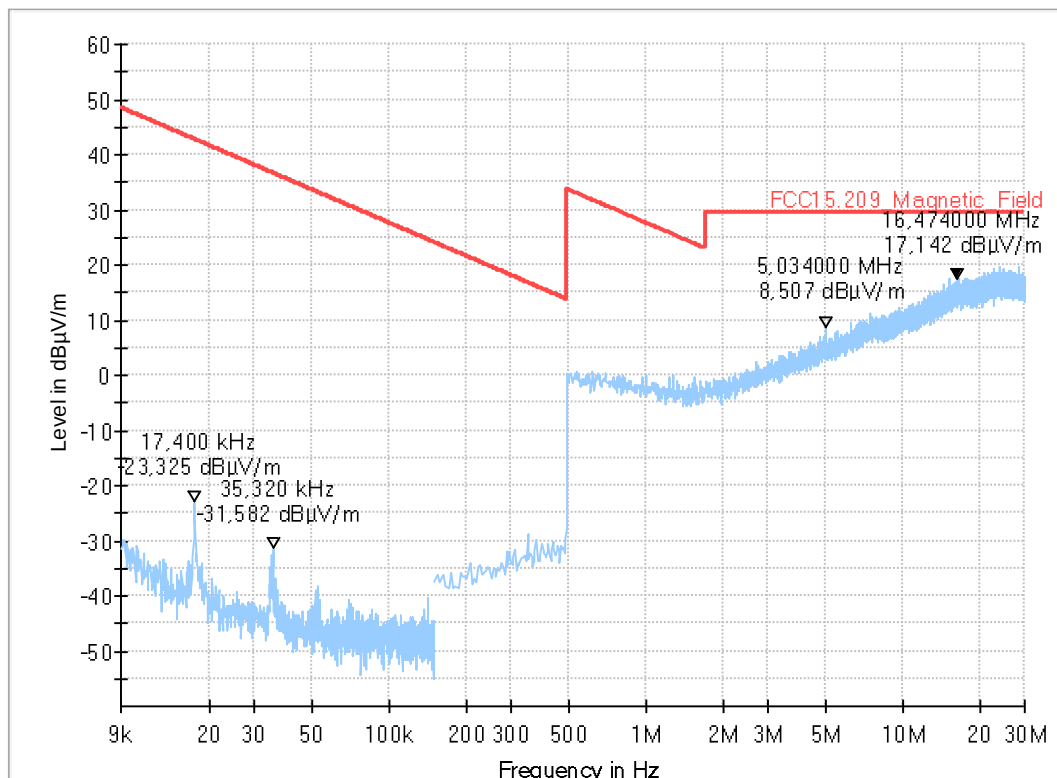
Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.50.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	HEI
Operating Mode:	BLE_High_Position :Laying
Power during tests:	12V DC, 110V/60Hz, full loaded batteries
Comment 1:	Channel high
Environmental Conditions:	Humidity : 45%rH; Temperature: 16°C
EUT Setup:	1
Verdict:	Passed
Comment:	

EUT Information

PMT number:	19-1-01300S06_C03
Manufacturer:	x-log Elektronik GmbH

Full Spectrum



3.01a_BLE_low_standing

Common Information

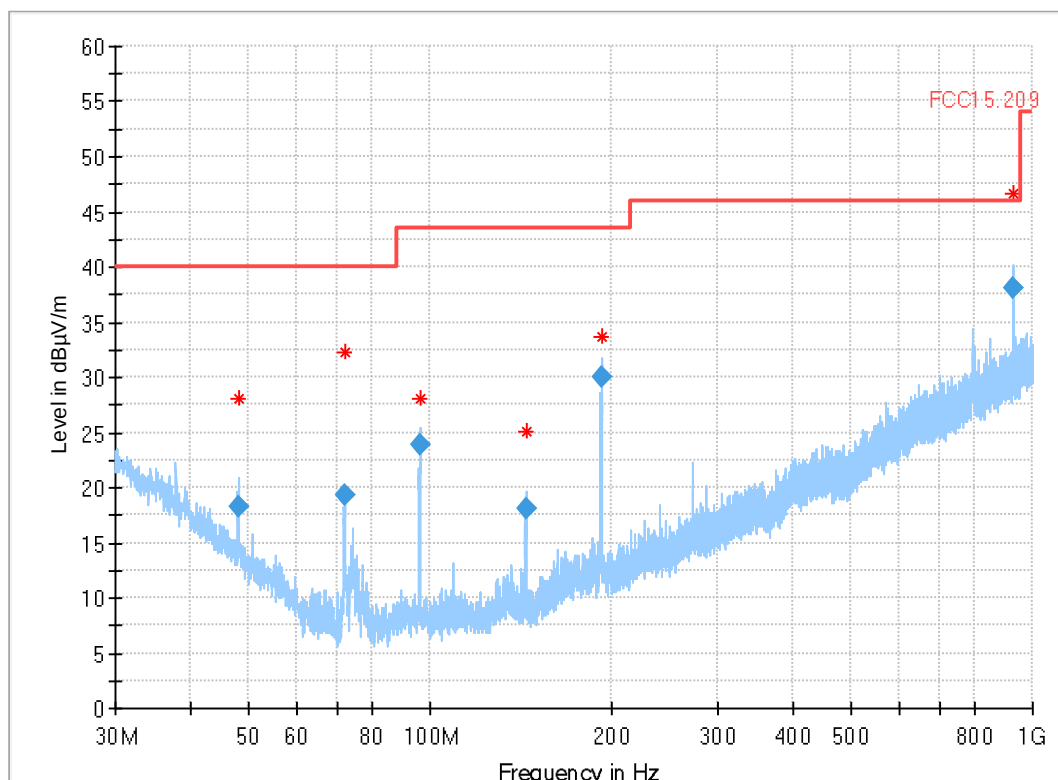
Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 & RSS Gen. Issue 5
Antenna polarisation:	horizontal/vertical
Environmental Conditions::	Humidity : 45%rH; Temperature: 16°C
Operator Name:	HEI
EUT:	
Operating Mode:	BLE_low_Position :Standing
Comment:	
Verdict:	Passed

EUT Information

PMT number:	19-1-01300S06_C03
Manufacturer:	x-log Elektronik GmbH

Full Spectrum

Full Spectrum



Remark: The peak at 928 MHz is known external disturbance and does not come from EUT.

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Comment
48.064000	18.26	40.00	21.74	120.000	173.0	V	201.0	13.6	20:10:53 - 04.03.2021
71.990000	19.28	40.00	20.72	120.000	233.0	H	331.0	6.6	19:56:13 - 04.03.2021
96.158000	23.94	43.50	19.56	120.000	128.0	V	173.0	8.2	20:15:50 - 04.03.2021
144.030000	18.10	43.50	25.40	120.000	133.0	V	343.0	8.6	20:01:13 - 04.03.2021
192.360000	30.06	43.50	13.44	120.000	109.0	V	355.0	11.5	20:05:53 - 04.03.2021
928.446000	38.01	46.00	7.99	120.000	256.0	H	348.0	27.0	19:51:15 - 04.03.2021

3.01b_BLE_low_laying

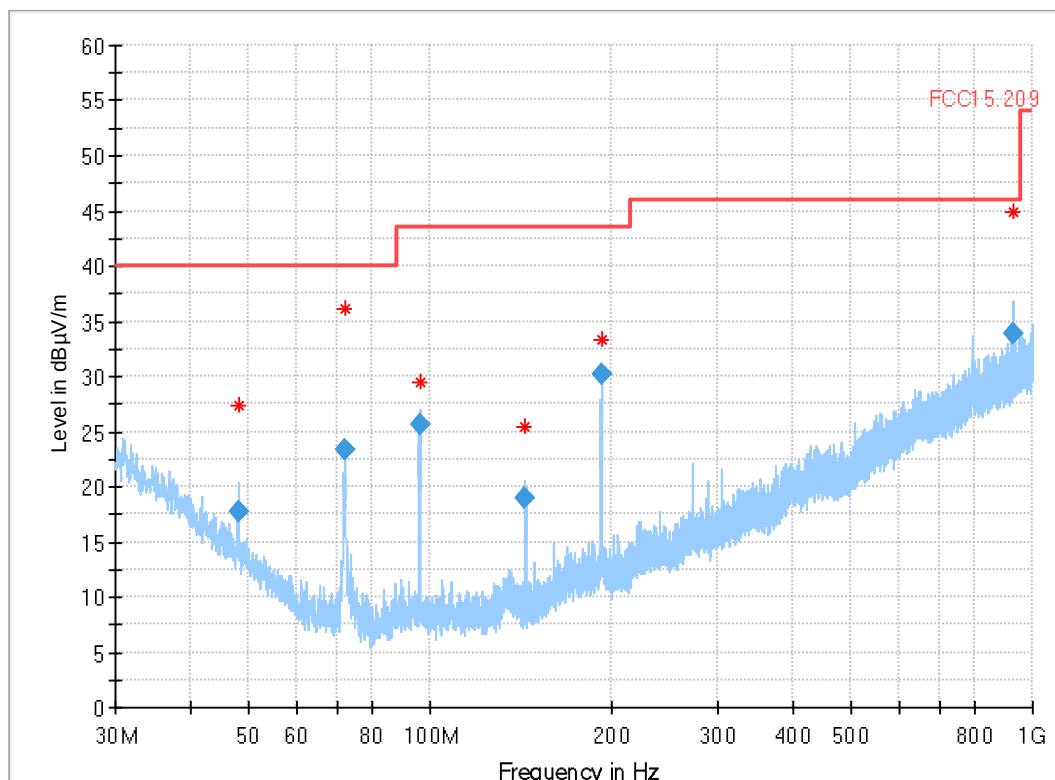
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 & RSS Gen. Issue 5
Antenna polarisation:	horizontal/vertical
Environmental Conditions:	Humidity : 45%rH; Temperature: 16°C
Operator Name:	HEI
EUT:	
Operating Mode:	BLE_CH:LOW_Position :Laying
Comment:	
Verdict:	Passed

EUT Information

PMT number:	19-1-01300S06_C03
Manufacturer:	x-log Elektronik GmbH

Full Spectrum



Remark: The peak at 928 MHz is known external disturbance and does not come from EUT.

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Comment
48.156000	17.73	40.00	22.27	120.000	117.0	V	135.0	13.6	23:10:06 - 04.03.2021
72.102000	23.40	40.00	16.60	120.000	263.0	H	332.0	6.6	22:54:20 - 04.03.2021
95.986000	25.62	43.50	17.88	120.000	129.0	V	178.0	8.2	23:15:02 - 04.03.2021
143.934000	19.00	43.50	24.50	120.000	116.0	V	334.0	8.6	22:59:31 - 04.03.2021
192.234000	30.20	43.50	13.30	120.000	108.0	V	3.0	11.5	23:04:55 - 04.03.2021
928.376000	33.90	46.00	12.10	120.000	210.0	H	218.0	27.0	22:49:36 - 04.03.2021

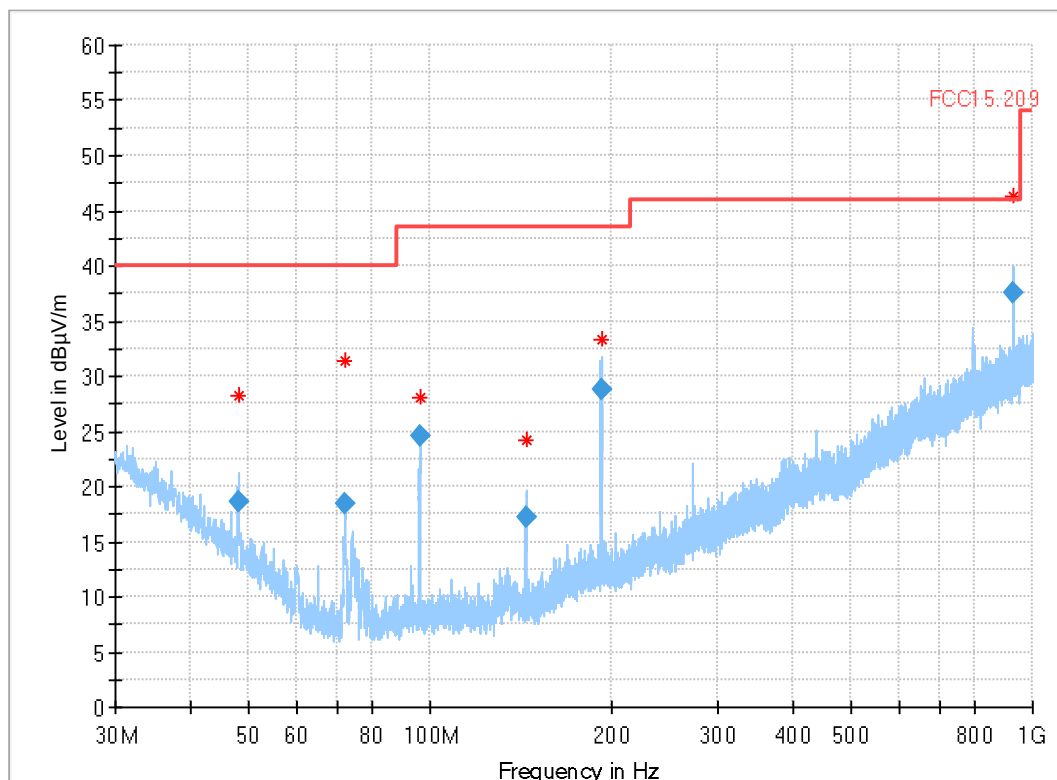
3.02a_BLE_mid_standing

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 & RSS Gen. Issue 5
Antenna polarisation:	horizontal/vertical
Environmental Conditions:	Humidity : 45%rH; Temperature: 16°C
Operator Name:	HEI
EUT:	
Operating Mode:	BLE_mid_Position :Standing
Verdict:	Passed

Full Spectrum

Full Spectrum



Remark: The peak at 928 MHz is known external disturbance and does not come from EUT.

Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Comment
48.036000	18.65	40.00	21.35	120.000	126.0	V	133.0	13.7	18:23:28 - 04.03.2021
72.192000	18.42	40.00	21.58	120.000	230.0	H	167.0	6.6	18:04:14 - 04.03.2021
96.174000	24.52	43.50	18.98	120.000	112.0	V	182.0	8.2	18:28:23 - 04.03.2021
144.244000	17.25	43.50	26.25	120.000	105.0	V	158.0	8.6	18:09:22 - 04.03.2021
192.624000	28.71	43.50	14.79	120.000	109.0	V	357.0	11.5	18:13:31 - 04.03.2021
928.332000	37.51	46.00	8.49	120.000	302.0	V	306.0	27.0	18:18:03 - 04.03.2021

3.02b_BLE_mid_laying

Common Information

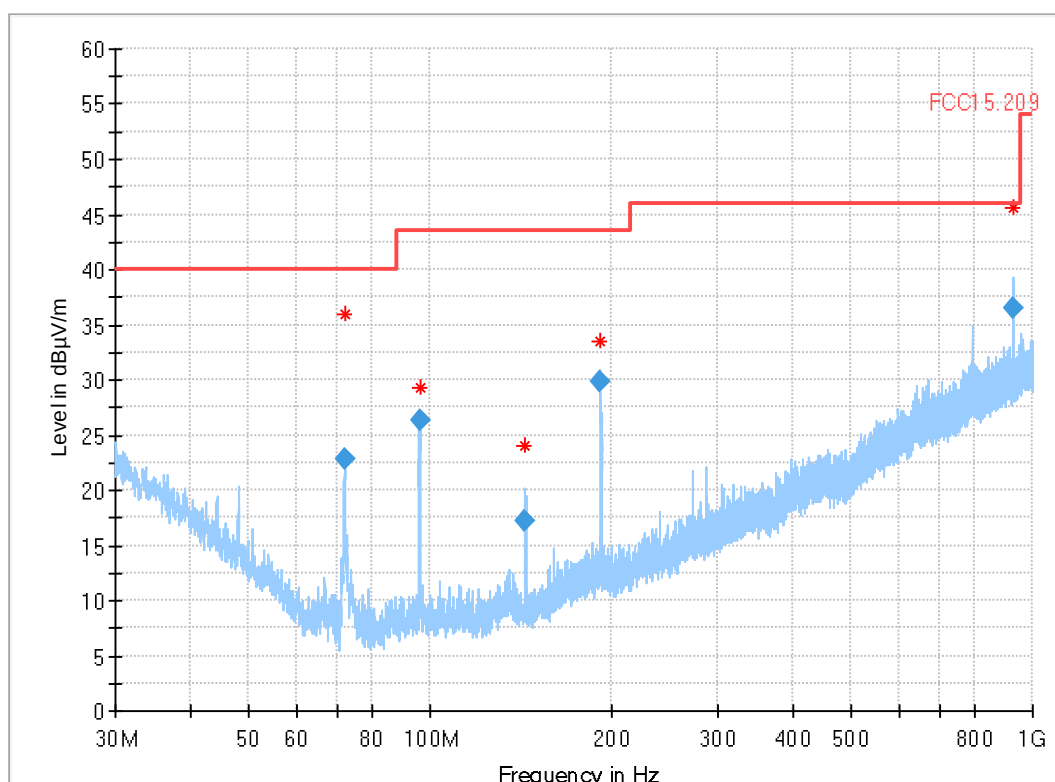
Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 & RSS Gen. Issue 5
Antenna polarisation:	horizontal/vertical
Environmental Conditions::	Humidity : 45%rH; Temperature: 16°C
Operator Name:	HEI
EUT:	
Operating Mode:	BLE_CH:Mid_Position : Laying
Comment:	
Verdict:	Passed

EUT Information

PMT number:	19-1-01300S06_C03
Manufacturer:	x-log Elektronik GmbH

Full Spectrum

Full Spectrum



Remark: The peak at 928 MHz is known external disturbance and does not come from EUT.

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Comment
72.090000	22.78	40.00	17.22	120.000	244.0	H	345.0	6.6	21:54:46 - 04.03.2021
96.028000	26.29	43.50	17.21	120.000	105.0	V	195.0	8.2	22:15:25 - 04.03.2021
143.990000	17.19	43.50	26.31	120.000	117.0	V	181.0	8.6	22:05:12 - 04.03.2021
191.592000	29.83	43.50	13.67	120.000	109.0	V	9.0	11.5	22:10:18 - 04.03.2021
928.398000	36.53	46.00	9.47	120.000	352.0	H	8.0	27.0	22:00:17 - 04.03.2021

3.03a_BLE_high_standing

Common Information

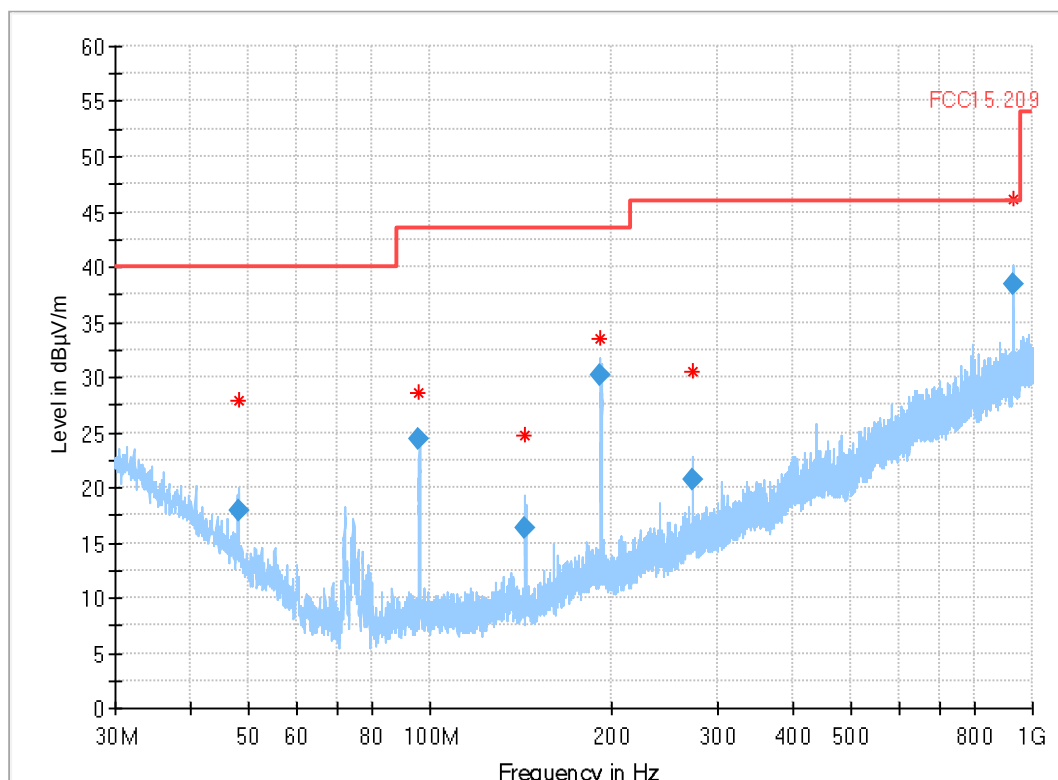
Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 & RSS Gen. Issue 5
Antenna polarisation:	horizontal/vertical
Environmental Conditions::	Humidity : 45%rH; Temperature: 16°C
Operator Name:	HEI
EUT:	
Operating Mode:	BLE_high_Postion :Standing
Comment:	
Verdict:	Passed

EUT Information

PMT number:	19-1-01300S06_C03
Manufacturer:	x-log Elektronik GmbH

Full Spectrum

Full Spectrum



Remark: The peak at 928 MHz is known external disturbance and does not come from EUT.

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Comment
48.142000	17.89	40.00	22.11	120.000	137.0	V	142.0	13.6	19:26:05 - 04.03.2021
95.954000	24.46	43.50	19.04	120.000	105.0	V	194.0	8.2	19:30:57 - 04.03.2021
143.706000	16.24	43.50	27.26	120.000	133.0	V	321.0	8.6	19:16:15 - 04.03.2021
192.014000	30.09	43.50	13.41	120.000	119.0	V	344.0	11.5	19:20:55 - 04.03.2021
272.002000	20.65	46.00	25.35	120.000	113.0	H	88.0	14.6	19:11:49 - 04.03.2021
928.430000	38.39	46.00	7.61	120.000	201.0	H	68.0	27.0	19:05:57 - 04.03.2021

3.03b_BLE_high_laying

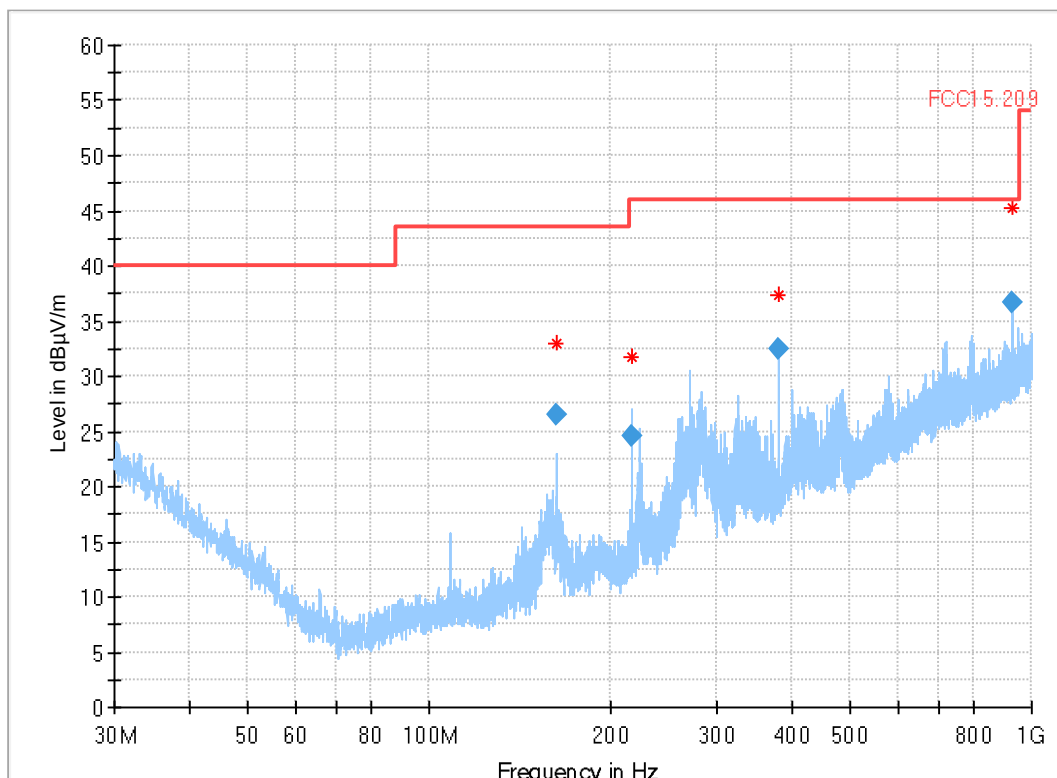
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 & RSS Gen. Issue 5
Antenna polarisation:	horizontal/vertical
Environmental Conditions:	Humidity : 40%rH; Temperature: 20°C
Operator Name:	HEI
EUT:	
Operating Mode:	BLE_high_Postion :Laying
Comment:	
Verdict:	Passed

EUT Information

PMT number	19-1-01300S06_C03
Manufacturer:	x-log Elektronik GmbH

Full Spectrum



Remark: The peak at 928 MHz is known external disturbance and does not come from EUT.

