

## TEST REPORT

Test report no.: 1-5753/12-01-16-A



Deutsche  
Akkreditierungsstelle  
D-PL-12076-01-00

### Testing laboratory

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#### Accredited Testing Laboratory:

The testing laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025 (2005) by the Deutsche Akkreditierungsstelle GmbH (DAkkS). The accreditation is valid for the scope of testing procedures as stated in the accreditation certificate with the registration number: D-PL-12076-01-01  
Area of Testing:  
Radio Communications & EMC (RCE)

### Applicant

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### Manufacturer

**Sennheiser electronic GmbH & Co. KG**  
Am Labor 1  
30900 Wedemark / GERMANY

### Test standard/s

47 CFR Part 15 Title 47 of the Code of Federal Regulations; Chapter I; Part 15 - Radio frequency devices  
RSS - 210 Issue 8 Spectrum Management and Telecommunications Radio Standards Specification - Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment  
For further applied test standards please refer to section 3 of this test report.

### Test Item

**Kind of test item:** Wireless Microphone Bodypack  
**Model name:** SK D1  
**FCC ID:** DMOSK2G4WE  
**IC:** 2099A-SK2G4WE  
**Frequency:** DTS band 2400 MHz to 2483.5 MHz  
**Technology tested:** Proprietary digital audio transmission  
**Antenna:** Integrated PCB antennas  
**Power supply:** 3.0 V DC by Li - Ion or 2x AA batteries  
**Temperature range:** -10°C to +55°C



This test report is electronically signed and valid without handwriting signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

### Test report authorised:

Stefan Bös  
Radio Communications & EMC

### Test performed:

Andreas Luckenbill  
Radio Communications & EMC

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## 2 General information

### 2.1 Notes and disclaimer

The test results of this test report relate exclusively to the test item specified in this test report. CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item.

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### 2.2 Application details

Date of receipt of order:	2013-01-14
Date of receipt of test item:	2014-06-23
Start of test:	2014-06-23
End of test:	2014-07-02
Additional measurements:	2015-01-19
Person(s) present during the test:	-/-

## 3 Test standard/s

Test standard	Date	Test standard description
47 CFR Part 15	-/-	Title 47 of the Code of Federal Regulations; Chapter I; Part 15 - Radio frequency devices
RSS - 210 Issue 8	01.12.2010	Spectrum Management and Telecommunications Radio Standards Specification - Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment

### 3.1 Measurement guidance

DTS : KDB 558074	2014-06	Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247
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## 4 Test environment

Temperature:	$T_{nom}$	+22 °C during room temperature tests
	$T_{max}$	+55 °C during high temperature tests
	$T_{min}$	-10 °C during low temperature tests
Relative humidity content:		52 %
Barometric pressure:		not relevant for this kind of testing
Power supply:	$V_{nom}$	3.0 V DC by Li - Ion or 2x AA batteries
	$V_{max}$	4.7 V
	$V_{min}$	1.8 V

## 5 Test item

<b>Kind of test item</b>	:	Wireless Microphone Bodypack
<b>Type identification</b>	:	SK D1
<b>S/N serial number</b>	:	Radiated units: ANT 1: 1234100265, 1474100580 ANT 2: 1234100268, 1474100580 Conducted unit: 1464100540
<b>HW hardware status</b>	:	551070-14
<b>SW software status</b>	:	0.4.7 Power setting: 8F 50 00 68 03 A0
<b>Frequency band [MHz]</b>	:	ISM band 2400 MHz to 2483.5 MHz (lowest channel 2403 MHz, highest channel 2481 MHz)
<b>Type of radio transmission</b>	:	DTS
<b>Use of frequency spectrum</b>	:	
<b>Type of modulation</b>	:	GFSK
<b>Number of channels</b>	:	40
<b>Antenna</b>	:	Integrated PCB antennas
<b>Power supply</b>	:	3.0 V DC by Li - Ion or 2x AA batteries
<b>Temperature range</b>	:	-10°C to +55°C

### 5.1 Additional information

The content of the following annexes is defined in the QA. It may be that not all of the listed annexes are necessary for this report, thus some values in between may be missing.

Test setup- and EUT-photos are included in test report: 1-5753/12-01-03\_AnnexA  
1-5753/12-01-03\_AnnexB  
1-5753/12-01-03\_AnnexD

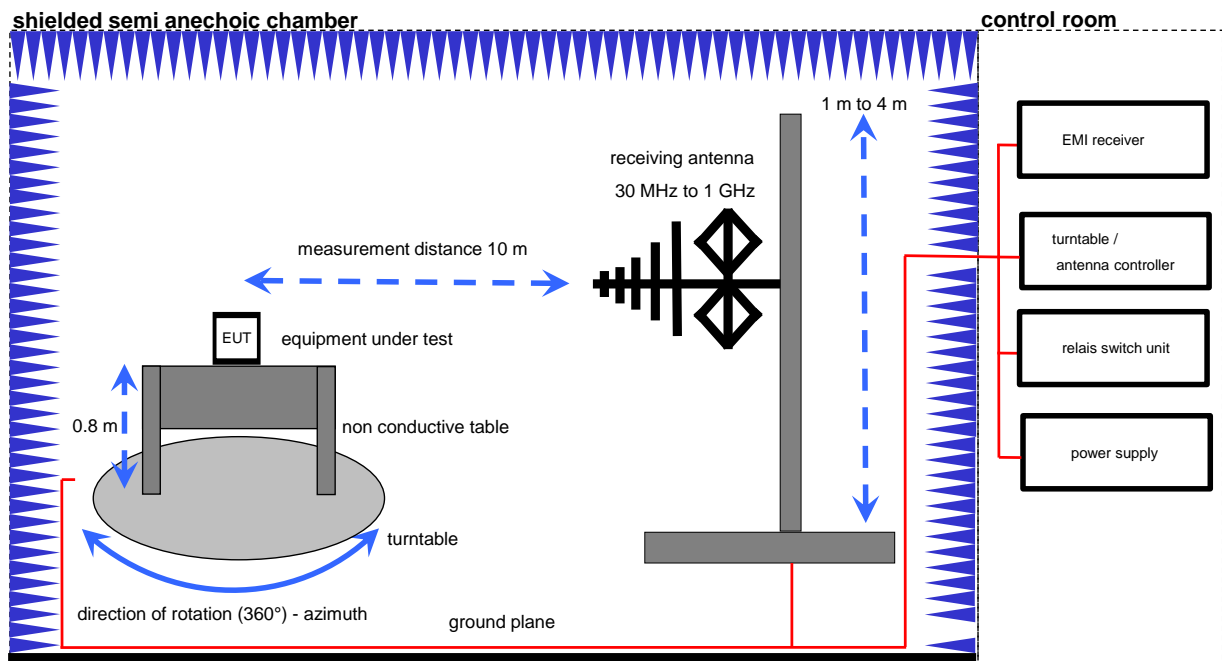
## 6 Test laboratories sub-contracted

None

## 7 Description of the test setup

### 7.1 Radiated measurements chamber F

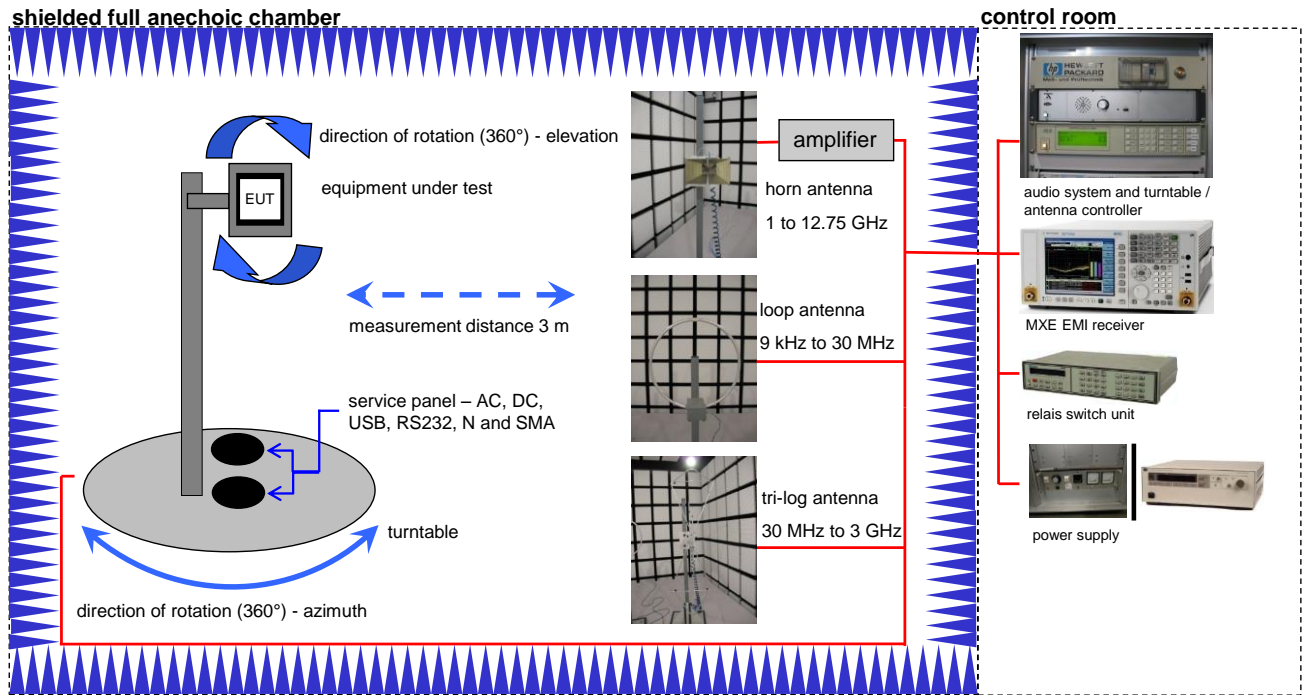
The radiated measurements are performed in vertical and horizontal plane in the frequency range from 9 kHz to 1 GHz in semi-anechoic chambers. The EUT is positioned on a non-conductive support with a height of 0.80 m above a conductive ground plane that covers the whole chamber. The receiving antennas are confirmed with specifications ANSI C63. These antennas can be moved over the height range between 1.0 m and 4.0 m in order to search for maximum field strength emitted from EUT. The measurement distances between EUT and receiving antennas are indicated in the test setups for the various frequency ranges. For each measurement, the EUT is rotated in all three axes until the maximum field strength is received. The wanted and unwanted emissions are received by spectrum analysers where the detector modes and resolution bandwidths over various frequency ranges are set according to requirement ANSI C63.



#### Equipment table:

Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
Software	EMC32 V.   9.12.05	R&S	-/-	-/-
Switch-Unit	3488A	HP Meßtechnik	2719A14505	30000368
DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2920A04466	30000580
EMI Test Receiver	ESCI 3	R&S	100083	300003312
Amplifier	JS42-00502650-28-5A	MITEQ	1084532	300003379
Antenna Tower	Model 2175	ETS-LINDGREN	64762	300003745
Positioning Controller	Model 2090	ETS-LINDGREN	64672	300003746
Turntable Interface-Box	Model 105637	ETS-LINDGREN	44583	300003747
TRILOG Broadband Test- Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	295	300003787

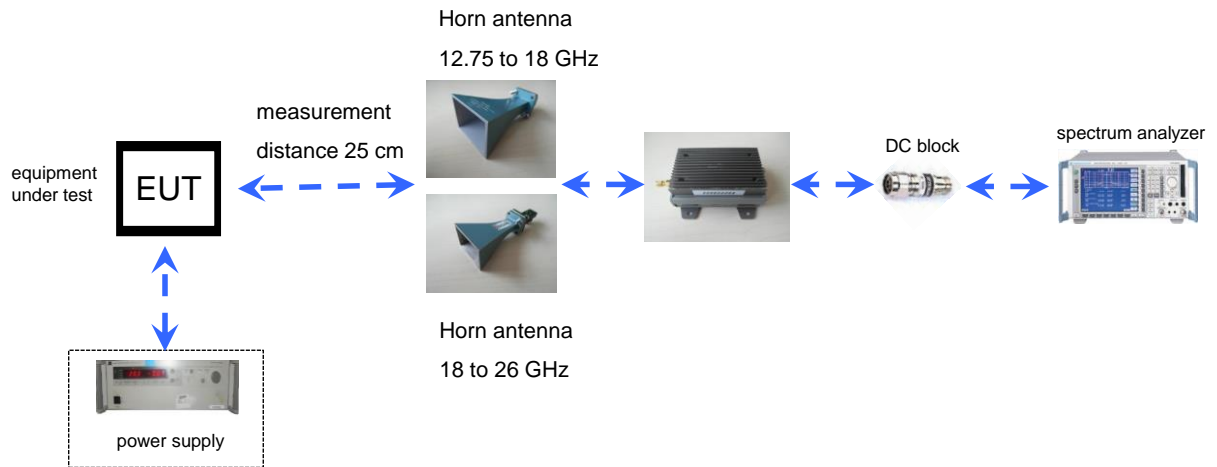
**7.2 Radiated measurements chamber C**



**Equipment table:**

Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
MXE EMI Receiver 20 Hz bis 26,5 GHz	N9038A	Agilent Technologies	MY51210197	300004405
TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	371	300003854
Band Reject filter	WRCG2400/2483-2375/2505-50/10SS	Wainwright	11	300003351
Highpass Filter	WHKX7.0/18G-8SS	Wainwright	18	300003789
Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	8812-3088	300001032
Active Loop Antenna	6502	EMCO	8905-2342	300000256
Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996
Switch / Control Unit	3488A	HP Meßtechnik	*	300000199
Switch / Control Unit	3488A	HP Meßtechnik	2719A15013	300001156
Isolating Transformer	MPL IEC625 Bus Regeltrenntravo	Erfi	91350	300001155
Three-Way Power Splitter, 50 Ohm	11850C	HP Meßtechnik		300000997
Amplifier	js42-00502650-28-5a	Parzich GMBH	928979	300003143

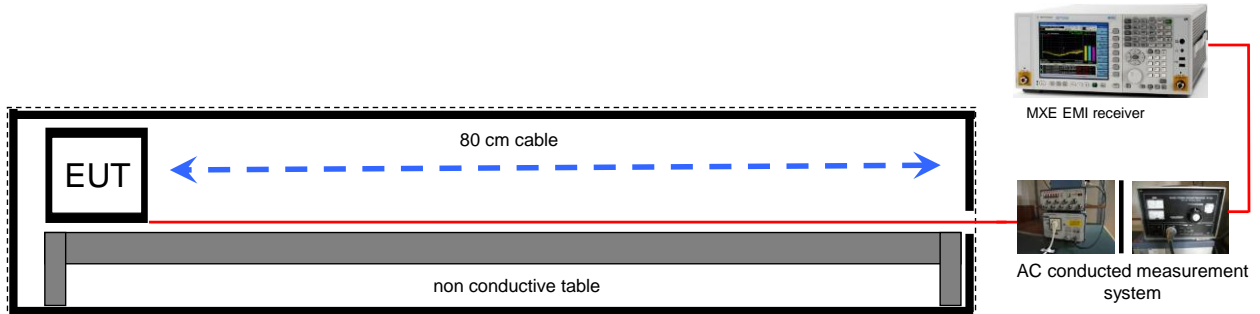
### 7.3 Radiated measurements 12.75 GHz to 26 GHz



#### Equipment table:

Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
Std. Gain Horn Antenna 12.4 to 18.0 GHz	639	Narda	8402	300000787
Std. Gain Horn Antenna 18.0 to 26.5 GHz	638	Narda	8205	300002442
Microwave System Amplifier, 0.5-26.5 GHz	83017A	HP Meßtechnik	00419	300002268
Spectrum Analyzer 20 Hz - 50 GHz	FSU50	R&S	200012	300003443
Signal Analyzer 40 GHz	FSV40	R&S	101042	300004517

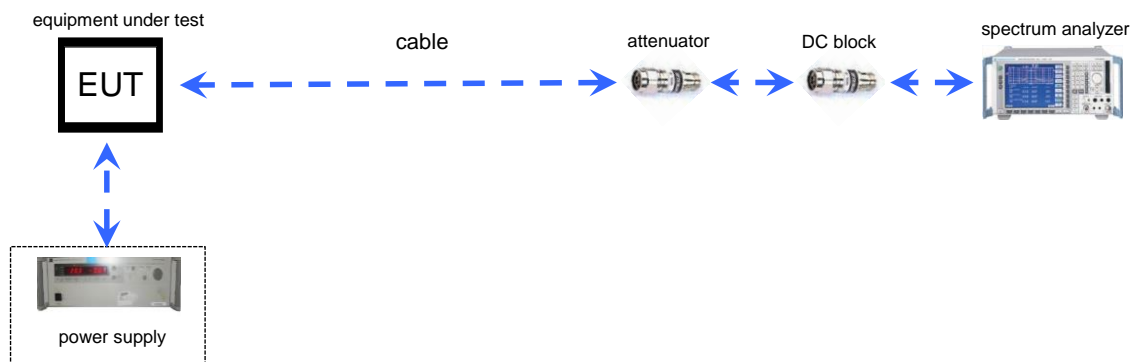
## 7.4 AC conducted



### Equipment table:

Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
MXE EMI Receiver 20 Hz bis 26,5 GHz	N9038A	Agilent Technologies	MY51210197	300004405
Isolating Transformer	MPL IEC625 Bus Regeltrenntravo	Erfi	91350	300001155
Switch / Control Unit	3488A	HP Meßtechnik	*	300000199
Switch / Control Unit	3488A	HP Meßtechnik	2719A15013	300001168
Artificial Mains 9 kHz to 30 MHz	ESH3-Z5	R&S	828576/020	300001210

## 7.5 Conducted measurements



### Equipment table:

Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
Signal Analyzer 40 GHz	FSV40	R&S	101042	300004517



## 8 Summary of measurement results

- No deviations from the technical specifications were ascertained
- There were deviations from the technical specifications ascertained

TC Identifier	Description	Verdict	Date	Remark
RF-Testing	CFR Part 15 RSS 210, Issue 8	Passed	2015-01-22	-/-

Test specification clause	Test case	Guideline	Temperature conditions	Power source voltages	Mode	Pass	Fail	NA	NP	Remark
§15.247(b)(4) RSS 210 / A8.4(2)	Antenna gain	-/-	Nominal	Nominal	GFSK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
§15.247(e) RSS 210 / A8.2(b)	Power spectral density	KDB 558074 DTS clause: 10.2	Nominal	Nominal	GFSK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
§15.247(a)(2) RSS 210 / A8.2(a)	Spectrum bandwidth – 6 dB bandwidth	KDB 558074 DTS clause: 8.1	Nominal	Nominal	GFSK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
RSS Gen clause 4.6.1	Occupied bandwidth	-/-	Nominal	Nominal	GFSK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
§15.247(b)(3) RSS-210 / A8.4(4)	Maximum output power	KDB 558074 DTS clause: 9.1.1	Nominal	Nominal	GFSK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
§15.247(d) RSS-210 / A8.5	Spurious emissions near the band edges	KDB 558074 DTS clause: 11.1 (b)	Nominal	Nominal	GFSK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
§15.205 RSS-210 / A8.5	Band edge compliance radiated	KDB 558074 DTS clause: 13.2	Nominal	Nominal	GFSK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
§15.247(d) RSS-210 / A8.5	TX spurious emissions conducted	KDB 558074 DTS clause: 11.1 (a)	Nominal	Nominal	GFSK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
§15.247(d) RSS-210 / A8.5	TX spurious emissions radiated	-/-	Nominal	Nominal	GFSK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
§15.109 RSS-Gen	RX spurious emissions radiated	-/-	Nominal	Nominal	RX mode	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
§15.209(a) RSS-Gen	TX spurious emissions radiated < 30 MHz	-/-	Nominal	Nominal	GFSK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
§15.107(a) §15.207	Conducted emissions < 30 MHz	-/-	Nominal	Nominal	GFSK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies

**Note:** NA = Not Applicable; NP = Not Performed

## 9 Additional comments

Reference documents: See main test report: 1-5753/12-01-14 (EM)

Special test descriptions: None

Configuration descriptions: None

Test mode:

- No test mode available.  
Iperf was used to ping another device with the largest support packet size
- Special software is used.  
EUT is transmitting pseudo random data by itself

## 10 Measurement results

### 10.1 Antenna gain

#### Measurement:

The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module. For normal WLAN devices, the DSSS mode is used.

