Test Report

T-0329-3618-02 JP

Type / Model Name:	**PLB000205**
FCC ID:	**W5IPLB000205**
Product Description:	**LPR-1D, LPR-2D**
Applicant:	**SYMEO GmbH**

Registration No. DAT-P-121/02-01

EMC -- TEST REPORT

Test Report No. : T-0329-3618-02 JP	2010-07-29 Date of issue

Type / Model Name : PLB000205

FCC ID W5IPLB000205

Product Description : LPR-1D, LPR-2D

Applicant : SYMEO GmbH

Address : Professor-Messerschmitt-Str. 3

85579 Neubiberg /Munich

Germany

Manufacturer : SYMEO GmbH

Address : Professor-Messerschmitt-Str. 3

85579 Neubiberg /Munich

Germany

Test Result according to the standards listed in clause 1 test standards:	**POSITIVE**

DAT-P-121/02-01
KBA-P 00057-01

File No. **T-0329-3618-02 JP**

Contents

1 TEST STANDARDS

The tests were performed according to following standards:

FCC Part 15 Subpart A : 2009	Code of Regulations Part 15 (Radio Frequency Devices), Subpart A (General) of the Federal Communication Commission (FCC)
FCC Part 15 Subpart C : 2009	Code of Regulations Part 15 (Radio Frequency Devices), Subpart C (Intentional Radiators) of the Federal Communication Commission (FCC) Applied Paragraphs: §15.207, §15.209, §15.249
ANSI C63.4-2003	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz – 40 GHz

2 OVERVIEW TEST RESULT

Performed test(s)	Result		
	Passed	Failed	Not performed
Conducted disturbance	X		
Radiated disturbance in the frequency range 3kHz – 30MHz	X		
Radiated disturbance in the frequency range 30MHz – 1000MHz	X		
Radiated disturbance in the frequency range 1GHz – 40GHz	X		
Bandedges	X		
Field strength of emission within band	X		

3 SUMMARY

GENERAL REMARKS:

The EUT has a TX mode and a RX mode but RX is without TX beacons not possible therefore the measurements were performed in TX mode only. The frequency range was scanned from 9 kHz to 40GHz.
The EuT was tested with a host housing and motherboard supplied by manufactuerer.

FINAL ASSESSMENT:

The equipment under test **fulfills** the EMC requirements cited in clause 1 test standards.

Date of receipt of test sample : acc. to storage records

Testing commenced on : 2010-06-21

Testing concluded on : 2010-07-22

Checked by:

Digital unterschrieben von Frank Scharnowski
Datum: 2010.07.29 09:08:26 +02'00'

Frank Scharnowski
Quality Manager

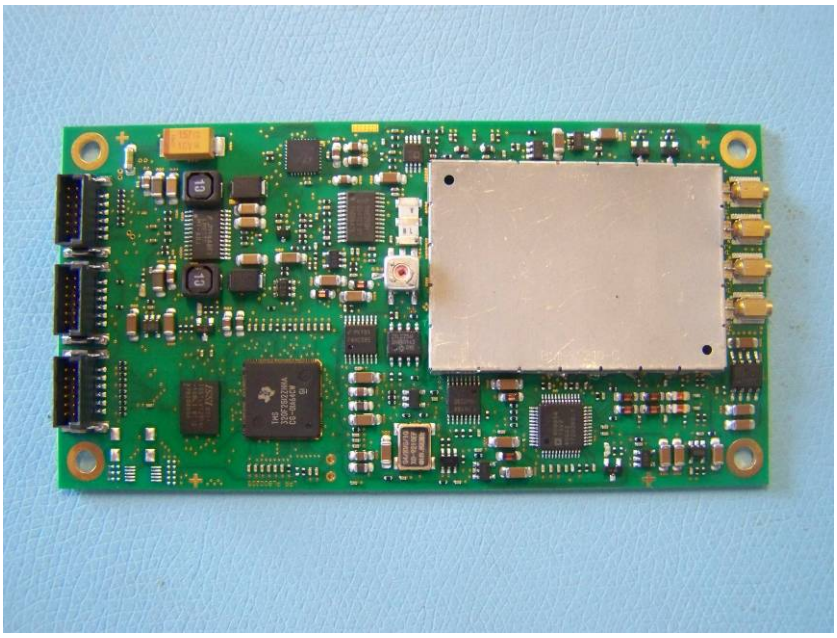
Tested by:

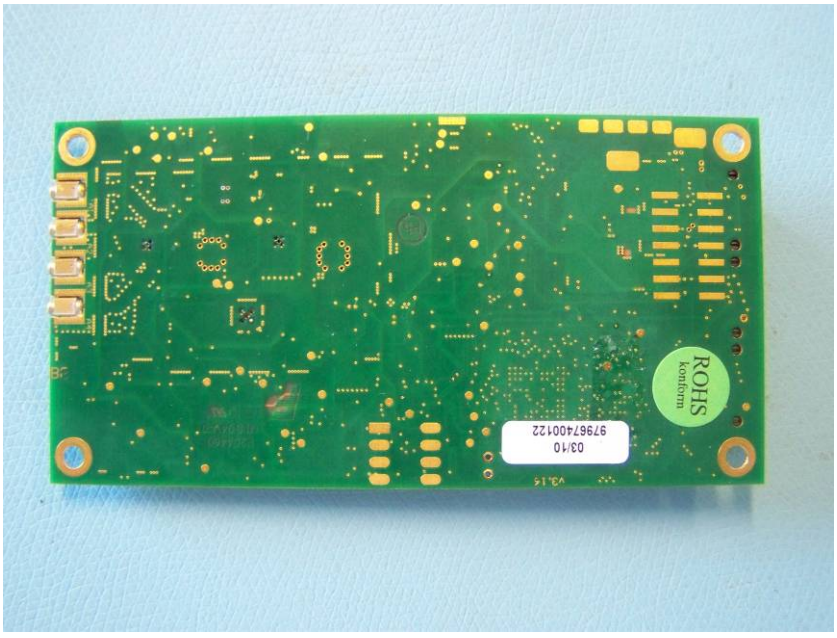
Jürgen Pessinger 2010.07.29 08:46:48 +02'00'

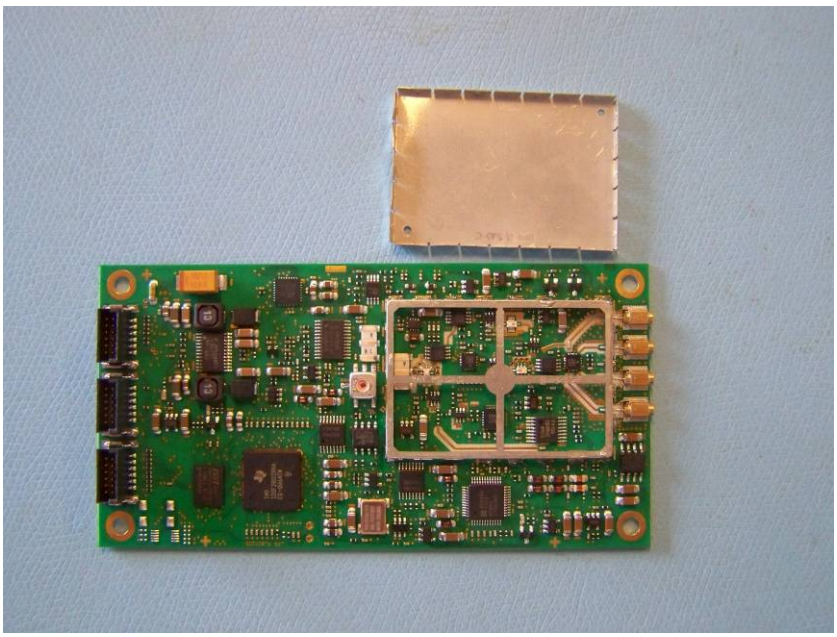
Jürgen Pessinger

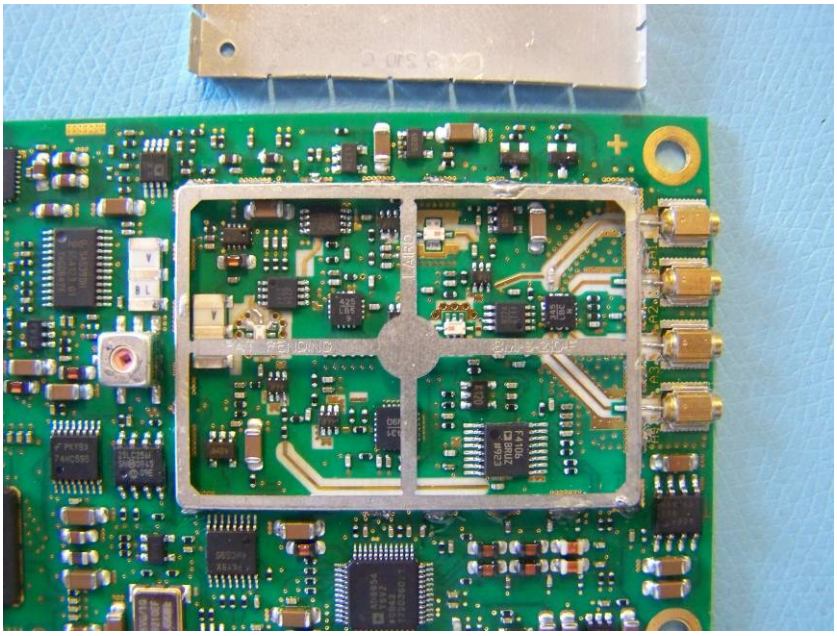
4 EQUIPMENT UNDER TEST

4.1 Photo documentation of the EuT









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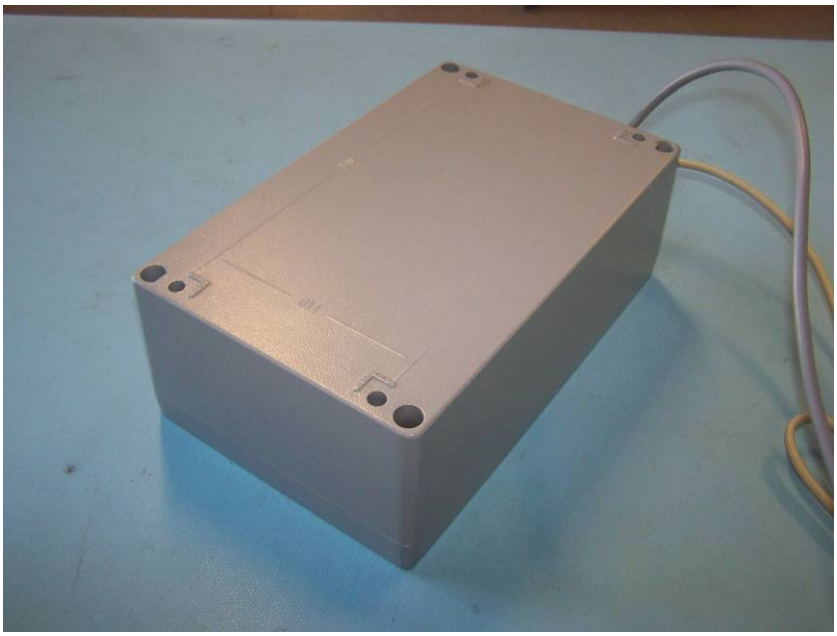
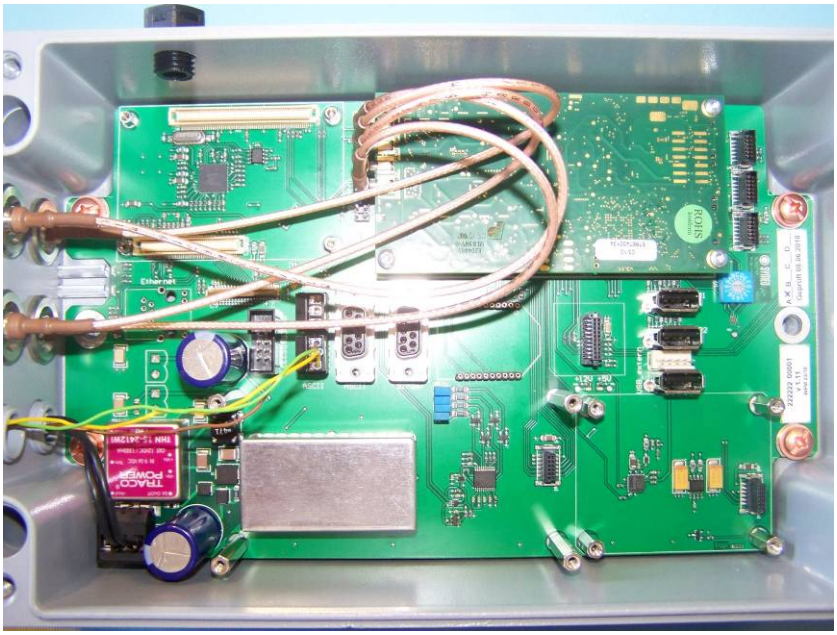
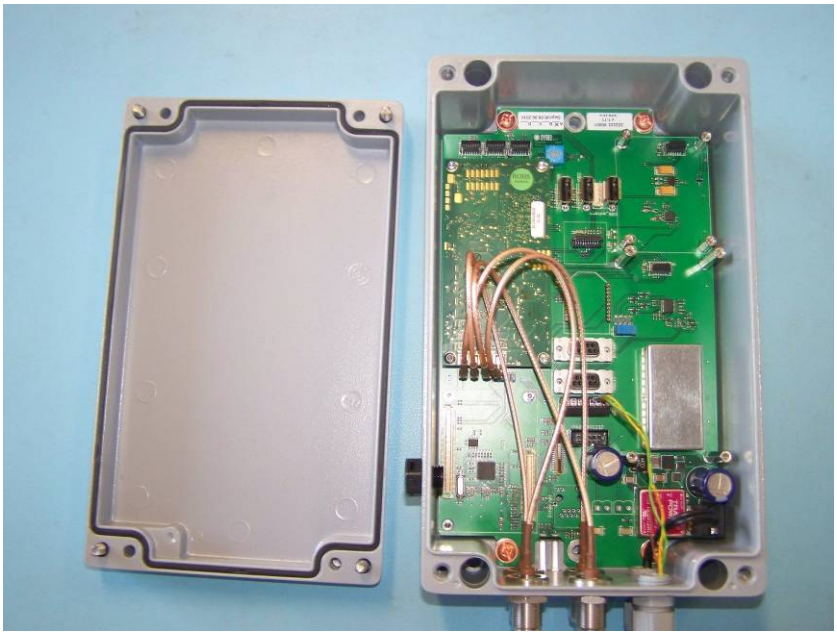
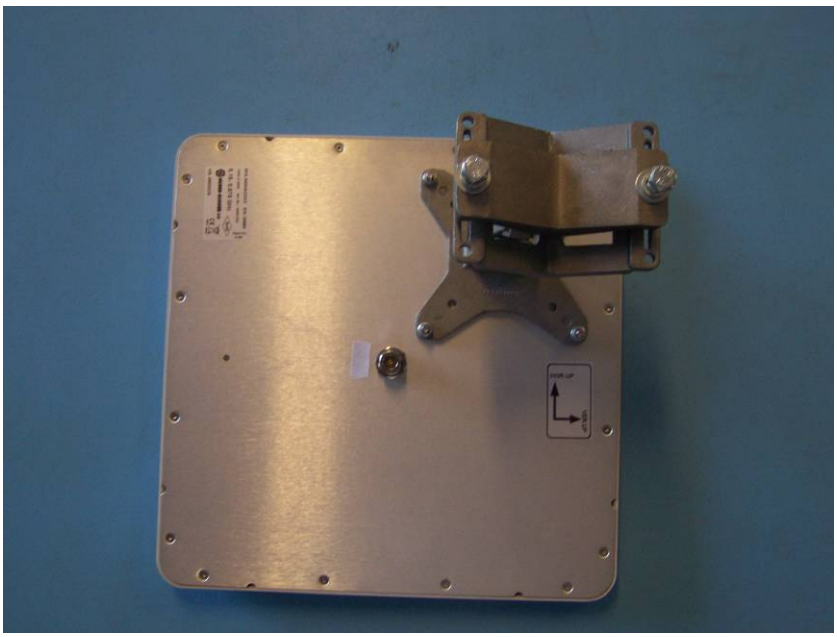









SYMEO
ABSOLUTE POSITIONING


SPA 5600/9/23/0/V S/N: 09885
1356.17.0008 Art. No. : 84007203
Batch No.: 01/09
5.15- 5.875 GHz
RoHS
HUBER+SUHNER AG
HS- 485002/N
CE
0682

4.2 Power supply system

Power supply voltage: 10-36V DC

4.3 Short description of the Equipment under Test (EuT)

The EuT is a wireless module for the use in systems for contactless, real time determination of distances and positions.

Number of tested samples: 1
Serial number: 97967400122

Dimensions: L: 11cm W: 5,5cm H: 1cm

Radio equipment characteristics

FSK Channel

Frequency band(s):	5725MHz – 5875MHz
Operating frequency:	5737MHz – 5863MHz
Channel spacing:	1MHz
Number of RF-channels:	38 channels (CH08 – CH45)
Comments:	None

Measurement band

Frequency band(s):	5725MHz – 5875MHz
Operating frequency:	Depends on FSK channel usage*
Channel spacing:	variable
Number of RF-channels:	1 distance measurement band
Comments:	None

*measurement band is located between last available FSK channel in upper FSK frequency range and the first available FSK channel in the lower FSK frequency range, with a clearance of 3MHz.

EuT operation mode:

The equipment under test was operated during the measurement under the following conditions:

- Testsoftware active, CH08 adjusted

- Testsoftware active, CH27 adjusted

- Testsoftware active, CH45 adjusted

EuT configuration:

The following interface cables and peripheral devices were connected during the measurements:

Interface cables:

Interface cable	Length [m]	Type	Line		Line termination
			shielded	unshielded	
DC power line*	1,5	2-wires	☐	☒	Power supply unit
RS232*	2,05	4-wires	☒	☐	Laptop
Antenna cable 1	4,0	1-wire	☒	☐	Antenna 1
Antenna cable 2	4,0	1-wire	☒	☐	Antenna 2
Antenna cable 3	4,0	1-wire	☒	☐	Antenna 3
Antenna cable 4	4,0	1-wire	☒	☐	Antenna 4

*connected to motherboard, not directly to PLB000205

Peripheral devices:

Kind of equipment		Model and/or Manufacturer
Power supply		DPM20LP, Deutronic
Line filter		B84113-C-B30, Epcos
Laptop		Tecra A2, Toshiba
Motherboard		PLB000797 V1.11, Symeo
Housing		ZAG12, ABTech
Antenna 1		SPA 5600/9/23/0V, Huber+Suhner, 23dBi
Antenna 2		SPA 5600/9/23/0V, Huber+Suhner, 23dBi
Antenna 3		SPA 5600/9/23/0V, Huber+Suhner, 23dBi
Antenna 4		SPA 5600/9/23/0V, Huber+Suhner, 23dBi

5 TEST ENVIRONMENT

5.1 Address of the test laboratory

emitel AG
Ohmstrasse 1
94342 STRASSKIRCHEN
DEUTSCHLAND

Laboratory registration numbers:

DAR Registration number:	DAT-P-121/02-01
DAR Registration number:	KBA-P 00057-01
SNCH Registration number:	SNCH 001/2005 ext 01
FCC Registration number:	765810
IC Registration number:	IC 5066A-1
VCCI Registration number:	T-215; C-3049; R-2765

5.2 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature: 15-35 ° C

Humidity: 30-60 %

Atmospheric pressure: 86-106 kPa

All atmospheric pressure values refer to our Laboratory altitude of 324m.

5.3 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16-4-2 /11.2003 „Uncertainties, statistics and limit modelling – Uncertainty in EMC measurements“ and is documented in the quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer does have the sole responsibility for the continued compliance of the device.

5.4 Measurement Protocol for FCC, VCCI and AUSTEL

5.4.1 GENERAL INFORMATION

5.4.1.1 Test Methodology

Conducted and radiated disturbance testing is performed according to the procedures in International Special Committee on Radio Interference (CISPR) Publication 22 (1997+A1:2000+A2:2002), European Standard EN 55022 (1998+A1:2000+A2:2003)and Australian Standard AS 3548 (which are based on CISPR 22).

The Japanese standard, "Voluntary Control Council for Interference (VCCI) by Data Processing Equipment and Electronic Office Machines, Technical Requirements" is technically equivalent to CISPR 22 (1997+A1:2000 +A2:2002). For official compliance, a conformance report must be sent to and accepted by the VCCI.

In compliance with FCC Docket 92-152, "Harmonization of Rules for Digital Devices Incorporate International Standards", testing for FCC compliance may be done following the ANSI C63.4-2003 procedures and using the CISPR 22 Limits.

5.4.1.2 Measurement Error

The data and results referenced in this document are true and accurate. The reader is cautioned that there is some measurement variability due to the tolerances of the test equipment that can contribute to a nominal product measurement uncertainty. The measurement uncertainty was calculated for all measurements listed in this test report according to CISPR 16-4-2 and is documented in the emitel AG quality system according to DIN EN ISO/IEC 17025. Furthermore, component differences and manufacturing process variability of production units similar to that tested may result in additional product uncertainty. If necessary, refer to the test lab for the actual measurement uncertainty for specific tests. The manufacturer has the sole responsibility of continued compliance of the device.