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Comment
162.728000	26.41	43.50	17.09	120.000	174.0	H	35.0	9.5	22:53:26 - 26.01.2021
216.980000	24.53	46.00	21.47	120.000	152.0	H	42.0	12.0	23:04:25 - 26.01.2021
379.714000	32.42	46.00	13.58	120.000	271.0	H	170.0	17.4	22:58:37 - 26.01.2021
928.364000	36.64	46.00	9.36	120.000	181.0	H	271.0	27.0	23:09:56 - 26.01.2021

4.01a_BLE_low

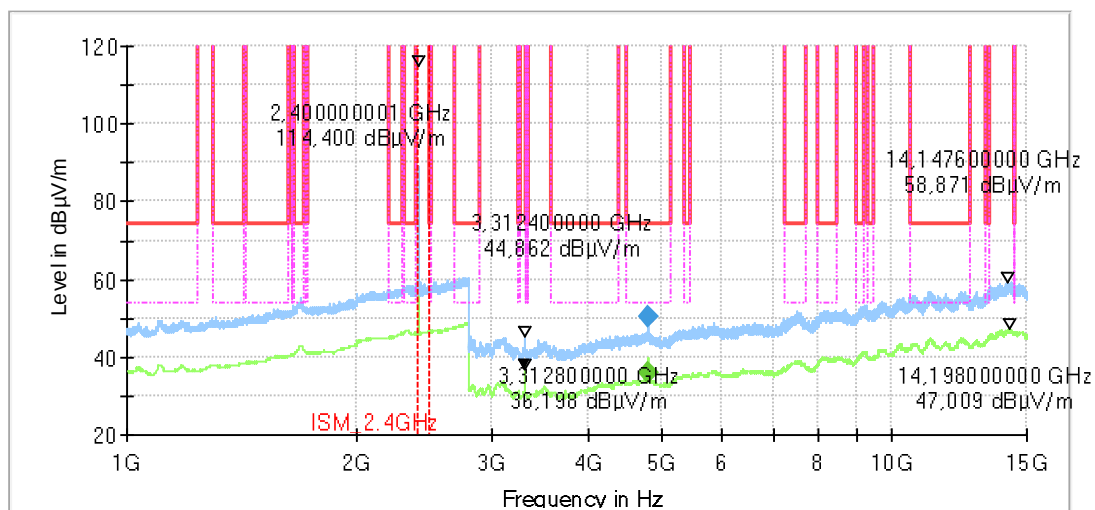
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	BLE Channel low
Operator:	PMA
Comment:	Channel no. low
Environmental Conditions:	Humidity : 61%rH; Temperature: 21°C
Verdict:	Passed

EUT Information

PMT number:	19-1-01300S06_C03
Manufacturer:	x-log Elektronik GmbH

Full Spectrum



Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average* (dBµV/m)	Limit (dBµV/m)	Margin	Meas. Time (ms)	Bandwidth h	Height	Pol	Azimuth h	Elevation n
4803.600000	50.19	---	74.00	23.81	100.0	1000.000	155.0	V	276.0	0.0
4804.400000	---	48.43	54.00	18.15	100.0	1000.000	155.0	H	90.0	90.0

* Duty Cycle correction applied acc. KDB 558074 v05r02

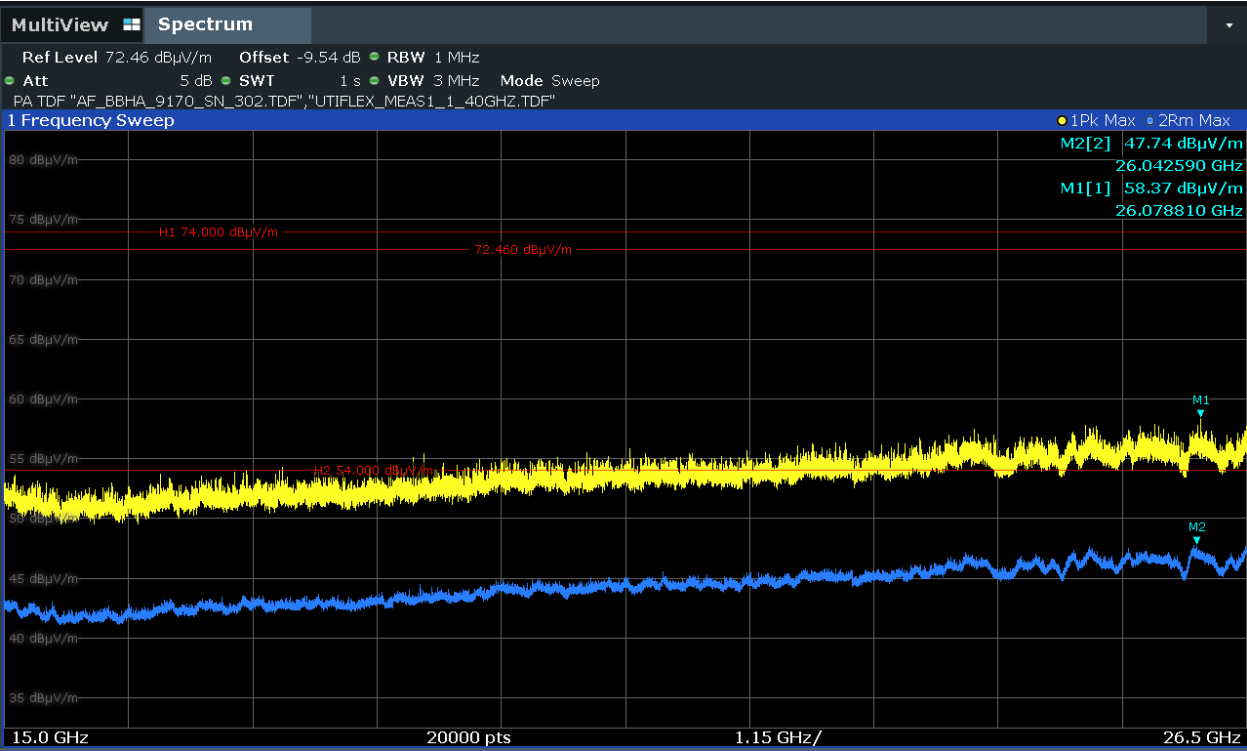
4.01b_BLE_low

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	BLE Channel Low
Set-up no.	1
Operator:	npe
Comment:	Ch01 = 2402 MHz
Comment2:	
Environmental Conditions:	Humidity : 40%rH; Temperature: 20°C
Verdict:	Passed

EUT Information

PMT number:	19-1-01300S06_C03
Manufacturer:	x-log Elektronik GmbH



4.02a_BLE_mid

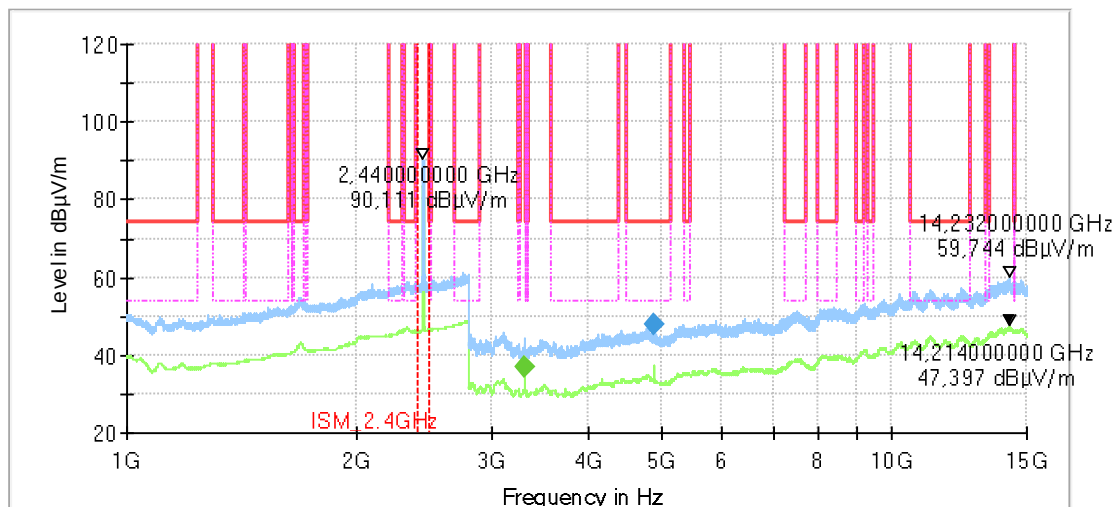
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	BLE Channel Mid
Set-up no.	1
Operator:	npe
Comment:	ch19 = 2440 MHz
Comment2:	
Environmental Conditions:	Humidity : 40%rH; Temperature: 20°C
Verdict:	Passed

EUT Information

PMT number:	19-1-01300S06_C03
Manufacturer:	x-log Elektronik GmbH

Full Spectrum



Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin	Meas. Time (ms)	Bandwidth (h)	Height	Pol	Azimuth	Elevation
3312.400000	---	36.74	150.00	113.26	100.0	1000.000	155.0	V	91.0	90.0
4879.600000	47.69	---	74.00	26.31	100.0	1000.000	155.0	H	132.0	90.0

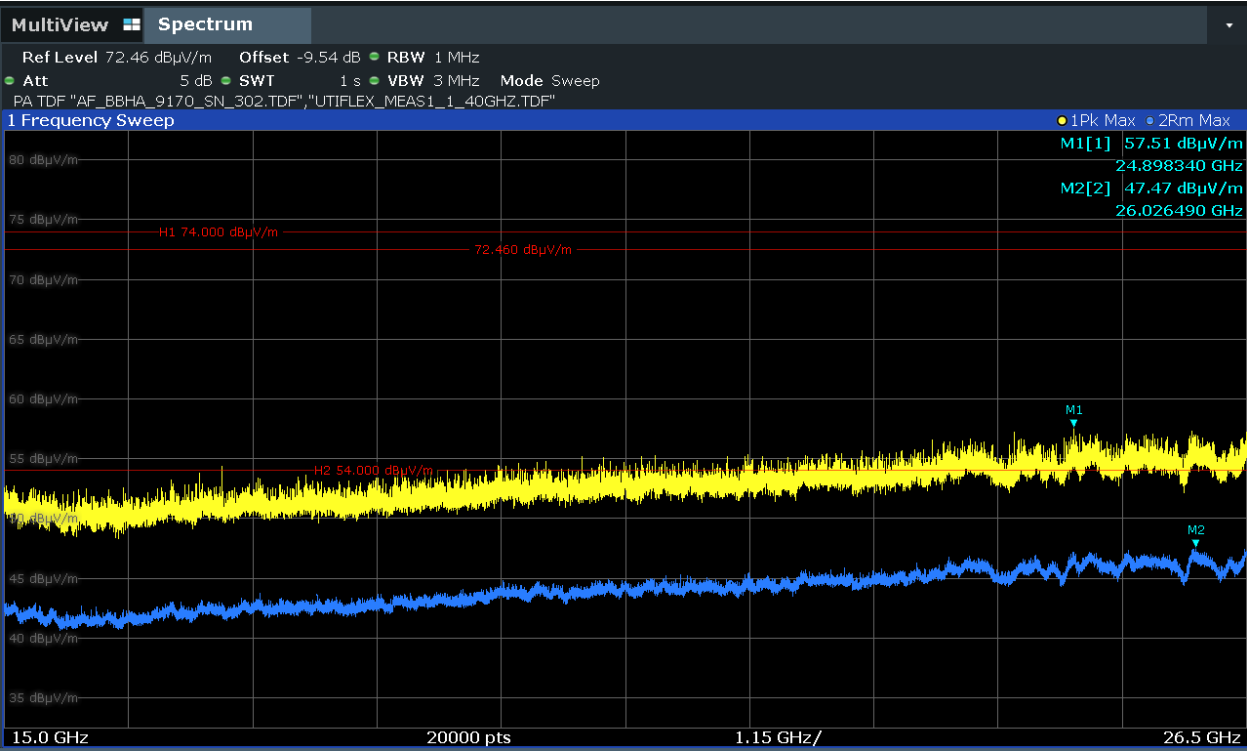
4.02b_BLE_mid

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	BLE Channel Mid
Set-up no.	1
Operator:	npe
Comment:	ch19 = 2440 MHz
Comment2:	
Environmental Conditions:	Humidity : 40%rH; Temperature: 20°C
Verdict:	Passed

