

**TEST REPORT**  
of the accredited test laboratory

**TÜV Nr.:M/FG-10/129**

:  
Deutschstraße 10  
A-1230 Vienna  
Tel.:  
+43(0)1 610 91-0  
pzw@tuv.at

**Division:**  
Medical Technology/  
Communication  
Technology/ EMC

**Department:**  
Testing Body for  
Communication  
Technology/ EMC

TÜV®

**Applicant:** AKG Acoustics GmbH  
Lemböckgasse 21-25  
A – 1230 Wien

**Tested Product:** Receiver for wireless headphone set

**FCC-ID:** V3TK840RX

**Manufacturer:** AKG Acoustics GmbH  
Lemböckgasse 21-25  
A – 1230 Wien

**Output power / field strength:** 2,69mW eirp      **power supply:** 3,7 VDC

**Frequency range:** 2403 - 2478 MHz      **Channel separation:** 5 MHz

**Standard:** FCC: 47 CFR Part 15 (October 1, 2009 edition)  
RSS-210 Issue 7, June 2007



Testing Laboratory,  
Inspection Body,  
Certification Body,  
Calibration Laboratory

**Notified Body 0408**  
IC 2932K-1

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Krugerstrasse 16  
1015 Vienna/Austria

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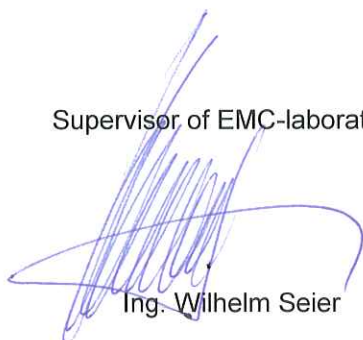
**Company Register**  
**Court / - Number:**  
Vienna / FN 288476 f

**Banking Connection:**  
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IBAN  
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BIC BKAUATWW  
RBI 001-04.093.282  
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BIC RZBAATWW

UID ATU63240488  
DVR 3002476

**TUV Austria Services GmbH**  
**Test laboratory for EMC**

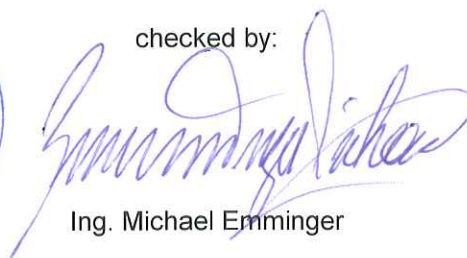
Supervisor of EMC-laboratory:

  
Ing. Wilhelm Seier



22.09.2010

checked by:

  
Ing. Michael Emminger

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The results of this test report only refer to the provided equipment.

## LIST OF MEASUREMENTS

The complete list of measurements called for in 47 CFR 15 and RSS-210 is given below.

SUBCLAUSE	PARAMETER TO BE MEASURED	PAGE
	Intentional Radiators	
	Test object data	3
2.1033	Number of channels and channel spacing	4
15.247(a)(2) A8.2 (a)	6 dB Bandwidth	5-7
15.247(b)(3) A8.4 (4)	Maximum Peak RF Power Output (eirp)	8
15.247(e) A8.2 (b)	Power Spectral Density	9
15.247(d) A8.5	Out-of-band Emissions	10-20
15.209(a)	Emissions in restricted bands	21-23
15.247(i)	Maximum permissible exposure	24

## TEST OBJECT DATA

### General EUT Description

This digital audio receiver will be used as wireless headphone for reception of audio signals from its associated transmitter. As the system is communicating bidirectional, the receiver has also a transmitter part. It has no antenna connector, so all technical data were measured radiated. As this device is using digital modulation technology and the frequency range 2400-2483,5 MHz all measurements were performed according to 15.247.

2.1033 (c) Technical description

2.1033 (4) Type of emission: MSK – Channel spacing 5 MHz.

2.1033 (5) Frequency range: 2403 – 2478 MHz (channel center frequency)

2.1033 (6) Power range and Controls: The maximum peak output power is fixed at 2,69 mW.

2.1033 (7) Maximum output power rating: 2,69mW eirp.

2.1033 (8) DC Voltage and Current: 5 V external (for charging the internal battery only) / 3,7V internal battery  
maximum current consumption: 300 mA

RSS-135 This standard does not apply to:

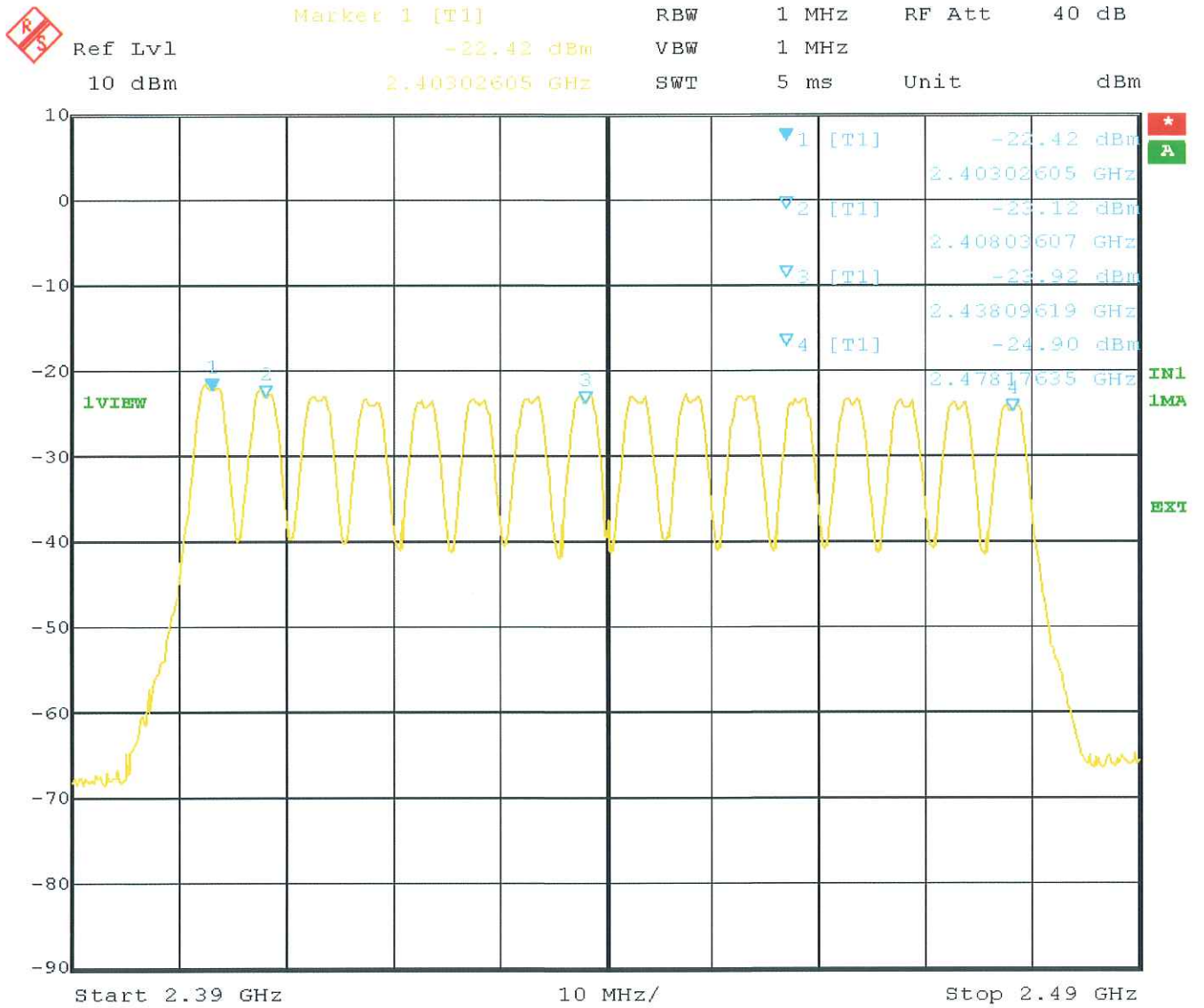
- 1.1.(a) a receiver that scans radio frequencies for the purpose of enabling its associated transmitter to avoid transmitting in an occupied frequency but which does not have the capability of decoding the message (e.g. converting it to audio voice) contained in the radio signal

Number of channels and channel spacing

§ 2.1033

Radiated Measurement

Rated output power: 2,69 mW



Date: 30.JUL.2010 13:17:22

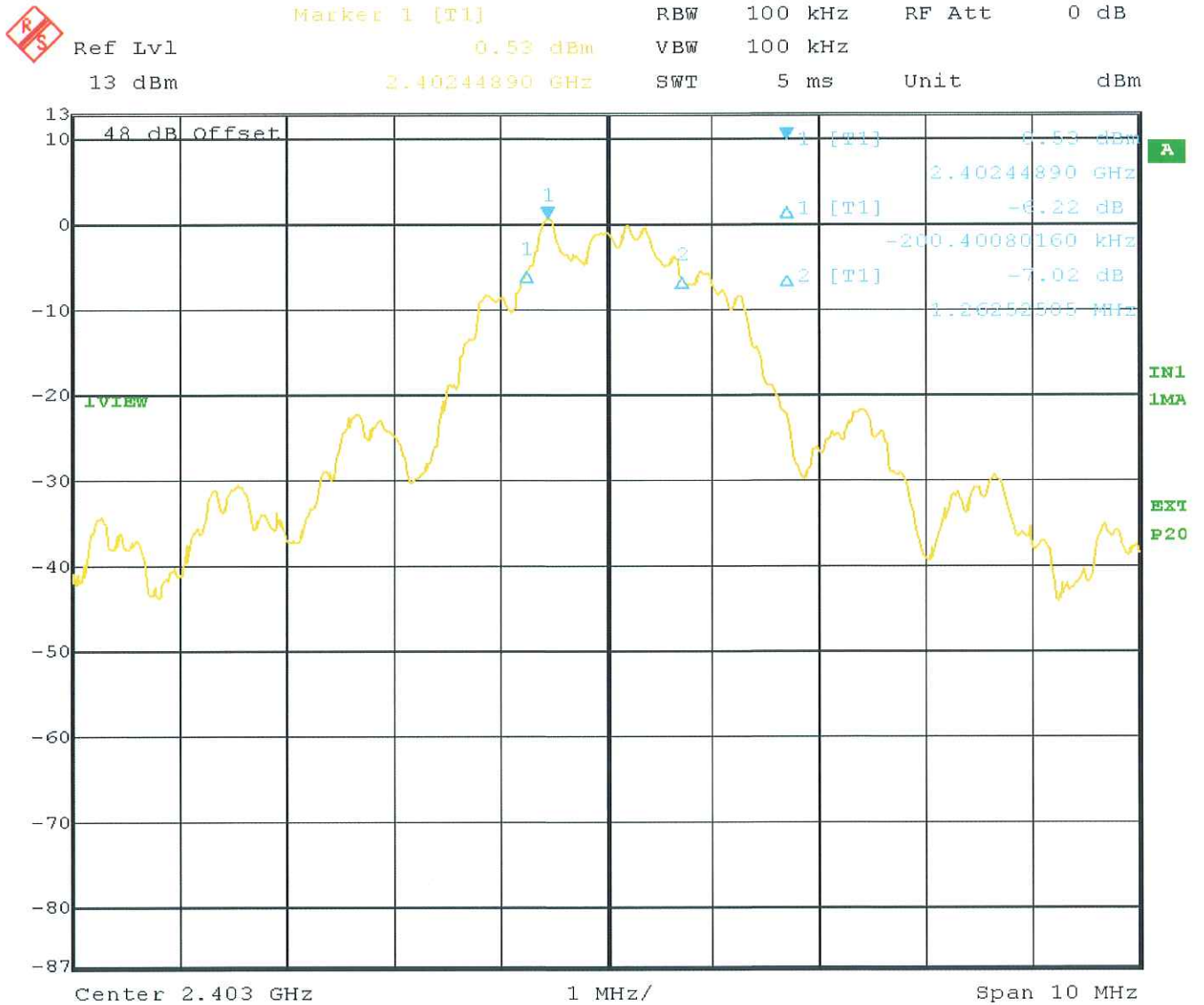
Test Equipment used: NT-100; NT-110; NT-111; NT-112; NT-125; NT-126; NT-150; NT-207; NT-500; NT-520; NT-550