#### Measurement parameters:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	3 MHz
Video bandwidth:	3 MHz
Trace-Mode:	Max hold

#### Limits:

FCC	IC
Antenna Gain	
6 dBi	

#### Results: ANT 1

T <sub>nom</sub>	V <sub>nom</sub>	Lowest channel 2403 MHz	Middle channel 2443 MHz	Highest channel 2481 MHz
Gain [dBi] Calculated		-1.5	0.1	1.2
Measurement uncertainty		± 1.5 dB (cond.) / ± 3 dB (rad.)		

#### Results: ANT 2

T <sub>nom</sub>	V <sub>nom</sub>	Lowest channel 2403 MHz	Middle channel 2443 MHz	Highest channel 2481 MHz
Gain [dBi] Calculated		1.2	0.1	-1.1
Measurement uncertainty		± 1.5 dB (cond.) / ± 3 dB (rad.)		

#### Verdict: **Passed**

## 10.2 Maximum output power

### Description:

Measurement of the maximum output power conducted and radiated. The measurements are performed using the data rate producing the highest conducted output power.

### Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	3 MHz
Video bandwidth:	3 MHz
Span:	3 MHz
Trace-Mode:	Max Hold

### Limits:

FCC	IC
Maximum Output Power	
Conducted: 1.0 W – Antenna Gain max. 6 dBi	

### Results:

GFSK / ANT 1 & ANT 2 Frequency	Maximum Output Power [dBm]		
	Lowest channel 2403 MHz	Middle channel 2443 MHz	Highest channel 2481 MHz
Peak output power conducted	16.0	16.2	15.8
Measurement uncertainty	± 1.5 dB (cond.)		

Verdict: **Passed**

### 10.3 Spectrum bandwidth – 6 dB

#### Description:

Measurement of the 6 dB bandwidth of the modulated signal.

#### Measurement:

Measurement parameter	
According to DTS clause: 8.1	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	100 kHz
Video bandwidth:	300 kHz
Span:	3 MHz
Measurement procedure:	Using marker function 6 dB down.
Trace-Mode:	Max hold (allow trace to stabilize)

#### Limits:

FCC	IC
Spectrum Bandwidth – 6 dB	
Systems using digital modulation techniques may operate in the 2400–2483.5 MHz band. The minimum 6 dB bandwidth shall be at least 500 kHz.	

#### Results:

Frequency	6 dB bandwidth [kHz]		
	Lowest channel 2403 MHz	Middle channel 2443 MHz	Highest channel 2481 MHz
GFSK / ANT 1 & ANT 2	860	840	850
Measurement uncertainty	± RBW		

**Verdict: Passed**

**10.4 Occupied bandwidth – 99% emission bandwidth**

**Description:**

Measurement of the 99% bandwidth of the modulated signal acc. RSS-GEN or ANSI C63.10.

**Measurement:**

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	30 kHz
Video bandwidth:	100 kHz
Span:	3 MHz
Measurement procedure:	Measurement of the 99% bandwidth using the integration function of the analyzer
Trace-Mode:	Max hold (allow trace to stabilize)

**Usage:**

-/-	IC
Occupied Bandwidth – 99% emission bandwidth	
OBW is necessary for Emission Designator	

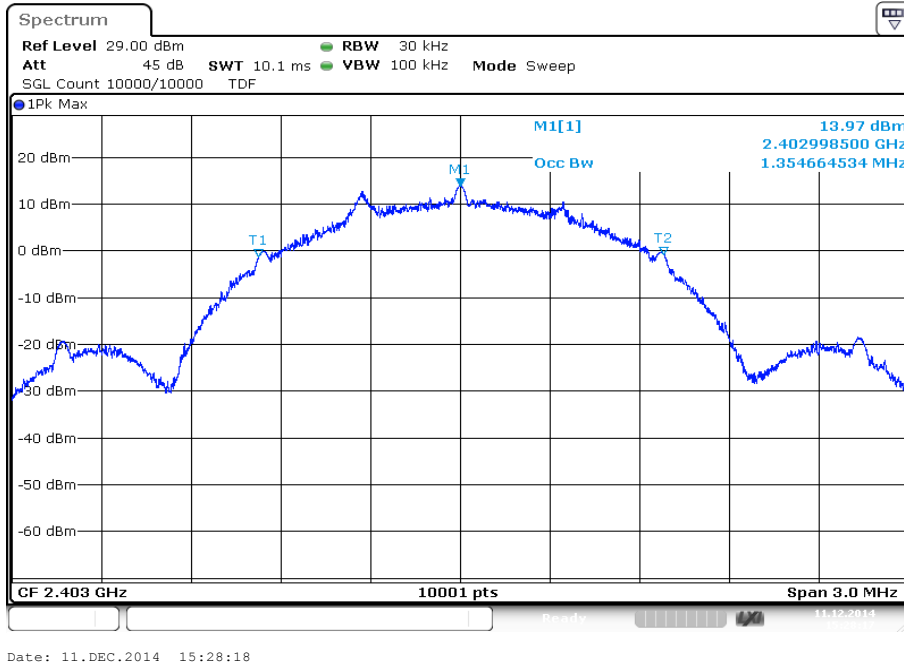
**Results:**

Modulation  Frequency	99 % bandwidth [kHz]		
	Lowest channel 2403 MHz	Middle channel 2443 MHz	Highest channel 2481 MHz
GFSK / ANT 1 & ANT 2	1355	1348	1348
Measurement uncertainty	± RBW		

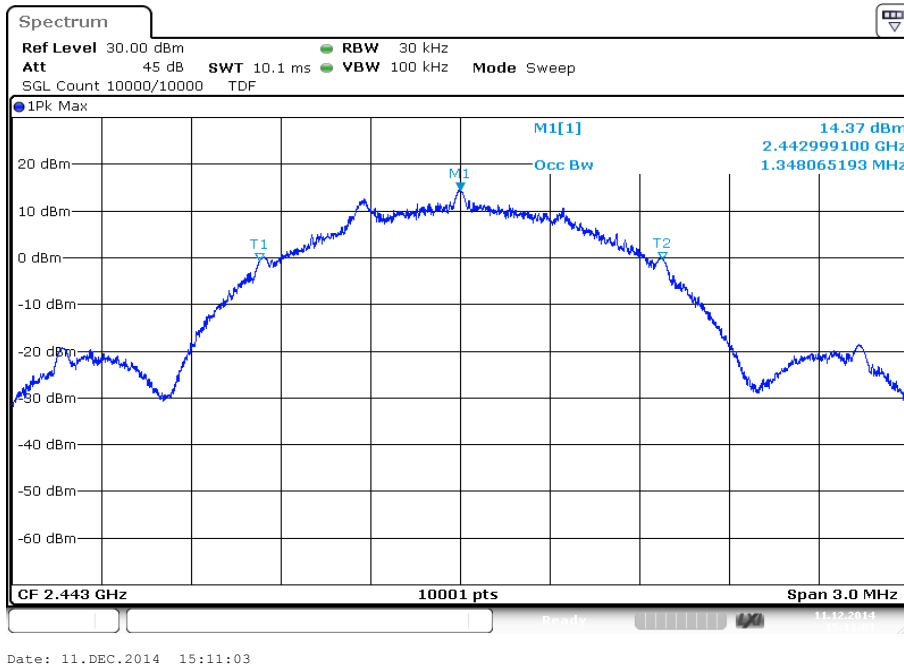
**Verdict: Passed**

**Plots:** ANT 1 + ANT 2

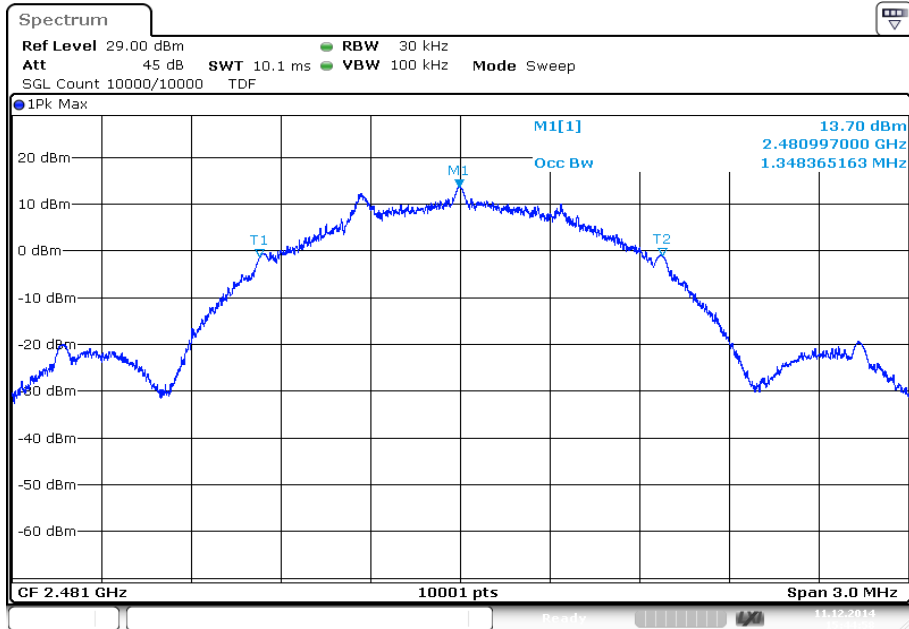
**Plot 1:** TX mode, lowest channel



**Plot 2:** TX mode, middle channel



Plot 3: TX mode, highest channel





### 10.5 Spurious emissions near the band edges

**Description:**

EUT is measured at the lower and upper band edge of the frequency band.

**Measurement:**

Measurement parameter	
According to DTS clause: 11.1 (b)	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	100 kHz
Video bandwidth:	500 kHz
Span:	2380 MHz – 2500 MHz
Trace-Mode:	Max hold

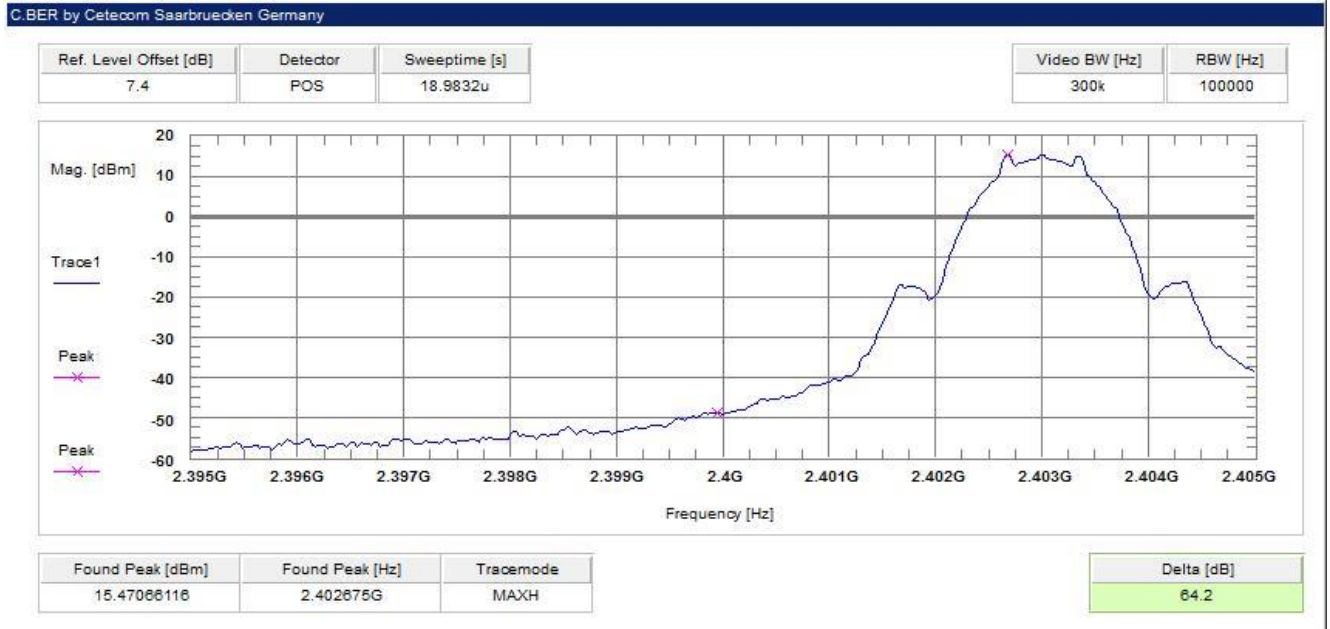
**Limits:**

FCC	IC
Band Edge Compliance Conducted	
<p>In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required.</p>	

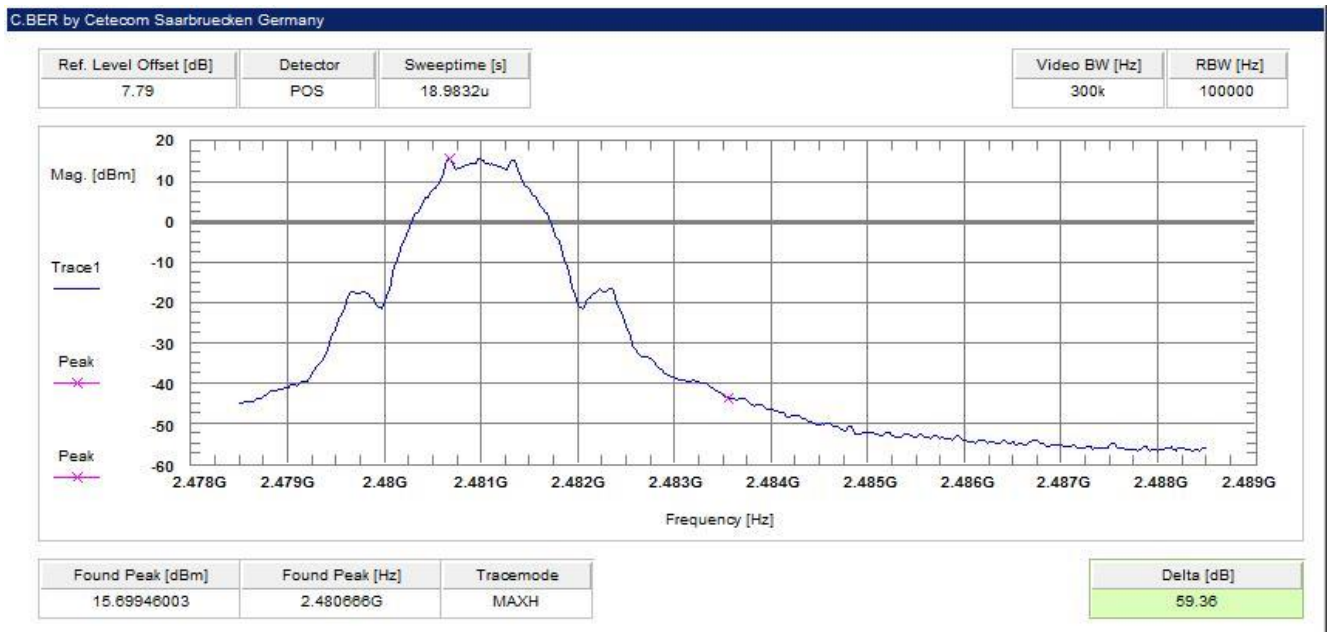
**Verdict: Passed**

**Plots:** ANT 1 & ANT 2

**Plot 1:** Lowest channel



**Plot 2:** Highest channel



## 10.6 Band edge compliance radiated

### Description:

Measurement of the radiated band edge compliance. The EUT is turned in the position that results in the maximum level at the band edge. Then a sweep over the corresponding restricted band is performed. The EUT is set to the lowest channel for the lower restricted band and to the highest channel for the upper restricted band. The measurement is repeated for all modulations. Measurement distance is 3m.

### Measurement:

Measurement parameter	
Detector:	Peak / RMS
Sweep time:	Auto
Resolution bandwidth:	1 MHz / 1 MHz
Video bandwidth:	1 MHz
Span:	See plot!
Trace-Mode:	Max Hold

### Limits:

FCC	IC
Band Edge Compliance Radiated	
<p>In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 5.205(c)).</p>	
74 dB $\mu$ V/m Peak 54 dB $\mu$ V/m AVG	

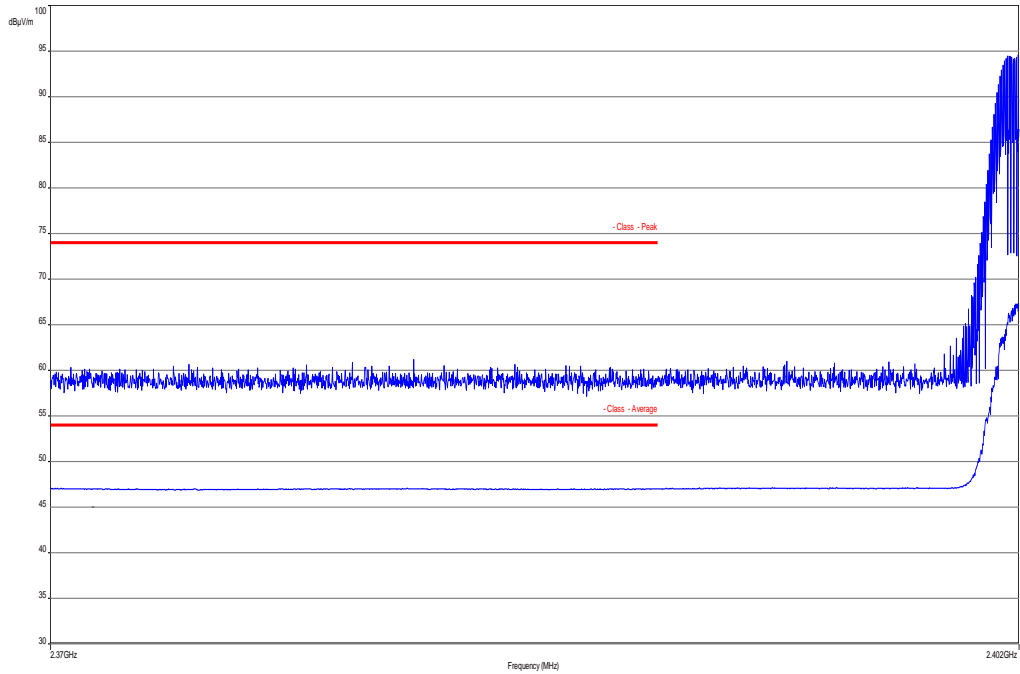
### Results:

Scenario	Band Edge Compliance Conducted [dB]	
	GFSK / ANT 1	GFSK / ANT 2
Modulation		
Lower Band Edge	> 20 dB (Peak) > 20 dB (AVG)	> 10 dB (Peak) > 20 dB (AVG)
Upper Band Edge	> 20 dB (Peak) > 20 dB (AVG)	> 10 dB (Peak) > 20 dB (AVG)
Measurement uncertainty	± 3 dB	