EUT Information

PMT number:	19-1-01300S06_C03
Manufacturer:	x-log Elektronik GmbH



4.03a_BLE_high

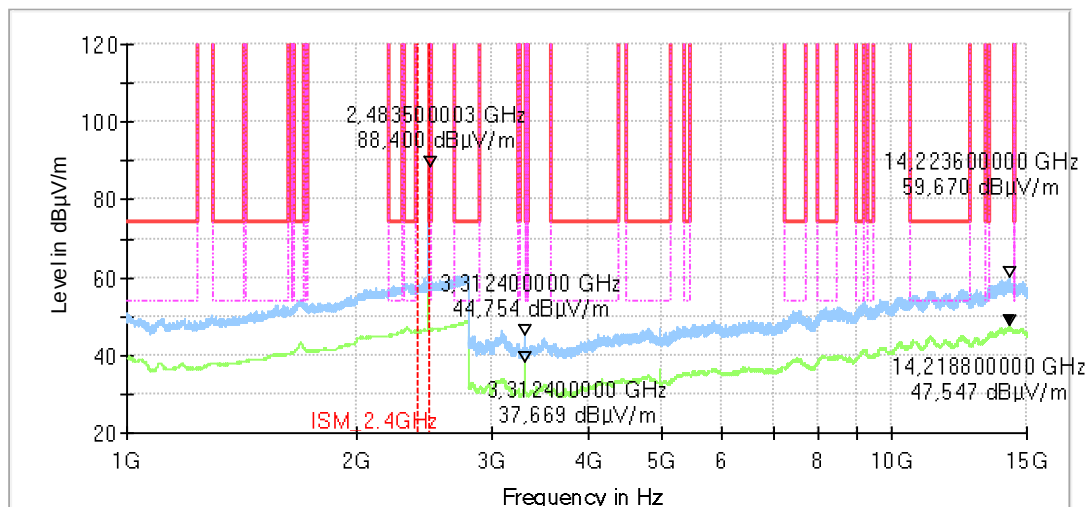
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	BLE Channel High
Set-up no.	1
Operator:	npe
Comment:	ch39 = 2480 MHz
Comment2:	
Environmental Conditions:	Humidity : 40%rH; Temperature: 20°C
Verdict:	Passed

EUT Information

PMT number:	19-1-01300S06_C03
Manufacturer:	x-log Elektronik GmbH

Full Spectrum



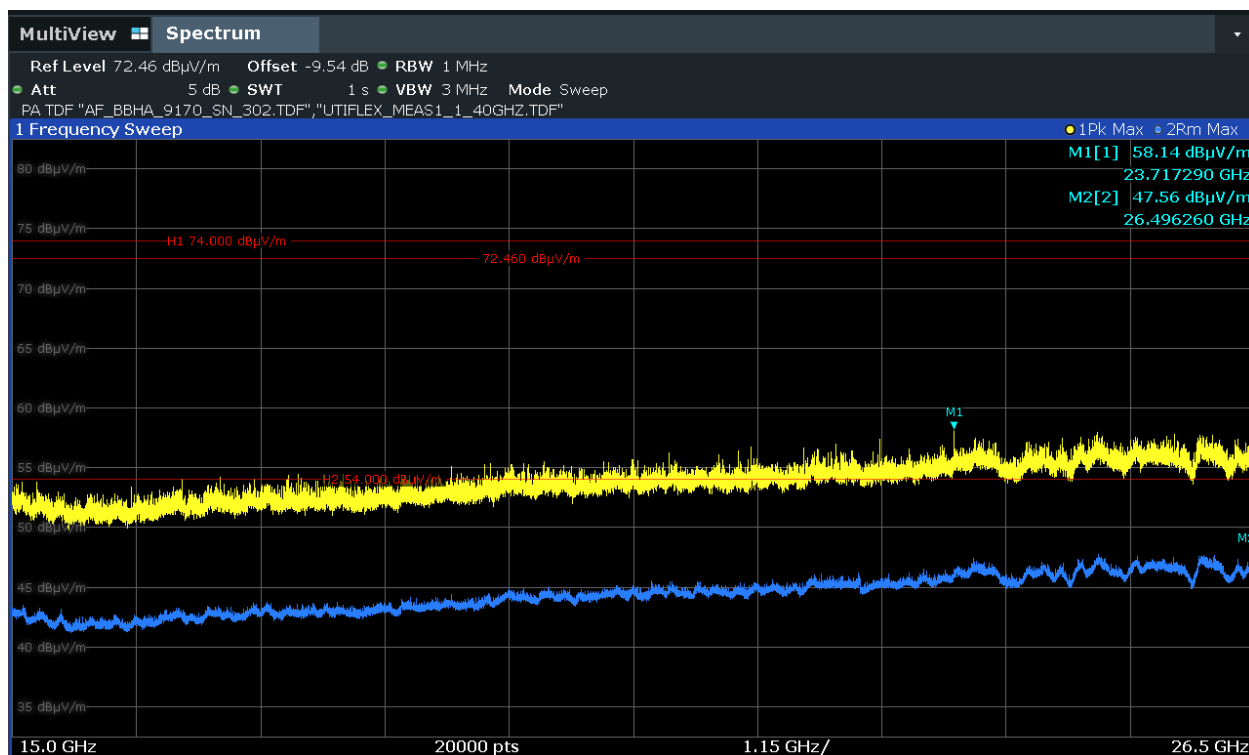
4.03b_BLE_high

Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	BLE Channel High
Set-up no.	1
Operator:	npe
Comment:	ch39 = 2480 MHz
Comment2:	
Environmental Conditions:	Humidity : 40%rH; Temperature: 20°C
Verdict:	Passed

EUT Information

PMT number:	19-1-01300S06_C03
Manufacturer:	x-log Elektronik GmbH



9.01_BE_BLE_low

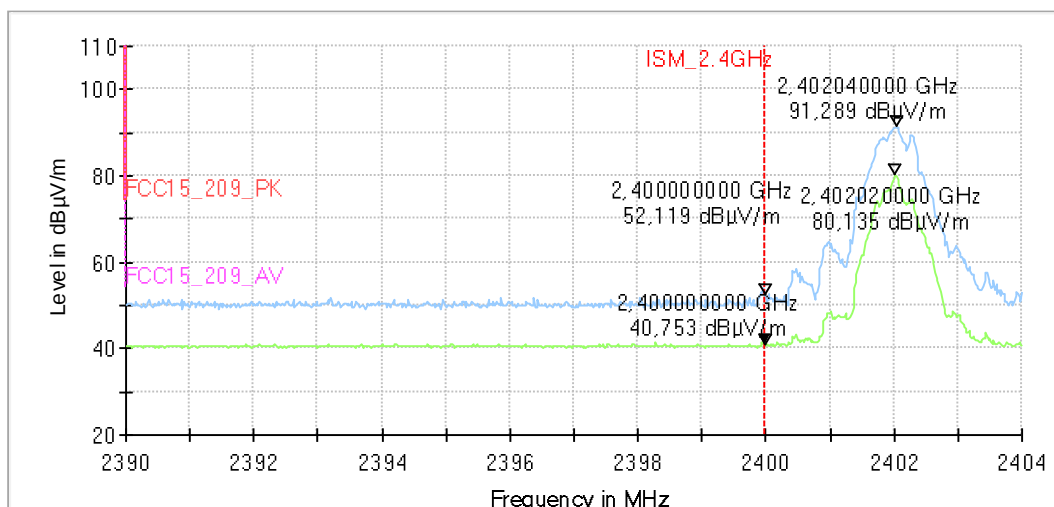
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	BLE Channel low
Operator:	PMa
Comment:	Channel no. low
Comment2:	
EUT Setup:	1

EUT Information

PMT number:	19-1-01300S06_C03
Manufacturer:	x-log Elektronik GmbH

Full Spectrum



9.02_BE_BLE_high

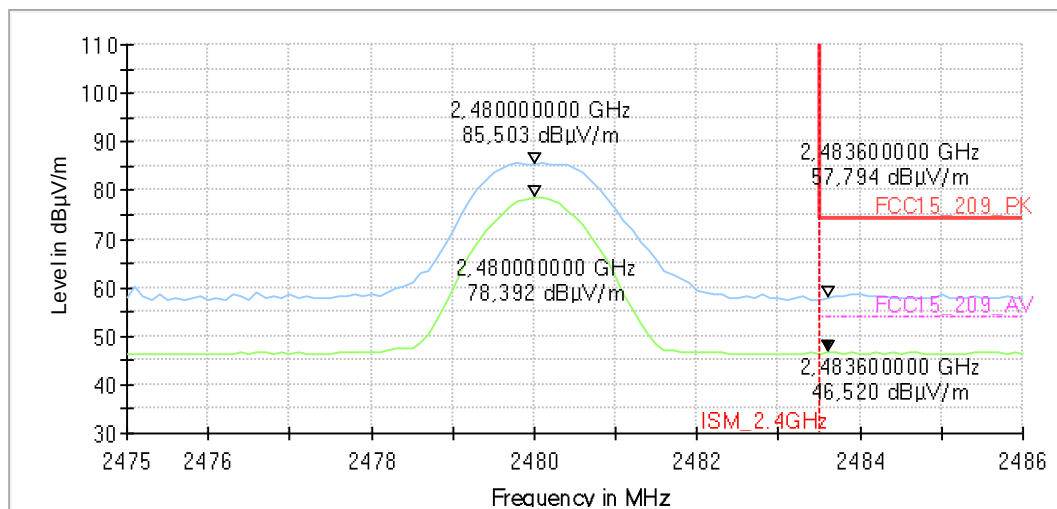
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions Emissions in 3m distance
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical
Operating Mode:	BLE Channel High
Operator:	npe
Comment:	Channel high = 2480 MHz
Comment2:	
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	19-1-01300S06_C03
Manufacturer:	x-log Elektronik GmbH

Full Spectrum



9.03_Reference_no_carrier

Common Information

Test Description:

Test Site:

Test Standard:

Antenna polarisation:

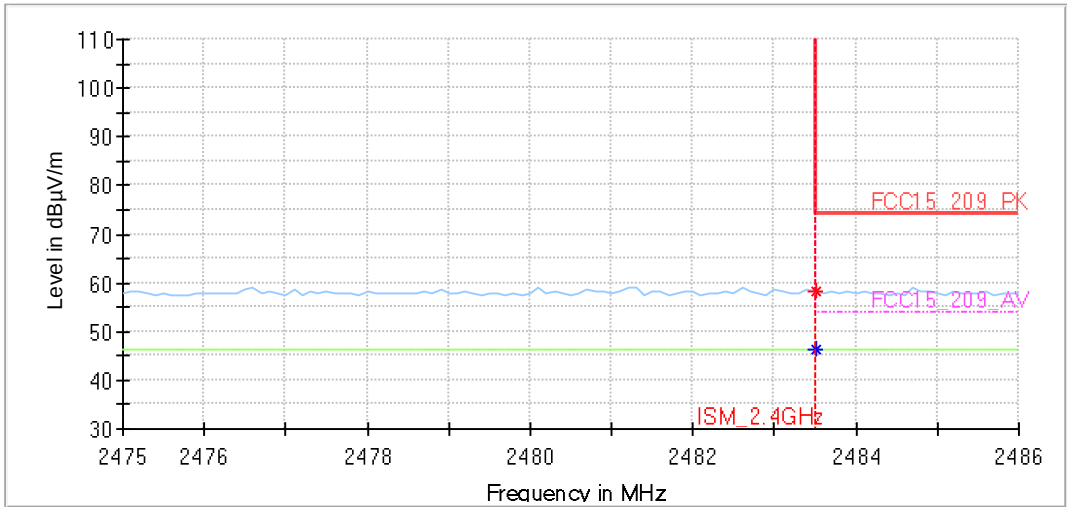
Band-Edge: Radiated Field Strength Emissions in 3m distance

Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0

FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5

horizontal/vertical

Full Spectrum



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	RMS (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
2483.500000	---	46.40	54.00	7.60	---	---	155.0	V	203.0	90.0
2483.500000	58.21	---	74.00	15.79	---	---	155.0	V	28.0	0.0