**6dB Bandwidth**

**§ 15.247(a)(2)  
A8.2(a)**

Radiated Measurement

Rated output power: 2,69 mW Channel 1 (2403 MHz)



Date: 3.AUG.2010 12:20:37

6dB Bandwidth: 1,463 MHz

**LIMIT SUBCLAUSE 15.247(e) – A8.2(b)**

Under normal test conditons	6 dB Bandwidth at least 500 kHz
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Test Equipment used: NT-100; NT-110; NT-111; NT-112; NT-125; NT-126; NT-150; NT-207; NT-500; NT-520; NT-550

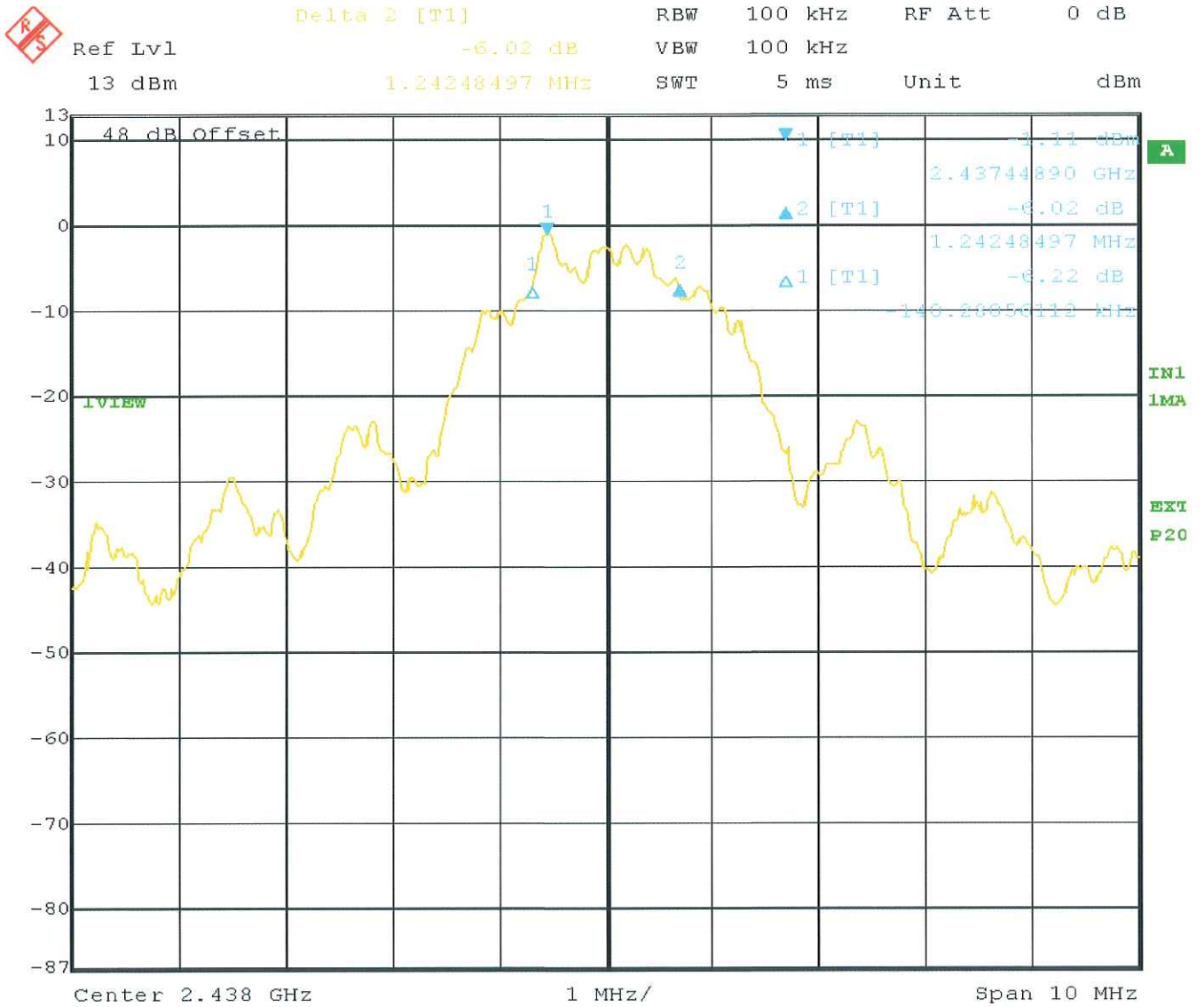


**6dB Bandwidth**

**§ 15.247(a)(2)  
A8.2(a)**

Radiated Measurement

Rated output power: 2,69 mW Channel 8 (2438 MHz)