5.4.1.3 Justification

The Equipment Under Test (EUT) is configured in a typical user arrangement in accordance with the manufacturer's instructions. A cable is connected to each available port and either terminated with a peripheral into it's characteristic impedance or left unterminated. When appropriate, the cables are manually manipulated with respect to each other to obtain maximum disturbances from the unit.

5.4.2 CONDUCTED DISTURBANCE

The final level, expressed in dBµV, is arrived at by taking the reading directly from the EMI receiver. This level is compared directly to the CISPR limit, which is equivalent to the Australian AS 3548 limit.

To convert between dBµV and µV, the following conversions apply:
dBµV = 20(log µV)
µV = Inverse log(dBµV/20)

5.4.3 RADIATED DISTURBANCE

The final level, expressed in dBµV/m, is arrived at by taking the reading from the EMI receiver (Level dBµV) and adding the antenna correction factor and cable loss factor (Factor dB) to it. This is done automatically in the EMI receiver, where the correction factor are stored. This result then has the CISPR limit subtracted from it to provide the Delta which gives the tabular data as shown in the data sheets in section 5.2. The CISPR 22 limit is equivalent to the Australian AS 3548 limit.

Example:	CISPR B		Delta						
	Frequency (MHz)		Level (dBµV)	+	Factor (dB)	=	Final (dBµV/m)	-	Limit (dBµV/m)	=	CISPR B (dB)
	37.19		10.2	+	12.0	=	22.2	-	40.0	=	-17.8

5.4.4 DETAILS OF TEST PROCEDURES

5.4.4.1 General Standard Information

The test methods used comply with CISPR Publication 22 (1997+A1:2000+A2:2002), EN 55022 (1998+A1:2000+A2:2003) and AS 3548 (1992) - "Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment" and with ANSI C63.4-2003 - "Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz."

5.4.4.2 Conducted disturbance

Conducted disturbance on the 50 Hz and/or 60 Hz power interface of the EUT are measured in the frequency range of 150 kHz to 30 MHz. The measurements are performed using a receiver, which has CISPR characteristic bandwidth and quasi peak detection, and a Line Impedance Stabilization Network (LISN), with 50Ω/50 µH (CISPR 16) characteristics. Table top equipment is placed on a non-conducting table 80 centimetres above the floor and is positioned 40 centimetres from the vertical ground plane (wall) of the screen room. If the minimum passing margin appears to be less than 20 dB with a peak mode measurement, the emissions are remeasured using a tuned receiver with quasi peak and average detection and recorded on the data sheets.

5.4.4.3 Radiated disturbance

Radiated disturbance from the EUT are measured in the frequency range of 30 to 1000 MHz using a tuned receiver and appropriate broadband linearly polarized antennas. Measurements between 30 MHz and 1000 MHz are made with 120 kHz/6 dB bandwidth and quasi peak detection and measurements above 1000 MHz are made with a 1 MHz/6 dB bandwidth and average/peak detection. Table top equipment is placed on a 1.0 X 1.5 meter non-conducting table 80 centimetres above the ground plane. Floor standing equipment is placed directly on the turntable/ground plane. Interface cables that are closer than 40 centimetres to the ground plane are bundled in the center in a serpentine fashion so they are at least 40 centimetres from the ground plane. Cables to simulators/testers (if used in this test) are routed through the center of the table and to a screen room located outside the test area. The antenna was positioned 3, 10 or 30 meters horizontally from the EUT. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 meters, measurement scans are made with both horizontal and vertical antenna polarizations and the EUT are rotated 360 degrees.

6 TEST CONDITIONS AND RESULTS

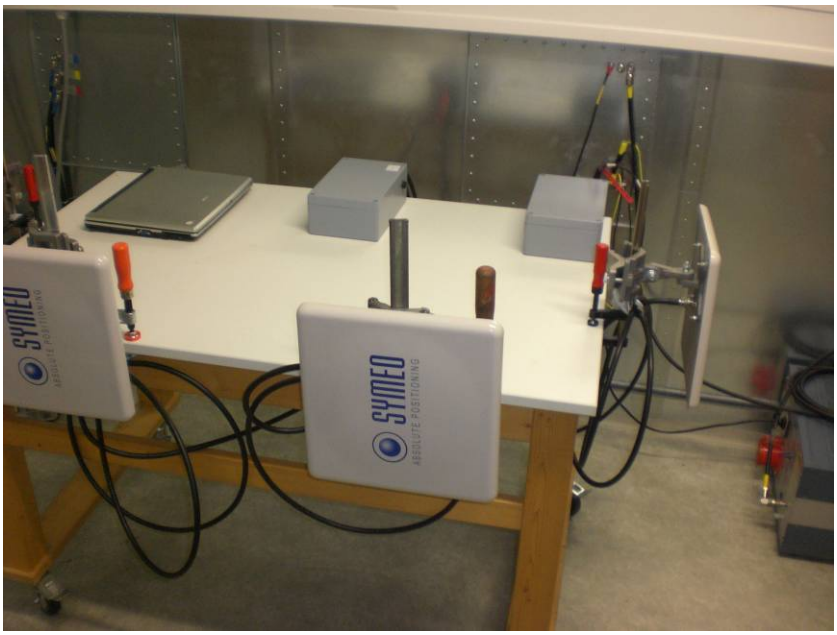
6.1 Conducted disturbance

For test instruments and accessories used see section 7 Part **A 4**.

6.1.1 Description of the test location

Test location: Shielded Room SK5

6.1.2 Photo documentation of the test set-up



6.1.3 Test specification

Environmental conditions: Temperature: 29°C Humidity: 44% Atmospheric pressure: 98kPa

Frequency range: 0.15 MHz - 30 MHz

The test was carried out in the following operation mode(s):
- Testsoftware active, CH08 adjusted
- Testsoftware active, CH27 adjusted
- Testsoftware active, CH45 adjusted

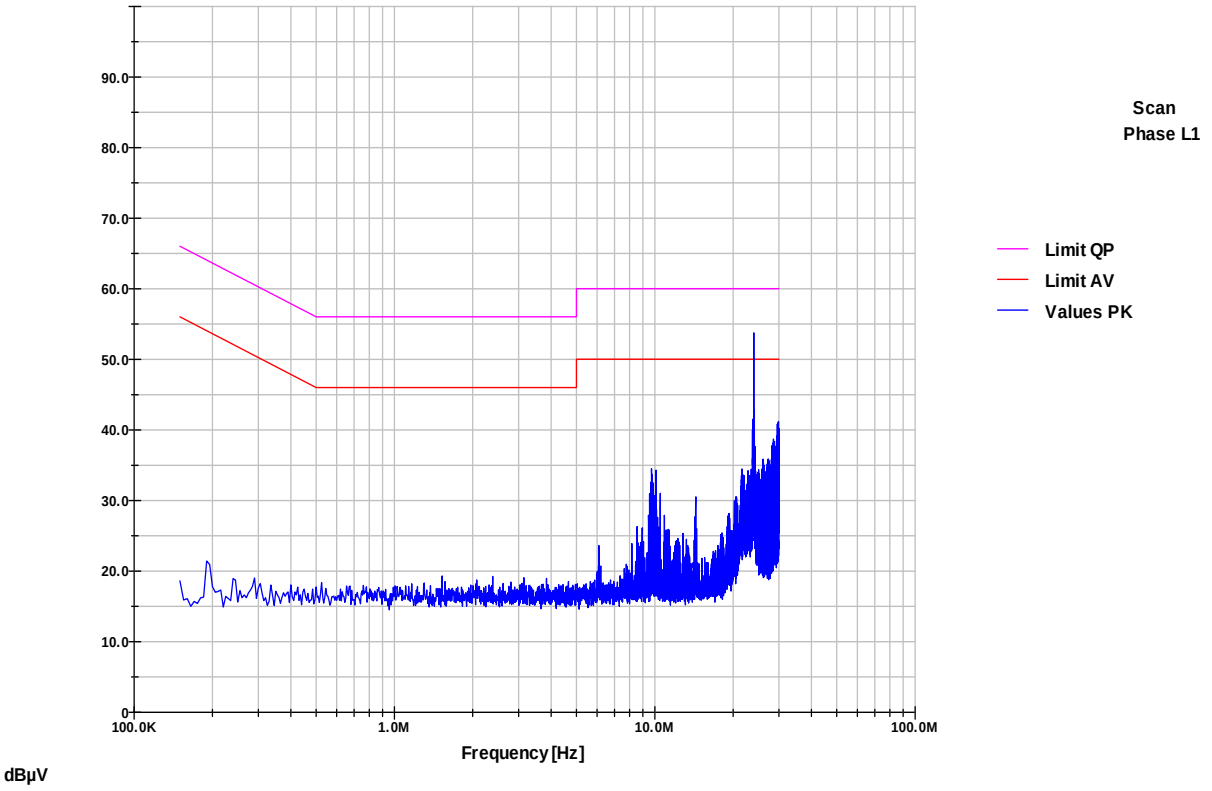
6.1.4 Test result

The requirements are **FULFILLED.**

Remarks: The measurements were made at AC input port of the line filter

6.1.5 Test protocol

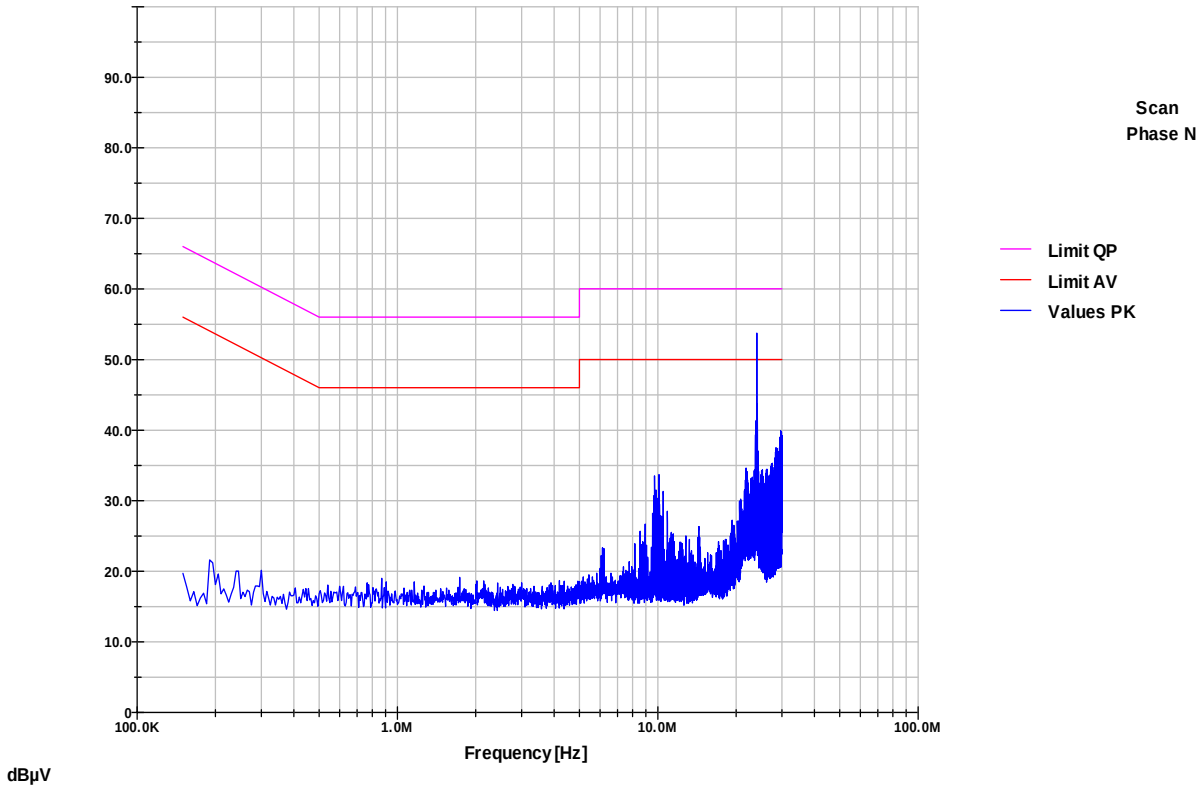
Date of test:	2010-07-12
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.207a
Test:	Conducted Emission Test
Detector:	QP / AV
Result:	Limit kept
Applied to:	Phase L1
Remark:	none



Minimum margin to limit: -10,4 dB

Frequency [MHz]	Reading [dBµV] QP	Reading [dBµV] AV	Correction [dB]	Values [dBµV] QP	Values [dBµV] AV	Limit [dBµV] QP	Limit [dBµV] AV	Margin [dB] QP	Margin [dB] AV
24,000	48,2	39,1	0,5	48,7	39,6	60,0	50,0	-11,3	-10,4

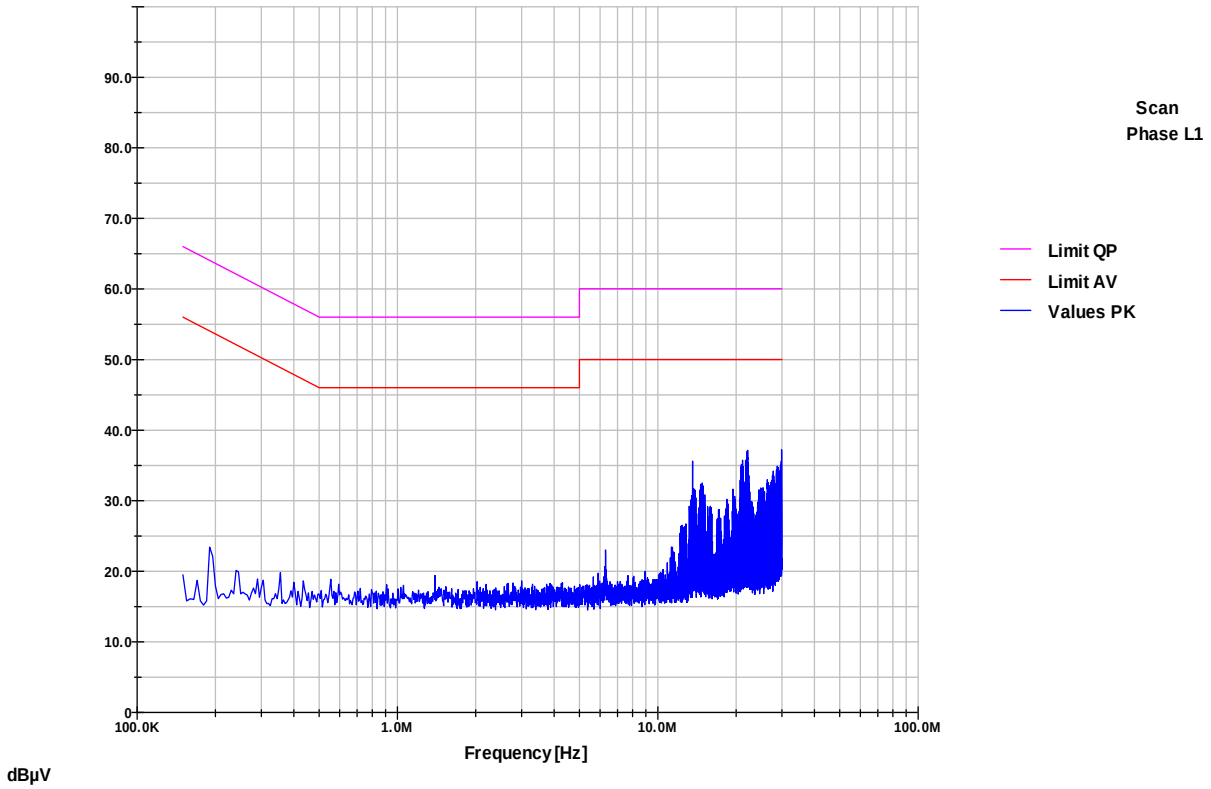
Date of test:	2010-07-12
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.207a
Test:	Conducted Emission Test
Detector:	QP / AV
Result:	Limit kept
Applied to:	Phase N
Remark:	none



Minimum margin to limit: -10,7 dB

Frequency [MHz]	Reading [dBµV] QP	Reading [dBµV] AV	Correction [dB]	Values [dBµV] QP	Values [dBµV] AV	Limit [dBµV] QP	Limit [dBµV] AV	Margin [dB] QP	Margin [dB] AV
24,000	47,9	38,8	0,5	48,4	39,3	60,0	50,0	-11,6	-10,7

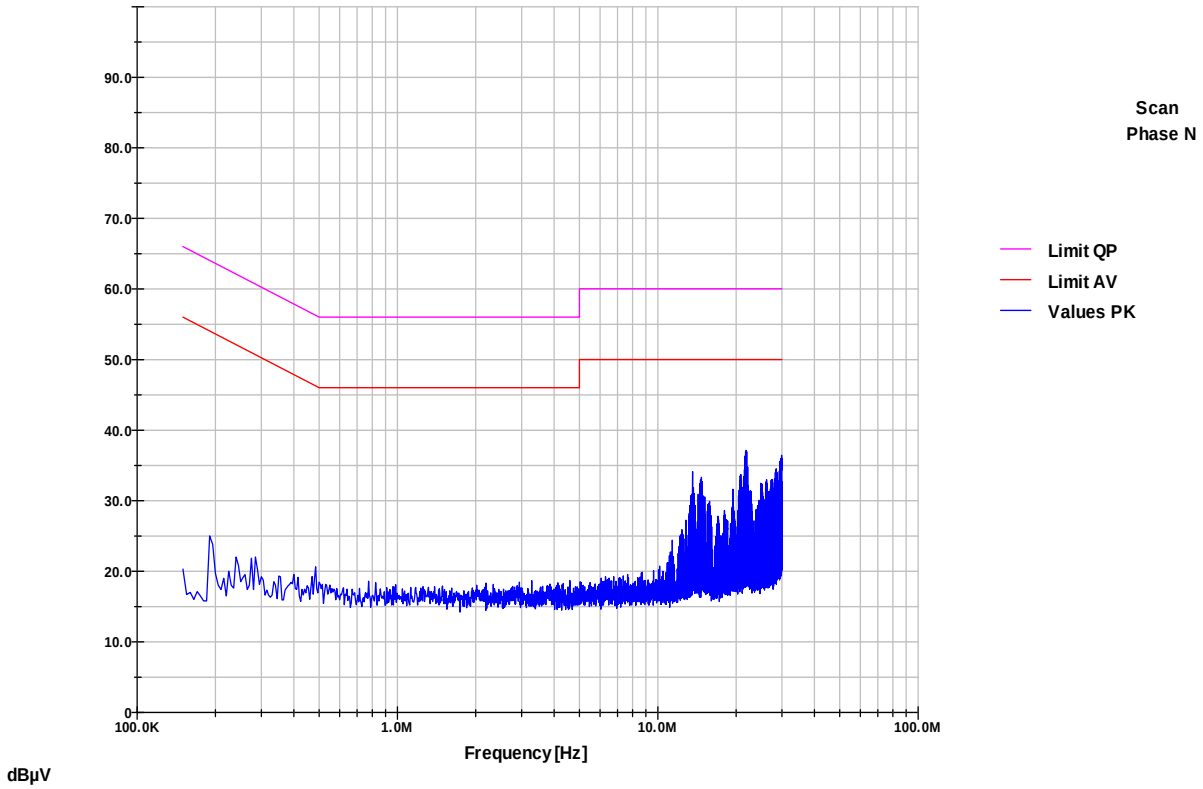
Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.207a
Test:	Conducted Emission Test
Detector:	QP / AV
Result:	Limit kept
Applied to:	Phase L1
Remark:	none



Minimum margin to limit: -22,9 dB

Frequency [MHz]	Reading [dBµV] QP	Reading [dBµV] AV	Correction [dB]	Values [dBµV] QP	Values [dBµV] AV	Limit [dBµV] QP	Limit [dBµV] AV	Margin [dB] QP	Margin [dB] AV
13,605	28,6	26,6	0,5	29,1	27,1	60,0	50,0	-30,9	-22,9

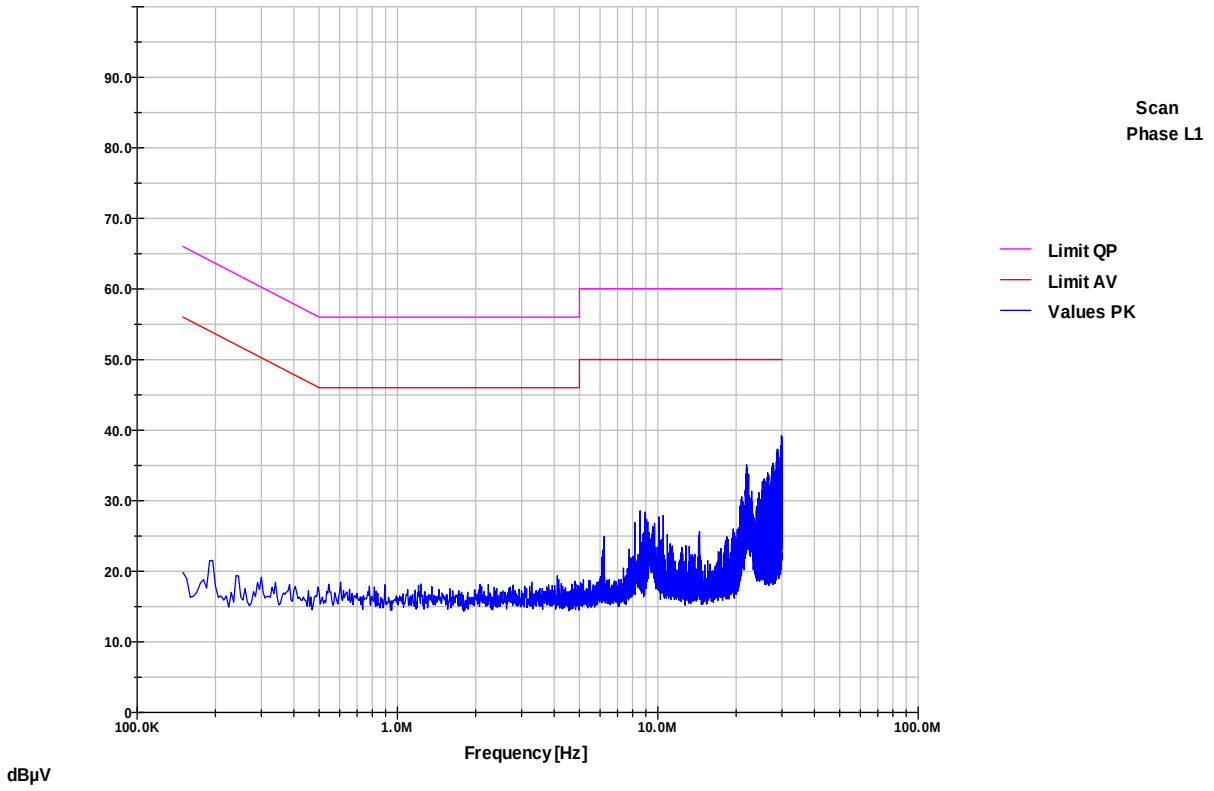
Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.207a
Test:	Conducted Emission Test
Detector:	QP / AV
Result:	Limit kept
Applied to:	Phase N
Remark:	none