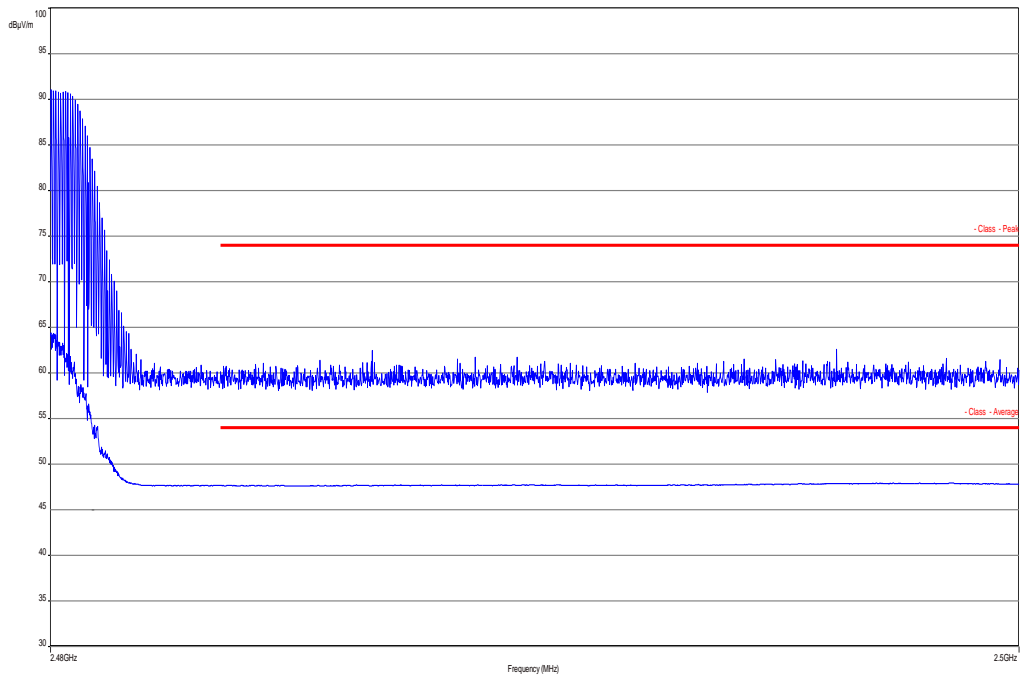
**Verdict: Passed**

**Plots:** ANT 1

**Plot 1:** TX mode, lower band edge, vertical & horizontal polarization, pre-scan

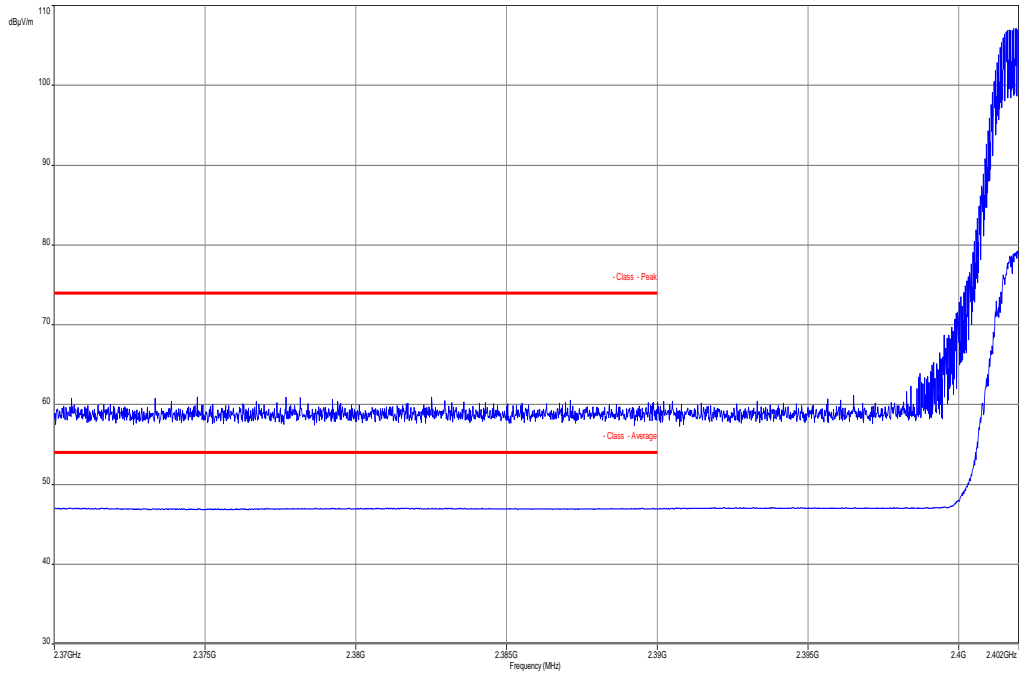


**Plot 2:** TX mode, upper band edge, vertical & horizontal polarization, pre-scan

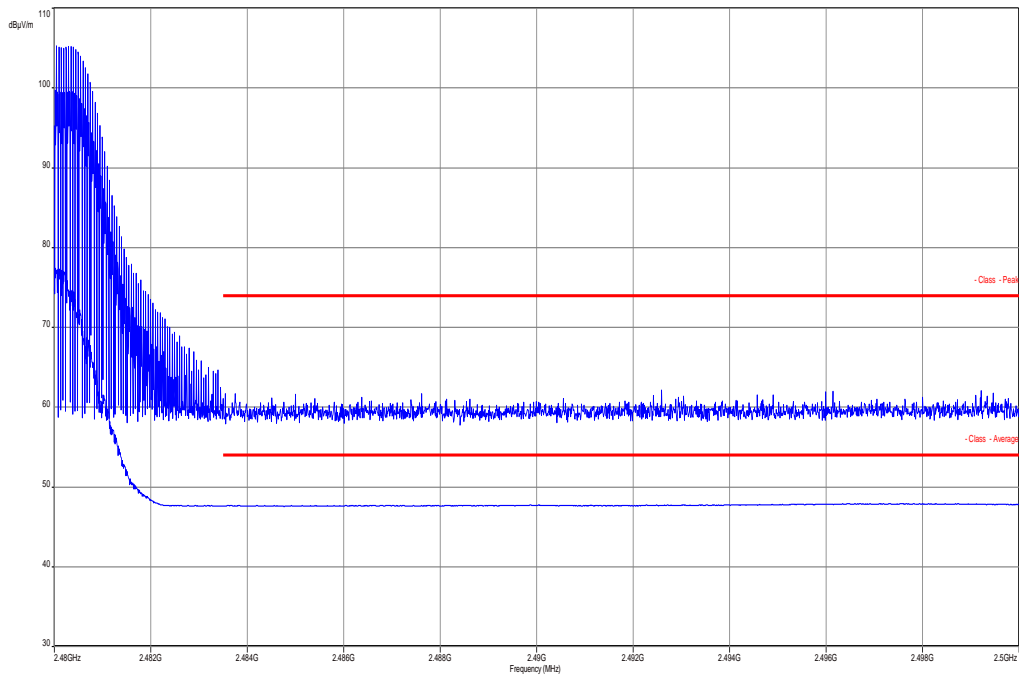


**Plots:** ANT 2

**Plot 1:** TX mode, lower band edge, vertical & horizontal polarization, pre-scan



**Plot 2:** TX mode, upper band edge, vertical & horizontal polarization, pre-scan



## 10.7 TX spurious emissions conducted

### Description:

Measurement of the conducted spurious emissions in transmit mode. The measurement is performed at the lowest, middle and highest channel.

### Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	100 kHz
Video bandwidth:	500 kHz
Span:	9 kHz to 25 GHz
Trace-Mode:	Max Hold

### Limits:

FCC	IC
TX Spurious Emissions Conducted	
<p>In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 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. Attenuation below the general limits specified in Section 15.209(a) is not required</p>	

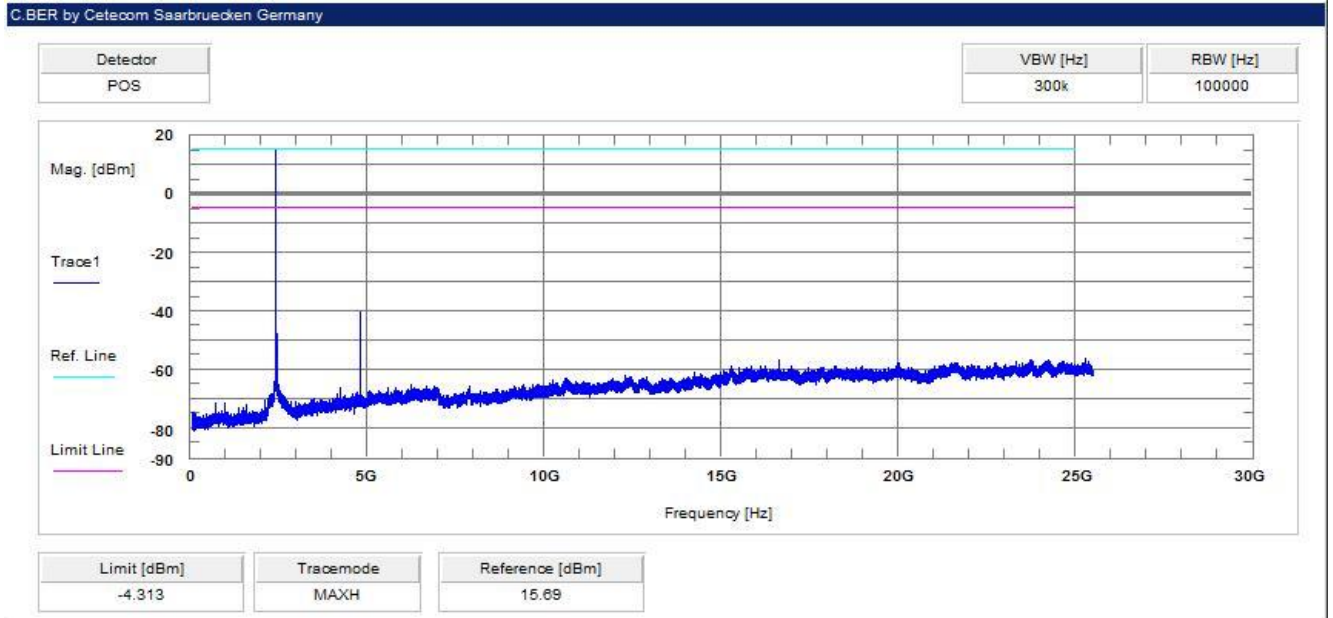
**Results:** ANT 1 & ANT 2

TX Spurious Emissions Conducted					
f [MHz]		amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
Low channel	2403 MHz	15.7	30 dBm		Operating frequency
No peaks detected. All detected emissions are below the -20 dBc criteria.			-20 dBc		complies
Mid channel	2443 MHz	16.0	30 dBm		Operating frequency
No peaks detected. All detected emissions are below the -20 dBc criteria.			-20 dBc		complies
High channel	2481 MHz	15.9	30 dBm		Operating frequency
No peaks detected. All detected emissions are below the -20 dBc criteria.			-20 dBc		complies
Measurement uncertainty		± 3 dB			

**Verdict:** Passed

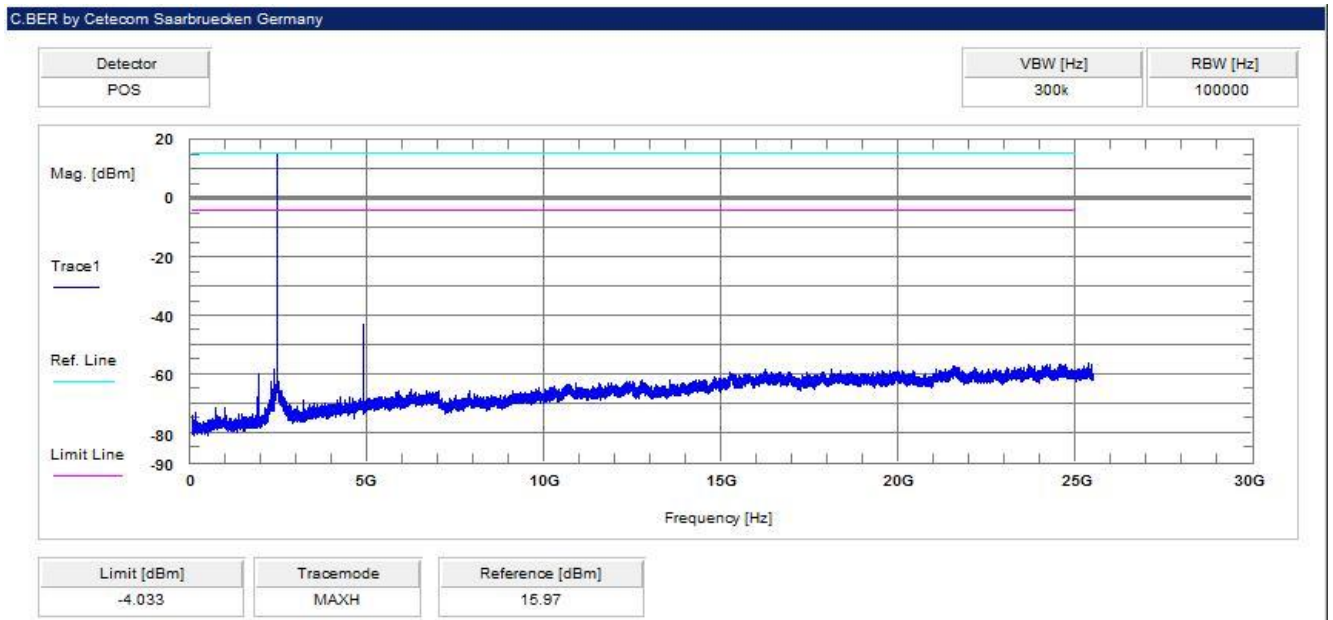
**Plots:** ANT 1 & ANT 2

**Plot 1:** TX mode, lowest channel, up to 26 GHz



The peak at the beginning of the plot is the LO from the SA.

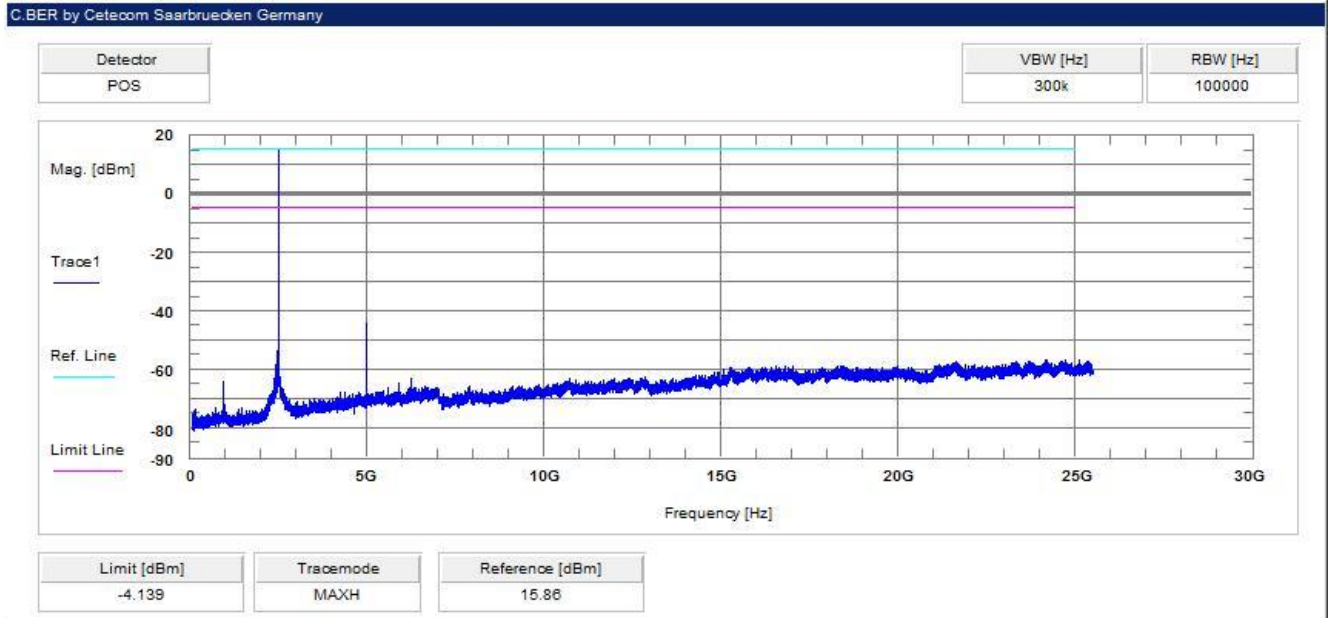
**Plot 2:** TX mode, middle channel, up to 26 GHz



The peak at the beginning of the plot is the LO from the SA.



**Plot 3: TX mode, highest channel, up to 26 GHz**



The peak at the beginning of the plot is the LO from the SA.

## 10.8 TX spurious emissions radiated

### Description:

Measurement of the radiated spurious emissions in transmit mode. The measurement is performed at the lowest, middle and highest channel.

### Measurement:

Measurement parameter	
Detector:	Peak / Quasi Peak / RMS
Sweep time:	Auto
Resolution bandwidth:	F > 1 GHz: 1 MHz F < 1 GHz: 100 kHz
Video bandwidth:	3 x RBW
Span:	30 MHz to 26 GHz
Trace-Mode:	Max Hold

The modulation with the highest output power was used to perform the transmitter spurious emissions. If spurious were detected a re-measurement was performed on the detected frequency with each modulation.