Date: 3.AUG.2010 12:23:28

6dB Bandwidth: 1,384 MHz

**LIMIT SUBCLAUSE 15.247(e) – A8.2(b)**

Under normal test conditons	6 dB Bandwidth at least 500 kHz
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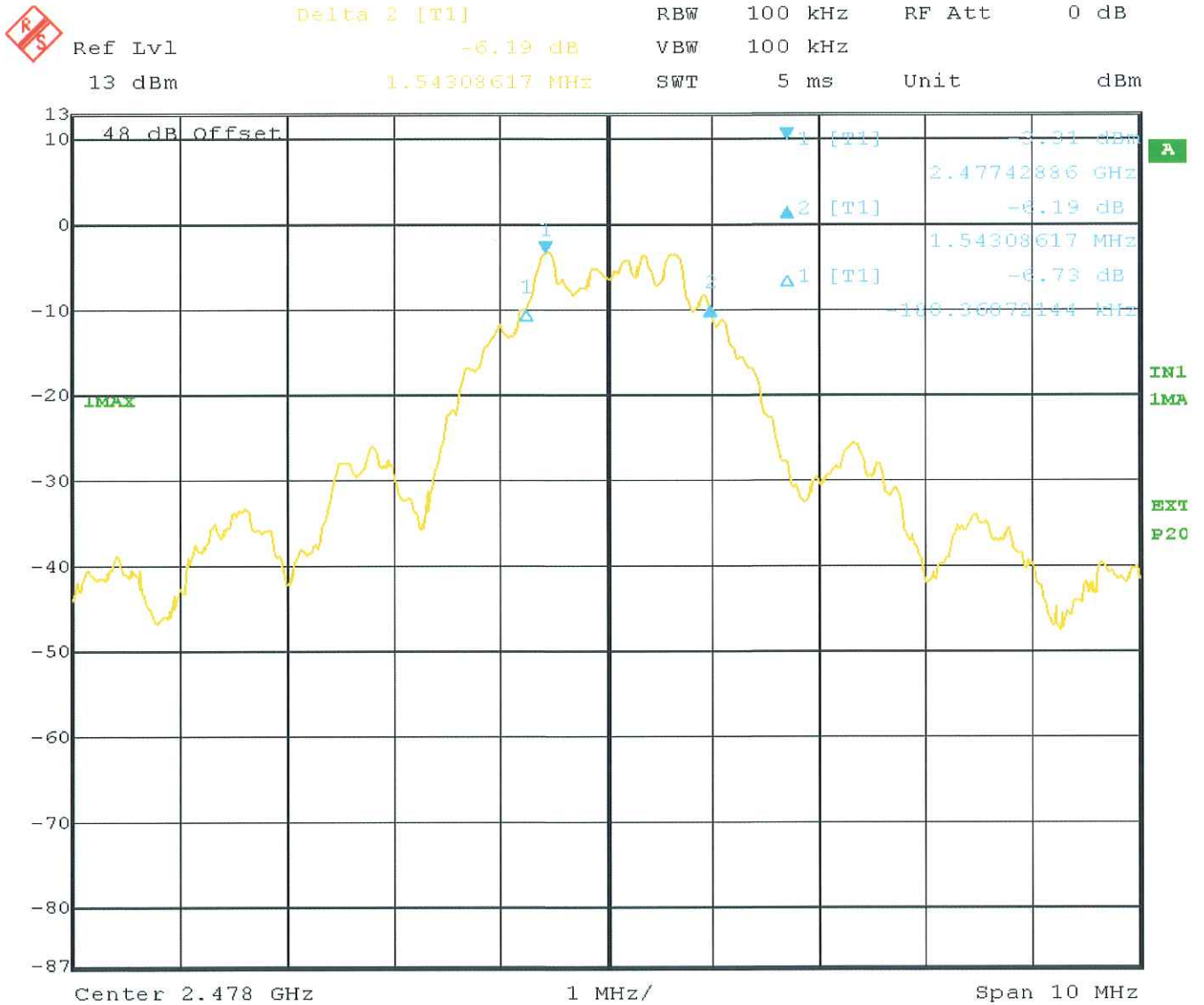
Test Equipment used: NT-100; NT-110; NT-111; NT-112; NT-125; NT-126; NT-150; NT-207; NT-500; NT-520; NT-550

**6dB Bandwidth**

§ 15.247(a)(2)  
A8.2(a)

Radiated Measurement

Rated output power: 2,69 mW Channel 16 (2478 MHz)



Date: 3.AUG.2010 12:38:45

6dB Bandwidth: 1,643 MHz

**LIMIT SUBCLAUSE 15.247(e) – A8.2(b)**

Under normal test conditons	6 dB Bandwidth at least 500 kHz
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Test Equipment used: NT-100; NT-110; NT-111; NT-112; NT-125; NT-126; NT-150; NT-207; NT-500; NT-520; NT-550

**Maximum Peak RF Power Output (EIRP)**

**§ 15.247(b)(3)  
A8.4(4)**

Radiated Measurement

Rated output power: 2,69 mW

Test conditions		Transmitter power (mW) (eirp)		
		2403 MHz	2438 MHz	2478 MHz
T <sub>nom</sub> ( 27 )°C	V <sub>nom</sub> (3,7)V	2,69	1,95	1,41
Maximum deviation from rated output power under normal test conditions (dB)		0	-1,4	-2,8
Measurement uncertainty		± 0,75 dB		