Minimum margin to limit: -24,3 dB

Frequency [MHz]	Reading [dBµV] QP	Reading [dBµV] AV	Correction [dB]	Values [dBµV] QP	Values [dBµV] AV	Limit [dBµV] QP	Limit [dBµV] AV	Margin [dB] QP	Margin [dB] AV
13,603	28,2	25,2	0,5	28,7	25,7	60,0	50,0	-31,3	-24,3

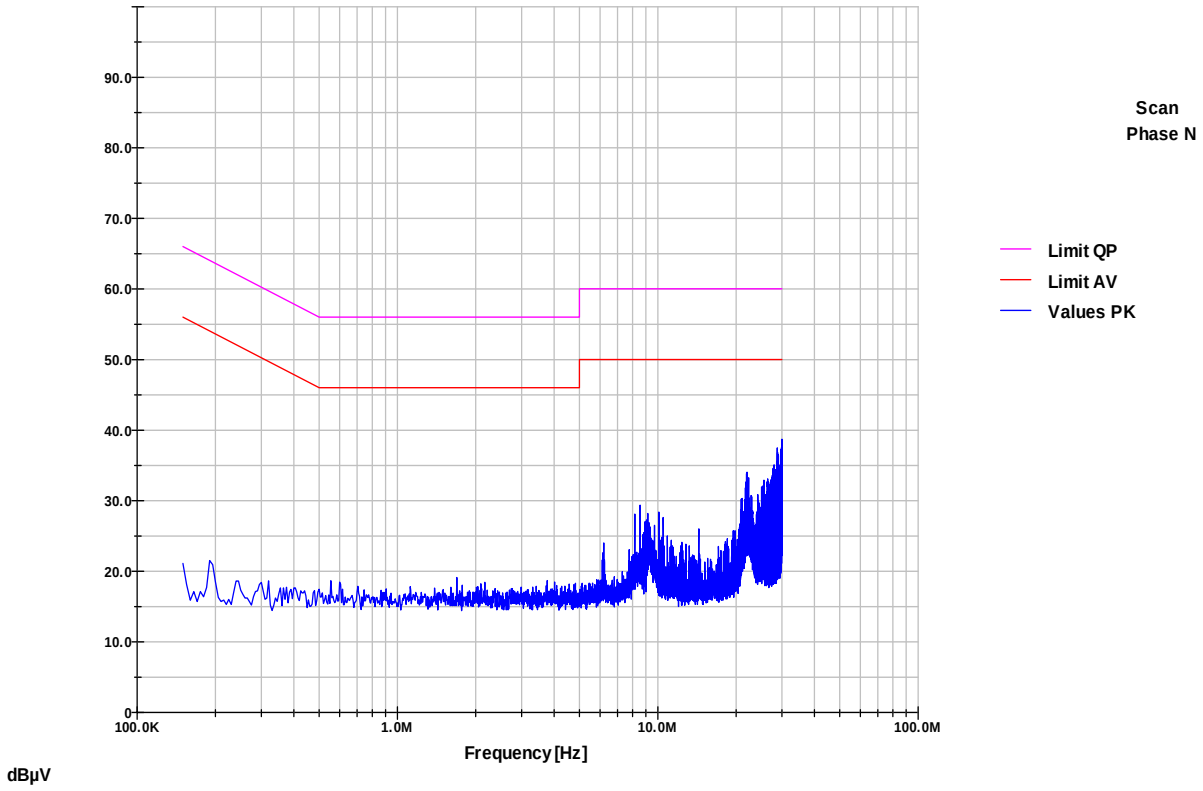
Date of test:	2010-07-12
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.207a
Test:	Conducted Emission Test
Detector:	QP / AV
Result:	Limit kept
Applied to:	Phase L1
Remark:	none



Minimum margin to limit: -31,1 dB

Frequency [MHz]	Reading [dBµV] QP	Reading [dBµV] AV	Correction [dB]	Values [dBµV] QP	Values [dBµV] AV	Limit [dBµV] QP	Limit [dBµV] AV	Margin [dB] QP	Margin [dB] AV
30,000	28,2	18,3	0,6	28,8	18,9	60,0	50,0	-31,2	-31,1

Date of test:	2010-07-12
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.207a
Test:	Conducted Emission Test
Detector:	QP / AV
Result:	Limit kept
Applied to:	Phase N
Remark:	none



Minimum margin to limit: -31,2 dB

Frequency [MHz]	Reading [dBµV] QP	Reading [dBµV] AV	Correction [dB]	Values [dBµV] QP	Values [dBµV] AV	Limit [dBµV] QP	Limit [dBµV] AV	Margin [dB] QP	Margin [dB] AV
29,999	28,2	16,9	0,6	28,8	17,5	60,0	50,0	-31,2	-32,5

6.2 Radiated disturbance in the frequency range 3kHz – 30MHz

For test instruments and accessories used see section 7 Part **SER 1**.

6.2.1 Description of the test location

Test location: Shielded Room SK5

Test distance: 2 metres

6.2.2 Photo documentation of the test set-up

6.2.3 Test specification

Environmental conditions: Temperature: 29°C Humidity: 44% Atmospheric pressure: 98kPa

Frequency range:

The test was carried out in the following operation mode(s):
- Testsoftware active, CH08 adjusted
- Testsoftware active, CH27 adjusted
- Testsoftware active, CH45 adjusted

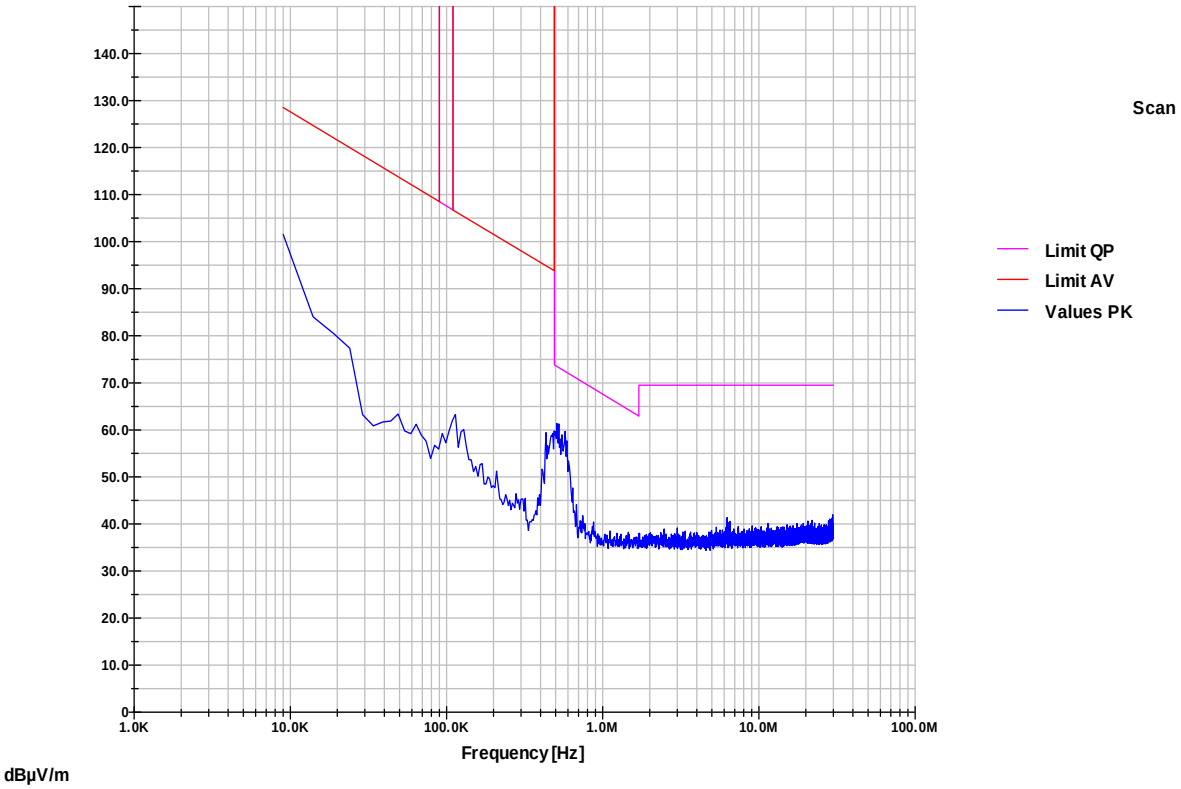
6.2.4 Test result

The requirements are **FULFILLED.**

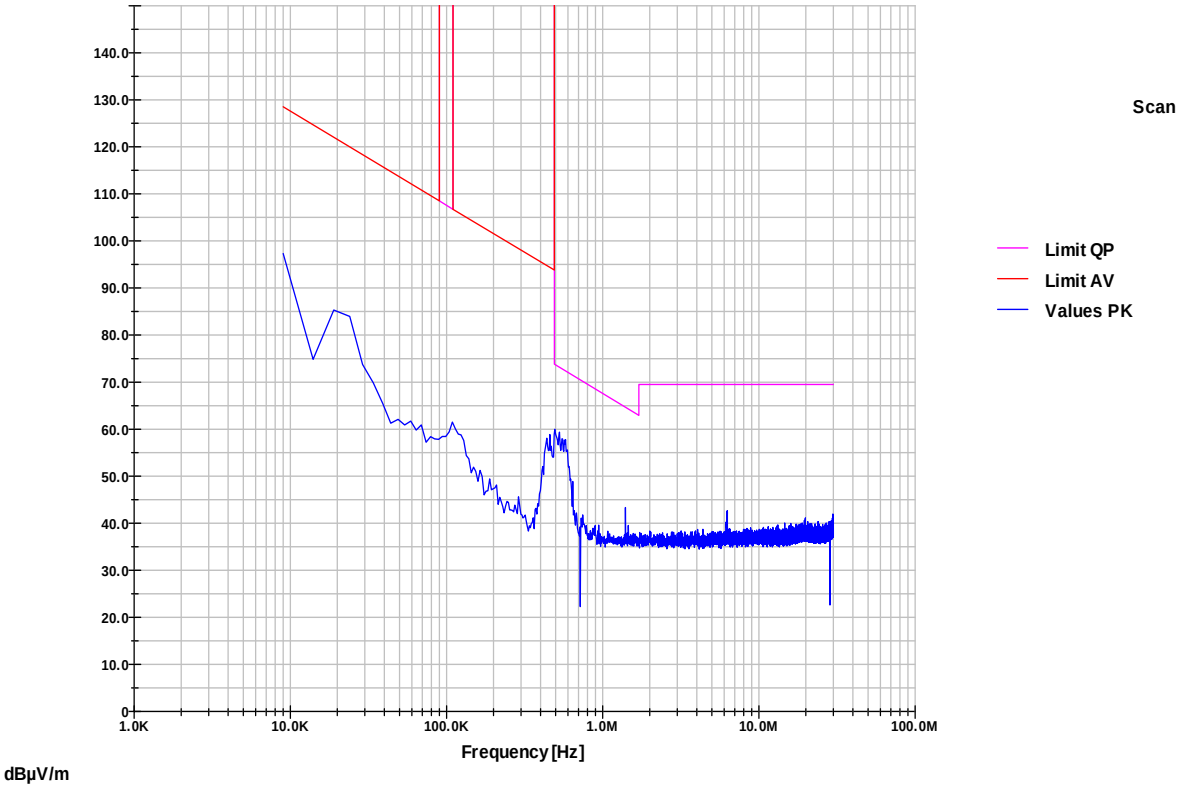
Remarks: The prescan shows that the Peak value is below the Average / QuasiPeak limit, therefore no final measurement was made.

6.2.5 Test protocol

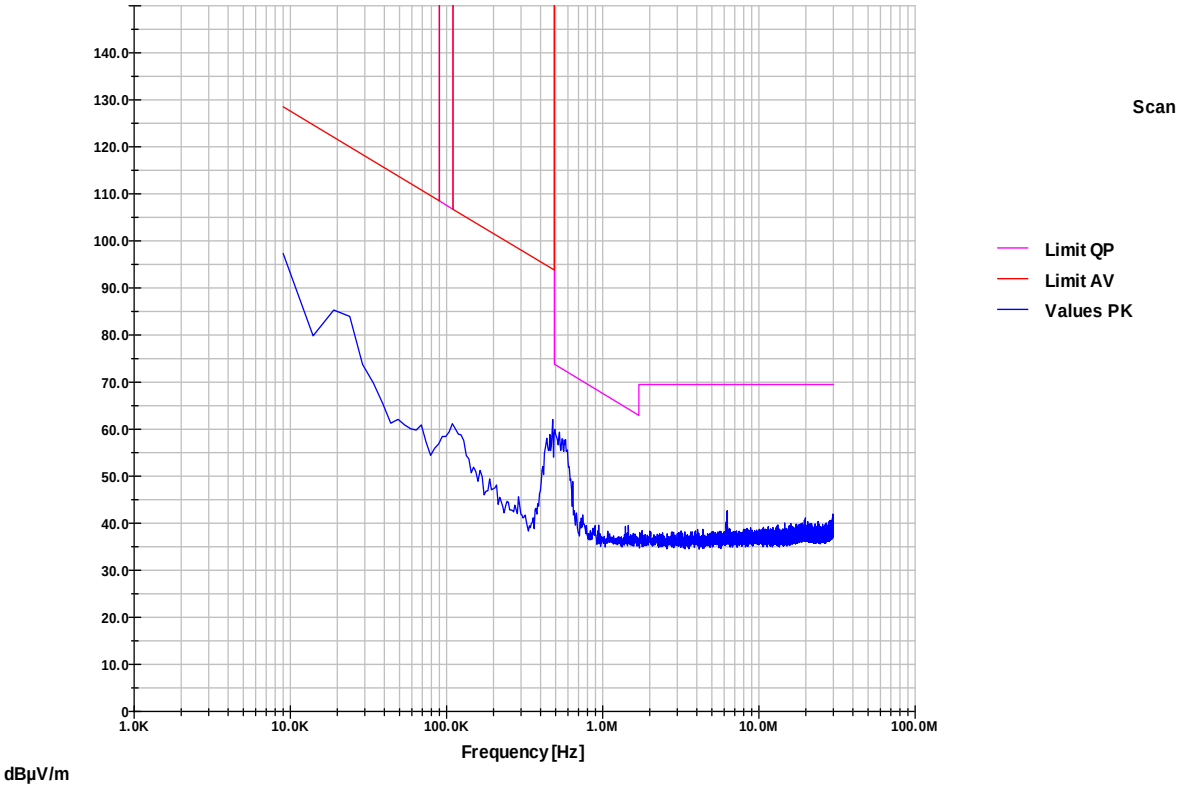
Date of test:	2010-07-12
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.209
Test:	Radiated Emission Test
Detector:	No QuasiPeak / Average measurement was made because the Peak values are below the AV / QP Limit
Result:	Limit kept
Remark:	none



Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.209
Test:	Radiated Emission Test
Detector:	No QuasiPeak / Average measurement was made because the Peak values are below the AV / QP Limit
Result:	Limit kept
Remark:	none



Date of test:	2010-07-12
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.209
Test:	Radiated Emission Test
Detector:	No QuasiPeak / Average measurement was made because the Peak values are below the AV / QP Limit
Result:	Limit kept
Remark:	none



6.3 Radiated disturbance in the frequency range 30MHz – 1000MHz

For test instruments and accessories used see section 7 Part **SER 2**.

6.3.1 Description of the test location

Test location: OATS 3

Test distance: 3 metres

6.3.2 Photo documentation of the test set-up

6.3.3 Test specification

Environmental conditions: Temperature: 27°C Humidity: 40% Atmospheric pressure: 98kPa

Frequency range: 30 MHz - 1000 MHz

The test was carried out in the following operation mode(s):
- Testsoftware active, CH08 adjusted
- Testsoftware active, CH27 adjusted
- Testsoftware active, CH45 adjusted