### Limits:

FCC	IC	
TX Spurious Emissions Radiated		
<p>In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).</p>		
Frequency (MHz)	Field Strength (dBµV/m)	Measurement distance
30 - 88	30.0	10
88 – 216	33.5	10
216 – 960	36.0	10
Above 960	54.0	3

**Results:** ANT 1

TX Spurious Emissions Radiated [dBµV/m]										
GFSK / ANT 1										
Lowest channel 2403 MHz			Middle channel 2443 MHz			Highest channel 2481 MHz				
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]		
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.				
1 <sup>st</sup> harmonic	Peak	44.3	1 <sup>st</sup> harmonic	Peak	49.8	1 <sup>st</sup> harmonic	Peak	53.0		
	RMS	33.3		RMS	38.8		RMS	42.0		
2 <sup>nd</sup> harmonic	Peak	-/-	2 <sup>nd</sup> harmonic	Peak	56.9	2 <sup>nd</sup> harmonic	Peak	61.0		
	RMS	-/-		RMS	44.9		RMS	49.0		
3 <sup>rd</sup> harmonic	Peak	-/-	3 <sup>rd</sup> harmonic	Peak	-/-	3 <sup>rd</sup> harmonic	Peak	-/-		
	RMS	-/-		RMS	-/-		RMS	-/-		
4 <sup>th</sup> harmonic	Peak	See plots!	4 <sup>th</sup> harmonic	Peak	See plots!	4 <sup>th</sup> harmonic	Peak	See plots!		
	RMS			RMS			RMS			
5 <sup>th</sup> harmonic	Peak			5 <sup>th</sup> harmonic		Peak			5 <sup>th</sup> harmonic	Peak
	RMS					RMS				RMS
6 <sup>th</sup> harmonic	Peak			6 <sup>th</sup> harmonic		Peak			6 <sup>th</sup> harmonic	Peak
	RMS					RMS				RMS
7 <sup>th</sup> harmonic	Peak			7 <sup>th</sup> harmonic		Peak			7 <sup>th</sup> harmonic	Peak
	RMS					RMS				RMS
8 <sup>th</sup> harmonic	Peak		8 <sup>th</sup> harmonic	Peak		8 <sup>th</sup> harmonic	Peak			
	RMS			RMS			RMS			
Measurement uncertainty			± 3 dB							

**Verdict:** Passed

**Results:** ANT 2

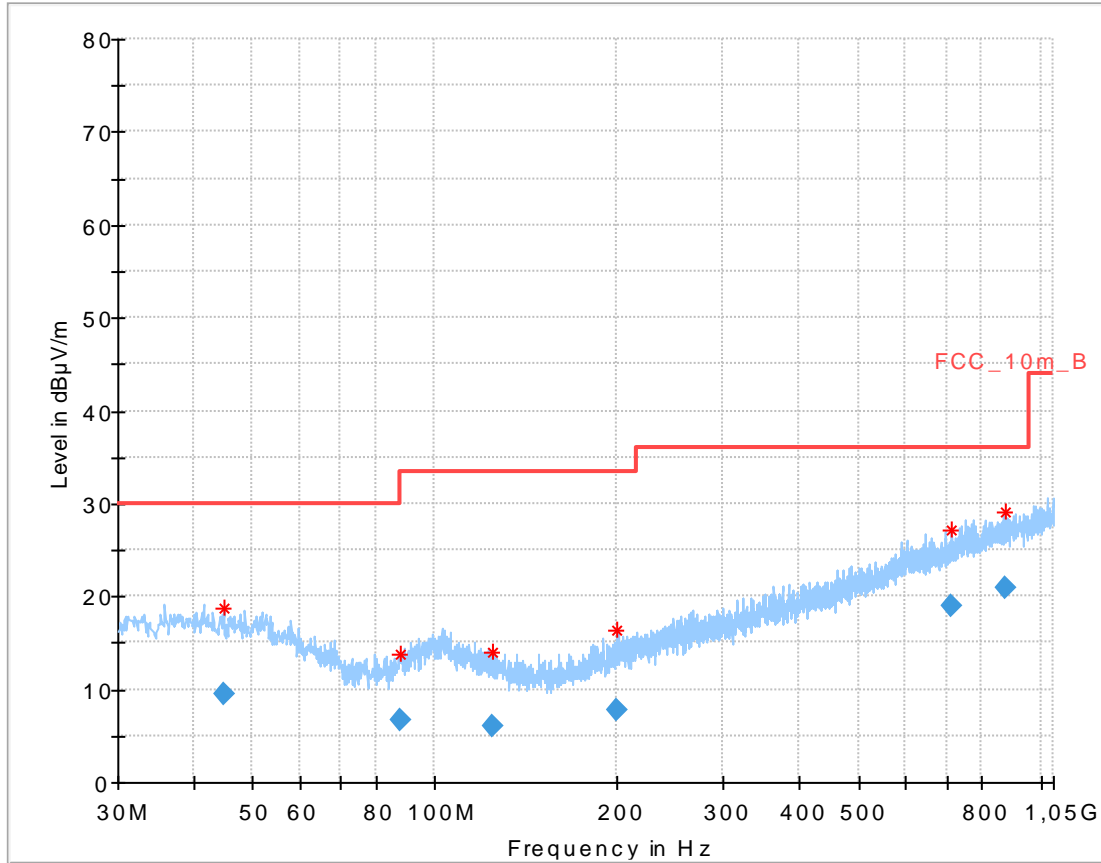
TX Spurious Emissions Radiated [dBµV/m]										
GFSK / ANT 2										
Lowest channel 2403 MHz			Middle channel 2443 MHz			Highest channel 2481 MHz				
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]		
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.				
1 <sup>st</sup> harmonic	Peak	52.3	1 <sup>st</sup> harmonic	Peak	51.7	1 <sup>st</sup> harmonic	Peak	52.4		
	RMS	41.3		RMS	40.7		RMS	41.4		
2 <sup>nd</sup> harmonic	Peak	-/-	2 <sup>nd</sup> harmonic	Peak	59.7	2 <sup>nd</sup> harmonic	Peak	61.6		
	RMS	-/-		RMS	47.7		RMS	49.6		
3 <sup>rd</sup> harmonic	Peak	-/-	3 <sup>rd</sup> harmonic	Peak	-/-	3 <sup>rd</sup> harmonic	Peak	-/-		
	RMS	-/-		RMS	-/-		RMS	-/-		
4 <sup>th</sup> harmonic	Peak	See plots!	4 <sup>th</sup> harmonic	Peak	See plots!	4 <sup>th</sup> harmonic	Peak	See plots!		
	RMS			RMS			RMS			
5 <sup>th</sup> harmonic	Peak			5 <sup>th</sup> harmonic		Peak			5 <sup>th</sup> harmonic	Peak
	RMS					RMS				RMS
6 <sup>th</sup> harmonic	Peak			6 <sup>th</sup> harmonic		Peak			6 <sup>th</sup> harmonic	Peak
	RMS					RMS				RMS
7 <sup>th</sup> harmonic	Peak			7 <sup>th</sup> harmonic		Peak			7 <sup>th</sup> harmonic	Peak
	RMS					RMS				RMS
8 <sup>th</sup> harmonic	Peak		8 <sup>th</sup> harmonic	Peak		8 <sup>th</sup> harmonic	Peak			
	RMS			RMS			RMS			
Measurement uncertainty			± 3 dB							

**Verdict:** Passed

**Note:** The limit was recalculated with 20 dB / decade (Part 15.31) for all radiated spurious emissions 30 MHz to 1 GHz from 3 meter limit to a 10 meter distance. (40dB/decade for emissions < 30MHz)

**Plots:** ANT 1

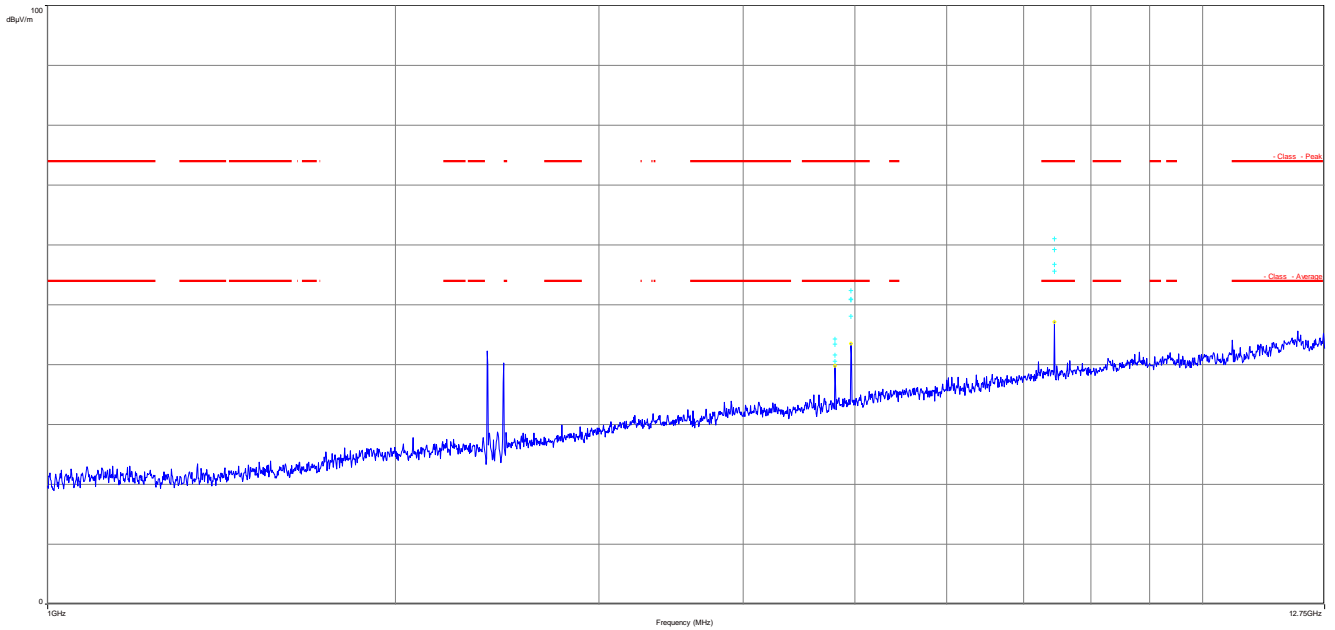
**Plot 1:** Lowest channel, 30 MHz to 1 GHz, vertical & horizontal polarization



**Final\_Result:**

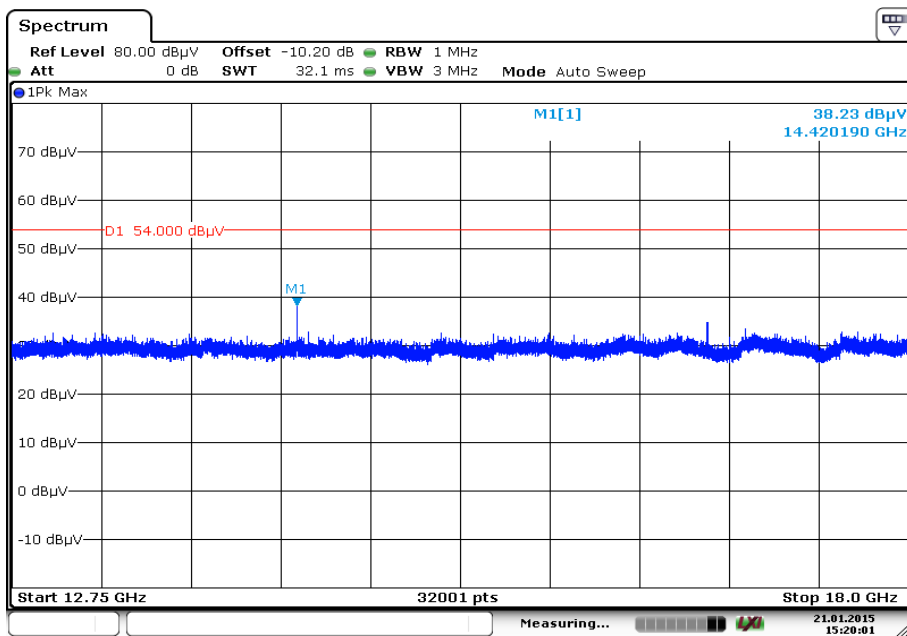
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
44.830350	9.55	30.00	20.45	1000.0	120.000	170.0	V	264	13.9
88.010850	6.72	33.50	26.78	1000.0	120.000	170.0	V	205	10.2
124.776600	5.93	33.50	27.57	1000.0	120.000	170.0	V	295	9.8
199.565400	7.66	33.50	25.84	1000.0	120.000	170.0	H	155	11.7
712.951350	18.92	36.00	17.08	1000.0	120.000	122.0	H	-7	21.8
872.627550	20.90	36.00	15.10	1000.0	120.000	170.0	H	268	23.8

**Plot 2:** Lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



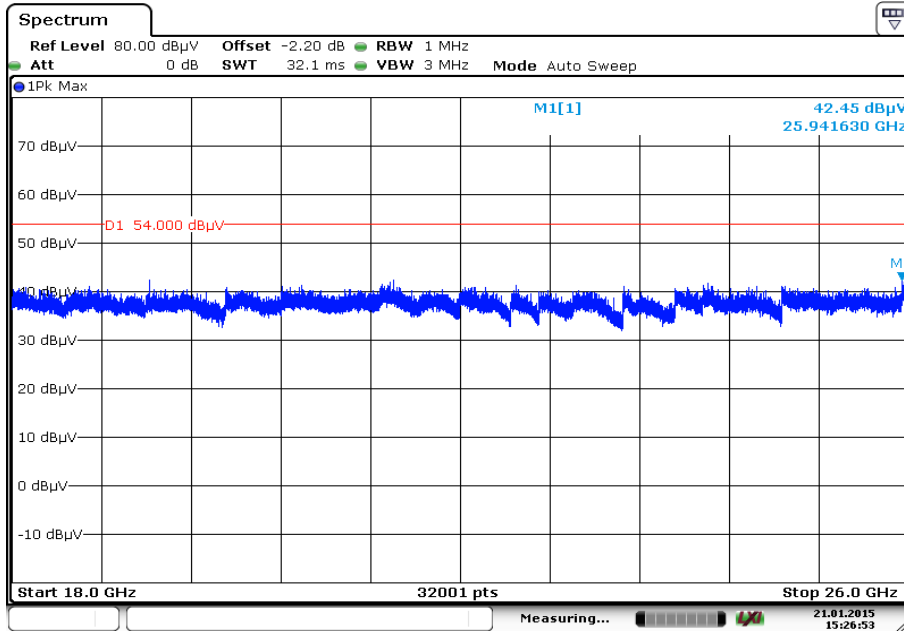
The carrier signal is notched with a 2.4 GHz band rejection filter.

**Plot 3:** Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



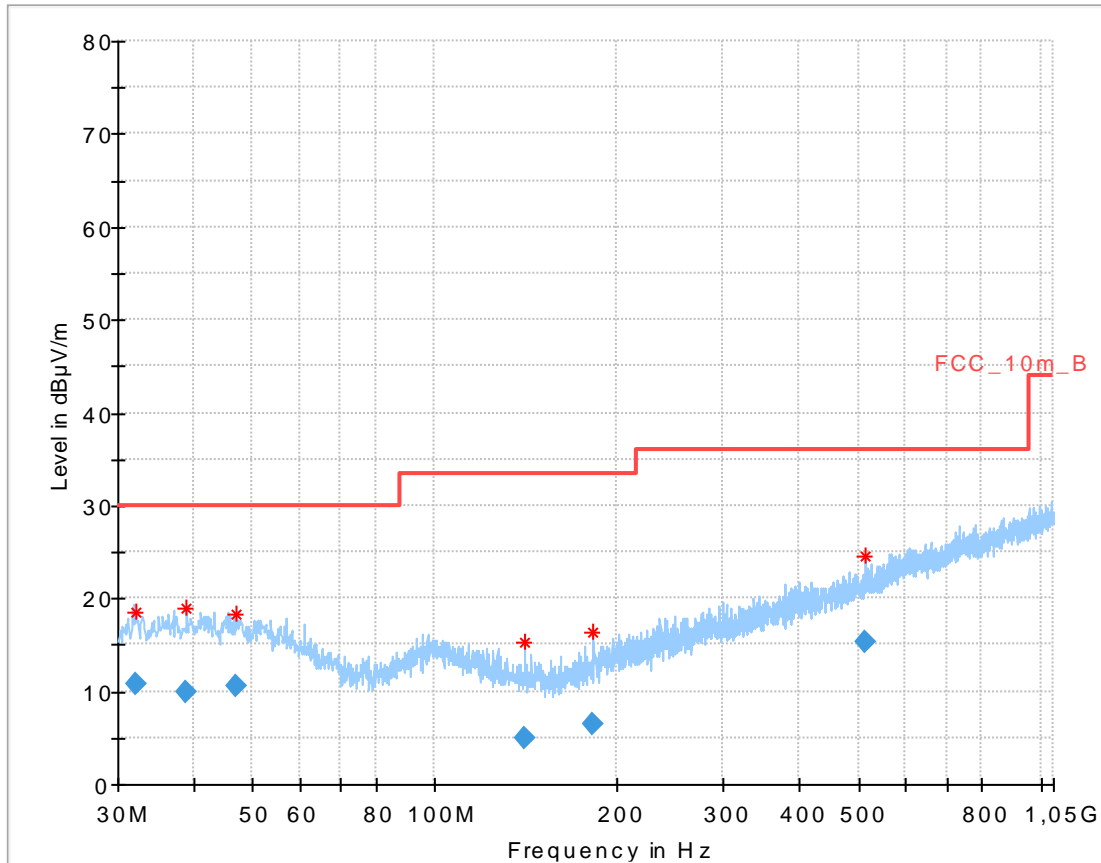
Date: 21.JAN.2015 15:20:01

Plot 4: Lowest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Date: 21.JAN.2015 15:26:54

Plot 5: Middle channel, 30 MHz to 1 GHz, vertical & horizontal polarization

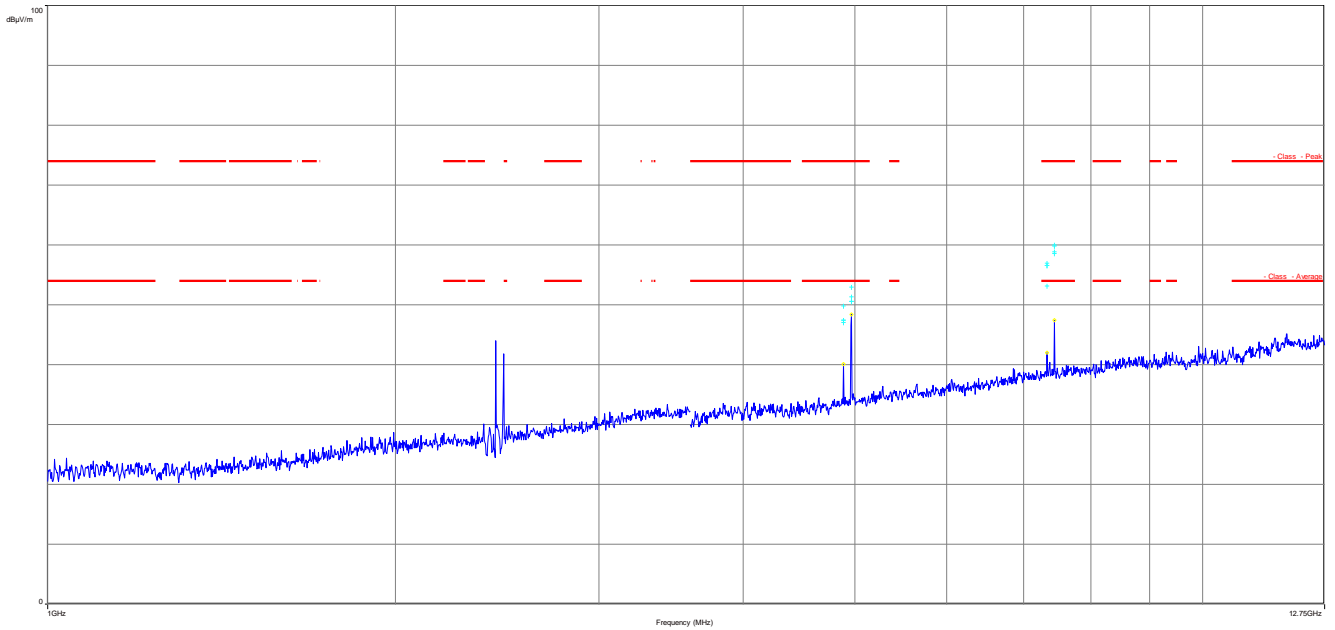


Final\_Result:

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
32.136450	10.88	30.00	19.12	1000.0	120.000	170.0	H	-7	13.5
38.772000	9.94	30.00	20.06	1000.0	120.000	139.0	V	25	14.0
46.840350	10.57	30.00	19.43	1000.0	120.000	170.0	H	115	13.8
140.717700	4.86	33.50	28.64	1000.0	120.000	170.0	H	289	8.7
181.643250	6.40	33.50	27.10	1000.0	120.000	122.0	V	268	10.5
512.444100	15.38	36.00	20.62	1000.0	120.000	170.0	H	25	18.9

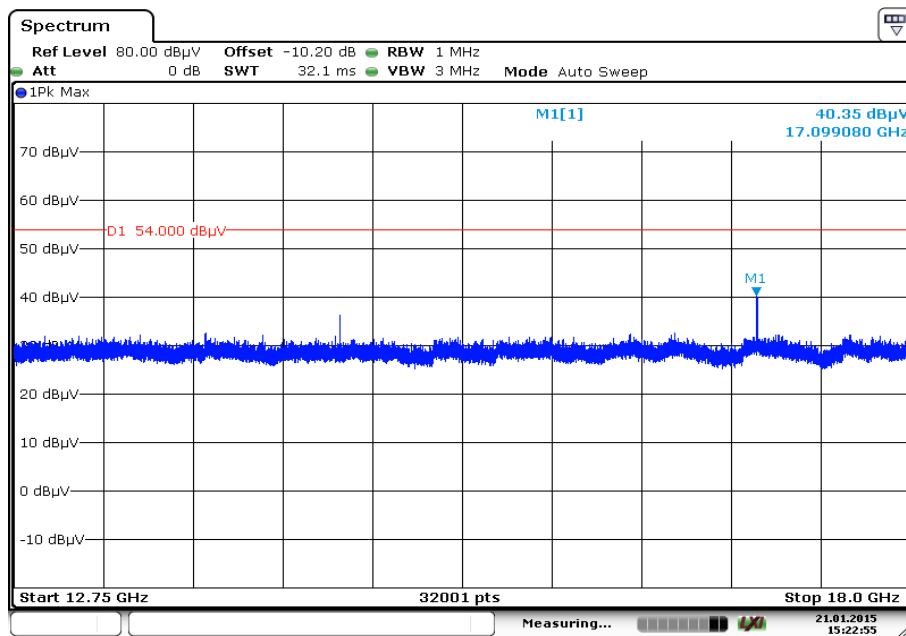


**Plot 6:** Middle channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



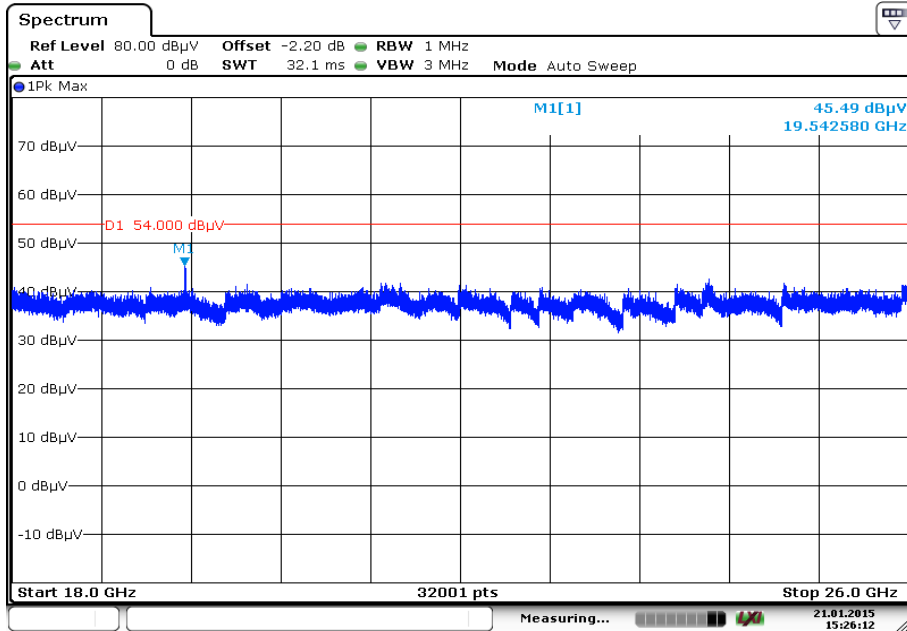
The carrier signal is notched with a 2.4 GHz band rejection filter.