**LIMIT SUBCLAUSE 15.247(b)(3) – A8.4(4)**

Under normal test conditons	1W conducted (4W eirp)
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Test Equipment used: NT-100; NT-110; NT-111; NT-112; NT-125; NT-126; NT-150; NT-207; NT-500; NT-520; NT-550



**Power spectral density (EIRP)**

**§ 15.247(e)  
A8.2(b)**

Radiated Measurement

Rated output power: 2,69 mW

Test conditions		Power spectral density (dBm) (eirp)		
		2403 MHz	2438 MHz	2478 MHz
T <sub>nom</sub> ( 27 )°C	V <sub>nom</sub> (3,7)V	-18,9	-21,8	-23,8
Measurement uncertainty		± 0,75 dB		

**LIMIT SUBCLAUSE 15.247(e) – A8.2(b)**

Under normal test conditons	+8dBm in any 3 kHz band
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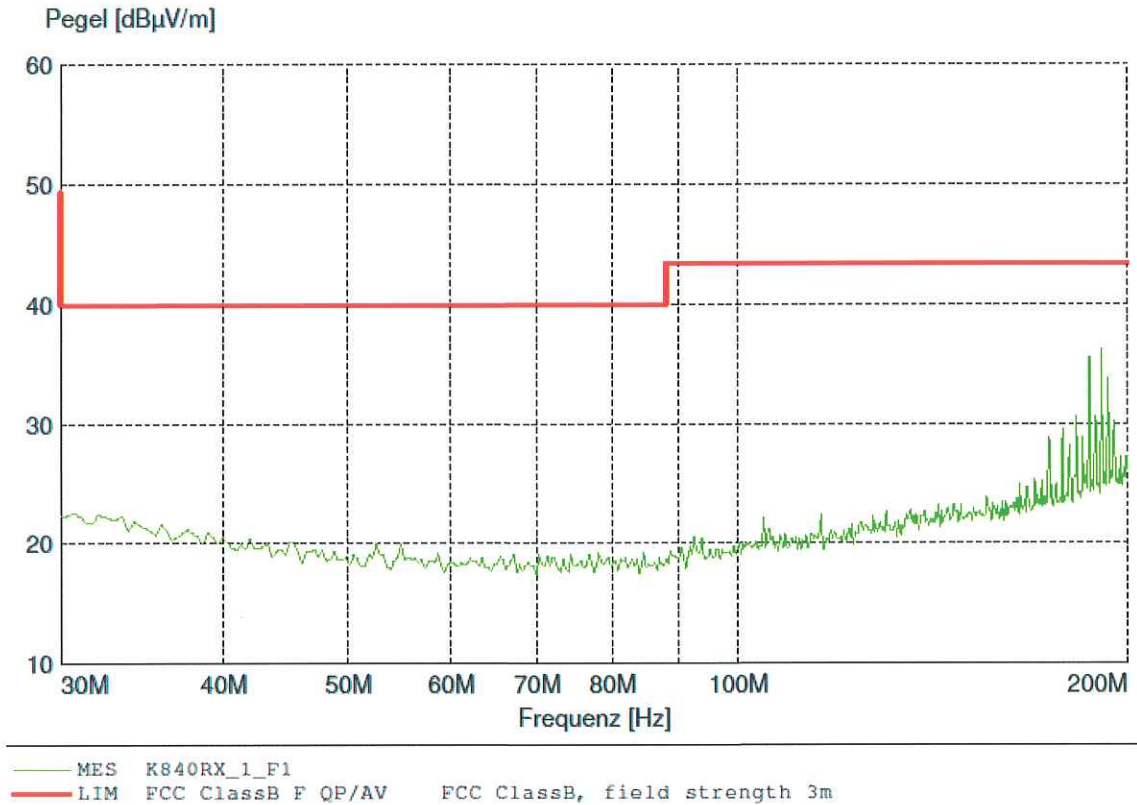
Test Equipment used: NT-100; NT-110; NT-111; NT-112; NT-125; NT-126; NT-150; NT-207; NT-500; NT-520; NT-550

**Out-of-band Emission**

**§ 15.247(d)  
A8.5**

Measurement with Peak-Detector:

Frequency: 2403 MHz



Seite 1 06.08.2010 14:26

**LIMIT SUBCLAUSE 15.247(d) – A8.5**

In any 100 kHz bandwidth outside the frequency band in which the radio device is operating.	At least 20dB below the power in the 100 kHz bandwidth within the band that contains the highest level of the desired power.
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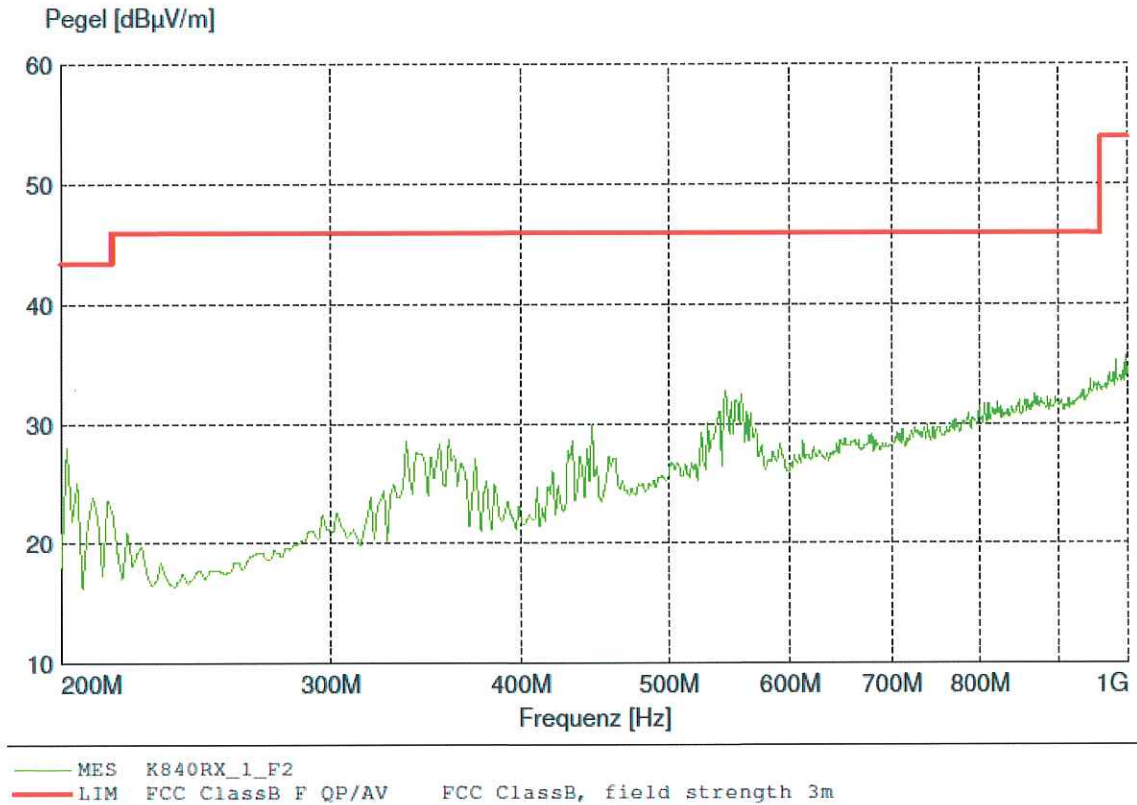
Test Equipment used: NT-100; NT-110; NT-111; NT-112; NT-125; NT-207

**Out-of-band Emission**

**§ 15.247(d)  
A8.5**

Measurement with Peak-Detector:

Frequency: 2403 MHz



Seite 1 06.08.2010 14:29

**LIMIT SUBCLAUSE 15.247(d) – A8.5**

In any 100 kHz bandwidth outside the frequency band in which the radio device is operating.	At least 20dB below the power in the 100 kHz bandwidth within the band that contains the highest level of the desired power.
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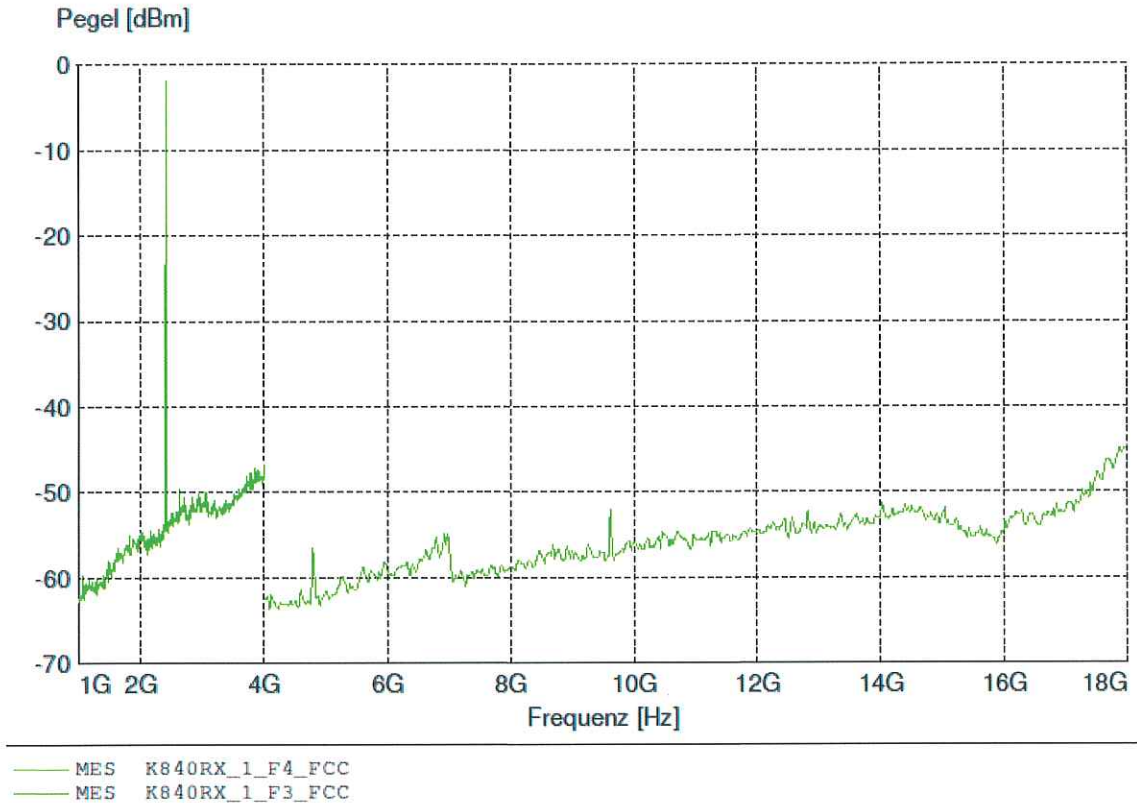
Test Equipment used: NT-100; NT-110; NT-111; NT-112; NT-125; NT-207