1.3 Conducted measurements

Duty Cycle

Mode	DUT Frequency (MHz)	DutyCycle (%)	Result
BLE(1Mbps); 2402MHz	2402.000000	23.490	PASS
BLE(1Mbps); 2440MHz	2440.000000	23.506	PASS
BLE(1Mbps); 2480MHz	2480.000000	23.522	PASS

Peak output power (Sweep)

Mode	DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
BLE(1Mbps); 2402MHz	2402.000000	-5.1	30.0	PASS
BLE(1Mbps); 2440MHz	2440.000000	-5.6	30.0	PASS
BLE(1Mbps); 2480MHz	2480.000000	-7.4	30.0	PASS

Minimum Emission Bandwidth 6 dB

Mode	DUT Frequency	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left	Band Edge Right
BLE(1Mbps); 2402MHz	2402.0000	0.712872	0.500000	---	2401.6831	2402.3960
BLE(1Mbps); 2440MHz	2440.0000	0.712872	0.500000	---	2439.6831	2440.3960
BLE(1Mbps); 2480MHz	2480.0000	0.732674	0.500000	---	2479.6831	2480.4158

Peak Power Spectral Density

Mode	DUT Frequency	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
BLE(1Mbps); 2402MHz	2402.000000	2402.032500	-10.229	8.0	PASS
BLE(1Mbps); 2440MHz	2440.000000	2440.032500	-10.851	8.0	PASS
BLE(1Mbps); 2480MHz	2480.000000	2480.042500	-12.275	8.0	PASS

Occupied Channel Bandwidth 99%

Mode	DUT Frequency	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left	Band Edge Right
BLE(1Mbps); 2402MHz	2402.0000	1.005000	---	---	2401.5425	2402.5475
BLE(1Mbps); 2440MHz	2440.0000	0.985000	---	---	2439.5575	2440.5425
BLE(1Mbps); 2480MHz	2480.0000	0.950000	---	---	2479.5825	2480.5325

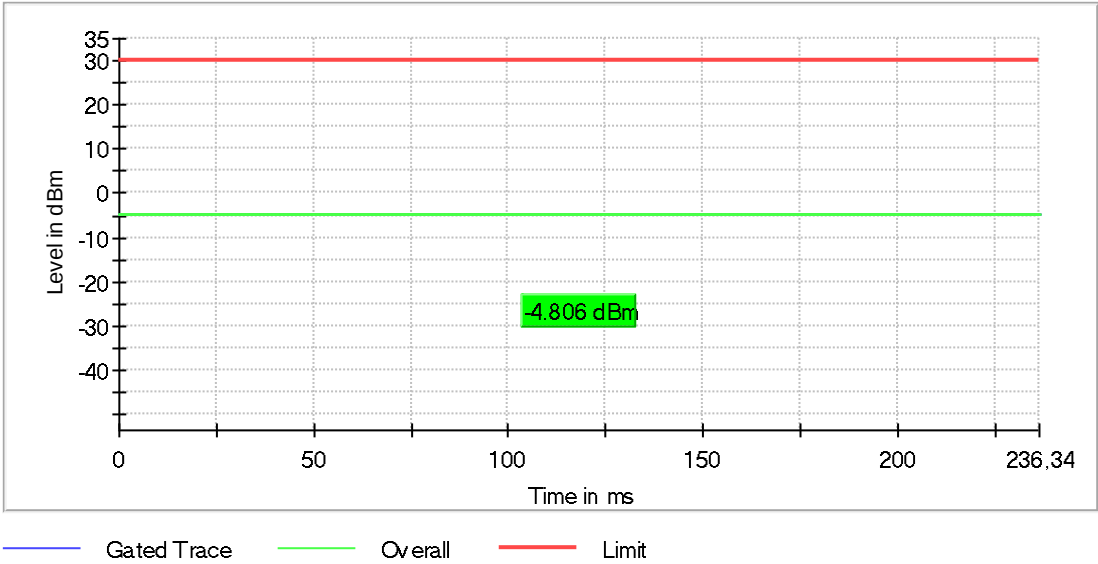
Tx Spurious Emission

Mode	DUT Frequency (MHz)	Result
BT-LE (1Mbps); 2402MHz	2402.000000	PASS
BT-LE (1Mbps); 2440MHz	2440.000000	PASS
BT-LE (1Mbps); 2480MHz	2480.000000	PASS

Duty Cycle (2402 MHz; BLE(1Mbps) (1 dBm); 1 MHz)

Result

DUT Frequency (MHz)	DutyCycle (%)	Result
2402.000000	23.490	PASS



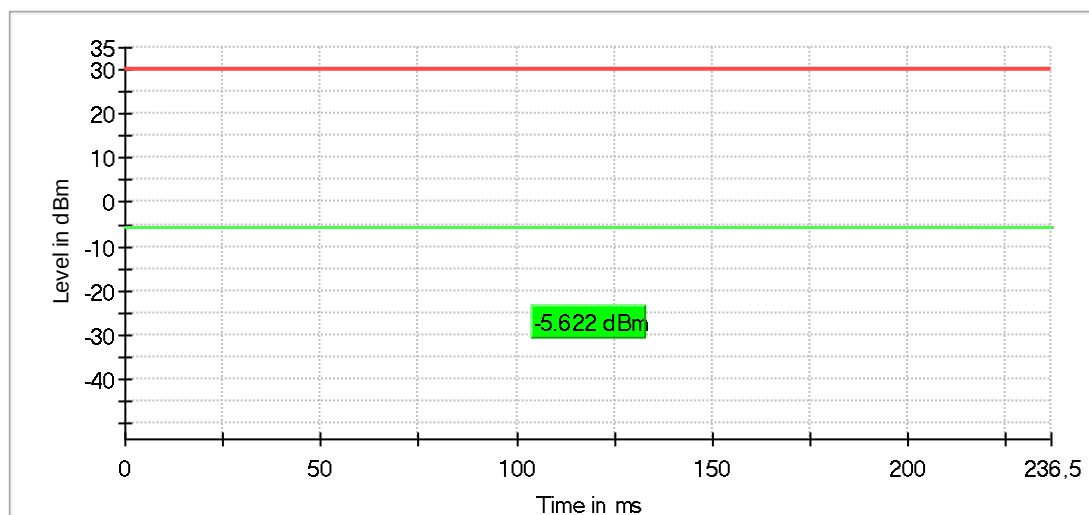
OSP PowerMeter settings

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 μ s	1.000 μ s

Duty Cycle (2440 MHz; BLE(1Mbps) (1 dBm); 1 MHz)

Result

DUT Frequency (MHz)	DutyCycle (%)	Result
2440.000000	23.506	PASS



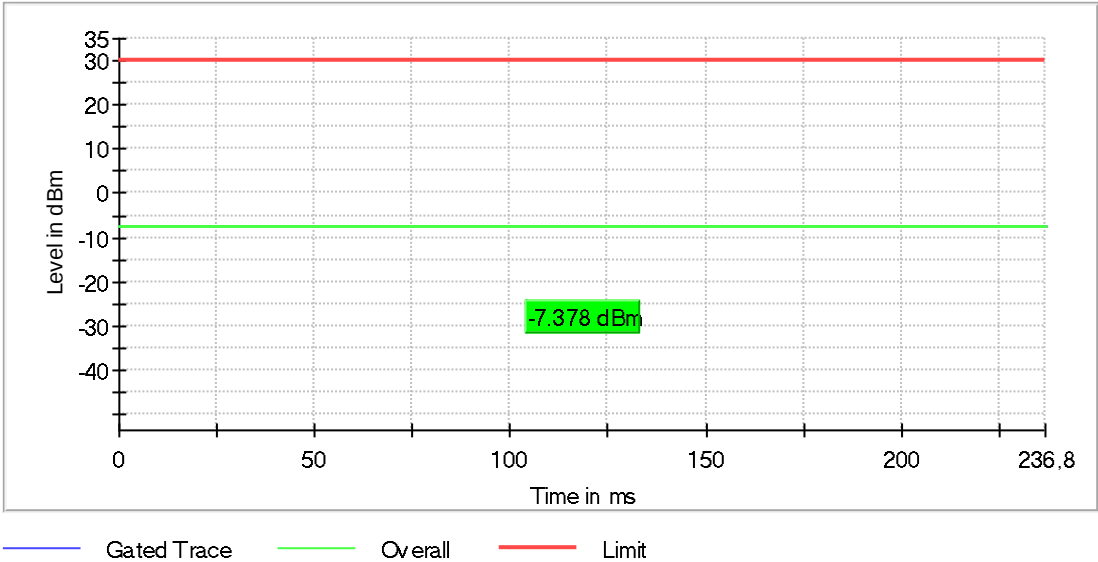
OSP PowerMeter settings

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 μ s	1.000 μ s

Duty Cycle (2480 MHz; BLE(1Mbps) (1 dBm); 1 MHz)

Result

DUT Frequency (MHz)	DutyCycle (%)	Result
2480.000000	23.522	PASS



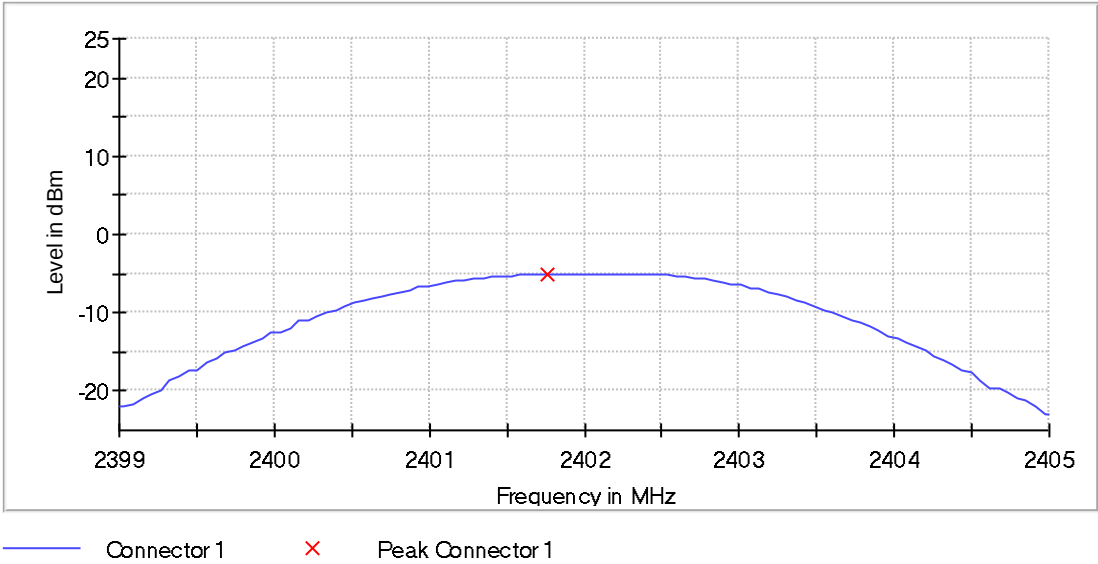
OSP PowerMeter settings

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 μ s	1.000 μ s

Peak output power (Sweep) (2402 MHz; BLE(1Mbps) (1 dBm); 1 MHz)

Result

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2402.000000	-5.1	30.0	PASS



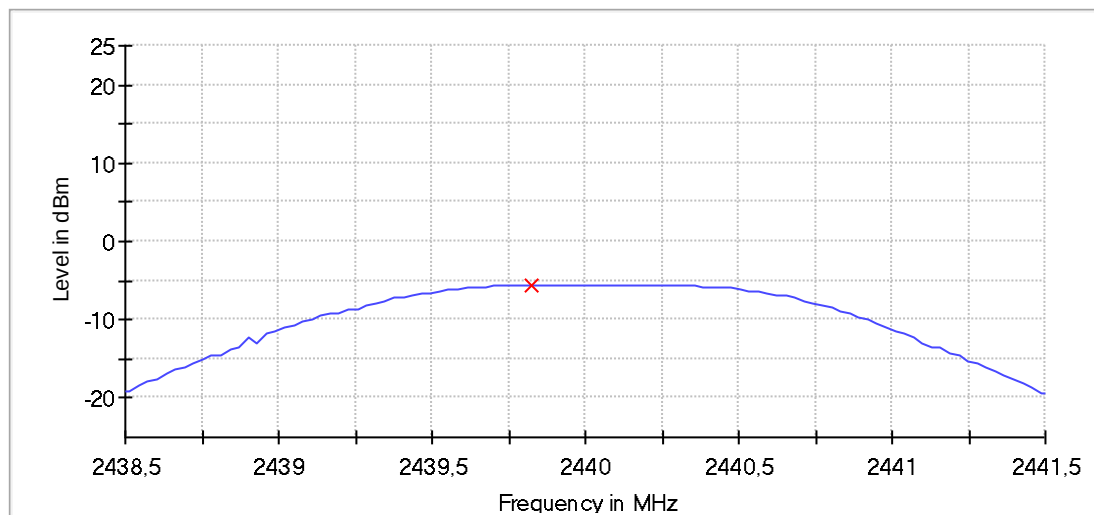
Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.39900 GHz	2.39900 GHz
Stop Frequency	2.40500 GHz	2.40500 GHz
Span	6.000 MHz	6.000 MHz
RBW	2.000 MHz	>= 1.000 MHz
VBW	10.000 MHz	>= 6.000 MHz
SweepPoints	101	~ 101
SweepTime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.21 dB	0.50 dB