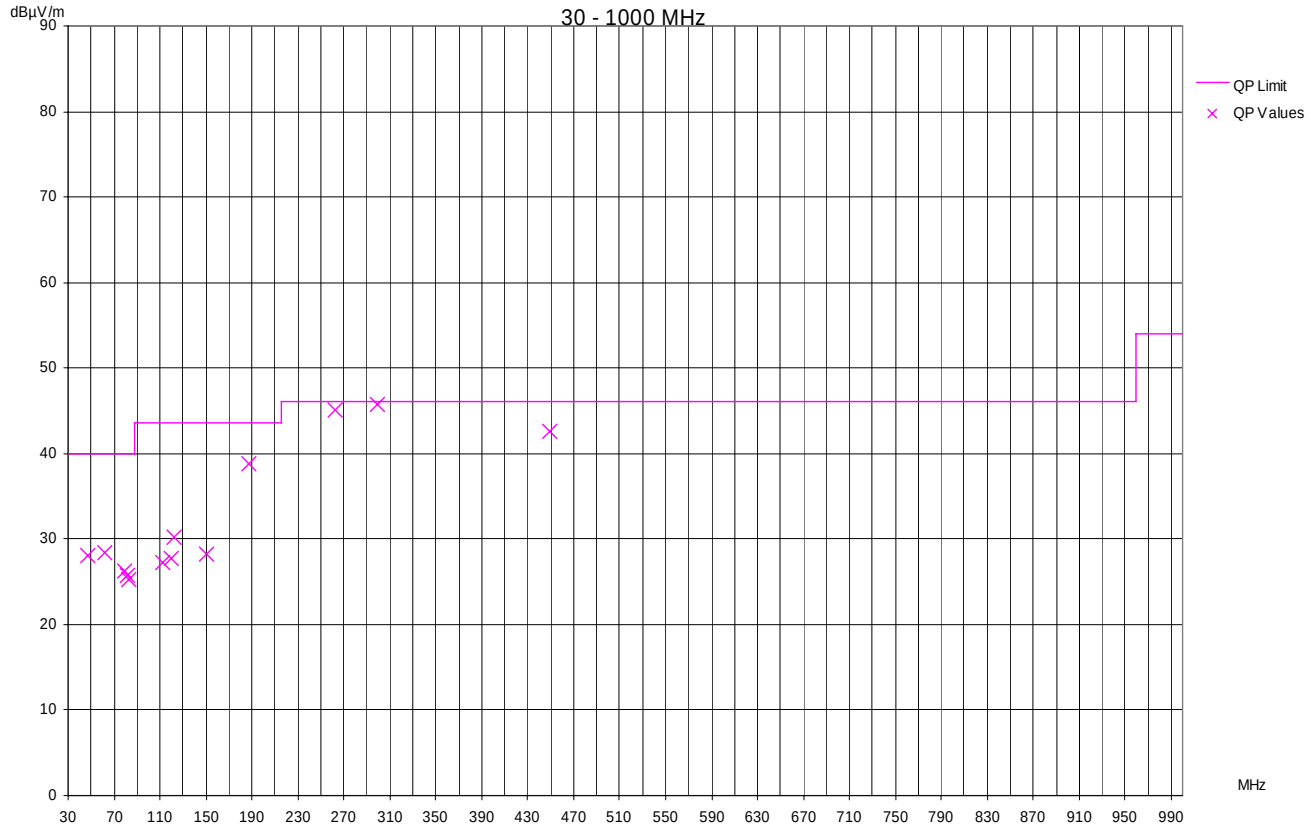
6.3.4 Test result

The requirements are **FULFILLED.**

Remarks: none

6.3.5 Test protocol

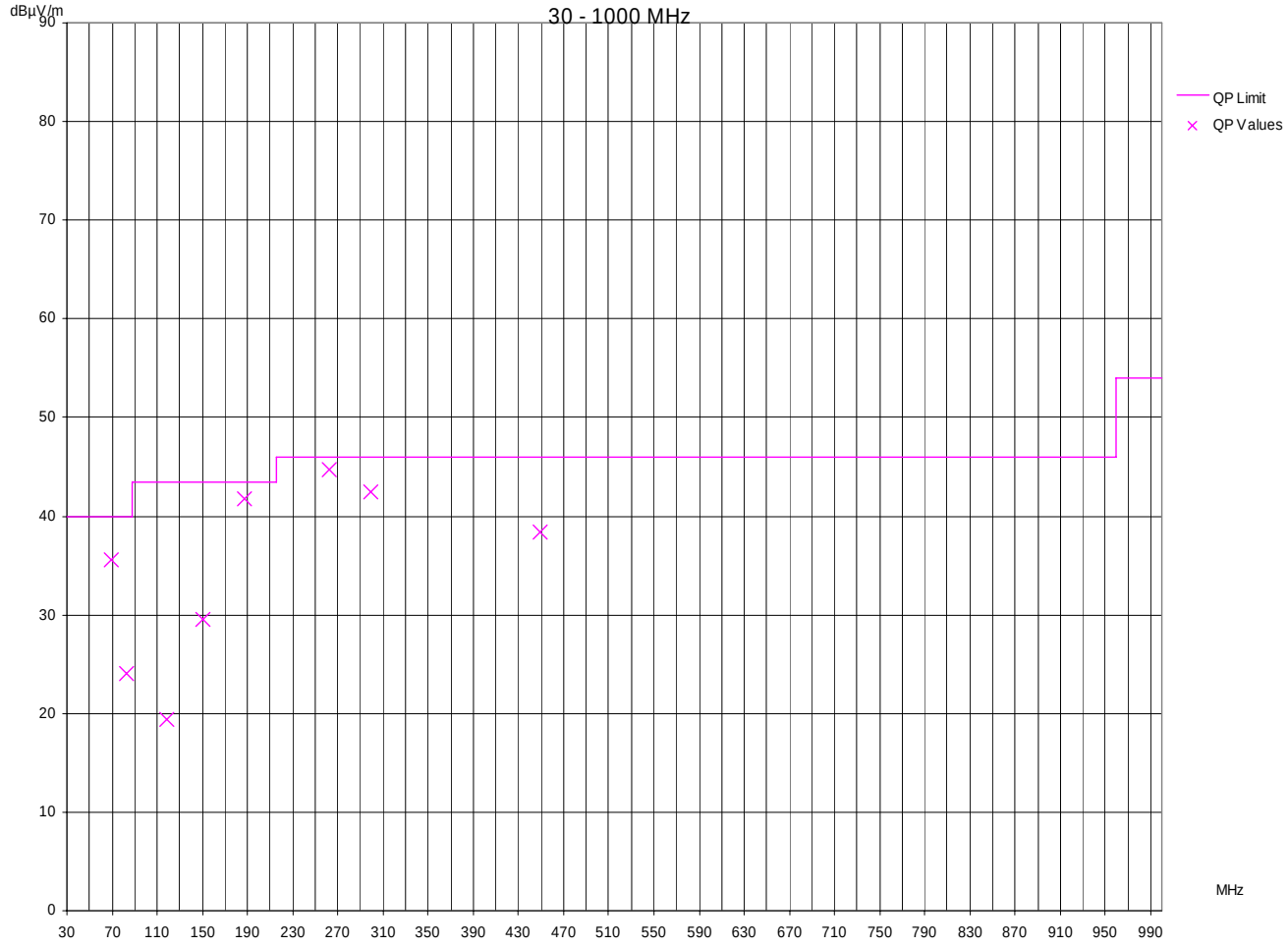
Date of test:	2010-07-05
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.209
Test:	Radiated Emission Test (Distance 3m)
Detector:	QP
Result:	Limit kept
Applied to:	Horizontal
Remark:	none



Minimum margin to limit: -0,3 dB

Frequency [MHz]	Reading [dBµV] QP	Correction [dB]	Values [dBµV/m] QP	Limit [dBµV/m] QP	Margin [dB] QP
47,100	13,2	14,8	28,0	40,0	-12,0
62,500	15,9	12,5	28,4	40,0	-11,6
79,336	15,1	11,1	26,2	40,0	-13,8
81,068	14,6	11,2	25,8	40,0	-14,2
82,804	13,8	11,4	25,2	40,0	-14,8
112,390	13,8	13,4	27,2	43,5	-16,3
119,284	15,5	12,3	27,8	43,5	-15,7
122,184	18,2	11,9	30,1	43,5	-13,4
149,900	17,7	10,6	28,3	43,5	-15,2
187,320	26,1	12,7	38,8	43,5	-4,7
262,251	29,8	15,3	45,1	46,0	-0,9
299,716	29,1	16,6	45,7	46,0	-0,3
449,569	22,7	20,0	42,7	46,0	-3,3

Date of test:	2010-07-05
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.209
Test:	Radiated Emission Test (Distance 3m)
Detector:	QP
Result:	Limit kept
Applied to:	Vertical
Remark:	none

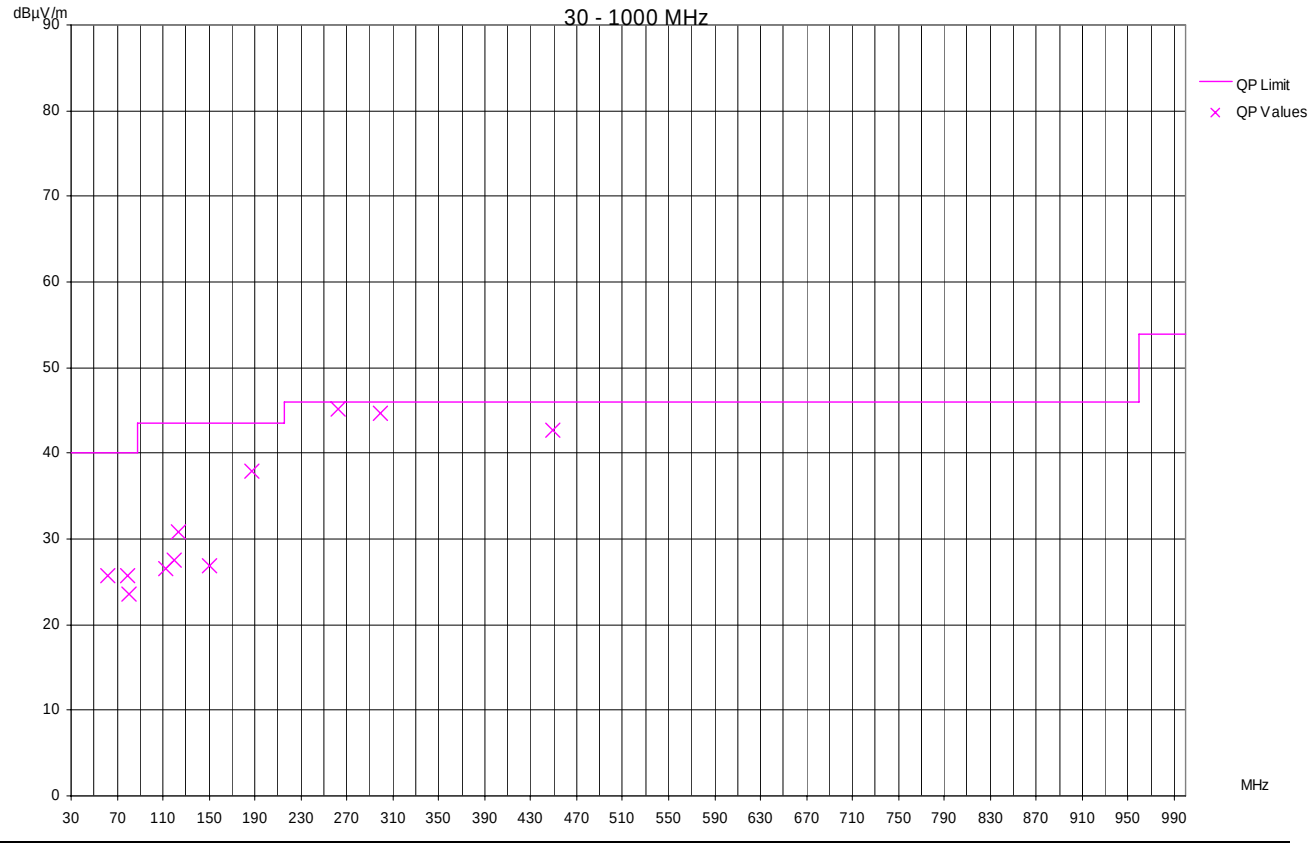


Minimum margin to limit: -1,3 dB

Frequency [MHz]	Reading [dBµV] QP	Correction [dB]	Values [dBµV/m] QP	Limit [dBµV/m] QP	Margin [dB] QP
68,800	24,3	11,3	35,6	40,0	-4,4
82,798	12,7	11,4	24,1	40,0	-15,9
118,115	6,9	12,5	19,4	43,5	-24,1
149,900	18,9	10,6	29,5	43,5	-14,0
187,321	29,1	12,7	41,8	43,5	-1,7
262,249	29,4	15,3	44,7	46,0	-1,3
299,713	25,9	16,6	42,5	46,0	-3,5
449,566	18,4	20,0	38,4	46,0	-7,6

File No. **T-0329-3618-02 JP**

Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.209
Test:	Radiated Emission Test (Distance 3m)
Detector:	QP
Result:	Limit kept
Applied to:	Horizontal
Remark:	none

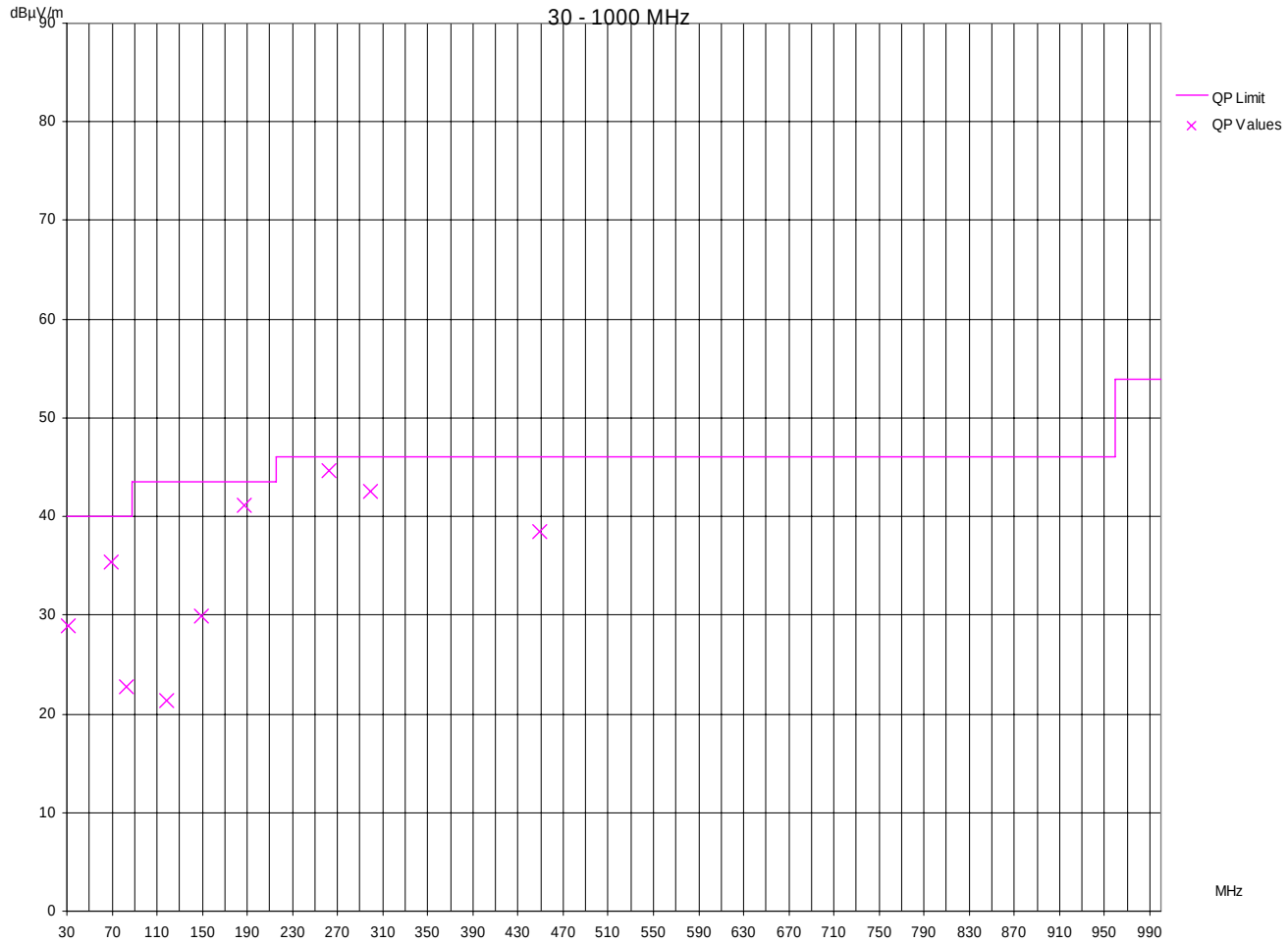


Minimum margin to limit: -0,9 dB

Frequency [MHz]	Reading [dBµV] QP	Correction [dB]	Values [dBµV/m] QP	Limit [dBµV/m] QP	Margin [dB] QP
61,700	13,1	12,7	25,8	40,0	-14,2
79,271	14,6	11,1	25,7	40,0	-14,3
81,008	12,3	11,2	23,5	40,0	-16,5
112,390	13,1	13,4	26,5	43,5	-17,0
119,293	15,2	12,3	27,5	43,5	-16,0
122,876	18,9	11,9	30,8	43,5	-12,7
149,900	16,3	10,6	26,9	43,5	-16,6
187,320	25,3	12,7	38,0	43,5	-5,5
262,500	29,8	15,3	45,1	46,0	-0,9
299,716	28,1	16,6	44,7	46,0	-1,3
449,568	22,7	20,0	42,7	46,0	-3,3

File No. **T-0329-3618-02 JP**

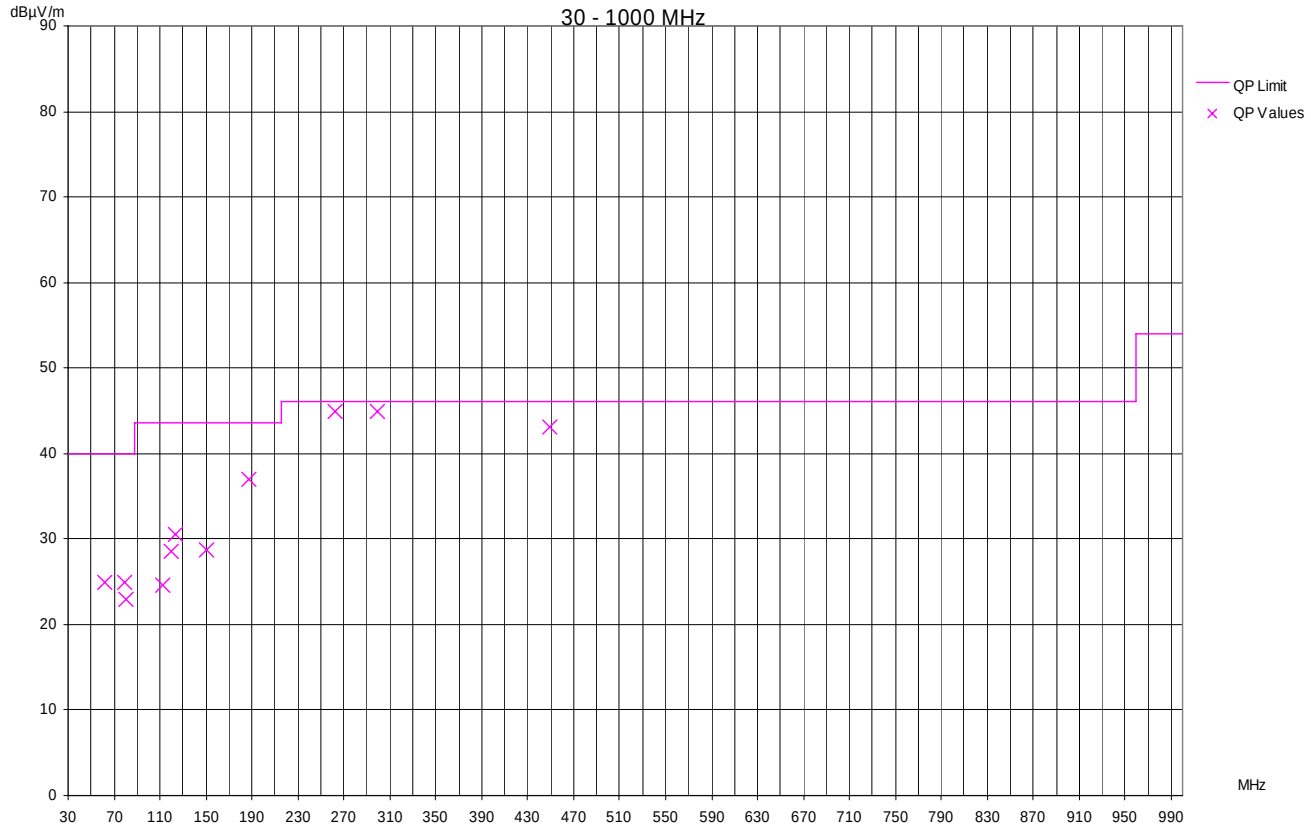
Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.209
Test:	Radiated Emission Test (Distance 3m)
Detector:	QP
Result:	Limit kept
Applied to:	Vertical
Remark:	none



Minimum margin to limit: -1,4 dB

Frequency [MHz]	Reading [dBµV] QP	Correction [dB]	Values [dBµV/m] QP	Limit [dBµV/m] QP	Margin [dB] QP
31,260	15,4	13,6	29,0	40,0	-11,0
68,800	24,1	11,3	35,4	40,0	-4,6
82,790	11,3	11,4	22,7	40,0	-17,3
118,437	8,9	12,4	21,3	43,5	-22,2
149,857	19,3	10,6	29,9	43,5	-13,6
187,326	28,4	12,7	41,1	43,5	-2,4
262,249	29,3	15,3	44,6	46,0	-1,4
299,713	26,0	16,6	42,6	46,0	-3,4
449,566	18,5	20,0	38,5	46,0	-7,5

Date of test:	2010-07-05
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.209
Test:	Radiated Emission Test (Distance 3m)
Detector:	QP
Result:	Limit kept
Applied to:	Horizontal
Remark:	none

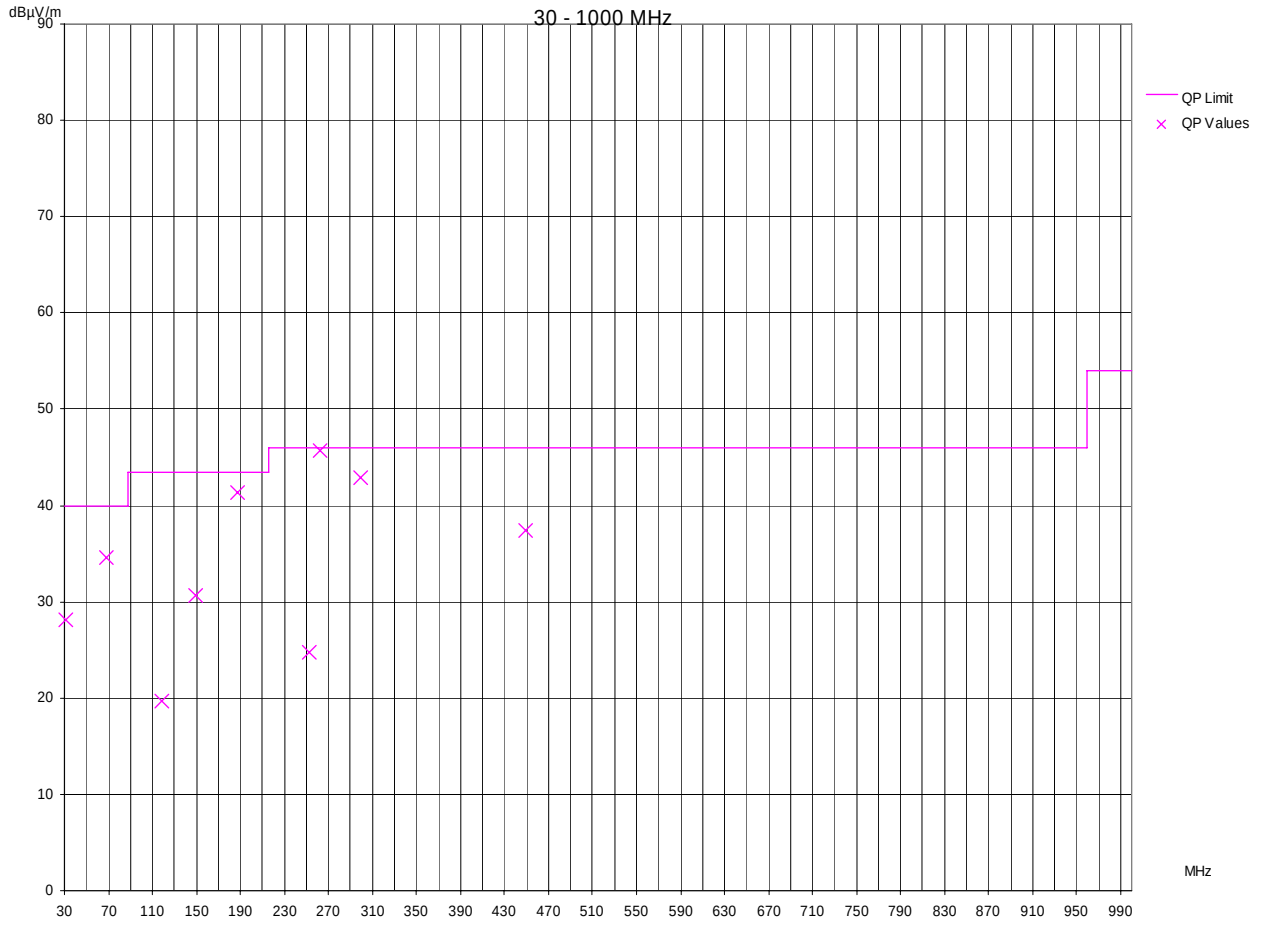


Minimum margin to limit: -1,0 dB

Frequency [MHz]	Reading [dBµV] QP	Correction [dB]	Values [dBµV/m] QP	Limit [dBµV/m] QP	Margin [dB] QP
61,400	12,2	12,7	24,9	40,0	-15,1
79,271	13,8	11,1	24,9	40,0	-15,1
81,009	11,7	11,2	22,9	40,0	-17,1
112,390	11,2	13,4	24,6	43,5	-18,9
119,284	16,2	12,3	28,5	43,5	-15,0
123,244	18,7	11,8	30,5	43,5	-13,0
149,900	18,1	10,6	28,7	43,5	-14,8
187,320	24,3	12,7	37,0	43,5	-6,5
262,251	29,7	15,3	45,0	46,0	-1,0
299,716	28,4	16,6	45,0	46,0	-1,0
449,569	23,1	20,0	43,1	46,0	-2,9

File No. **T-0329-3618-02 JP**

Date of test:	2010-07-05
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.209
Test:	Radiated Emission Test (Distance 3m)
Detector:	QP
Result:	Limit kept
Applied to:	Vertical
Remark:	none



Minimum margin to limit: -0,3 dB

Frequency [MHz]	Reading [dBµV] QP	Correction [dB]	Values [dBµV/m] QP	Limit [dBµV/m] QP	Margin [dB] QP
31,575	14,5	13,6	28,1	40,0	-11,9
68,600	23,3	11,3	34,6	40,0	-5,4
118,639	7,3	12,4	19,7	43,5	-23,8
149,857	20,0	10,6	30,6	43,5	-12,9
187,321	28,6	12,7	41,3	43,5	-2,2
252,300	9,6	15,1	24,7	46,0	-21,3
262,249	30,4	15,3	45,7	46,0	-0,3
299,713	26,3	16,6	42,9	46,0	-3,1
449,566	17,4	20,0	37,4	46,0	-8,6

File No. **T-0329-3618-02 JP**

6.4 Radiated disturbance in the frequency range 1GHz – 40GHz

For test instruments and accessories used see section 7 Part **SER 3**.