**Out-of-band Emission**

**§ 15.247(d)  
A8.5**

Measurement with Peak-Detector:

Frequency: 2403 MHz



Seite 1 06.08.2010 14:22

**LIMIT SUBCLAUSE 15.247(d) – A8.5**

<p>In any 100 kHz bandwidth outside the frequency band in which the radio device is operating.</p>	<p>At least 20dB below the power in the 100 kHz bandwidth within the band that contains the highest level of the desired power.</p>
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Test Equipment used: NT-100; NT-110; NT-111; NT-112; NT-125; NT-207

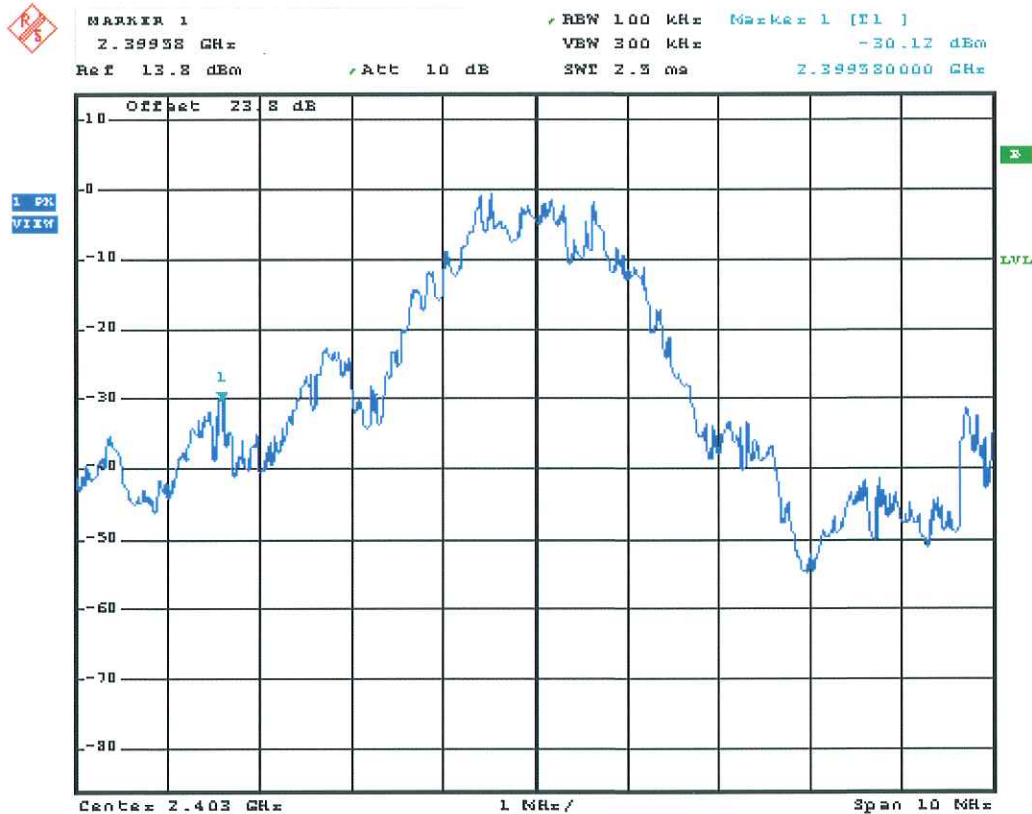
Although the measurements were made up to the tenth harmonic, the curve above is ending at 18 GHz. The tests above 18 GHz are not automatized and therefore we were not able to plot the spectrum analyzer display. Above 18 GHz no emission above noise level were found.

**Out-of-band Emission**

**§ 15.247(d)  
A8.5**

Measurement with Peak-Detector:

Frequency: 2403 MHz – Band Edge measurement



Date: 3.AUG.2010 09:46:44

**LIMIT SUBCLAUSE 15.247(d) – A8.5**

In any 100 kHz bandwidth outside the frequency band in which the radio device is operating.	At least 20dB below the power in the 100 kHz bandwidth within the band that contains the highest level of the desired power.
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Test Equipment used: NT-100; NT-110; NT-111; NT-112; NT-125; NT-207