**Plot 7:** Middle channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



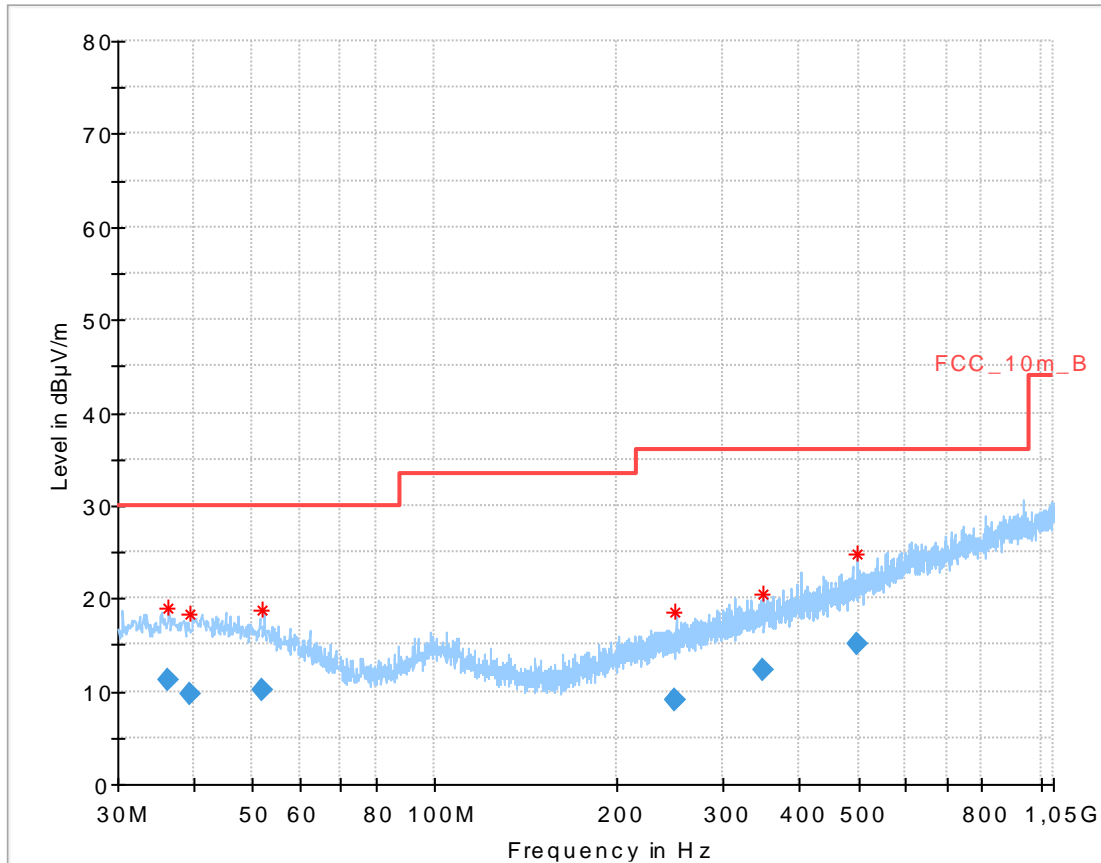
Date: 21.JAN.2015 15:22:55

Plot 8: Middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Date: 21.JAN.2015 15:26:12

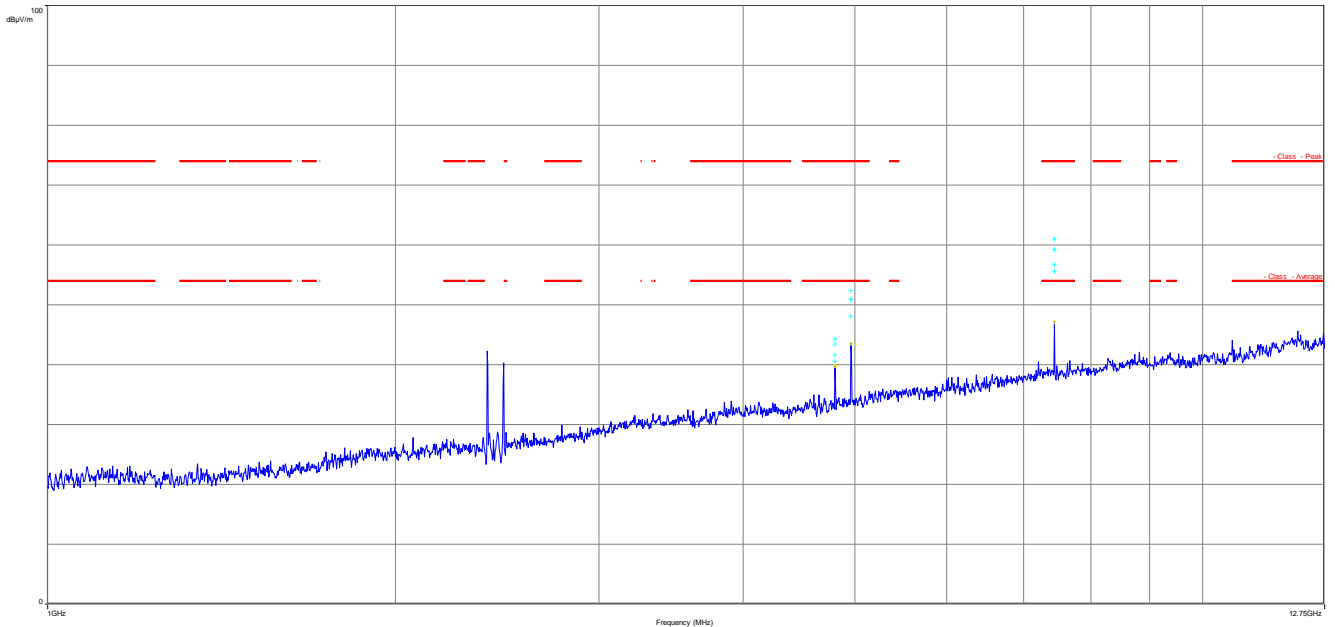
**Plot 9:** Highest channel, 30 MHz to 1 GHz, vertical & horizontal polarization



**Final\_Result:**

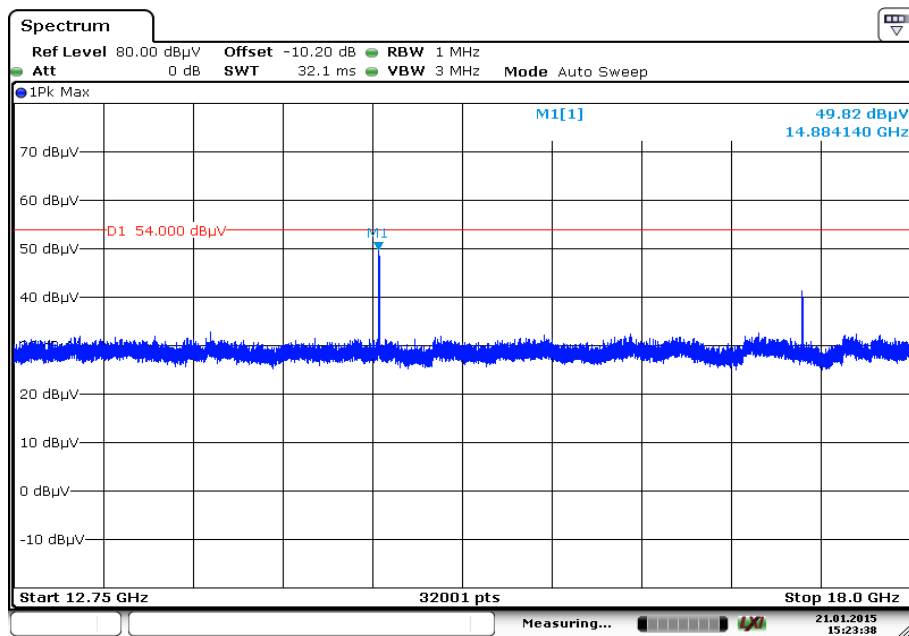
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
36.415350	11.11	30.00	18.89	1000.0	120.000	124.0	V	277	13.9
39.388050	9.62	30.00	20.38	1000.0	120.000	170.0	H	25	14.0
51.835050	10.08	30.00	19.92	1000.0	120.000	170.0	V	265	13.3
249.784650	9.03	36.00	26.97	1000.0	120.000	156.0	H	286	13.3
249.784650	9.10	36.00	26.90	1000.0	120.000	156.0	H	286	13.3
347.746800	12.28	36.00	23.72	1000.0	120.000	170.0	V	205	16.0
498.100950	15.12	36.00	20.88	1000.0	120.000	170.0	H	115	18.7

**Plot 10:** Highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



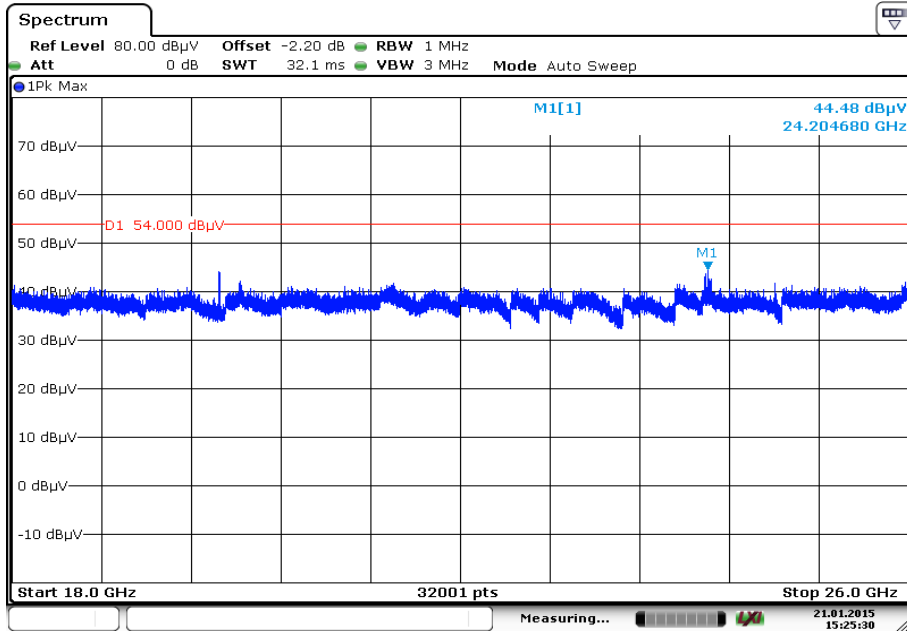
The carrier signal is notched with a 2.4 GHz band rejection filter.

**Plot 11:** Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Date: 21.JAN.2015 15:23:39

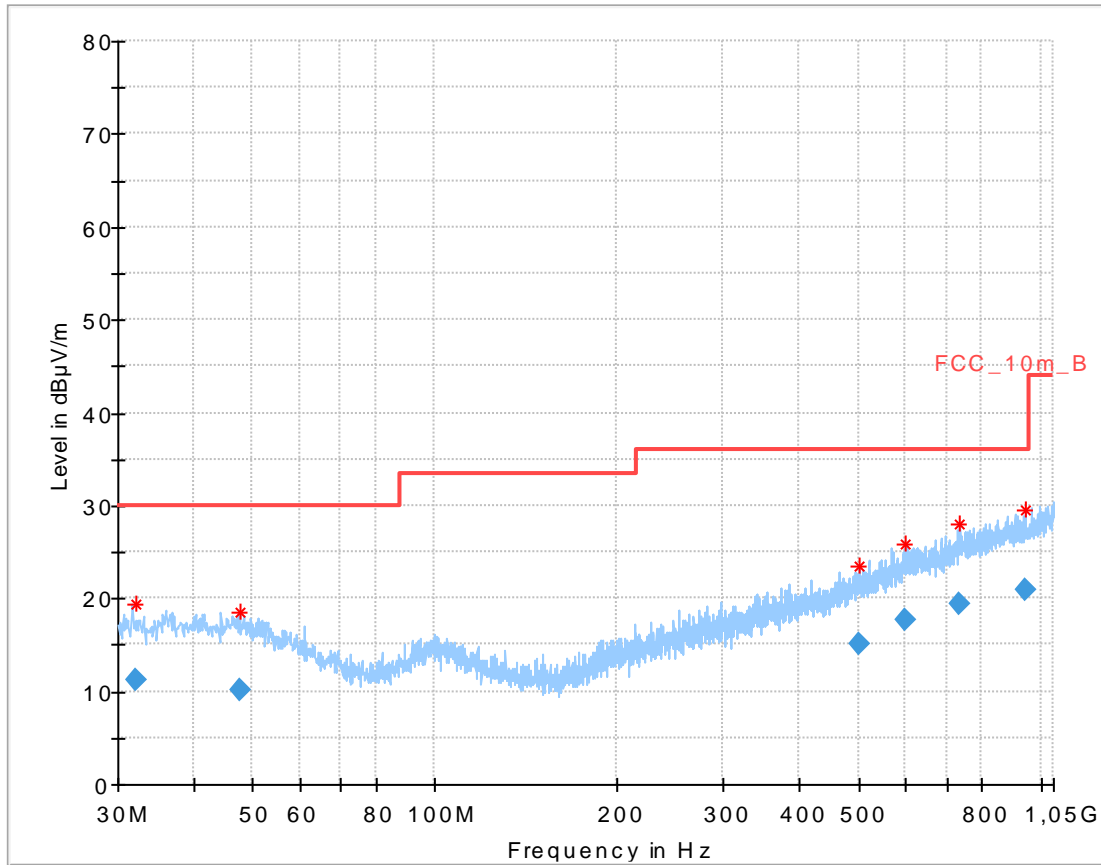
Plot 12: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Date: 21.JAN.2015 15:25:31

**Plots:** ANT 2

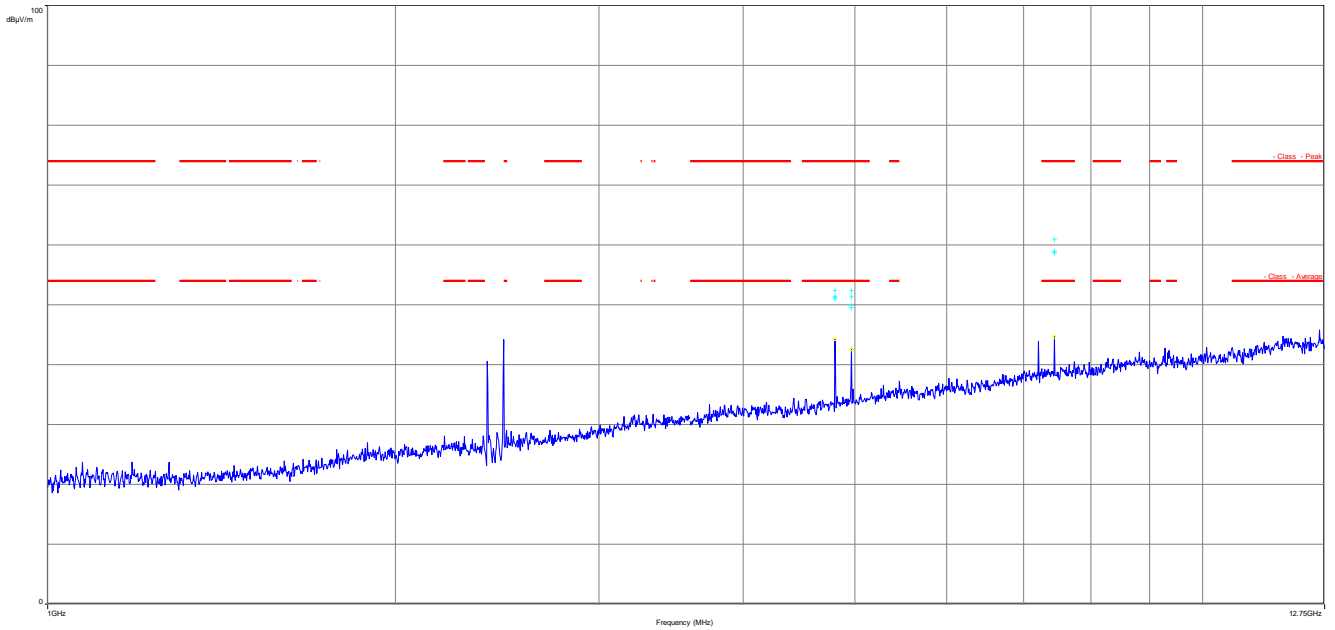
**Plot 1:** Lowest channel, 30 MHz to 1 GHz, vertical & horizontal polarization