6.4.1 Description of the test location

Test location: Anechoic Chamber A4

Test distance: 3 metres

6.4.2 Photo documentation of the test set-up

6.4.3 Test specification

Environmental conditions: Temperature: 23°C Humidity: 43% Atmospheric pressure: 98kPa

Frequency range: 1 GHz – 40GHz

The test was carried out in the following operation mode(s):
- Testsoftware active, CH08 adjusted
- Testsoftware active, CH27 adjusted
- Testsoftware active, CH45 adjusted

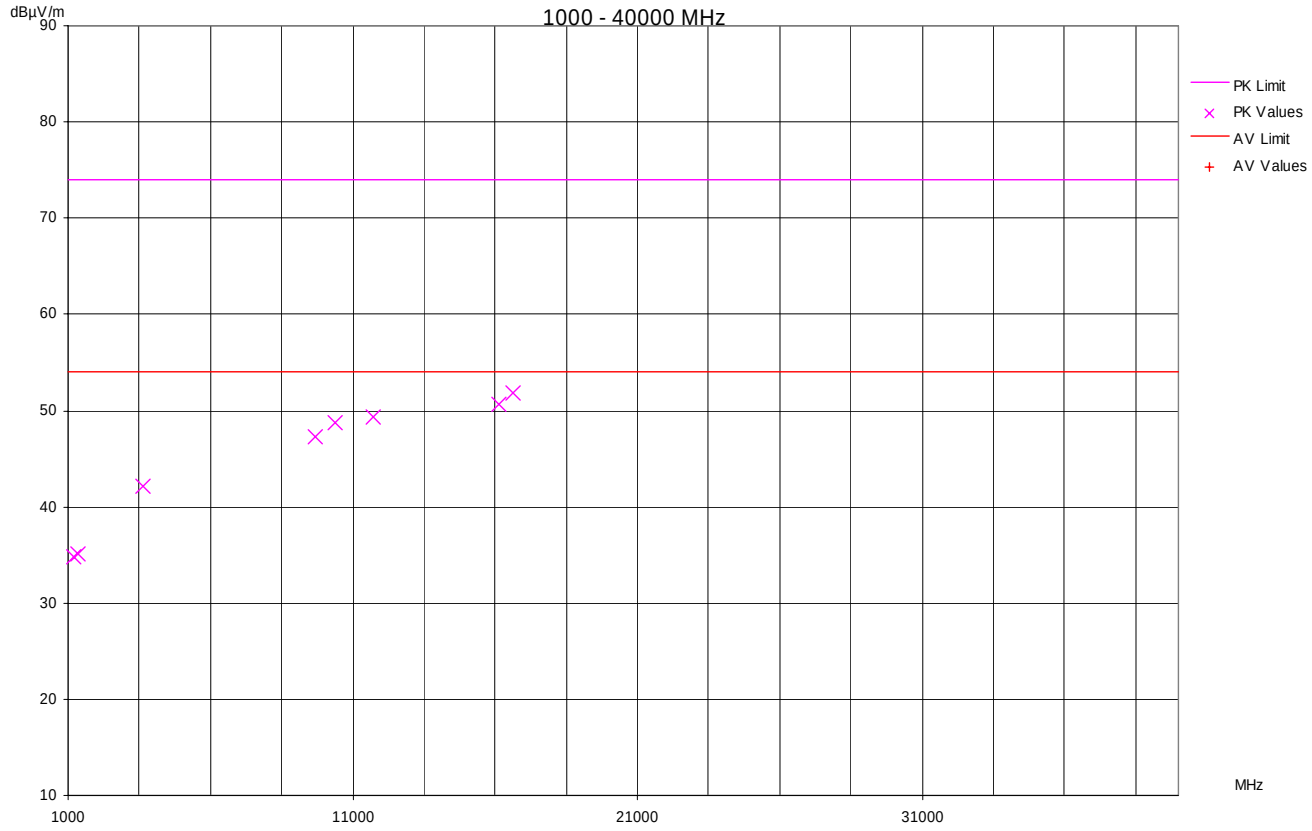
6.4.4 Test result

The requirements are

Remarks: Emissions above 18GHz were measured conducted at the antenna ports.

6.4.5 Test protocol

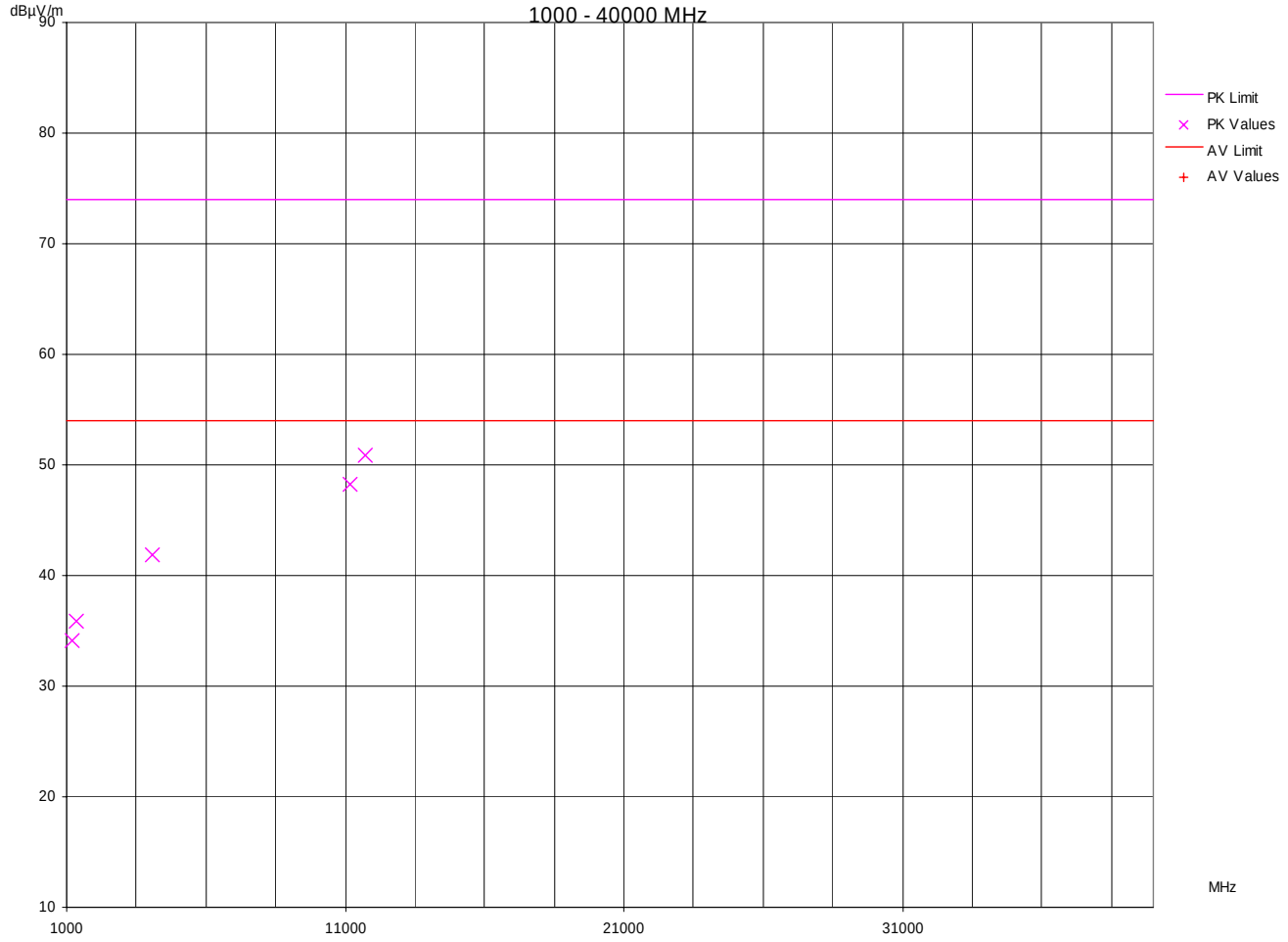
Date of test:	2010-06-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.209
Test:	Radiated Emission Test (Distance 3m)
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	If PK value is below AV limit no AV measurement was made.



Minimum margin to limit: -22,1 dB

Frequency [MHz]	Reading [dBµV] PK	Reading [dBµV] AV	Correction [dB]	Values [dBµV/m] PK	Values [dBµV/m] AV	Limit [dBµV/m] PK	Limit [dBµV/m] AV	Margin [dB] PK	Margin [dB] AV
1195,000	45,8		-10,9	34,9		74,0	54,0	-39,1	
1338,000	45,6		-10,5	35,1		74,0	54,0	-38,9	
3639,000	44,5		-2,4	42,1		74,0	54,0	-31,8	
9705,000	41,0		6,3	47,3		74,0	54,0	-26,7	
10356,000	41,3		7,4	48,7		74,0	54,0	-25,3	
11742,000	40,5		8,9	49,3		74,0	54,0	-24,6	
16110,000	42,6		8,1	50,7		74,0	54,0	-23,3	
16635,000	41,7		10,2	51,9		74,0	54,0	-22,1	

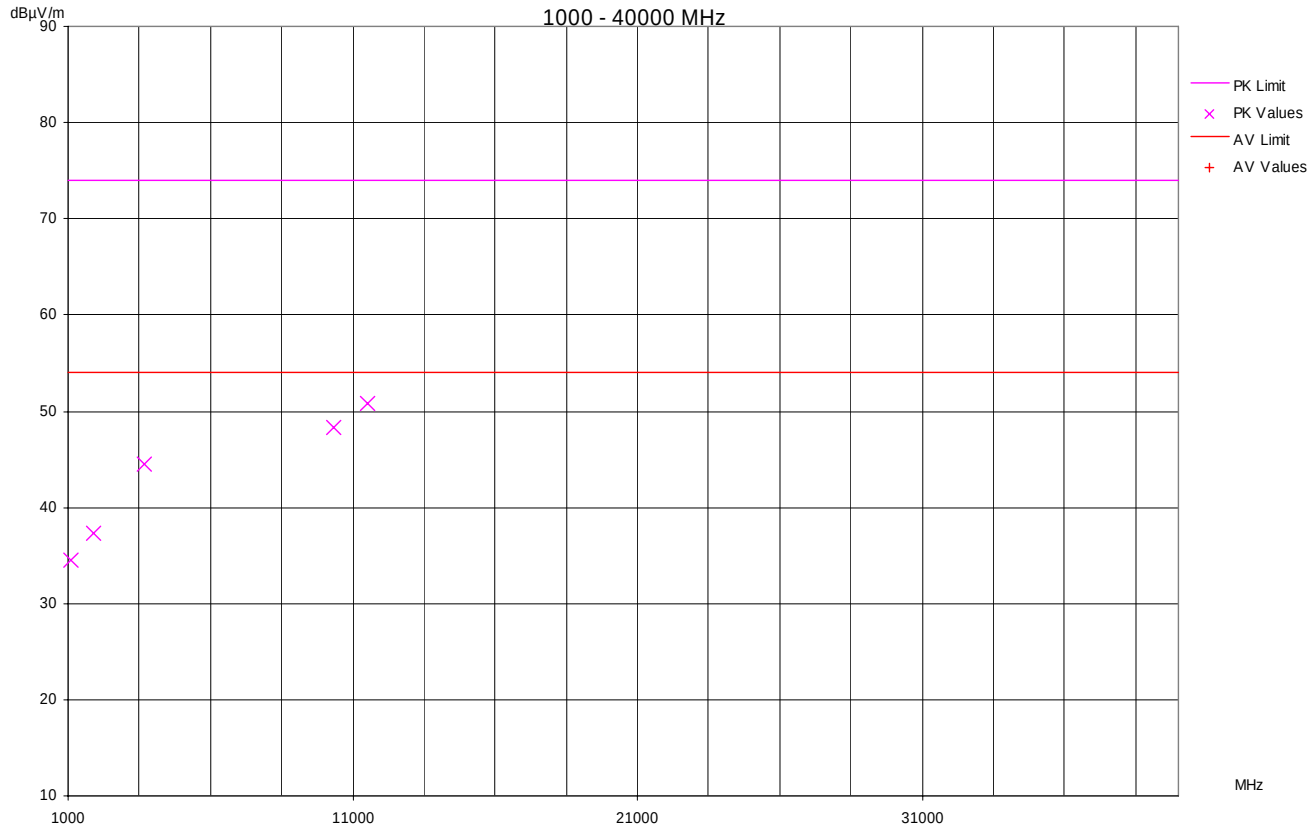
Date of test:	2010-06-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.209
Test:	Radiated Emission Test (Distance 3m)
Detector:	PK / AV
Result:	Limit kept
Applied to:	Vertical
Remark:	If PK value is below AV limit no AV measurement was made.



Minimum margin to limit: -23,1 dB

Frequency [MHz]	Reading [dBµV] PK	Reading [dBµV] AV	Correction [dB]	Values [dBµV/m] PK	Values [dBµV/m] AV	Limit [dBµV/m] PK	Limit [dBµV/m] AV	Margin [dB] PK	Margin [dB] AV
1195,000	45,1		-10,9	34,2		74,0	54,0	-39,8	
1338,000	46,4		-10,5	35,9		74,0	54,0	-38,1	
4080,000	43,6		-1,8	41,8		74,0	54,0	-32,1	
11175,000	39,9		8,3	48,2		74,0	54,0	-25,8	
11742,000	42,0		8,9	50,9		74,0	54,0	-23,1	

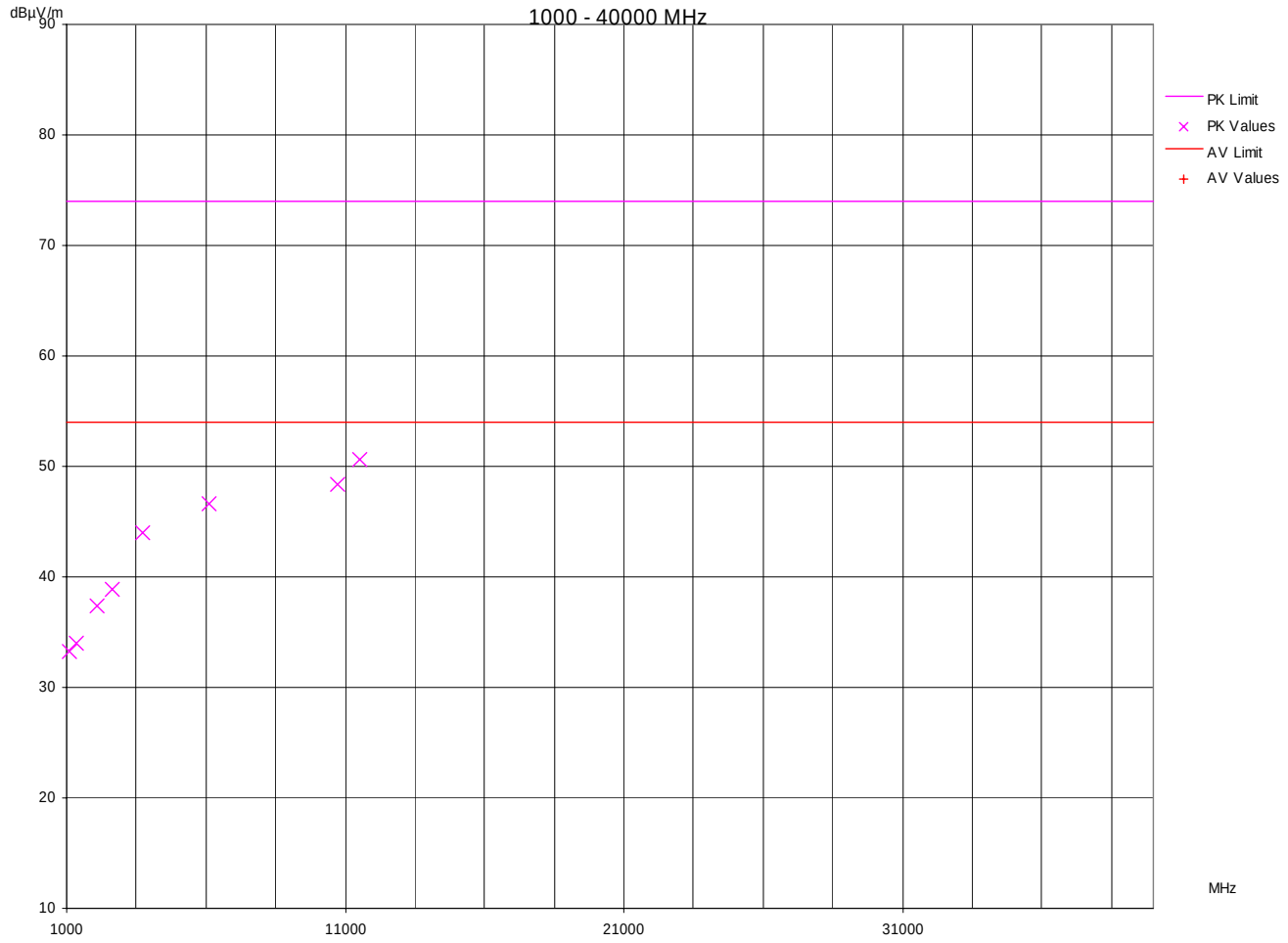
Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.209
Test:	Radiated Emission Test (Distance 3m)
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	none