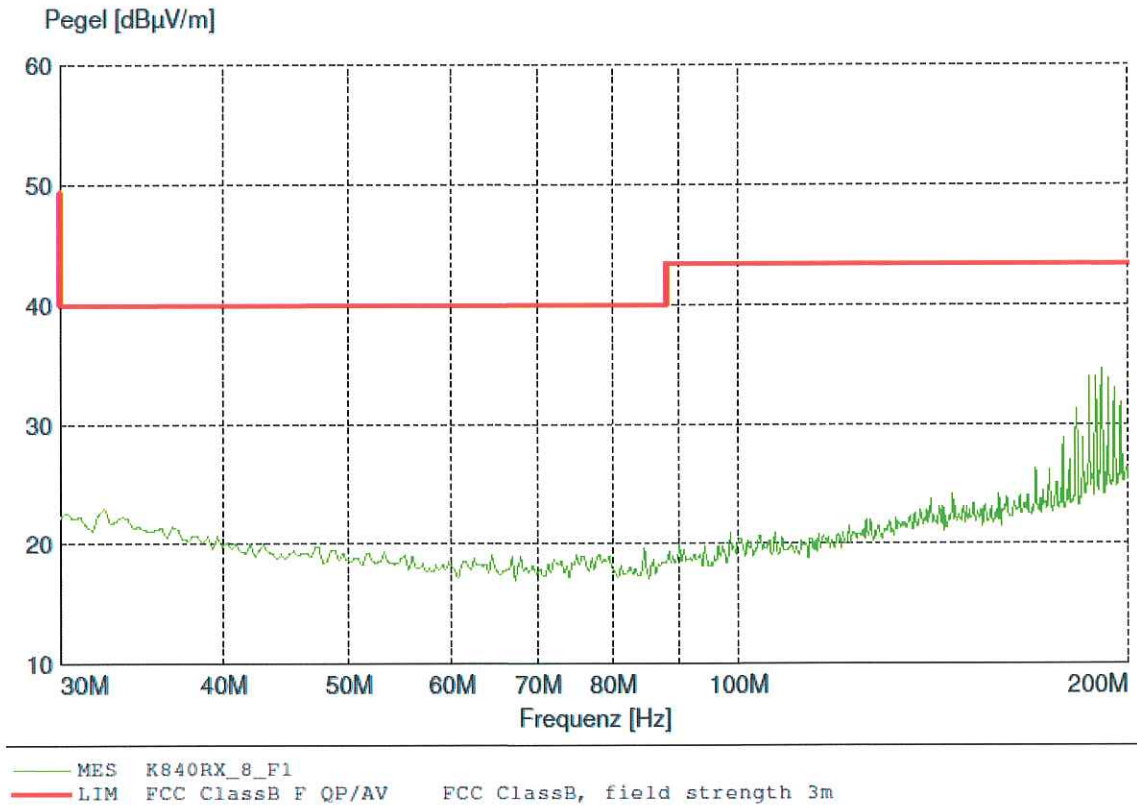


**Out-of-band Emission**

**§ 15.247(d)  
A8.5**

Measurement with Peak-Detector:

Frequency: 2438 MHz



Seite 1 06.08.2010 14:26

**LIMIT**

**SUBCLAUSE 15.247(d) – A8.5**

<p>In any 100 kHz bandwidth outside the frequency band in which the radio device is operating.</p>	<p>At least 20dB below the power in the 100 kHz bandwidth within the band that contains the highest level of the desired power.</p>
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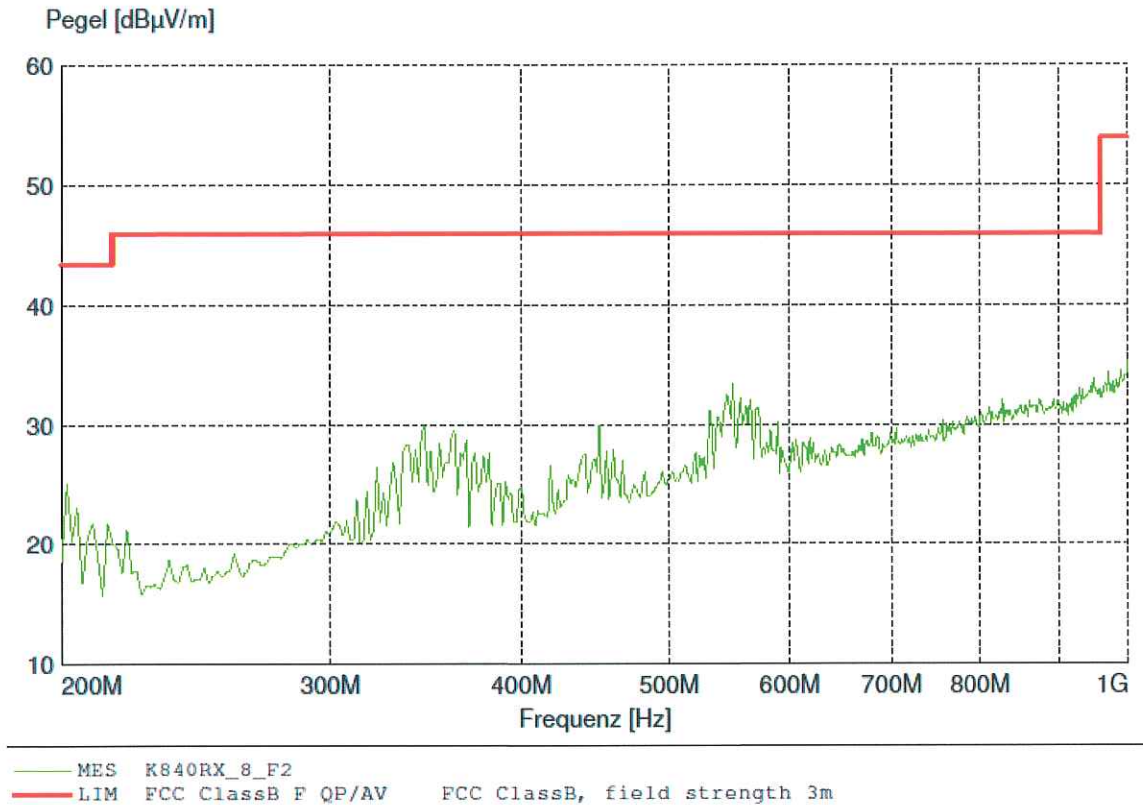
Test Equipment used: NT-100; NT-110; NT-111; NT-112; NT-125; NT-207

**Out-of-band Emission**

**§ 15.247(d)  
A8.5**

Measurement with Peak-Detector:

Frequency: 2438 MHz



Seite 1 06.08.2010 14:30

**LIMIT SUBCLAUSE 15.247(d) – A8.5**

In any 100 kHz bandwidth outside the frequency band in which the radio device is operating.	At least 20dB below the power in the 100 kHz bandwidth within the band that contains the highest level of the desired power.
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Test Equipment used: NT-100; NT-110; NT-111; NT-112; NT-125; NT-207