Peak output power (Sweep) (2440 MHz; BLE(1Mbps) (1 dBm); 1 MHz)

Result

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2440.000000	-5.6	30.0	PASS



— Connector 1 × Peak Connector 1

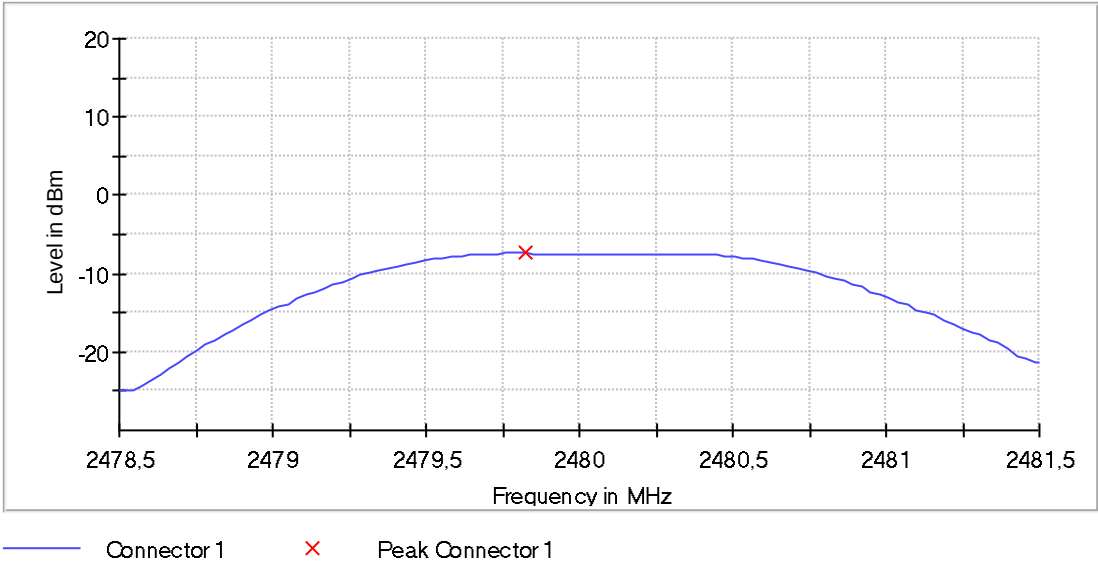
Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.43850 GHz	2.43850 GHz
Stop Frequency	2.44150 GHz	2.44150 GHz
Span	3.000 MHz	3.000 MHz
RBW	1.000 MHz	>= 712.873 kHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	101	~ 101
SweepTime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	5 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Peak output power (Sweep) (2480 MHz; BLE(1Mbps) (1 dBm); 1 MHz)

Result

DUT Frequency (MHz)	Peak Power (dBm)	Limit Max (dBm)	Result
2480.000000	-7.4	30.0	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47850 GHz	2.47850 GHz
Stop Frequency	2.48150 GHz	2.48150 GHz
Span	3.000 MHz	3.000 MHz
RBW	1.000 MHz	>= 712.873 kHz
VBW	3.000 MHz	>= 3.000 MHz
SweepPoints	101	~ 101
SweepTime	1.000 ms	AUTO
Reference Level	10.000 dBm	10.000 dBm
Attenuation	20.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.07 dB	0.50 dB

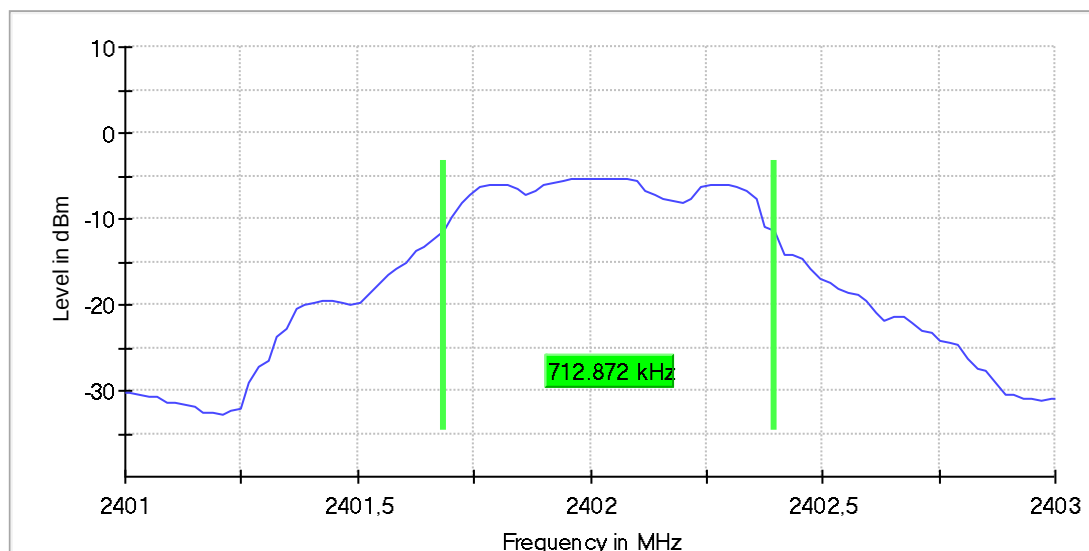
Minimum Emission Bandwidth 6 dB (2402 MHz; BLE(1Mbps) (1 dBm); 1 MHz)

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	0.712872	0.500000	---	2401.683168	2402.396040

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2402.000000	-5.3	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 40
SweepTime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	9 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.10 dB	0.50 dB

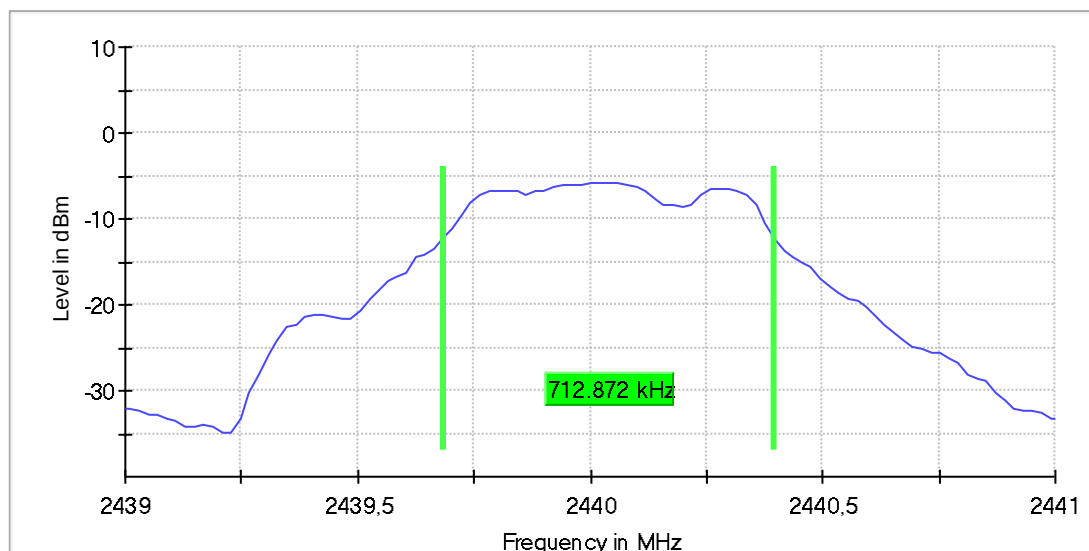
Minimum Emission Bandwidth 6 dB (2440 MHz; BLE(1Mbps) (1 dBm); 1 MHz)

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2440.000000	0.712872	0.500000	---	2439.683168	2440.396040

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2440.000000	-5.9	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.43900 GHz	2.43900 GHz
Stop Frequency	2.44100 GHz	2.44100 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 40
SweepTime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	14 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.09 dB	0.50 dB

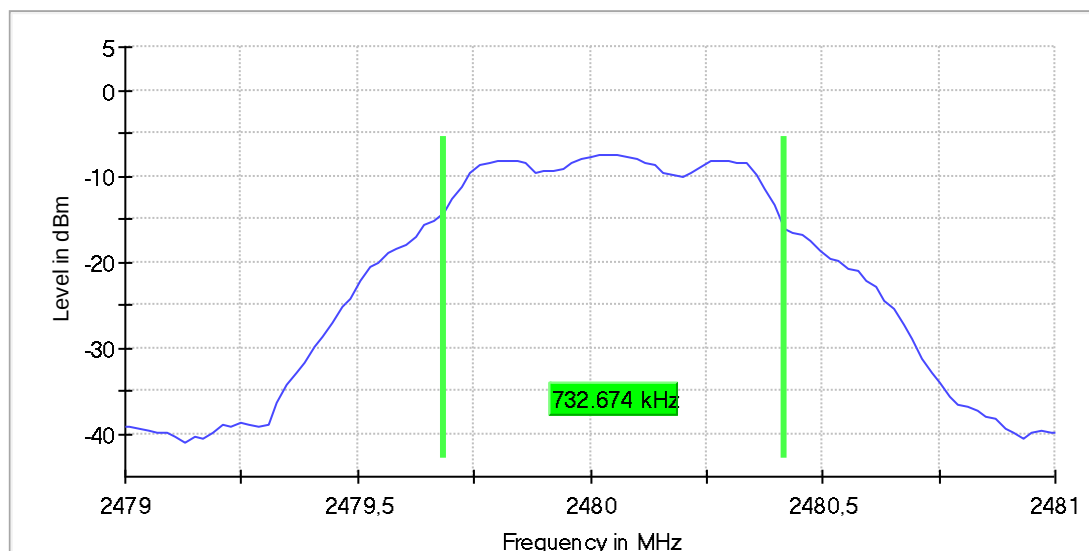
Minimum Emission Bandwidth 6 dB (2480 MHz; BLE(1Mbps) (1 dBm); 1 MHz)

6 dB Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	0.732674	0.500000	---	2479.683168	2480.415842

(continuation of the "6 dB Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Max Level (dBm)	Result
2480.000000	-7.6	PASS



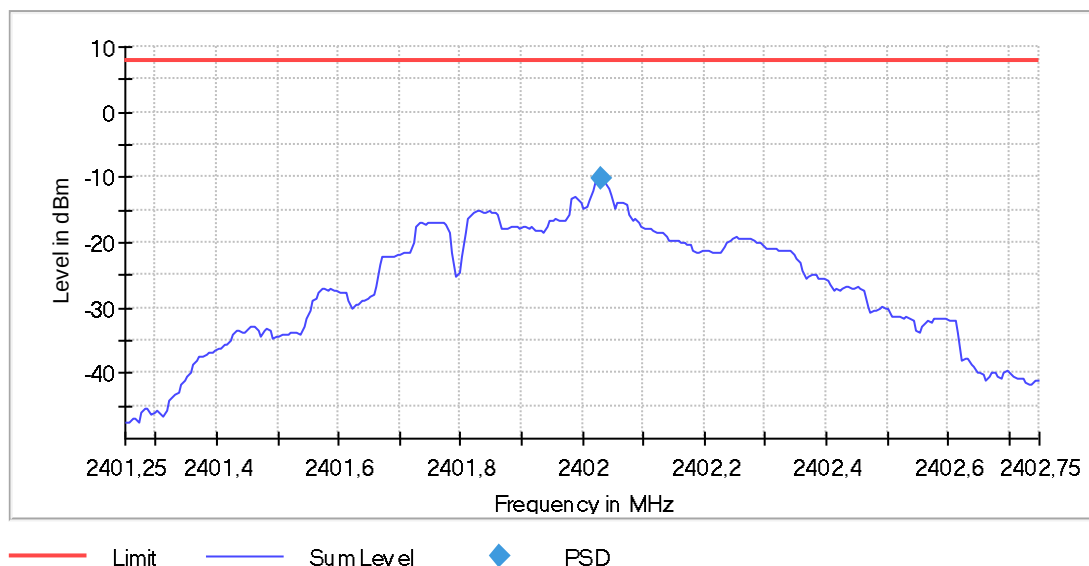
Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	100.000 kHz	~ 100.000 kHz
VBW	300.000 kHz	~ 300.000 kHz
SweepPoints	101	~ 40
SweepTime	1.000 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	15 / max. 150	max. 150
Stable	5 / 5	5
Max Stable Difference	0.12 dB	0.50 dB