Minimum margin to limit: -23,1 dB

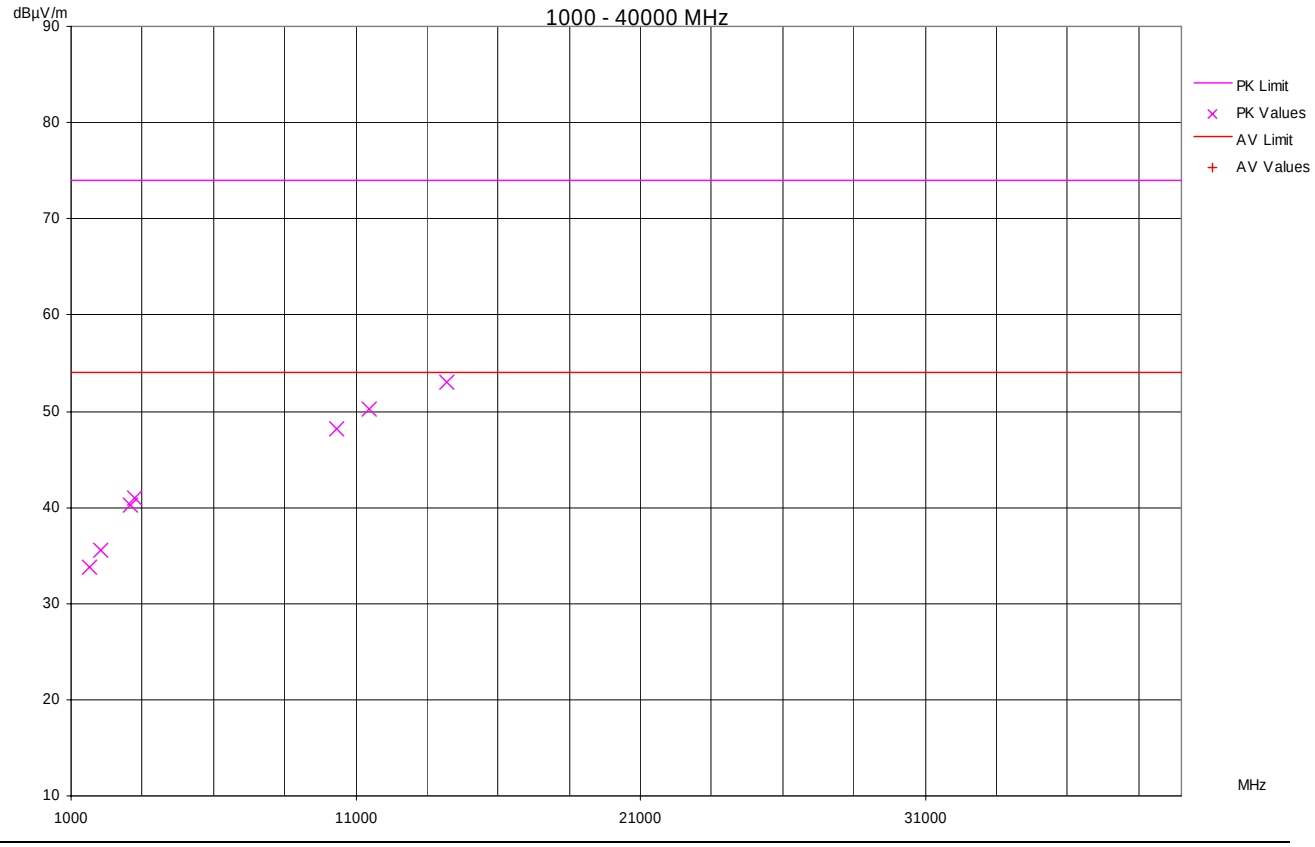
Frequency	Reading [dBµV]		Correction	Values [dBµV/m]		Limit [dBµV/m]		Margin [dB]	
[MHz]	PK	AV	[dB]	PK	AV	PK	AV	PK	AV
1108,000	45,9		-11,3	34,6		74,0	54,0	-39,4	
1888,000	44,6		-7,2	37,4		74,0	54,0	-36,6	
3700,000	46,4		-1,8	44,6		74,0	54,0	-29,4	
10347,000	40,9		7,4	48,3		74,0	54,0	-25,7	
11523,000	42,1		8,8	50,9		74,0	54,0	-23,1	

Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.209
Test:	Radiated Emission Test (Distance 3m)
Detector:	PK / AV
Result:	Limit kept
Applied to:	Vertical
Remark:	



						Minimum margin to limit:		**-23,3**	**dB**
Frequency	**Reading [dBµV]**		**Correction**	**Values [dBµV/m]**		**Limit [dBµV/m]**		**Margin [dB]**	
[MHz]	**PK**	**AV**	**[dB]**	**PK**	**AV**	**PK**	**AV**	**PK**	**AV**
1084,000	44,8		-11,5	33,2		74,0	54,0	-40,7	
1348,000	44,5		-10,5	34,0		74,0	54,0	-39,9	
2092,000	44,3		-6,9	37,4		74,0	54,0	-36,6	
2632,000	44,5		-5,6	38,8		74,0	54,0	-35,1	
3748,000	45,5		-1,5	44,0		74,0	54,0	-30,0	
6100,000	45,1		1,5	46,6		74,0	54,0	-27,4	
10728,000	40,3		8,0	48,3		74,0	54,0	-25,7	
11529,000	41,9		8,8	50,7		74,0	54,0	-23,3	

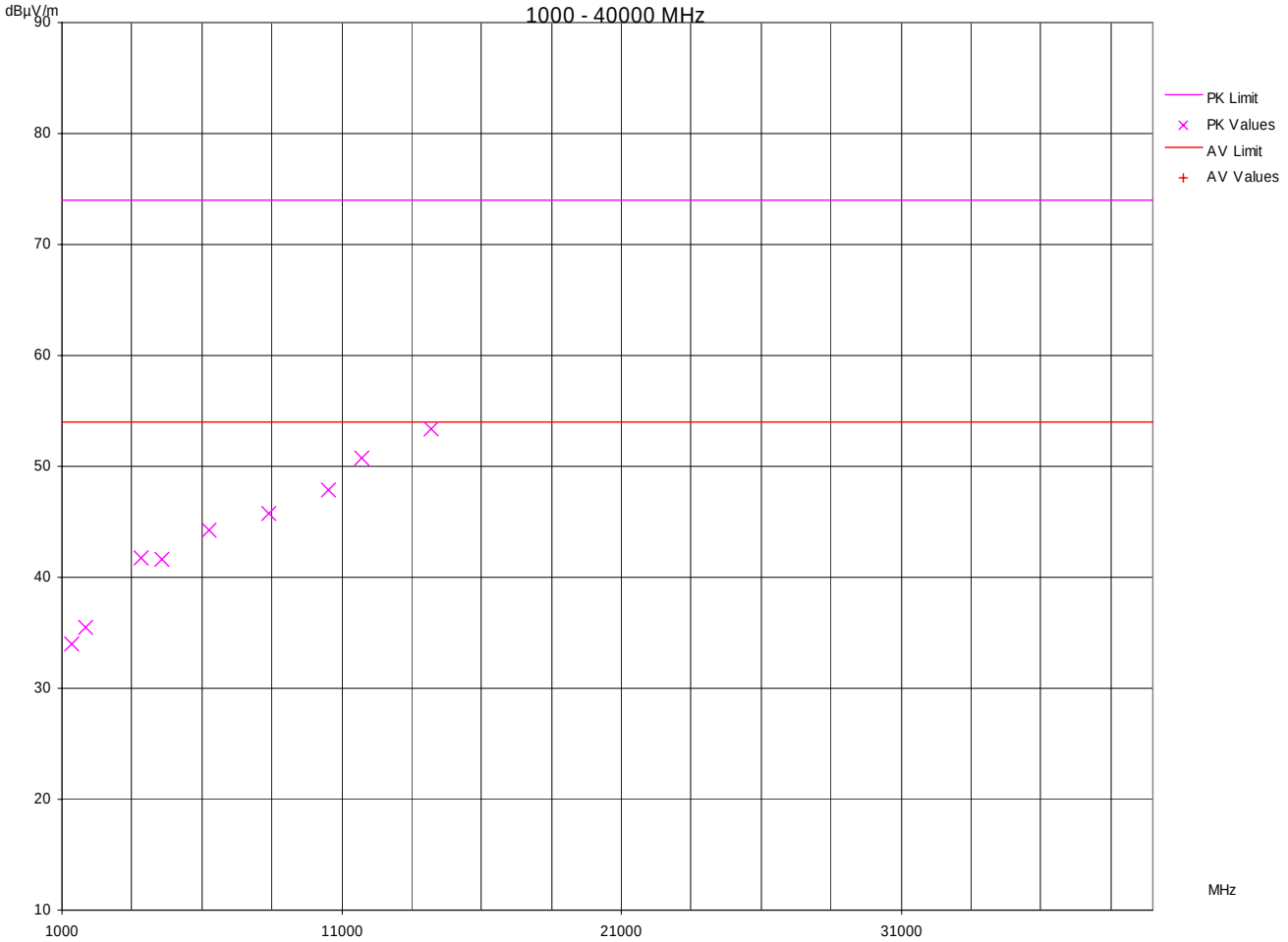
Date of test:	2010-06-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.209
Test:	Radiated Emission Test (Distance 3m)
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	If PK value is below AV limit no AV measurement was made.



Minimum margin to limit: -20,9 dB

Frequency	Reading [dBµV]		Correction	Values [dBµV/m]		Limit [dBµV/m]		Margin [dB]	
[MHz]	PK	AV	[dB]	PK	AV	PK	AV	PK	AV
1650,000	43,0		-9,2	33,8		74,0	54,0	-40,2	
2027,000	42,5		-7,0	35,5		74,0	54,0	-38,5	
3106,000	43,6		-3,3	40,2		74,0	54,0	-33,7	
3249,000	44,2		-3,2	41,0		74,0	54,0	-33,0	
10335,000	40,8		7,4	48,2		74,0	54,0	-25,8	
11469,000	41,4		8,8	50,2		74,0	54,0	-23,8	
14178,000	42,0		11,0	53,0		74,0	54,0	-20,9	

Date of test:	2010-06-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.209
Test:	Radiated Emission Test (Distance 3m)
Detector:	PK / AV
Result:	Limit kept
Applied to:	Vertical
Remark:	If PK value is below AV limit no AV measurement was made.



Minimum margin to limit: -20,6 dB

Frequency	Reading [dBµV]		Correction	Values [dBµV/m]		Limit [dBµV/m]		Margin [dB]	
[MHz]	PK	AV	[dB]	PK	AV	PK	AV	PK	AV
1338,000	44,5		-10,5	34,0		74,0	54,0	-40,0	
1845,000	43,1		-7,6	35,5		74,0	54,0	-38,5	
3847,000	43,1		-1,3	41,8		74,0	54,0	-32,2	
4588,000	42,6		-0,9	41,6		74,0	54,0	-32,3	
6239,000	42,6		1,6	44,2		74,0	54,0	-29,8	
8382,000	40,4		5,4	45,8		74,0	54,0	-28,2	
10545,000	40,0		7,9	47,9		74,0	54,0	-26,1	
11700,000	41,8		8,9	50,7		74,0	54,0	-23,3	
14178,000	42,3		11,0	53,4		74,0	54,0	-20,6	

6.5 Bandedges

For test instruments and accessories used see section 7 Part **SER 3**.

6.5.1 Description of the test location

Test location: Anechoic Chamber A4

Test distance: 3 metres

6.5.2 Photo documentation of the test set-up

6.5.3 Test specification

Environmental conditions: Temperature: 25°C Humidity: 40% Atmospheric pressure: 98kPa

Frequency range:

The test was carried out in the following operation mode(s):
- Testsoftware active, CH08 adjusted
- Testsoftware active, CH27 adjusted
- Testsoftware active, CH45 adjusted

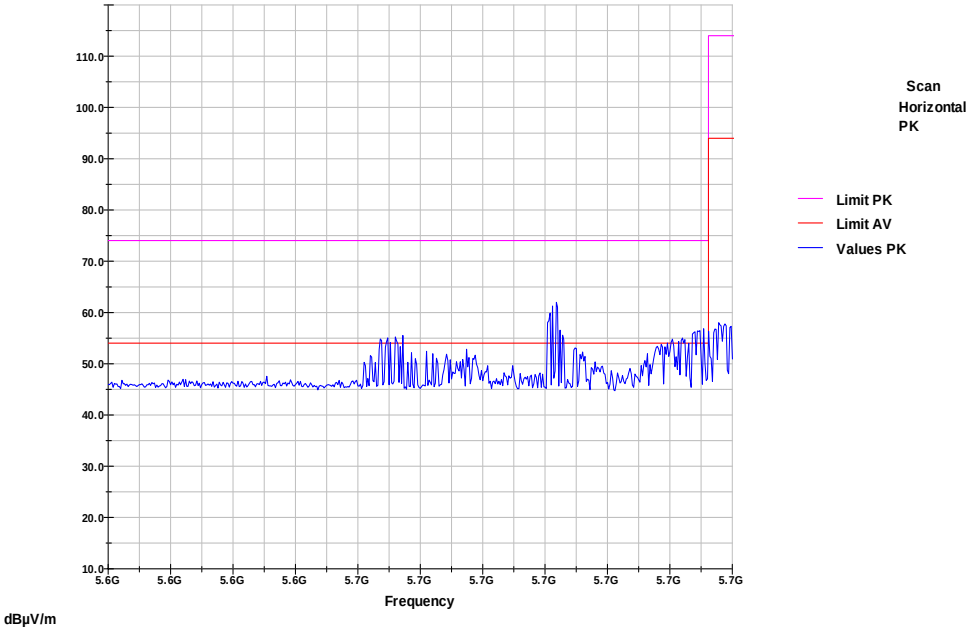
6.5.4 Test result

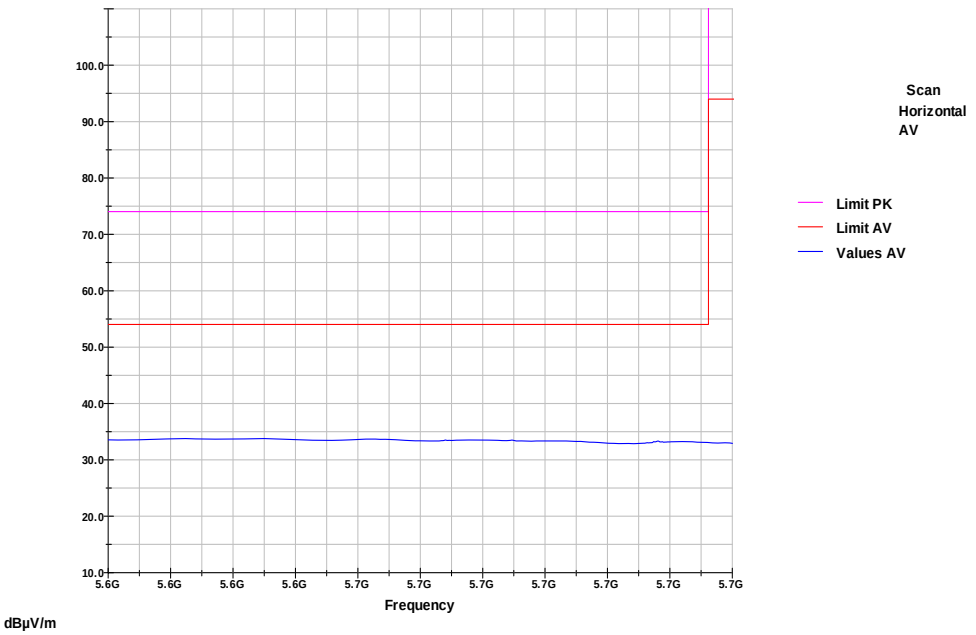
The requirements are **FULFILLED.**

Remarks: The testing was performed in horizontal polarization only, pretests show the highest emission at the band edges occur in horizontal polarization.

6.5.5 Test protocol

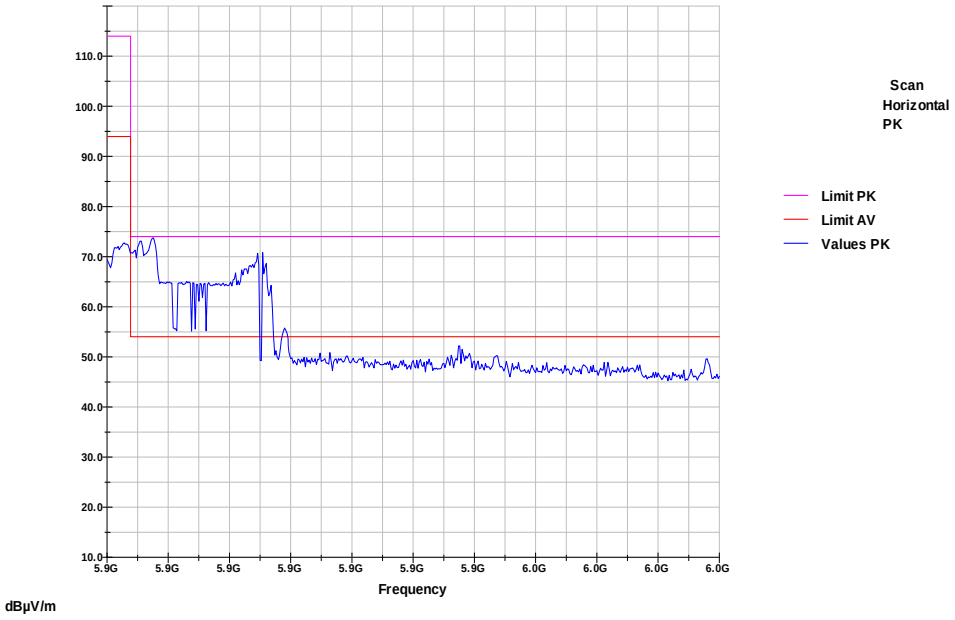
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	Low bandedge, antenna port 1

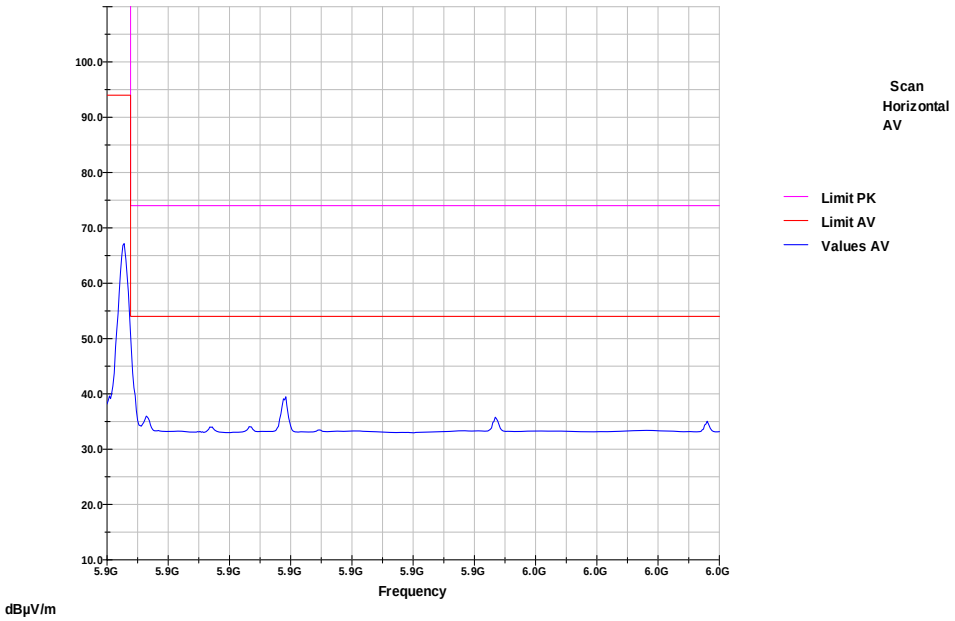




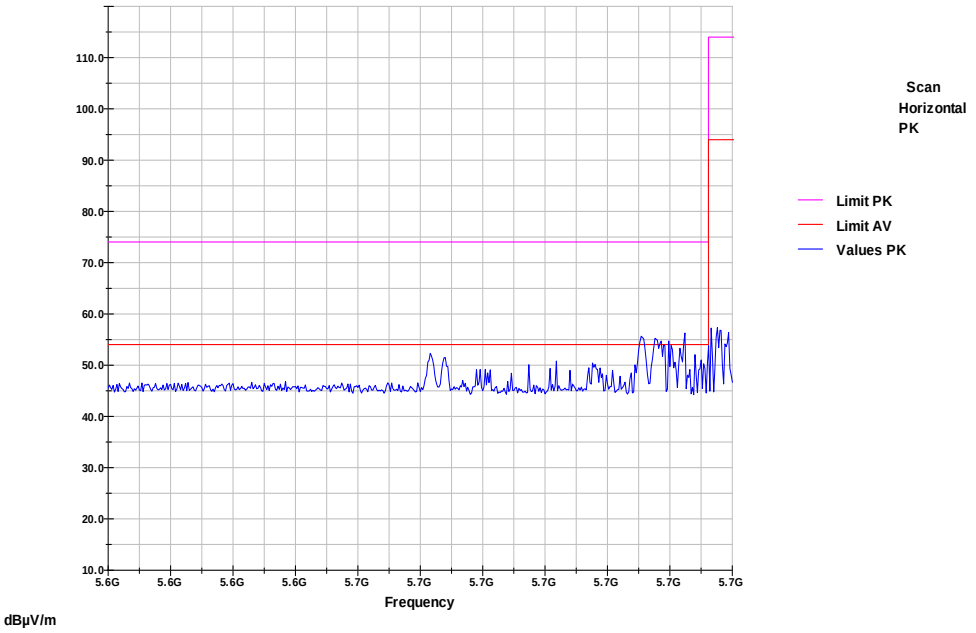
File No. **T-0329-3618-02 JP**

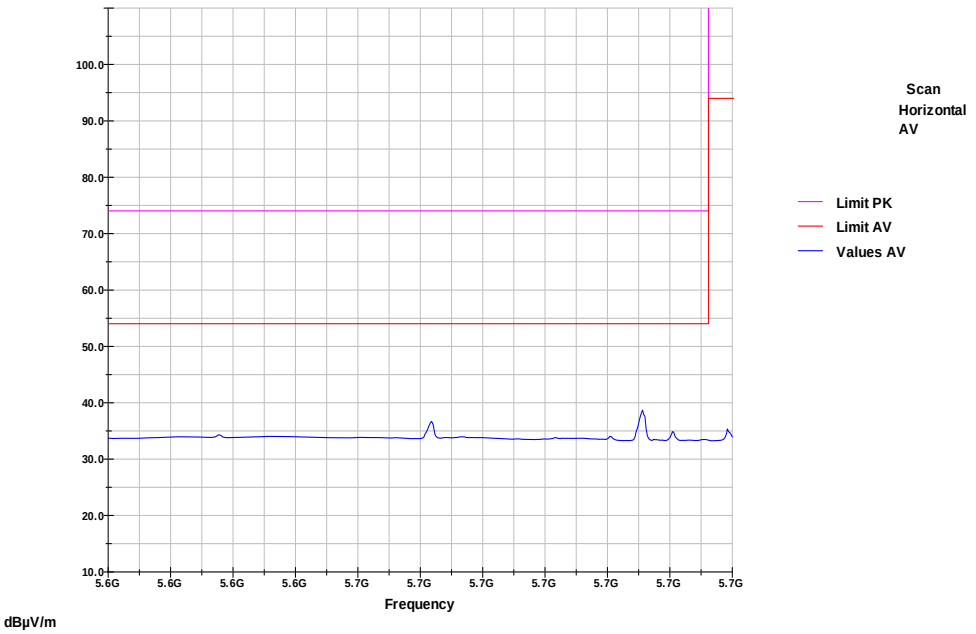
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	High bandedge, antenna port 1