**Final\_Result:**

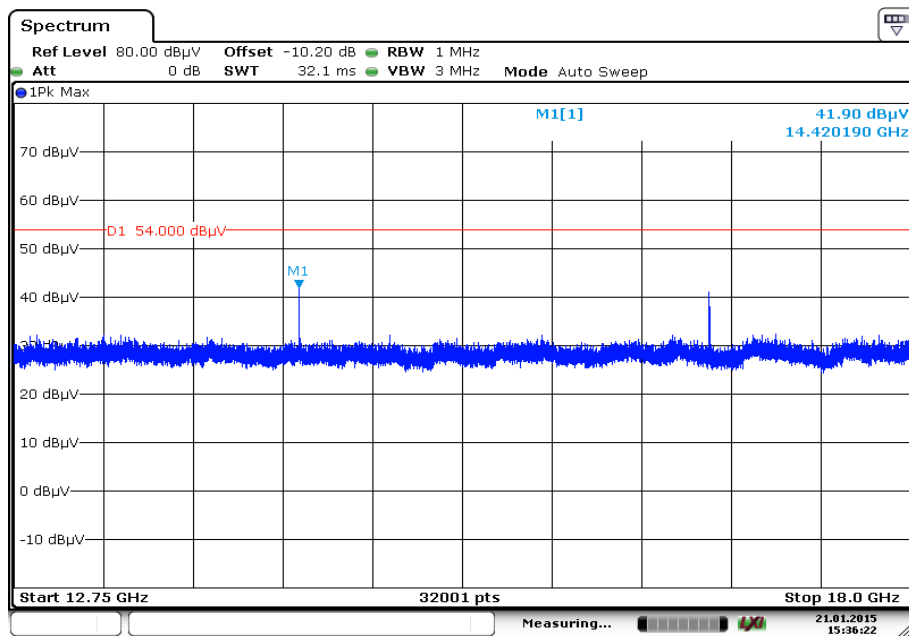
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
32.040600	11.29	30.00	18.71	1000.0	120.000	170.0	V	115	13.5
47.805750	10.13	30.00	19.87	1000.0	120.000	170.0	H	245	13.7
502.327650	15.11	36.00	20.89	1000.0	120.000	170.0	H	197	18.7
597.865200	17.60	36.00	18.40	1000.0	120.000	170.0	V	205	20.7
736.613400	19.46	36.00	16.54	1000.0	120.000	170.0	V	192	22.4
943.814250	21.00	36.00	15.00	1000.0	120.000	170.0	V	88	24.2

**Plot 2:** Lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



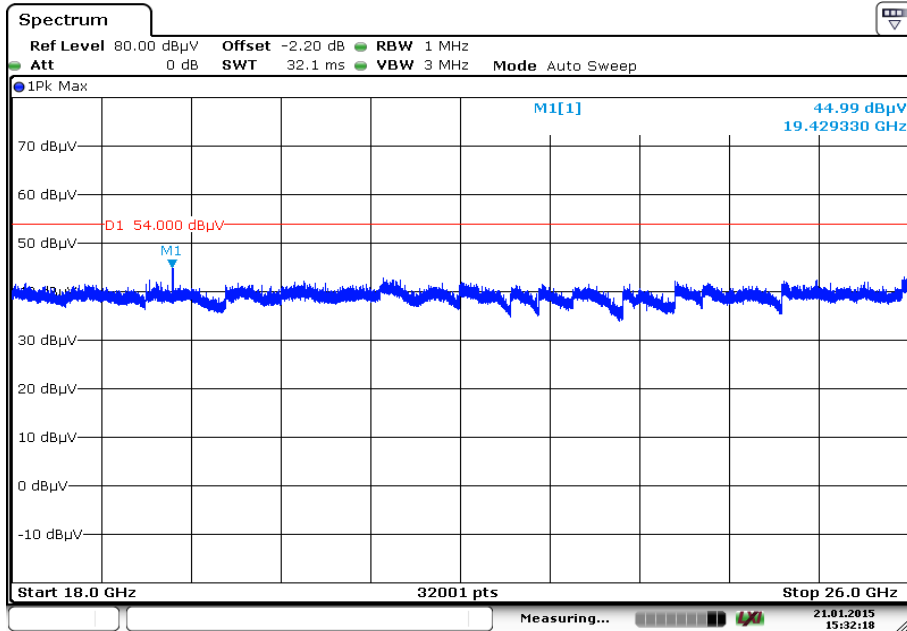
The carrier signal is notched with a 2.4 GHz band rejection filter.

**Plot 3:** Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Date: 21.JAN.2015 15:36:22

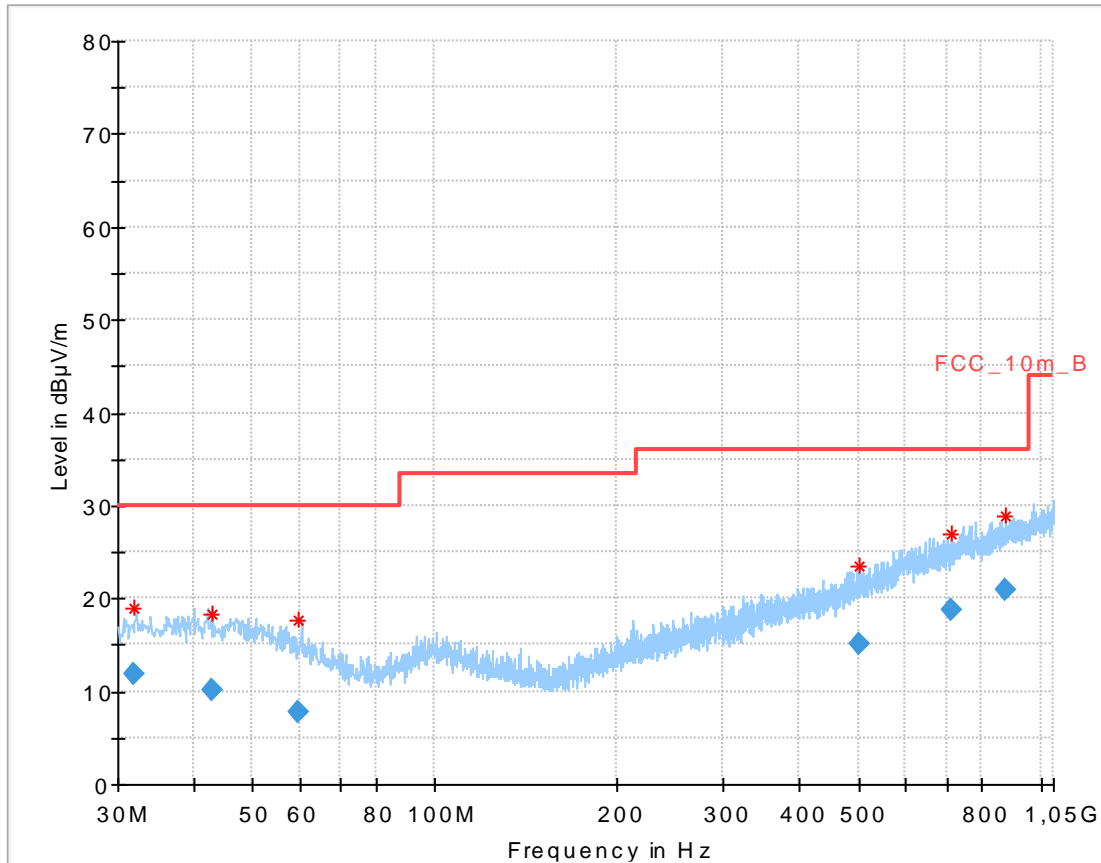
Plot 4: Lowest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Date: 21.JAN.2015 15:32:19



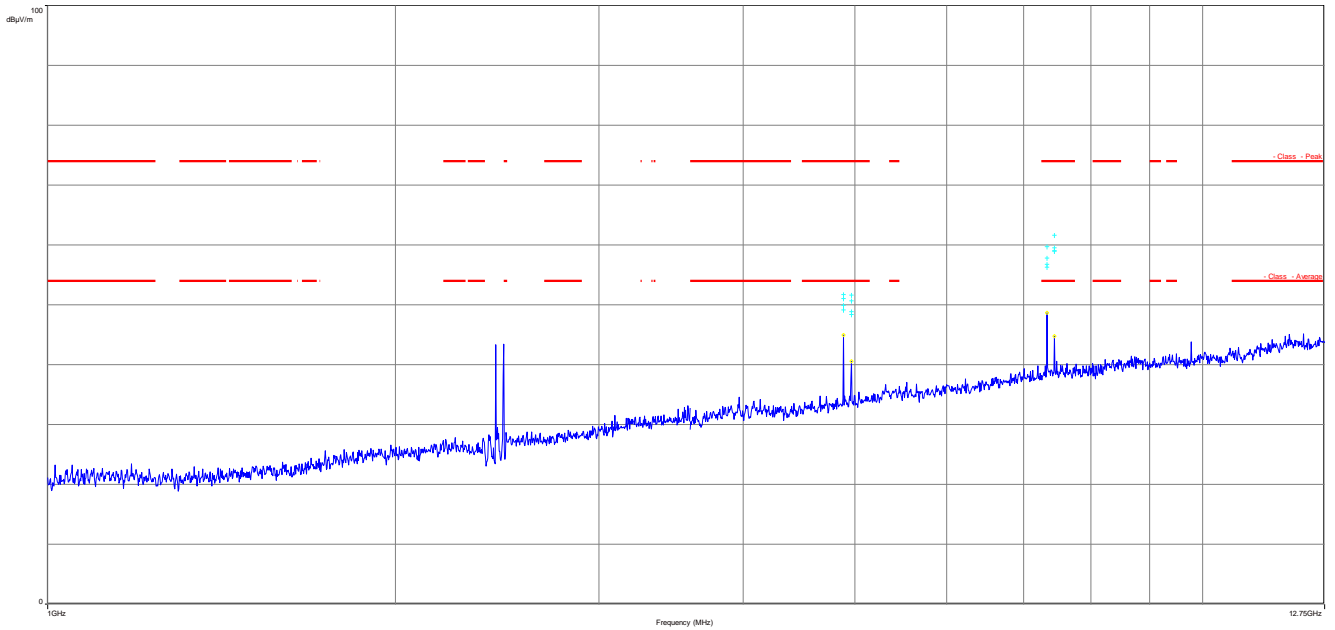
**Plot 5:** Middle channel, 30 MHz to 1 GHz, vertical & horizontal polarization



**Final\_Result:**

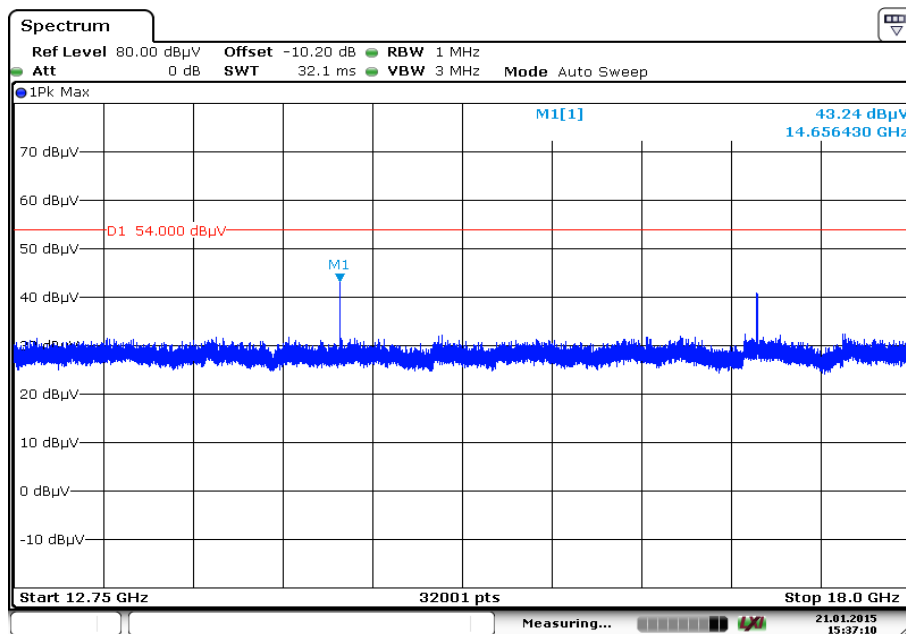
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
32.004600	11.82	30.00	18.18	1000.0	120.000	170.0	V	115	13.5
42.849150	10.06	30.00	19.94	1000.0	120.000	170.0	H	115	13.9
59.697300	7.67	30.00	22.33	1000.0	120.000	170.0	V	178	11.6
502.225350	15.07	36.00	20.93	1000.0	120.000	170.0	V	84	18.7
709.661250	18.82	36.00	17.18	1000.0	120.000	170.0	V	17	21.8
875.457900	20.95	36.00	15.05	1000.0	120.000	98.0	H	286	23.8

**Plot 6:** Middle channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



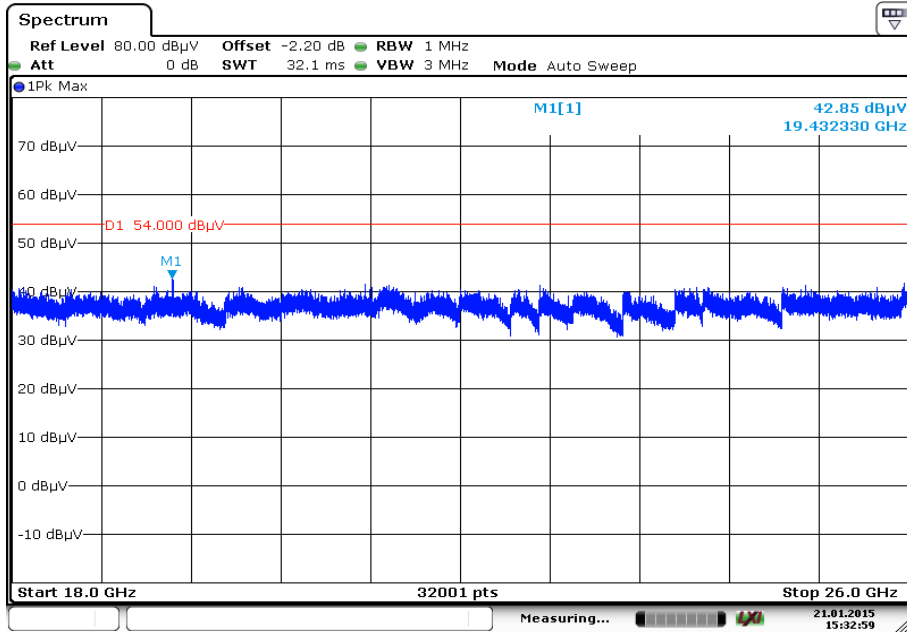
The carrier signal is notched with a 2.4 GHz band rejection filter.

**Plot 7:** Middle channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



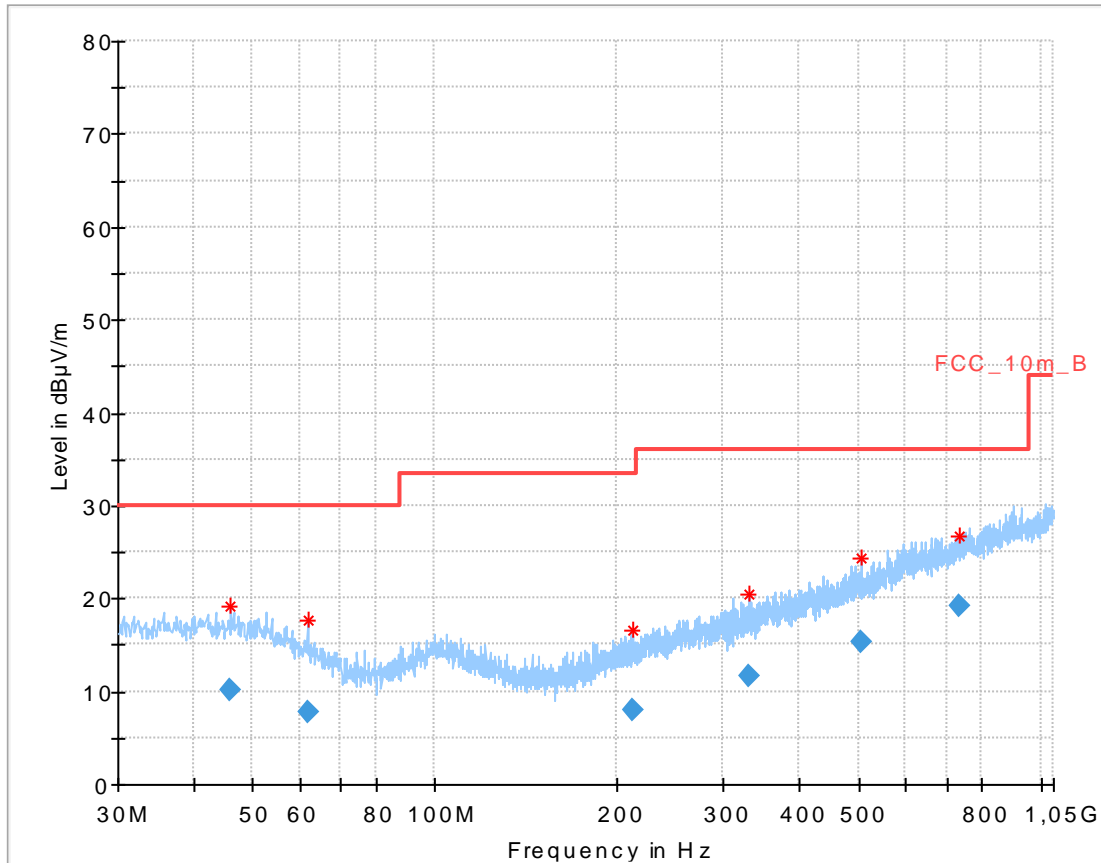
Date: 21.JAN.2015 15:37:10

Plot 8: Middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Date: 21.JAN.2015 15:32:59

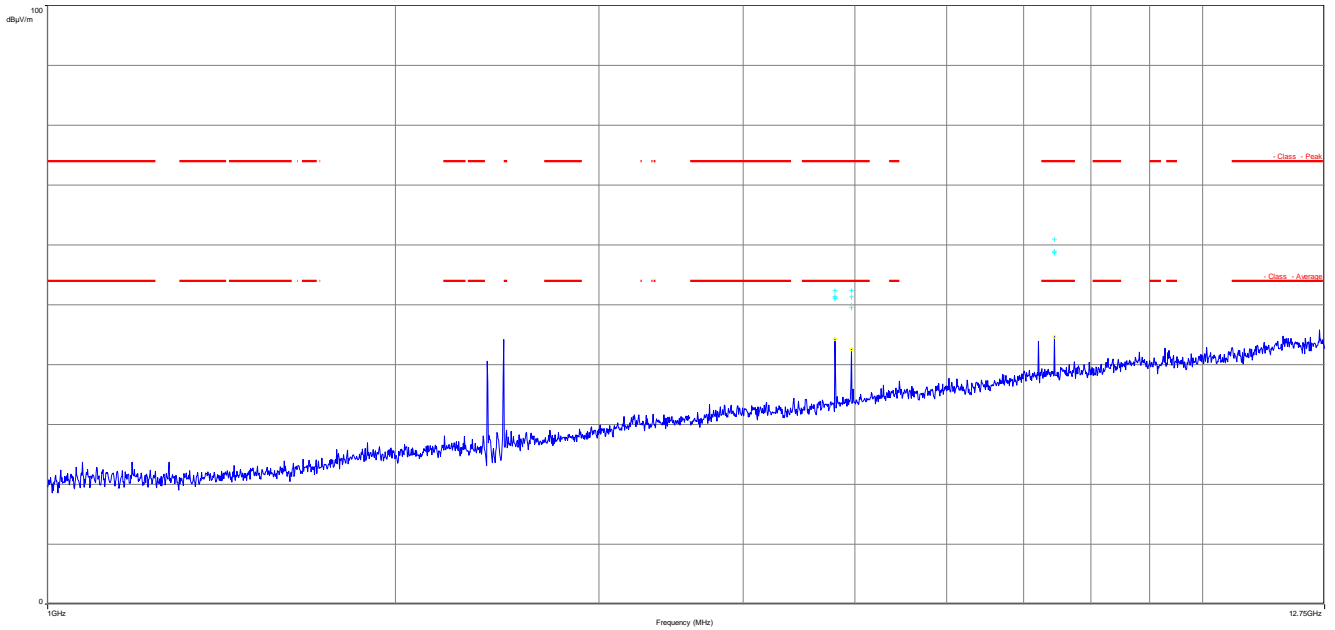
**Plot 9:** Highest channel, 30 MHz to 1 GHz, vertical & horizontal polarization