Peak Power Spectral Density (2402 MHz; BLE(1Mbps) (1 dBm); 1 MHz)

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2402.000000	2402.032500	-10.229	8.0	PASS



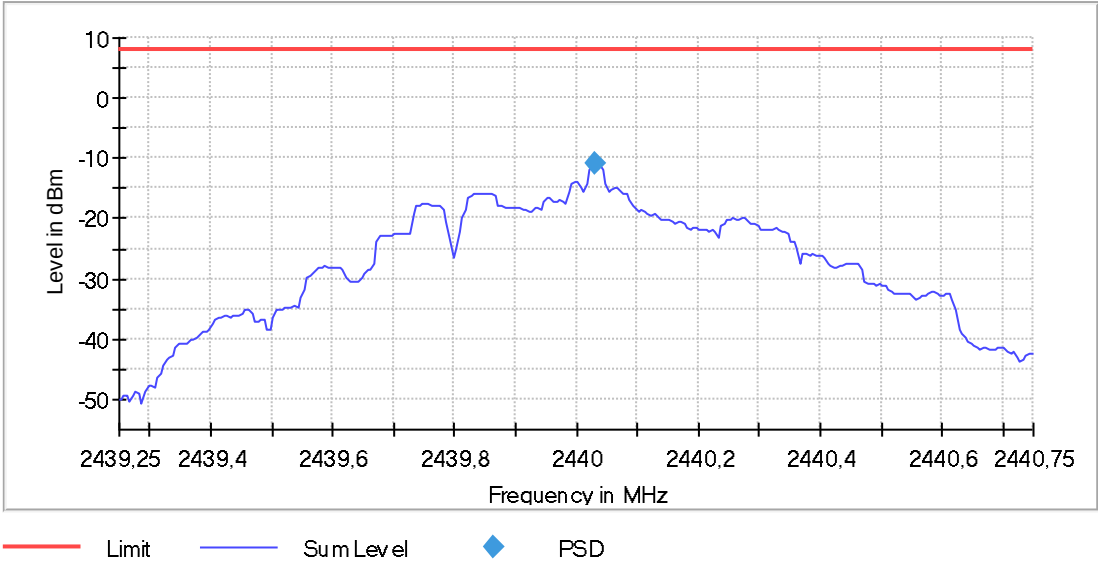
Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40125 GHz	2.40125 GHz
Stop Frequency	2.40275 GHz	2.40275 GHz
Span	1.500 MHz	1.500 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	300	~ 300
Sweeptime	1.500 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	16 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.04 dB	0.50 dB

Peak Power Spectral Density (2440 MHz; BLE(1Mbps) (1 dBm); 1 MHz)

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2440.000000	2440.032500	-10.851	8.0	PASS



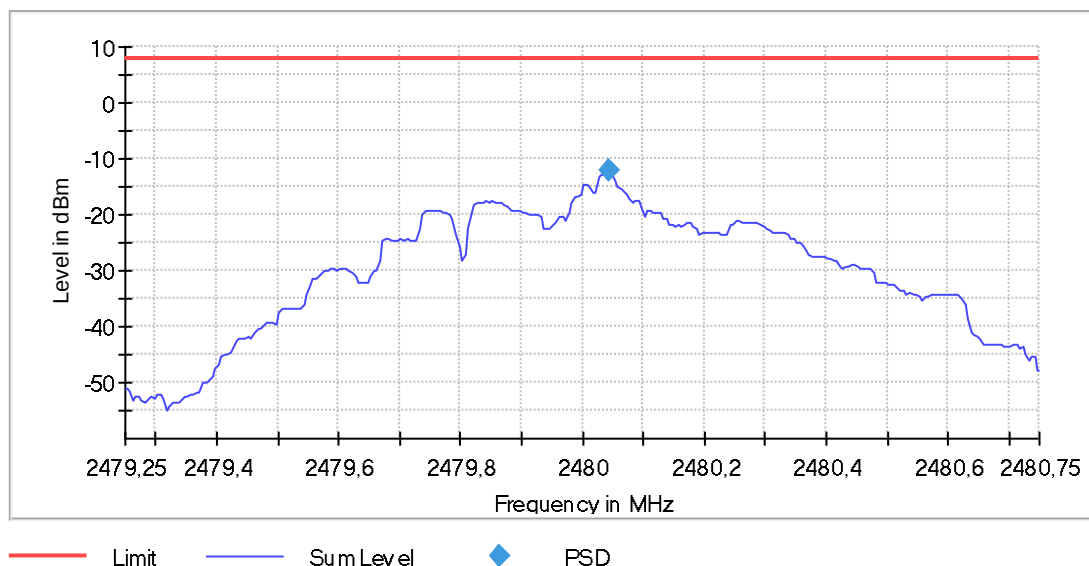
Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.43925 GHz	2.43925 GHz
Stop Frequency	2.44075 GHz	2.44075 GHz
Span	1.500 MHz	1.500 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	300	~ 300
SweepTime	1.500 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	13 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.00 dB	0.50 dB

Peak Power Spectral Density (2480 MHz; BLE(1Mbps) (1 dBm); 1 MHz)

Result

DUT Frequency (MHz)	Frequency (MHz)	PSD (dBm)	Limit Max (dBm)	Result
2480.000000	2480.042500	-12.275	8.0	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47925 GHz	2.47925 GHz
Stop Frequency	2.48075 GHz	2.48075 GHz
Span	1.500 MHz	1.500 MHz
RBW	10.000 kHz	<= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	300	~ 300
Sweptime	1.500 ms	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	Sweep
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	17 / max. 150	max. 150
Stable	2 / 2	2
Max Stable Difference	0.14 dB	0.50 dB

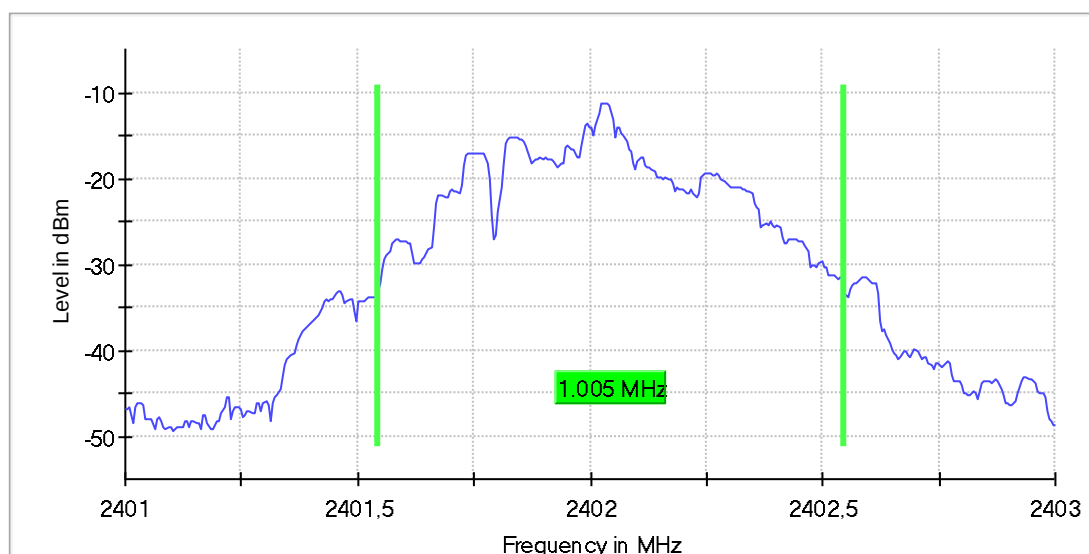
Occupied Channel Bandwidth 99% (2402 MHz; BLE(1Mbps) (1 dBm); 1 MHz)

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2402.000000	1.005000	---	---	2401.542500	2402.547500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2402.000000	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.40100 GHz	2.40100 GHz
Stop Frequency	2.40300 GHz	2.40300 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
SweepTime	419.000 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	19 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.25 dB	0.30 dB

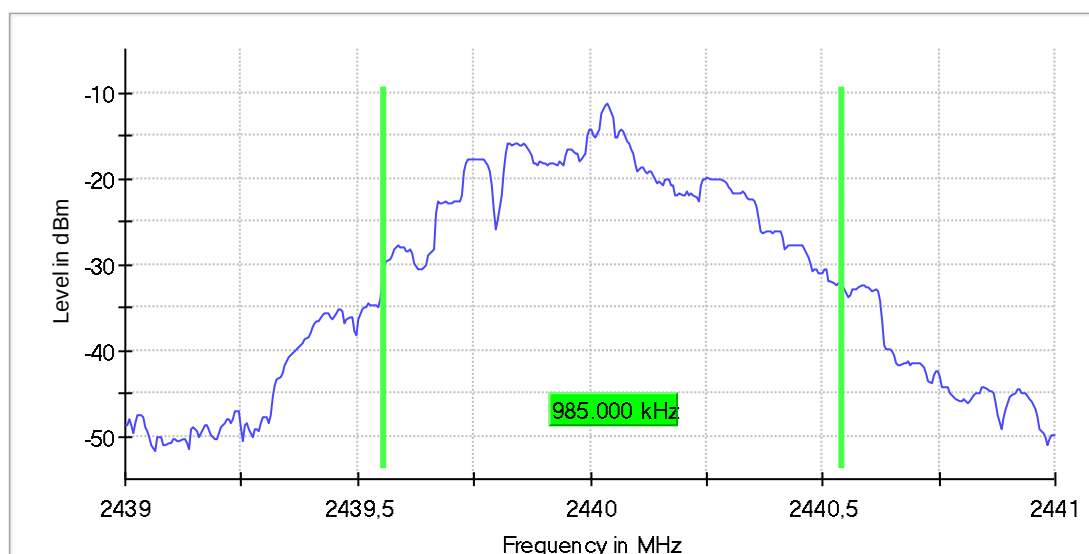
Occupied Channel Bandwidth 99% (2440 MHz; BLE(1Mbps) (1 dBm); 1 MHz)

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2440.000000	0.985000	---	---	2439.557500	2440.542500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2440.000000	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.43900 GHz	2.43900 GHz
Stop Frequency	2.44100 GHz	2.44100 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
SweepTime	419.000 μ s	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	17 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.29 dB	0.30 dB

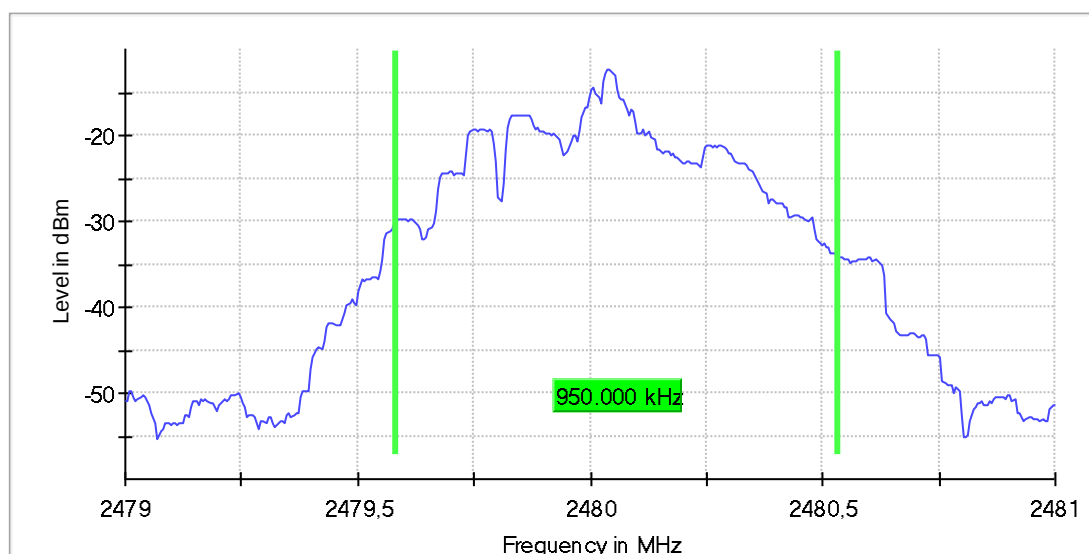
Occupied Channel Bandwidth 99% (2480 MHz; BLE(1Mbps) (1 dBm); 1 MHz)

99 % Bandwidth

DUT Frequency (MHz)	Bandwidth (MHz)	Limit Min (MHz)	Limit Max (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
2480.000000	0.950000	---	---	2479.582500	2480.532500

(continuation of the "99 % Bandwidth" table from column 6 ...)