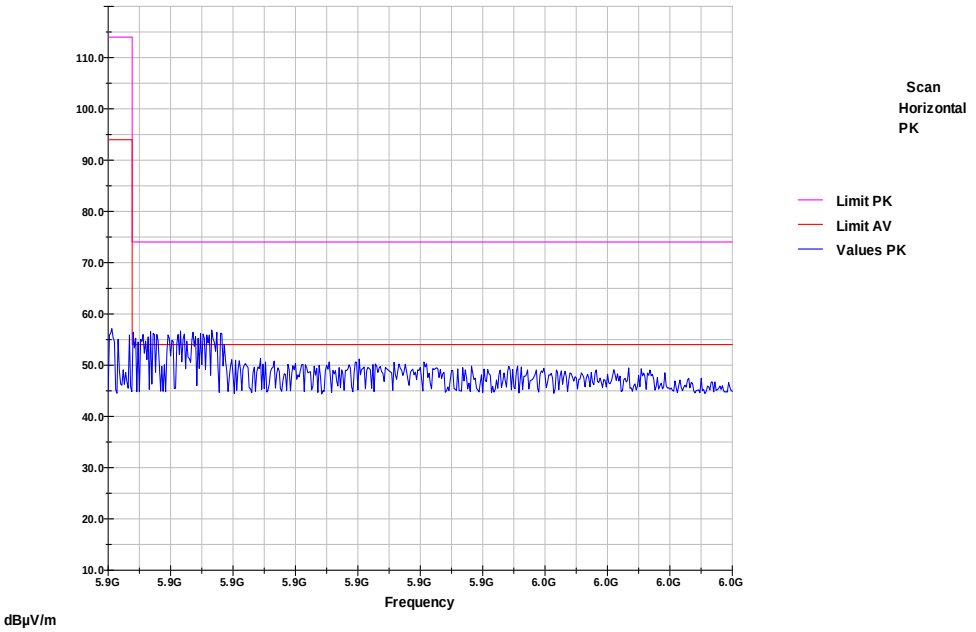
Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	Low bandedge, antenna port 1

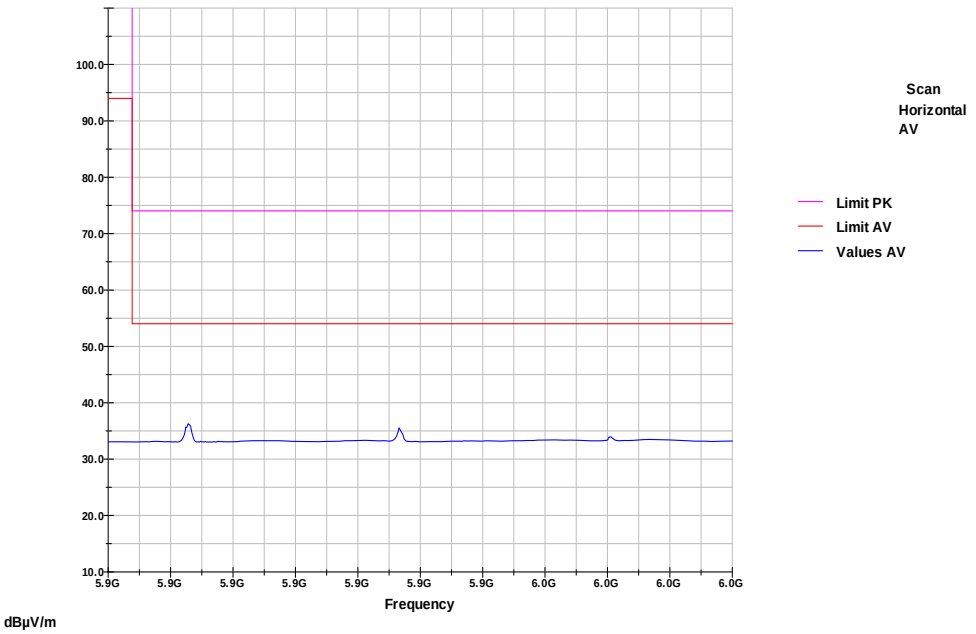




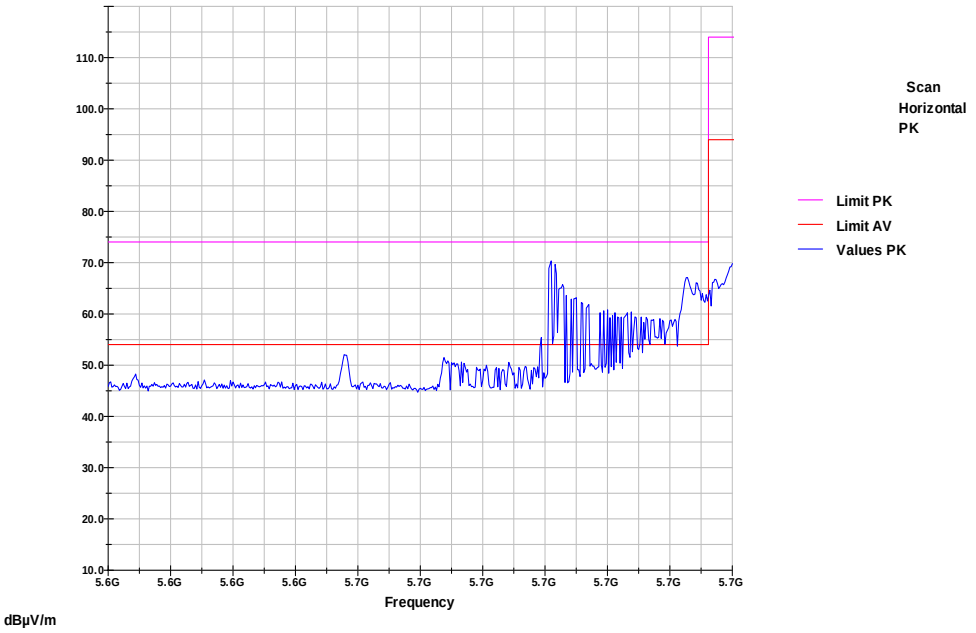
File No. **T-0329-3618-02 JP**

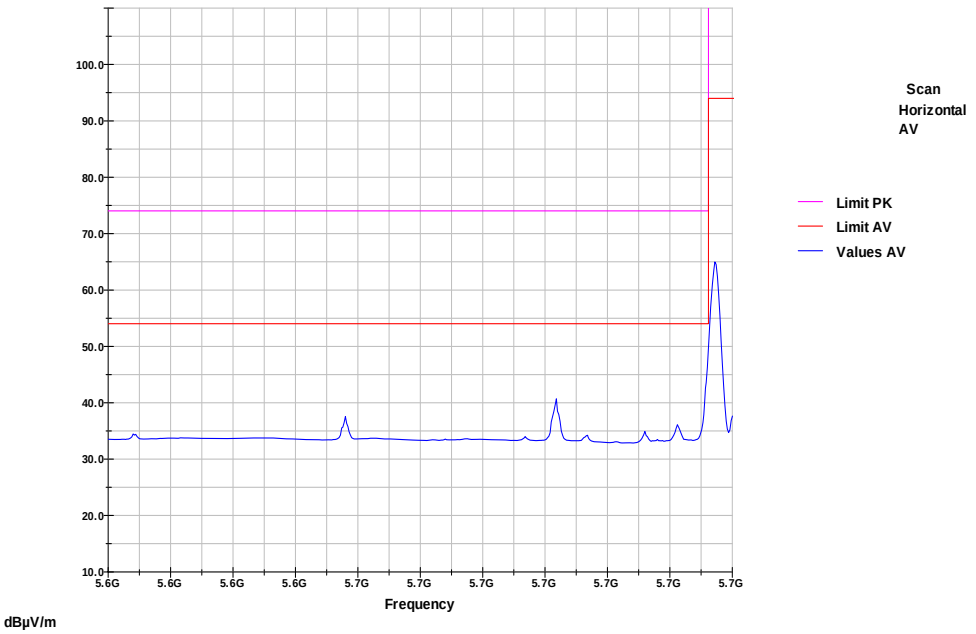
Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	High bandedge, antenna port 1





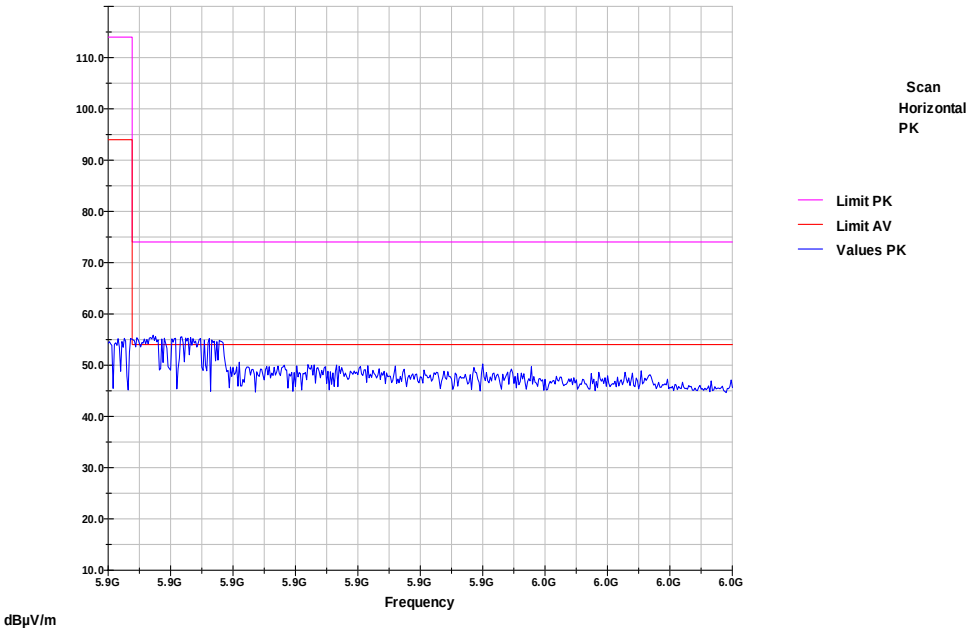
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	Low bandedge, antenna port 1

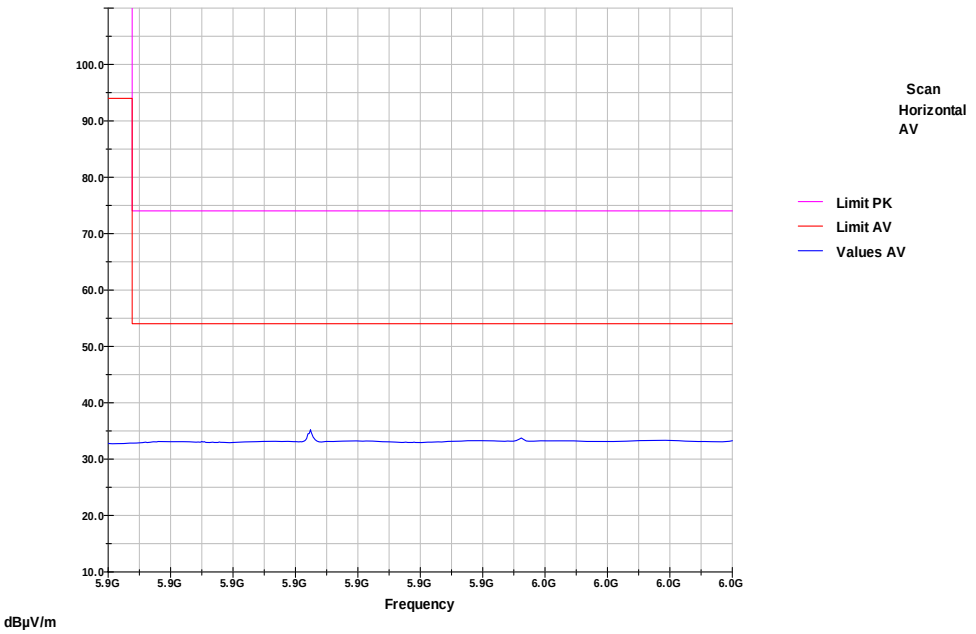




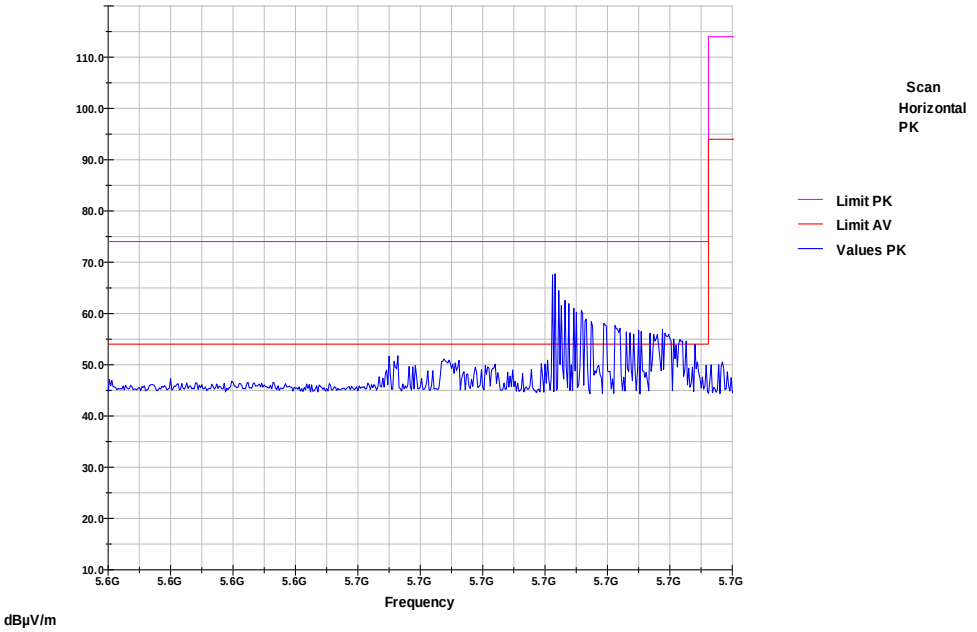
File No. **T-0329-3618-02 JP**

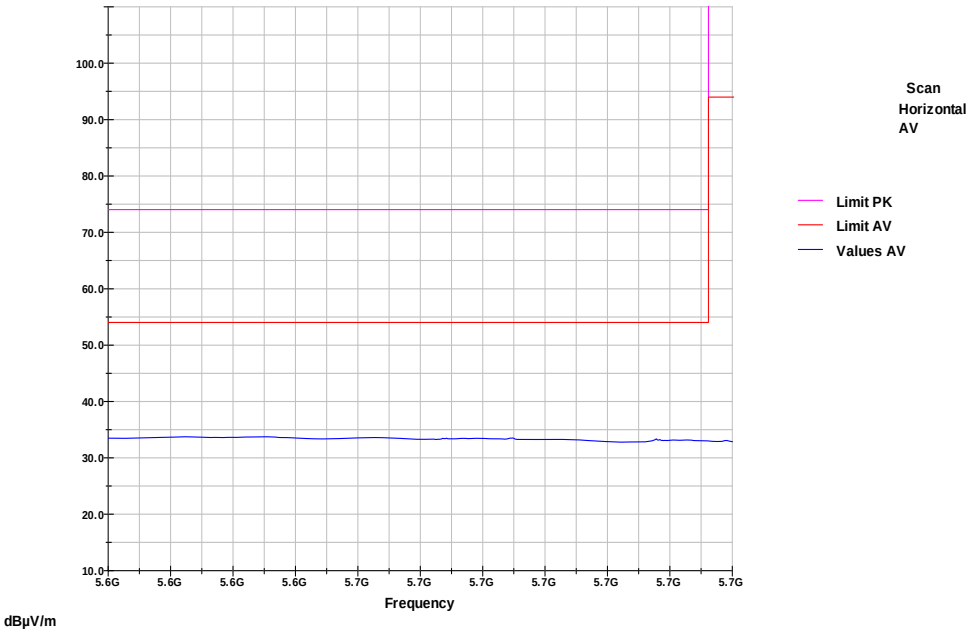
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	High bandedge, antenna port 1





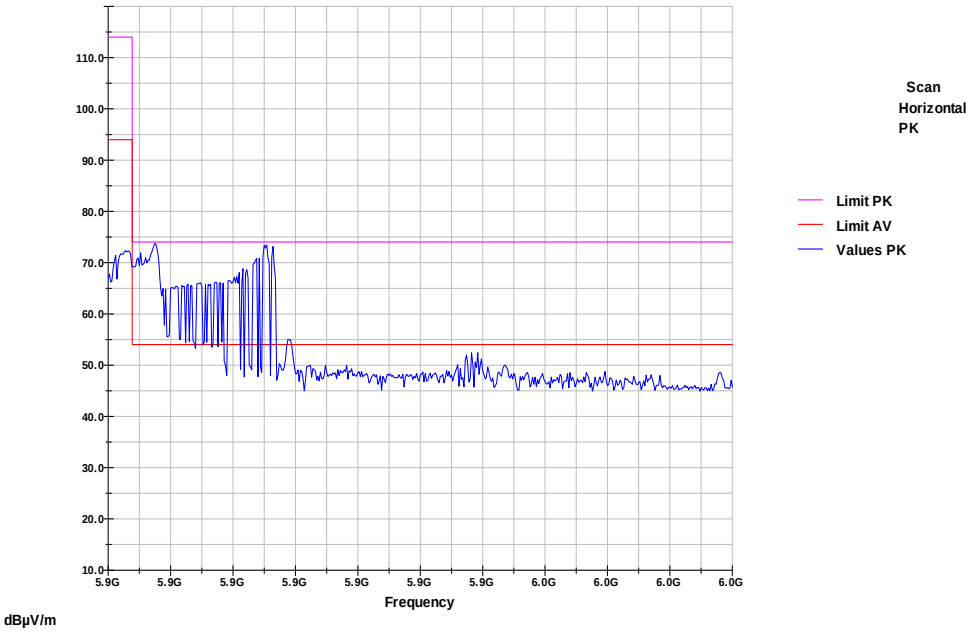
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	Low bandedge, antenna port 2

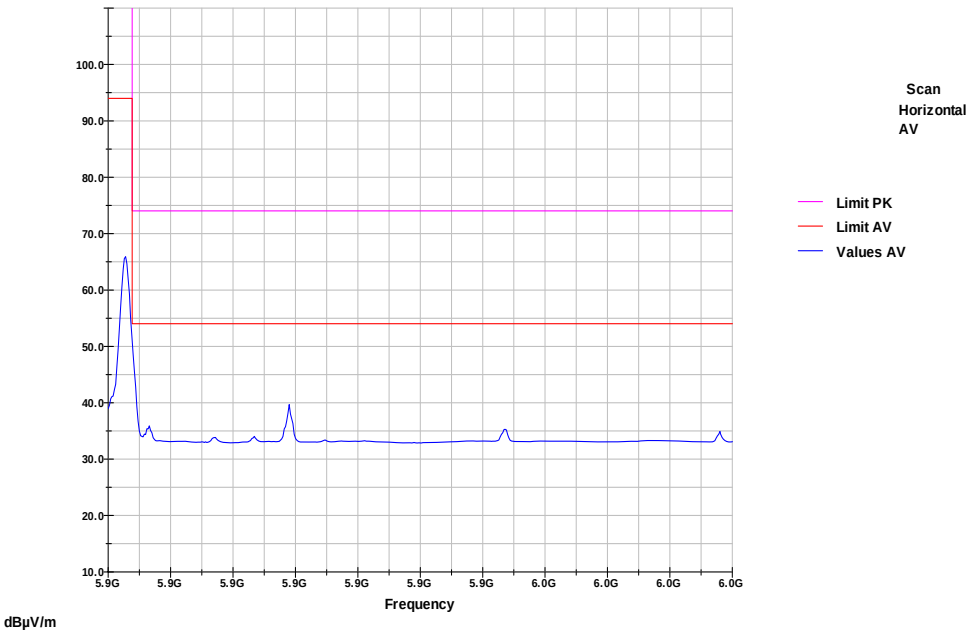




File No. **T-0329-3618-02 JP**

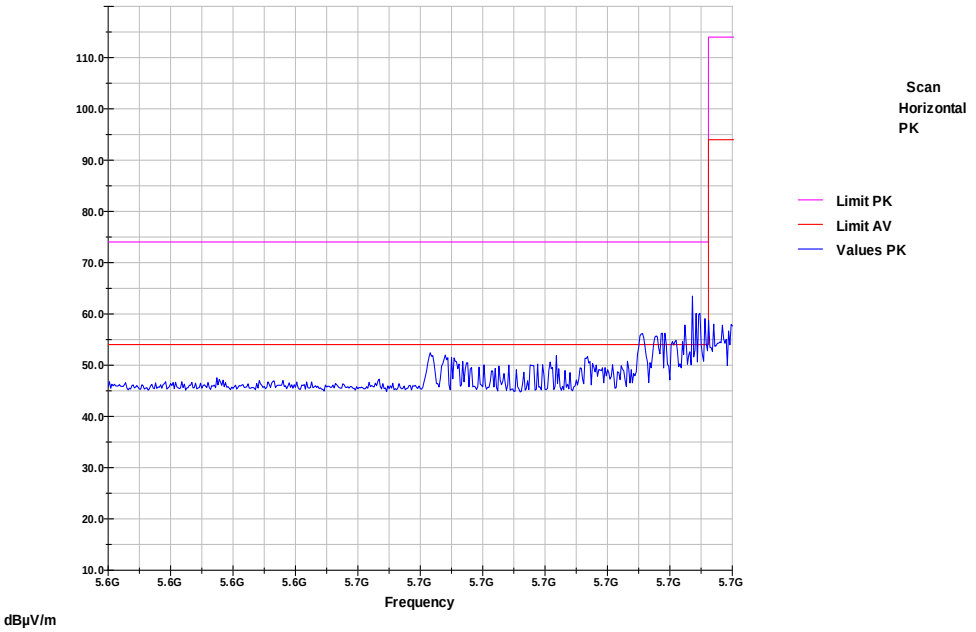
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	High bandedge, antenna port 2