**Final\_Result:**

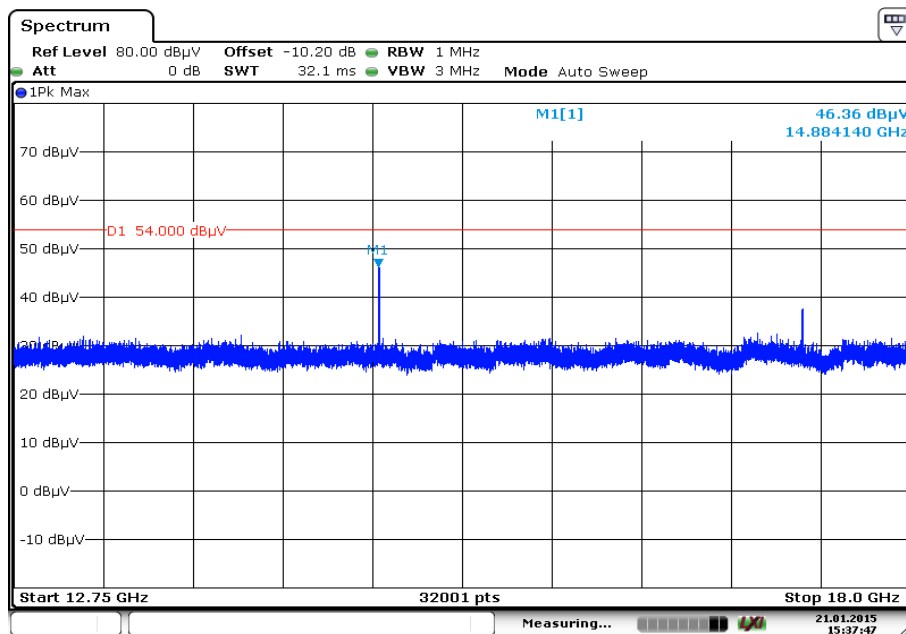
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
45.971850	10.23	30.00	19.77	1000.0	120.000	170.0	H	295	13.8
62.060700	7.73	30.00	22.27	1000.0	120.000	122.0	V	268	11.1
211.616250	7.94	33.50	25.56	1000.0	120.000	170.0	H	295	12.1
330.172050	11.74	36.00	24.26	1000.0	120.000	122.0	V	107	15.4
506.329800	15.31	36.00	20.69	1000.0	120.000	170.0	V	88	18.8
731.715900	19.29	36.00	16.71	1000.0	120.000	170.0	V	205	22.3

**Plot 10:** Highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



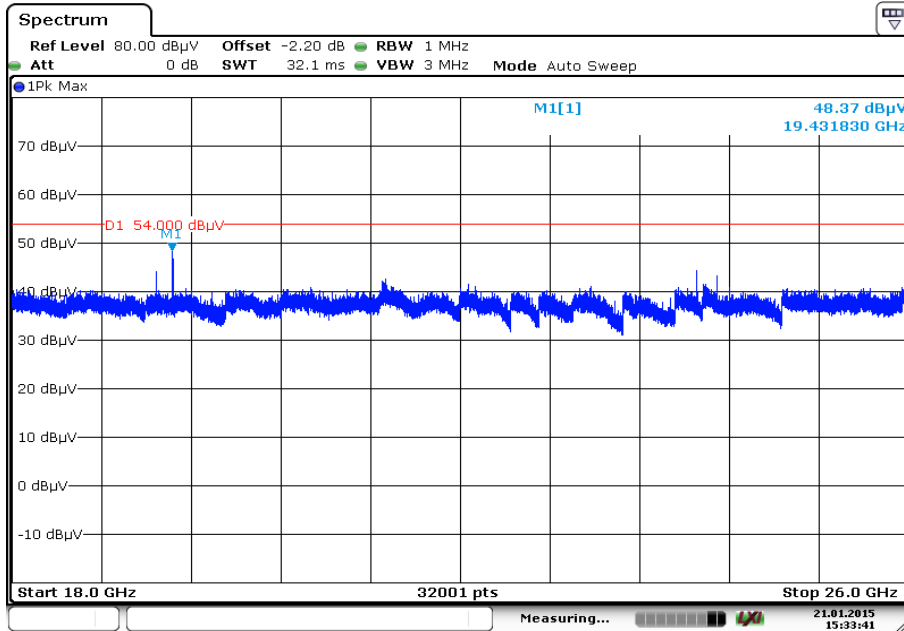
The carrier signal is notched with a 2.4 GHz band rejection filter.

**Plot 11:** Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Date: 21.JAN.2015 15:37:48

Plot 12: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Date: 21.JAN.2015 15:33:42

## 10.9 RX spurious emissions radiated

### Description:

Measurement of the radiated spurious emissions in idle/receive mode. The results are valid for both modes.

### Measurement:

Measurement parameter	
Detector:	Peak / Quasi Peak / RMS
Sweep time:	Auto
Resolution bandwidth:	F > 1 GHz: 1 MHz F < 1 GHz: 100 kHz
Video bandwidth:	3 x RBW Remeasurement: 10 Hz / 3 MHz
Span:	30 MHz to 26 GHz
Trace-Mode:	Max Hold

### Limits:

FCC		IC	
RX Spurious Emissions Radiated			
Frequency (MHz)	Field Strength (dB $\mu$ V/m)	Measurement distance	
30 - 88	30.0	10	
88 - 216	33.5	10	
216 - 960	36.0	10	
Above 960	54.0	3	

### Results:

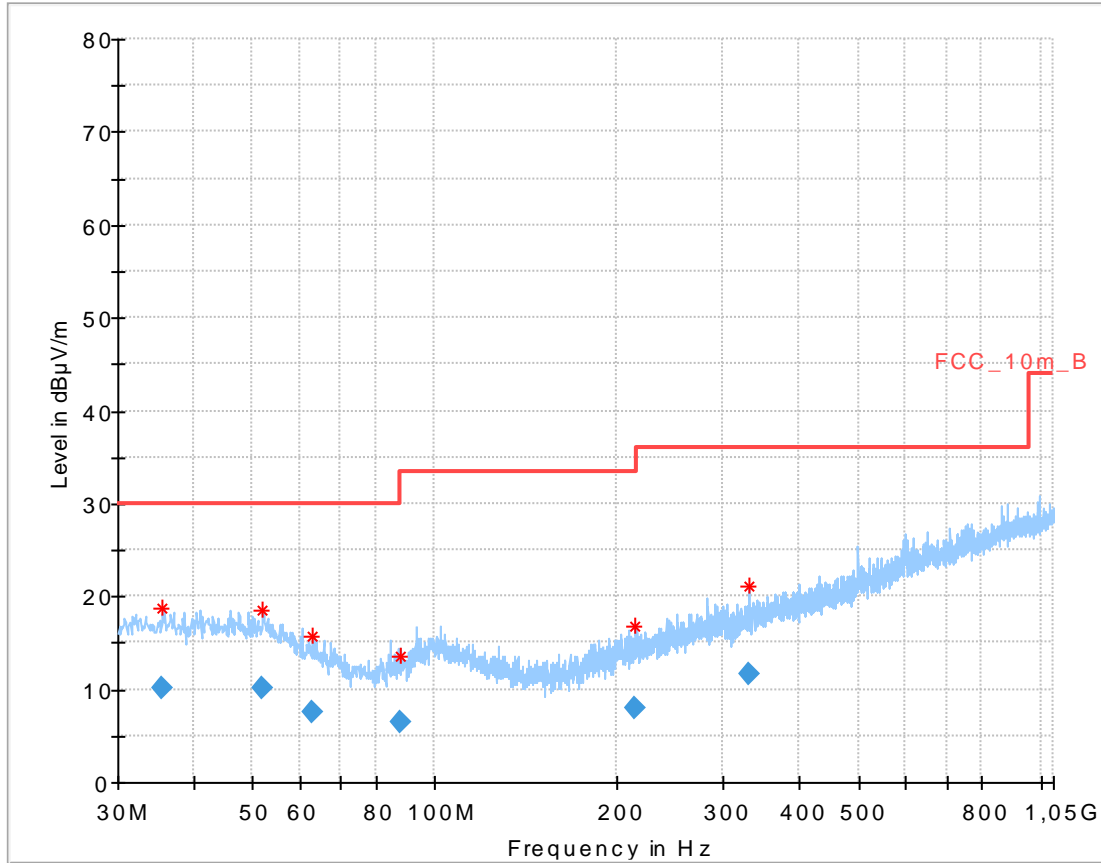
RX Spurious Emissions Radiated [dB $\mu$ V/m]		
F [MHz]	Detector	Level [dB $\mu$ V/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
No spurious emissions above 1 GHz detected.		
Measurement uncertainty	± 3 dB	

**Verdict: Passed.**

**Note:** The limit was recalculated with 20 dB / decade (Part 15.31) for all radiated spurious emissions 30 MHz to 1 GHz from 3 meter limit to a 10 meter distance. (40dB/decade for emissions < 30MHz)

**Plots: RX / Idle – mode**

**Plot 1: 30 MHz to 1 GHz, vertical & horizontal polarization**

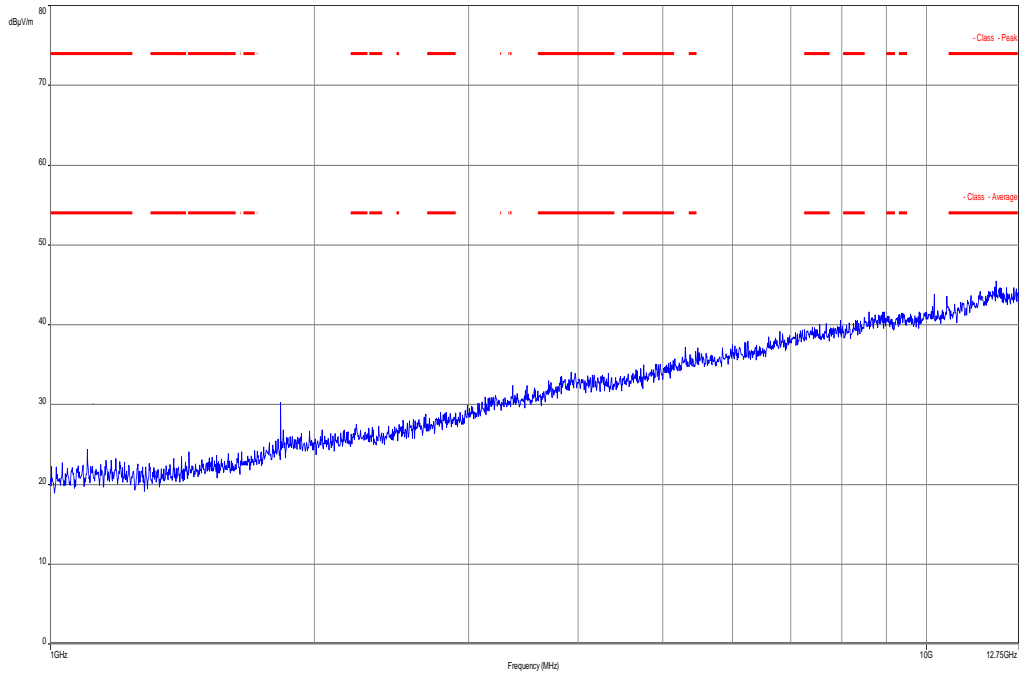


**Final\_Result:**

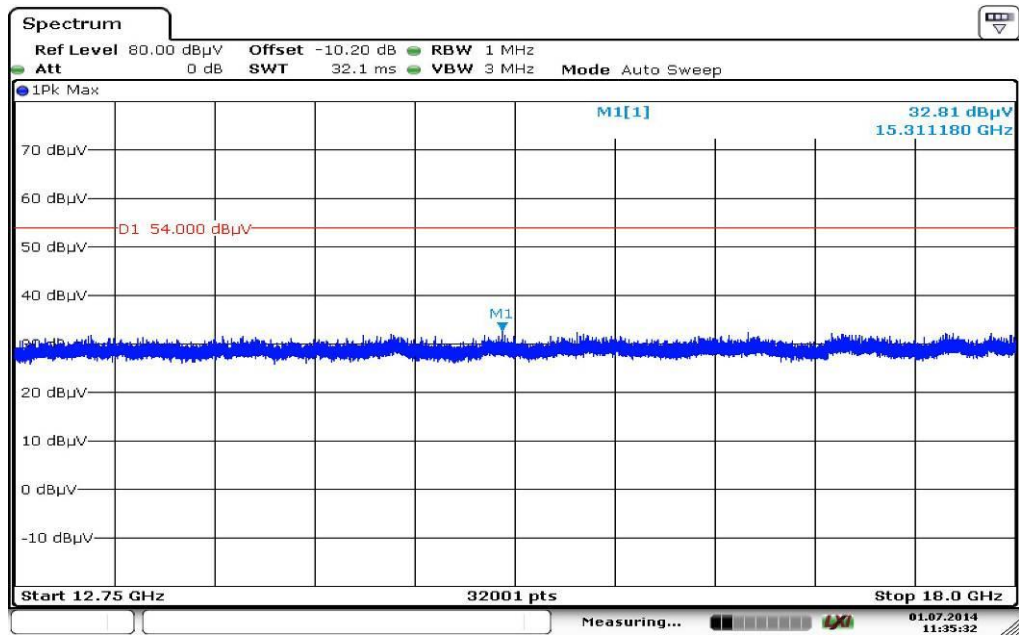
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
35.533950	10.23	30.00	19.77	1000.0	120.000	170.0	H	193	13.8
51.859500	10.08	30.00	19.92	1000.0	120.000	122.0	V	197	13.3
62.888100	7.63	30.00	22.37	1000.0	120.000	122.0	H	245	10.9
87.695850	6.56	30.00	23.44	1000.0	120.000	170.0	V	286	10.1
214.561050	7.90	33.50	25.60	1000.0	120.000	156.0	H	282	12.2
328.947150	11.68	36.00	24.32	1000.0	120.000	170.0	H	25	15.4



Plot 2: 1 GHz to 12.75 GHz, vertical & horizontal polarization

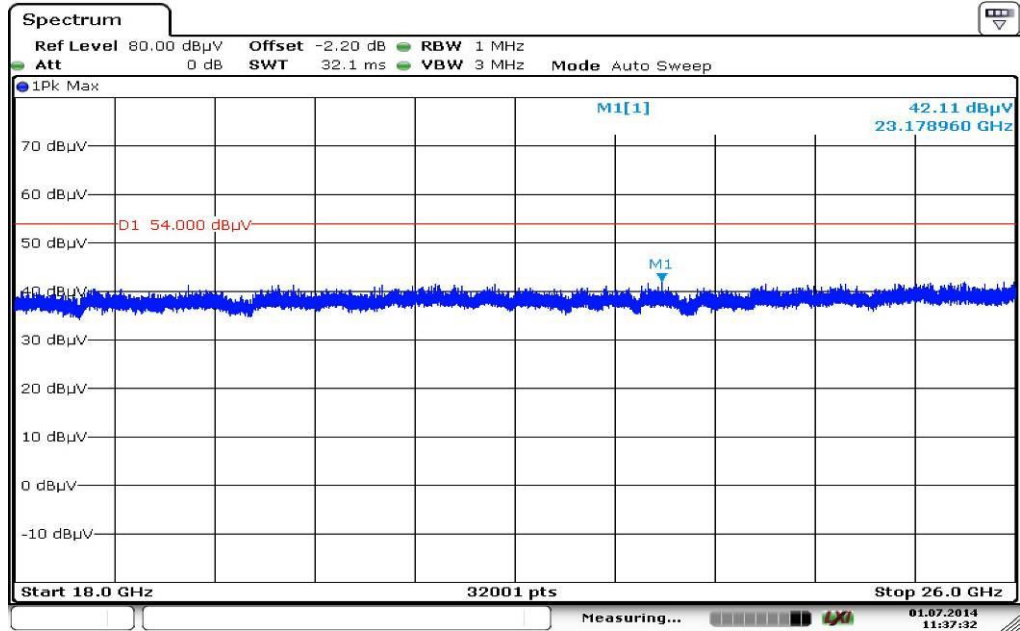


Plot 3: 12.75 GHz to 18 GHz, vertical & horizontal polarization



Date: 1.JUL.2014 11:35:32

Plot 4: 18 GHz to 26 GHz, vertical & horizontal polarization



Date: 1.JUL.2014 11:37:32

## 10.10 Spurious emissions radiated < 30 MHz

### Description:

Measurement of the radiated spurious emissions in transmit mode below 30 MHz. The EUT is set to the middle channel. This measurement is representative for all channels and modes. If peaks are found the lowest and highest channel will be measured too. The measurement is performed with the data rate producing the highest output power. The limits are recalculated to a measurement distance of 3 m with 40 dB/decade according CFR Part 2.

### Measurement:

Measurement parameter	
Detector:	Peak / Quasi Peak
Sweep time:	Auto
Video bandwidth:	F < 150 kHz: 200 Hz F > 150 kHz: 9 kHz
Resolution bandwidth:	F < 150 kHz: 1 kHz F > 150 kHz: 100 kHz
Span:	9 kHz to 30 MHz
Trace-Mode:	Max Hold

### Limits:

FCC	IC	
TX Spurious Emissions Radiated < 30 MHz		
Frequency (MHz)	Field Strength (dB $\mu$ V/m)	Measurement distance
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

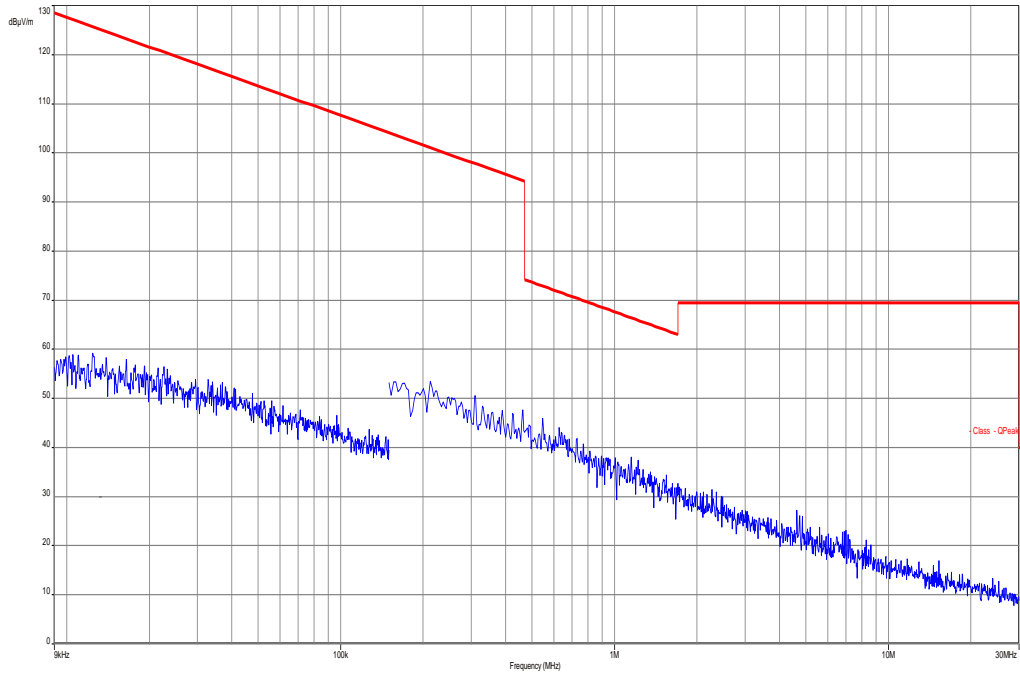
### Results:

TX Spurious Emissions Radiated < 30 MHz [dB $\mu$ V/m]		
F [MHz]	Detector	Level [dB $\mu$ V/m]
No peaks detected.		
Measurement uncertainty	± 3 dB	