DUT Frequency (MHz)	Result
2480.000000	PASS



Measurement

Setting	Instrument Value	Target Value
Start Frequency	2.47900 GHz	2.47900 GHz
Stop Frequency	2.48100 GHz	2.48100 GHz
Span	2.000 MHz	2.000 MHz
RBW	10.000 kHz	>= 10.000 kHz
VBW	30.000 kHz	>= 30.000 kHz
SweepPoints	400	~ 400
SweepTime	419.000 µs	AUTO
Reference Level	-10.000 dBm	-10.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	FFT	AUTO
Preamplifier	off	off
Stablemode	Trace	Trace
Stablevalue	0.30 dB	0.30 dB
Run	29 / max. 150	max. 150
Stable	3 / 3	3
Max Stable Difference	0.20 dB	0.30 dB

Tx Spurious Emission (2402 MHz; BT-LE (1Mbps) (1 dBm); 1 MHz)

Result

DUT Frequency (MHz)	Result
2402.000000	PASS

Final measurements

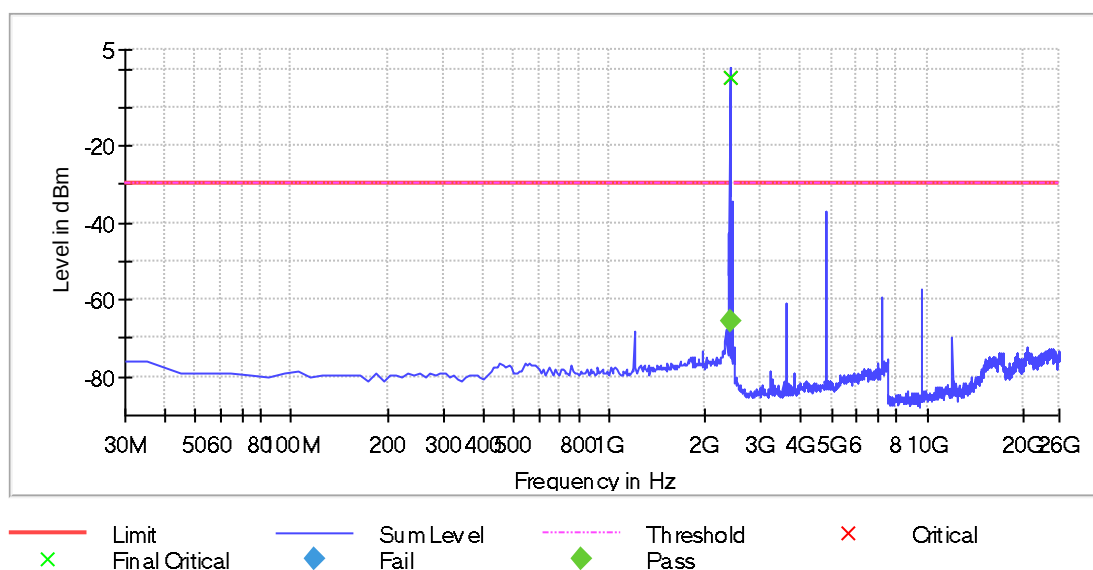
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
2399.410035	-2.1	-65.8	-29.7	36.1	PASS

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
2395.021008	-2.1	-27.7	-29.7
4807.166065	-36.9	7.2	-29.7
2375.105042	-42.6	12.8	-29.7
2385.063025	-53.6	23.9	-29.7
9604.412133	-57.4	27.6	-29.7
7205.789099	-59.6	29.9	-29.7
3607.854547	-61.1	31.3	-29.7
3597.860285	-64.0	34.2	-29.7
2325.315126	-67.6	37.8	-29.7
1200.063025	-68.3	38.6	-29.7
4797.171802	-68.7	39.0	-29.7
12013.029431	-69.7	39.9	-29.7
2315.357143	-70.6	40.8	-29.7
2335.273109	-71.0	41.2	-29.7
2345.231092	-71.5	41.8	-29.7

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	2400.000000	1	1
2400.000000	2483.500000	1	1
2483.500000	26000.000000	1	1



Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	238	~ 238
SweepTime	23.700 ms	AUTO
Reference Level	-20.000 dBm	-30.000 dBm
Attenuation	10.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	4 / max. 40	max. 40
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

Final Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	401	~ 401
SweepTime	1.000 ms	AUTO
Reference Level	0.000 dBm	0.000 dBm
Attenuation	10.000 dB	AUTO
Detector	Sample	Sample
SweepCount	100	100
Filter	3 dB	3 dB
Trace Mode	Average Linear	Average Linear
SweepType	Sweep	AUTO
Preamp	off	off

Tx Spurious Emission (2440 MHz; BT-LE (1Mbps) (1 dBm); 1 MHz)

Result

DUT Frequency (MHz)	Result
2440.000000	PASS

Final measurements

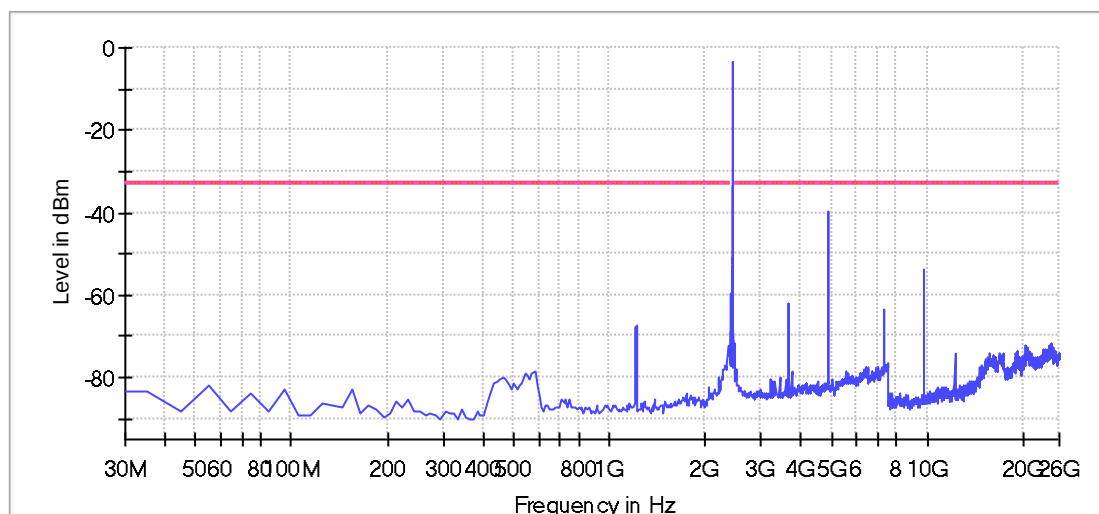
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
---	---	---	---	---	---

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
4877.125903	-40.0	6.8	-33.2
9754.326073	-53.7	20.5	-33.2
9764.320336	-54.5	21.3	-33.2
3657.825861	-62.1	28.9	-33.2
7315.725988	-63.6	30.5	-33.2
1219.978992	-67.3	34.1	-33.2
1210.021008	-67.7	34.5	-33.2
9774.314598	-70.9	37.7	-33.2
24605.800361	-71.9	38.7	-33.2
24086.098704	-72.2	39.0	-33.2
2355.189076	-72.2	39.0	-33.2
24515.851997	-72.2	39.1	-33.2
20458.181364	-72.4	39.2	-33.2
24415.909371	-72.4	39.2	-33.2
24835.668402	-72.7	39.6	-33.2

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	2400.000000	1	1
2400.000000	2483.500000	1	1
2483.500000	26000.000000	1	1



— Limit — Sum Level Threshold × Critical × Final Critical

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	238	~ 238
SweepTime	23.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	6 / max. 40	max. 40
Stable	3 / 3	3
Max Stable Difference	0.17 dB	0.50 dB

Tx Spurious Emission (2480 MHz; BT-LE (1Mbps) (1 dBm); 1 MHz)

Result

DUT Frequency (MHz)	Result
2480.000000	PASS

Final measurements

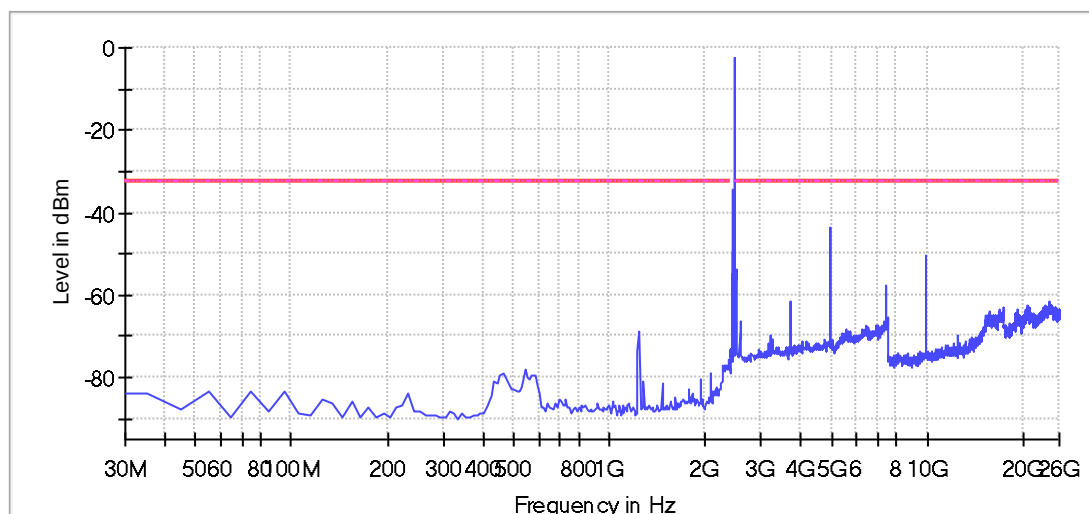
Frequency (MHz)	Level Pre Measurement (dBm)	level (dBm)	Limit (dBm)	Margin (dB)	Result
---	---	---	---	---	---

Pre Measurements

Frequency (MHz)	Level (dBm)	Margin (dB)	Limit (dBm)
4957.080004	-43.5	11.1	-32.4
9924.228538	-50.2	17.9	-32.4
9914.234275	-51.5	19.1	-32.4
2508.485657	-53.9	21.6	-32.4
2498.491394	-55.7	23.3	-32.4
7435.657140	-57.8	25.4	-32.4
2488.497131	-57.8	25.4	-32.4
7445.651402	-60.6	28.2	-32.4
24166.052805	-61.4	29.1	-32.4
3717.791436	-61.5	29.1	-32.4
23526.419996	-62.3	30.0	-32.4
24096.092966	-62.6	30.3	-32.4
24615.794624	-62.7	30.3	-32.4
24495.863472	-62.7	30.3	-32.4
20548.129728	-62.7	30.3	-32.4

Measurement Settings

Start Frequency (MHz)	Stop Frequency (MHz)	Pre Measurement	Final Measurement
30.000000	2400.000000	1	1
2400.000000	2483.500000	1	1
2483.500000	26000.000000	1	1



— Limit
 — Sum Level
 - - - Threshold
 × Critical
 × Final Critical

Pre Measurement 1

Setting	Instrument Value	Target Value
RBW	100.000 kHz	<= 100.000 kHz
VBW	300.000 kHz	>= 300.000 kHz
SweepPoints	238	~ 238
SweepTime	23.700 ms	AUTO
Reference Level	-30.000 dBm	-30.000 dBm
Attenuation	0.000 dB	AUTO
Detector	MaxPeak	MaxPeak
SweepCount	3	3
Filter	3 dB	3 dB
Trace Mode	Max Hold	Max Hold
SweepType	Sweep	AUTO
Preamp	off	off
Stablemode	Trace	Trace
Stablevalue	0.50 dB	0.50 dB
Run	5 / max. 40	max. 40
Stable	3 / 3	3
Max Stable Difference	0.00 dB	0.50 dB

End Of Annex 1