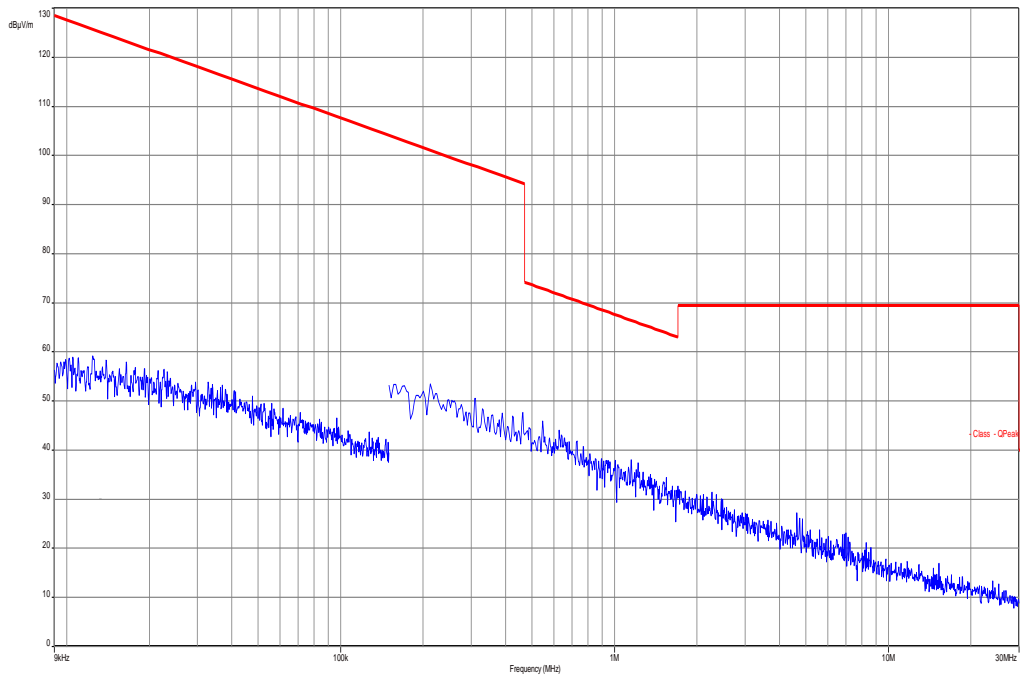
**Verdict: Passed**

**Plots: TX mode**

**Plot 1: 9 kHz to 30 MHz, ANT 1**

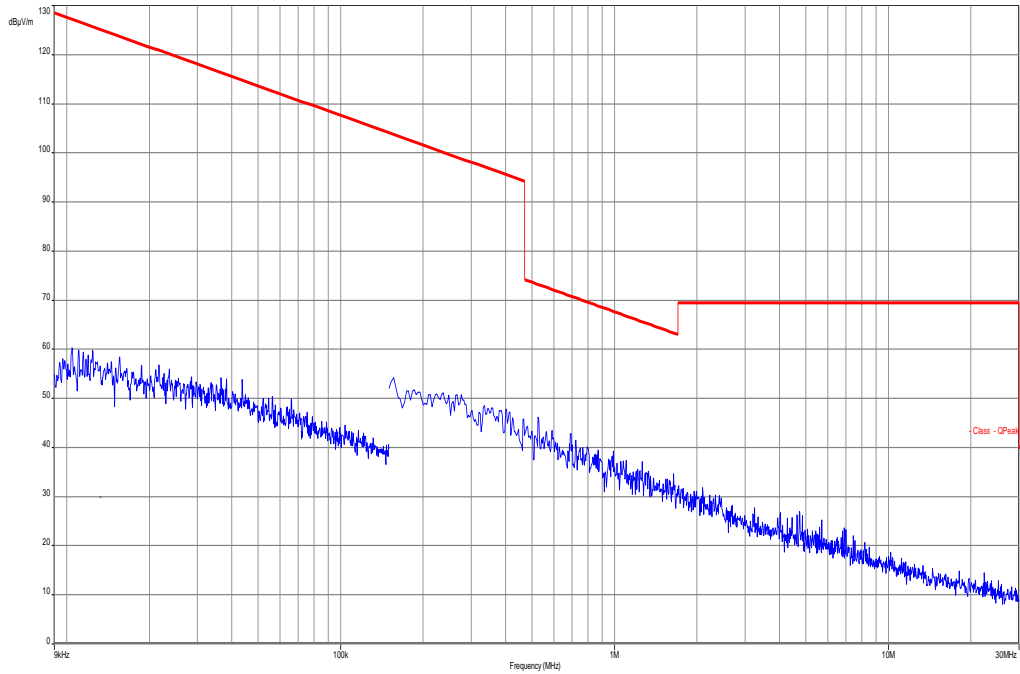


**Plot 2: 9 kHz to 30 MHz, ANT 2**



**Plots: RX / Idle – mode**

**Plot 1: 9 kHz to 30 MHz**



### 10.11 Spurious emissions conducted < 30 MHz

**Description:**

Measurement of the conducted spurious emissions in transmit mode below 30 MHz. The EUT is set to the middle channel. This measurement is repeated for DSSS and OFDM modulation. If peaks are found the lowest and highest channel will be measured too. The measurement is performed with the data rate producing the highest output power. Both power lines, phase and neutral line, are measured. Found peaks are remeasured with average and quasi peak detection to show compliance to the limits.

**Measurement:**

Measurement parameter	
Detector:	Peak - Quasi Peak / Average
Sweep time:	Auto
Video bandwidth:	F < 150 kHz: 200 Hz F > 150 kHz: 9 kHz
Resolution bandwidth:	F < 150 kHz: 1 kHz F > 150 kHz: 100 kHz
Span:	9 kHz to 30 MHz
Trace-Mode:	Max Hold

**Limits:**

FCC	IC	
TX Spurious Emissions Conducted < 30 MHz		
Frequency (MHz)	Quasi-Peak (dBµV/m)	Average (dBµV/m)
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30.0	60	50

\*Decreases with the logarithm of the frequency

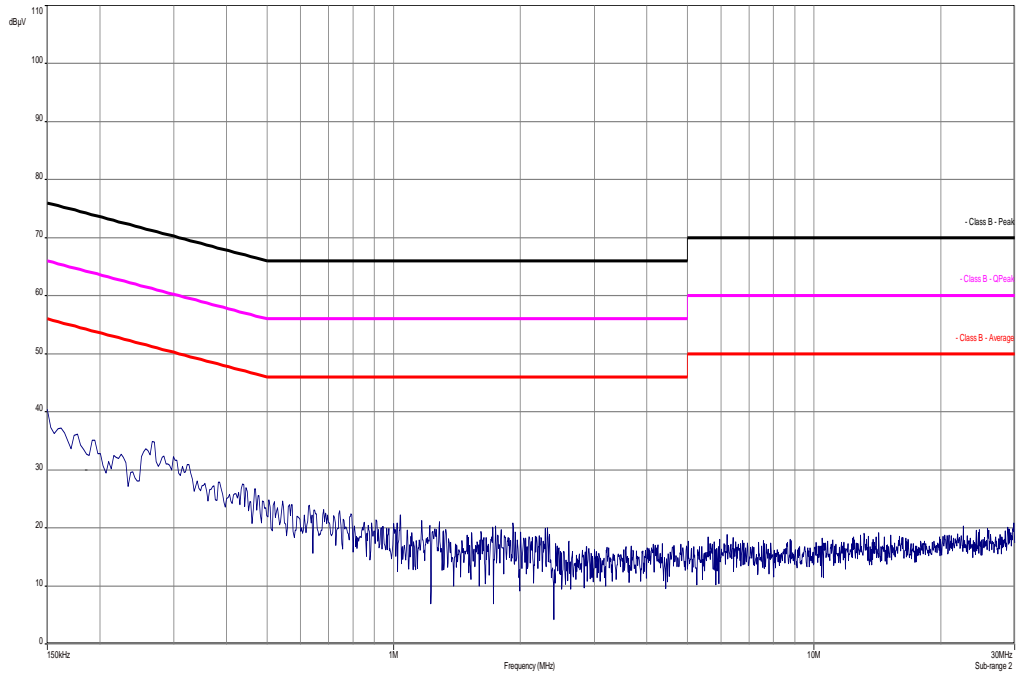
**Results:**

TX Spurious Emissions Conducted < 30 MHz [dBµV/m]		
F [MHz]	Detector	Level [dBµV/m]
No peaks detected.		
Measurement uncertainty	± 3 dB	

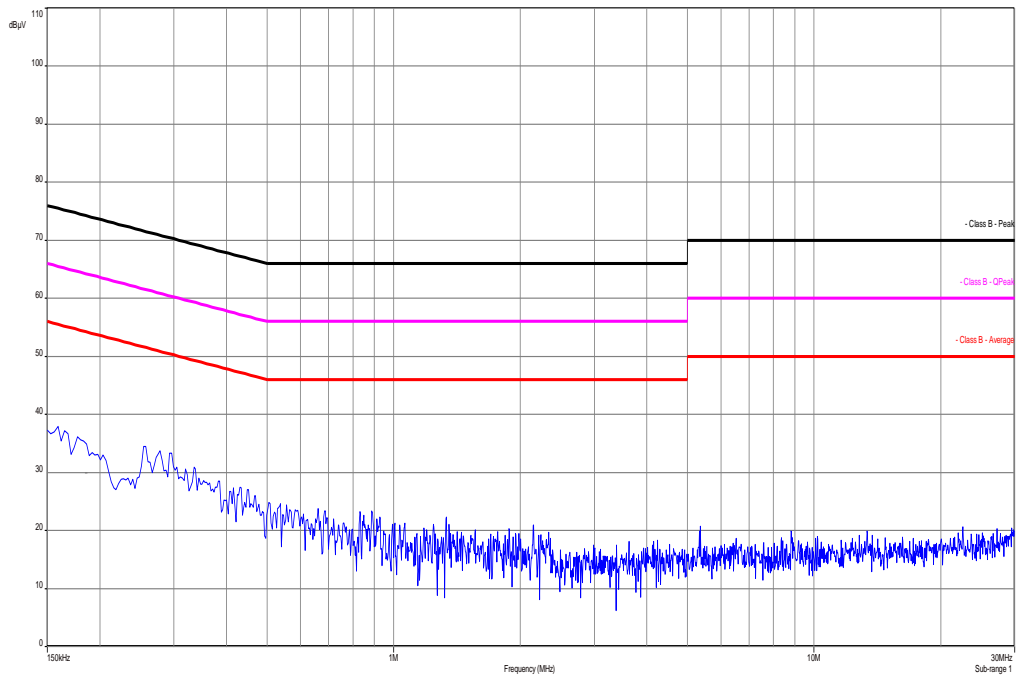
**Verdict: Passed**

**Plots:**

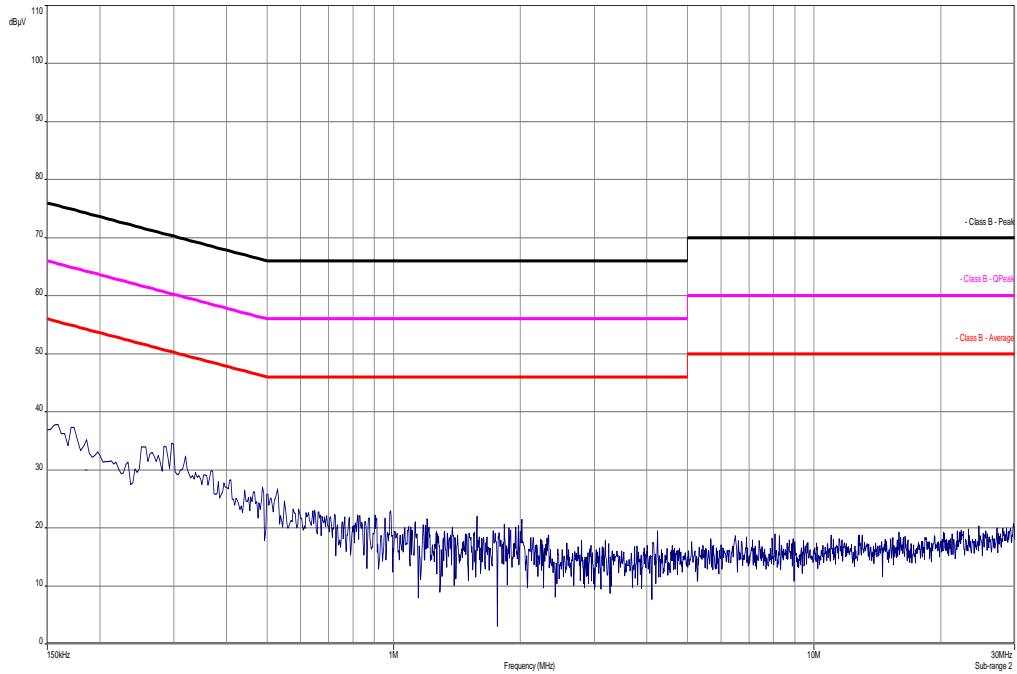
**Plot 1: TX mode, 150 kHz to 30 MHz, phase line**



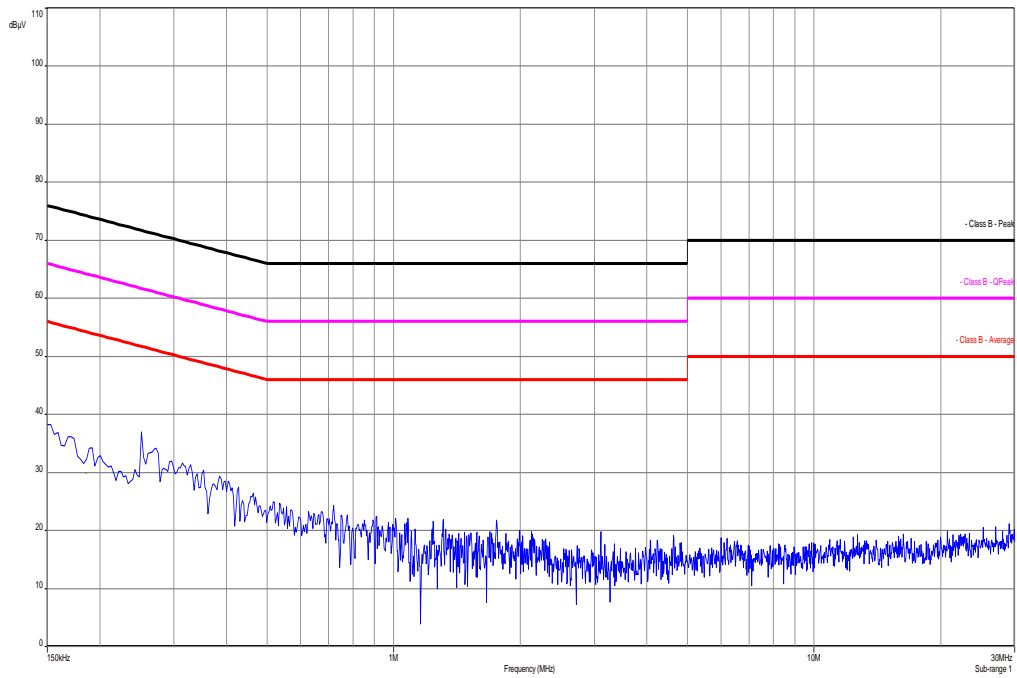
**Plot 2: TX mode, 150 kHz to 30 MHz, neutral line**



Plot 3: RX / Idle – mode, 150 kHz to 30 MHz, phase line



Plot 4: RX / Idle – mode, 150 kHz to 30 MHz, neutral line





## 11 Test equipment and ancillaries used for tests

Typically, the calibrations of the test apparatus are commissioned to and performed by an accredited calibration laboratory. The calibration intervals are determined in accordance with the DIN EN ISO/IEC 17025. In addition to the external calibrations, the laboratory executes comparison measurements with other calibrated test systems or effective verifications. Weekly chamber inspections and range calibrations are performed. Where possible, rf-generating and signalling equipment as well as measuring receivers and analyzers are connected to an external high-precision 10 MHz reference (GPS-based or rubidium frequency standard).

In order to simplify the identification of the equipment used at some special tests, some items of test equipment and ancillaries can be provided with an identifier or number in the equipment list below (Lab/Item).

No.	Lab / Item	Equipment	Type	Manufact.	Serial No.	INV. No Cetecom	Kind of Calibration	Last Calibration	Next Calibration
1	n. a.	Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	8812-3088	300001032	vKI!	08.05.2013	08.05.2015
2	n. a.	Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996	ev		
3	n. a.	Switch / Control Unit	3488A	HP Meßtechnik	*	300000199	ne		
4	9	Isolating Transformer	MPL IEC625 Bus Regeltrennt ravo	Erfi	91350	300001155	ne		
5	90	Active Loop Antenna 10 kHz to 30 MHz	6502	Kontron Psychotech	8905-2342	300000256	k	13.06.2013	13.06.2015
6	n. a.	Amplifier	js42-00502650-28-5a	Parzich GMBH	928979	300003143	ne		
7	n. a.	Band Reject filter	WRCG240 0/2483-2375/2505-50/10SS	Wainwright	11	300003351	ev		
8	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	371	300003854	vKI!	14.10.2011	14.10.2014
9	n. a.	MXE EMI Receiver 20 Hz bis 26,5 GHz	N9038A	Agilent Technologies	MY51210197	300004405	k	13.03.2014	13.03.2015
10	11b	Microwave System Amplifier, 0.5-26.5 GHz	83017A	HP Meßtechnik	00419	300002268	ev		
11	A026	Std. Gain Horn Antenna 12.4 to 18.0 GHz	639	Narda	8402	300000787	k	22.07.2013	22.07.2015
12	A029	Std. Gain Horn Antenna 18.0 to 26.5 GHz	638	Narda	8205	300002442	k	19.07.2013	19.07.2015
13	n. a.	Signal Analyzer 40 GHz	FSV40	R&S	101042	300004517	k	21.01.2014	21.01.2015
14	45	Switch-Unit	3488A	HP Meßtechnik	2719A14505	300000368	g		
15	50	DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2920A04466	300000580	ne		
16	n. a.	EMI Test Receiver	ESCI 3	R&S	100083	300003312	k	27.01.2014	27.01.2015
17	n. a.	Funkstörmesse mpfänger 20Hz-26,5GHz	ESU26	R&S	100037	300003555	k	28.02.2014	28.02.2015
18	n. a.	Antenna Tower	Model 2175	ETS-LINDGREN	64762	300003745	izw		
19	n. a.	Positioning Controller	Model 2090	ETS-LINDGREN	64672	300003746	izw		
20	n. a.	Turntable Interface-Box	Model 105637	ETS-LINDGREN	44583	300003747	izw		
21	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	295	300003787	k	22.04.2014	22.04.2016

**Agenda:** Kind of Calibration

k	calibration / calibrated	EK	limited calibration
ne	not required (k, ev, izw, zw not required)	zw	cyclical maintenance (external cyclical maintenance)
ev	periodic self verification	izw	internal cyclical maintenance
Ve	long-term stability recognized	g	blocked for accredited testing
vkl!	Attention: extended calibration interval		
NK!	Attention: not calibrated	*)	next calibration ordered / currently in progress

**12 Observations**

No observations exceeding those reported with the single test cases have been made.

## Annex A Document history

Version	Applied changes	Date of release
	Initial release	2014-07-10
A	Added conducted measurements and partial re-measured radiated measurements with new lower power levels	2015-01-22

## Annex B Further information

### Glossary

AVG	-	Average
DUT	-	Device under test
EMC	-	Electromagnetic Compatibility
EN	-	European Standard
EUT	-	Equipment under test
ETSI	-	European Telecommunications Standard Institute
FCC	-	Federal Communication Commission
FCC ID	-	Company Identifier at FCC
HW	-	Hardware
IC	-	Industry Canada
Inv. No.	-	Inventory number
N/A	-	Not applicable
PP	-	Positive peak
QP	-	Quasi peak
S/N	-	Serial number
SW	-	Software