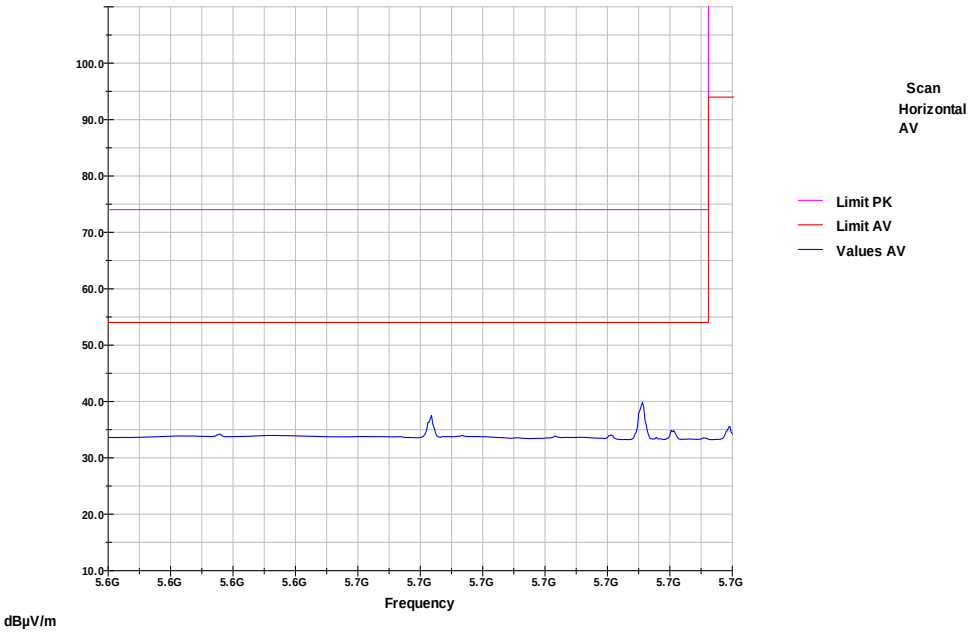




File No. **T-0329-3618-02 JP**

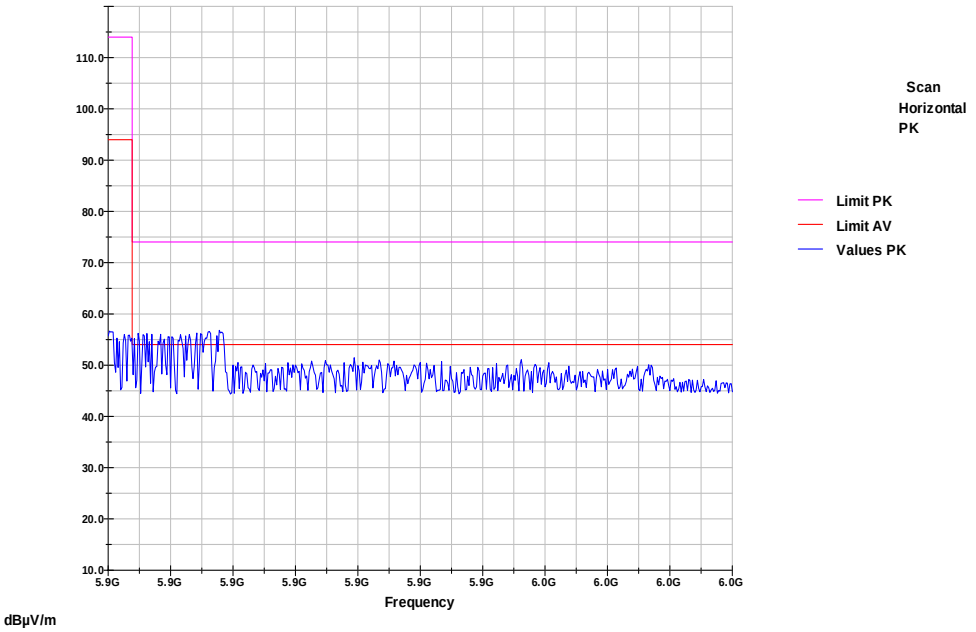
Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	Low bandedge, antenna port 2

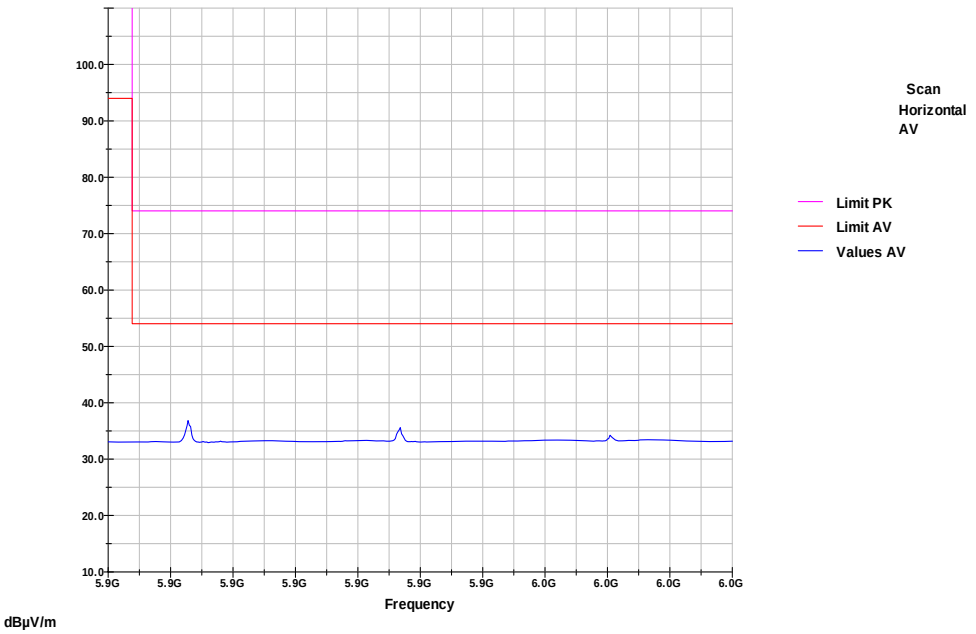




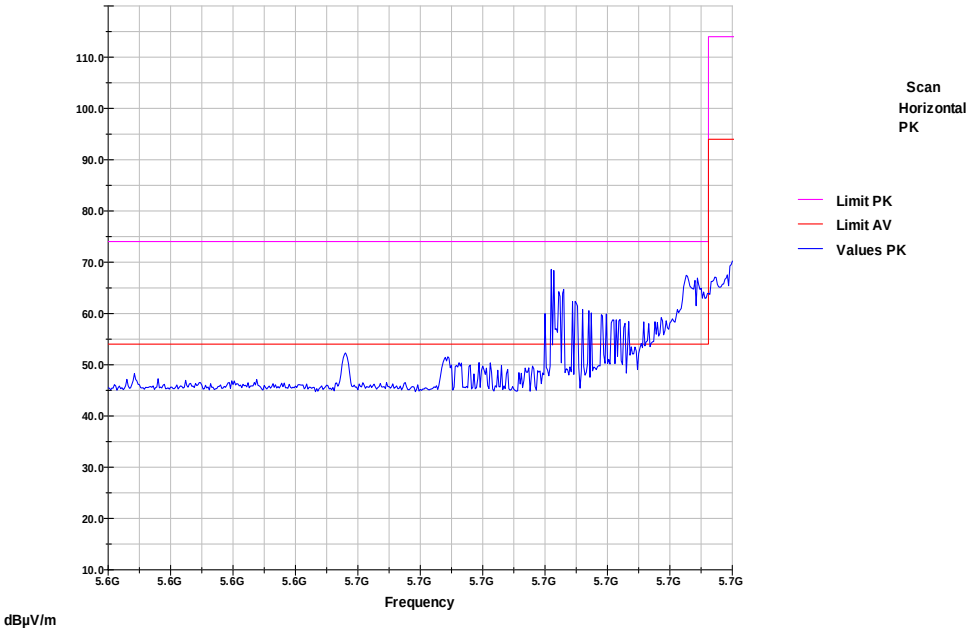
File No. **T-0329-3618-02 JP**

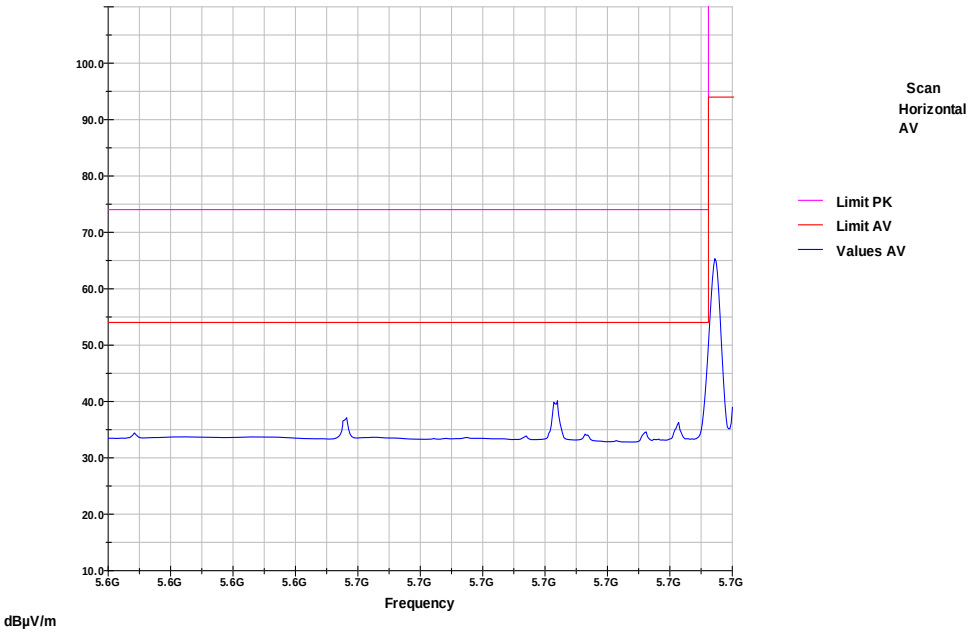
Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	High bandedge, antenna port 2





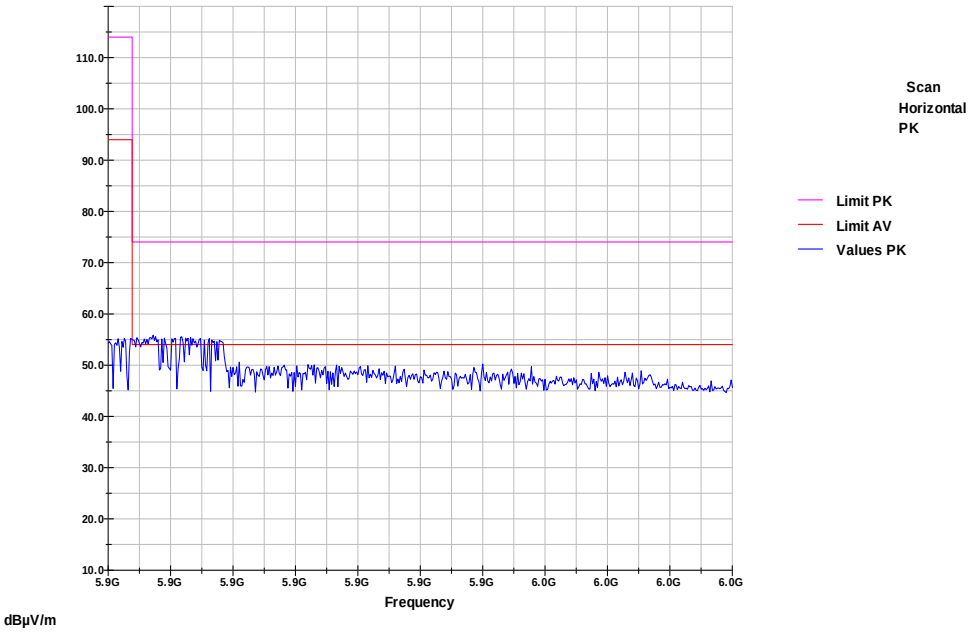
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	Low bandedge, antenna port 2

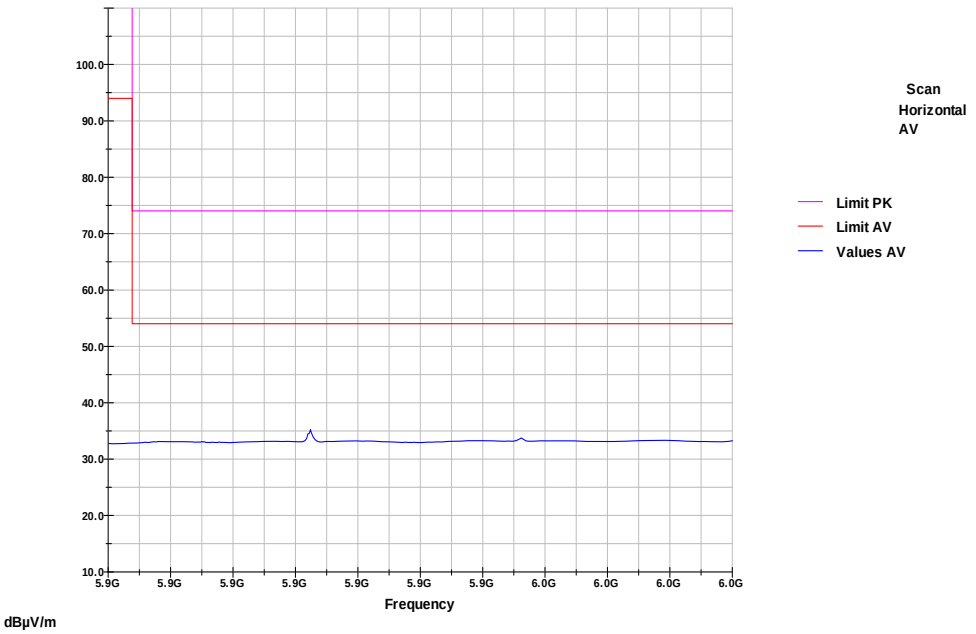




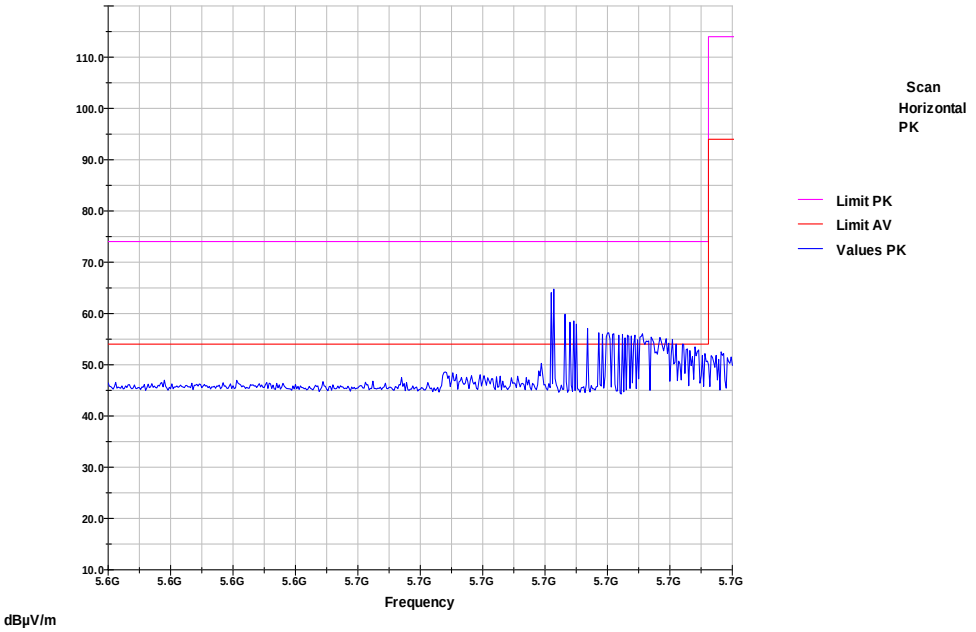
File No. **T-0329-3618-02 JP**

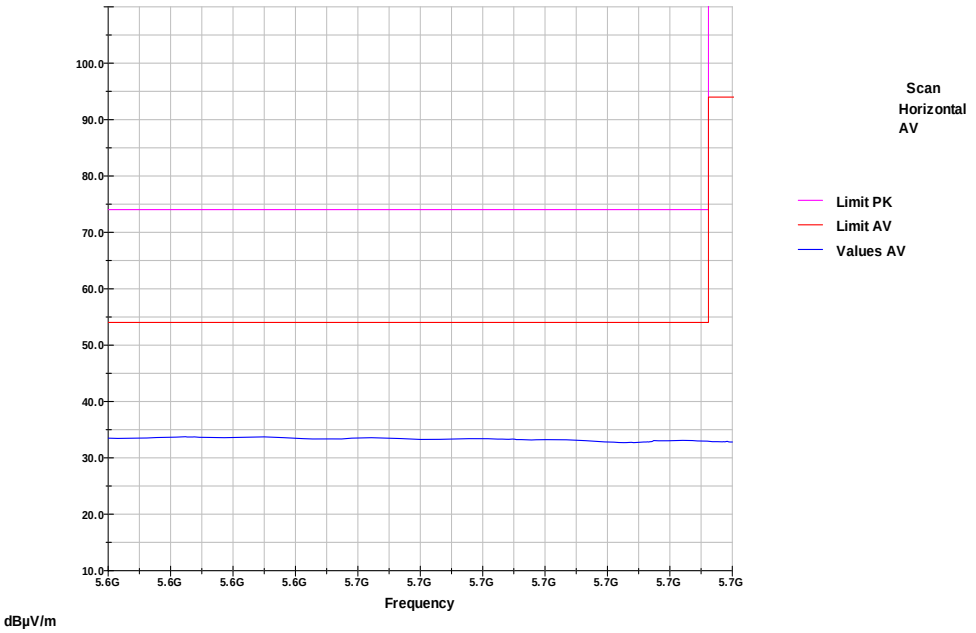
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	High bandedge, antenna port 2





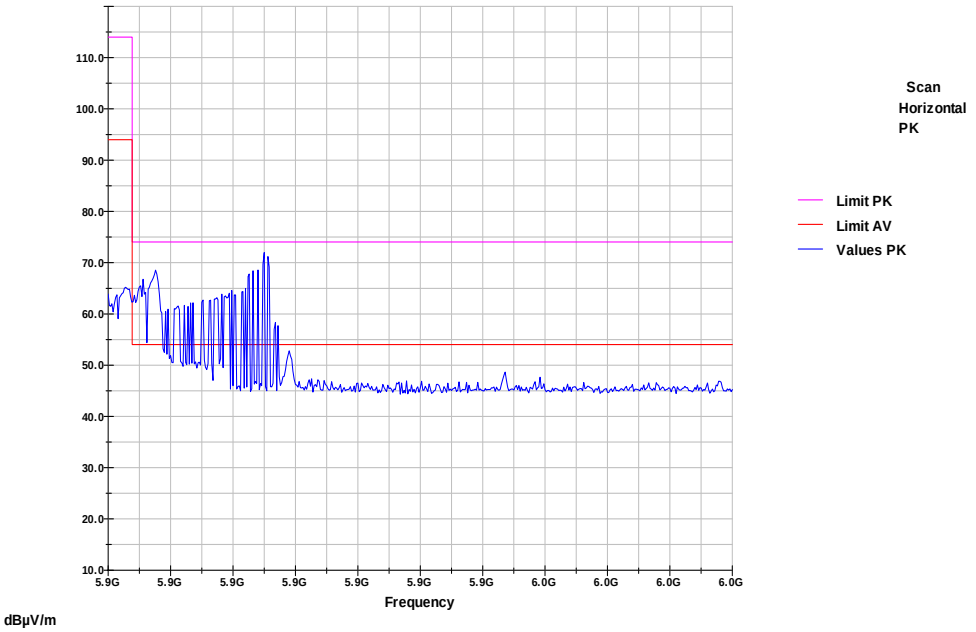
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	Low bandedge, antenna port 3

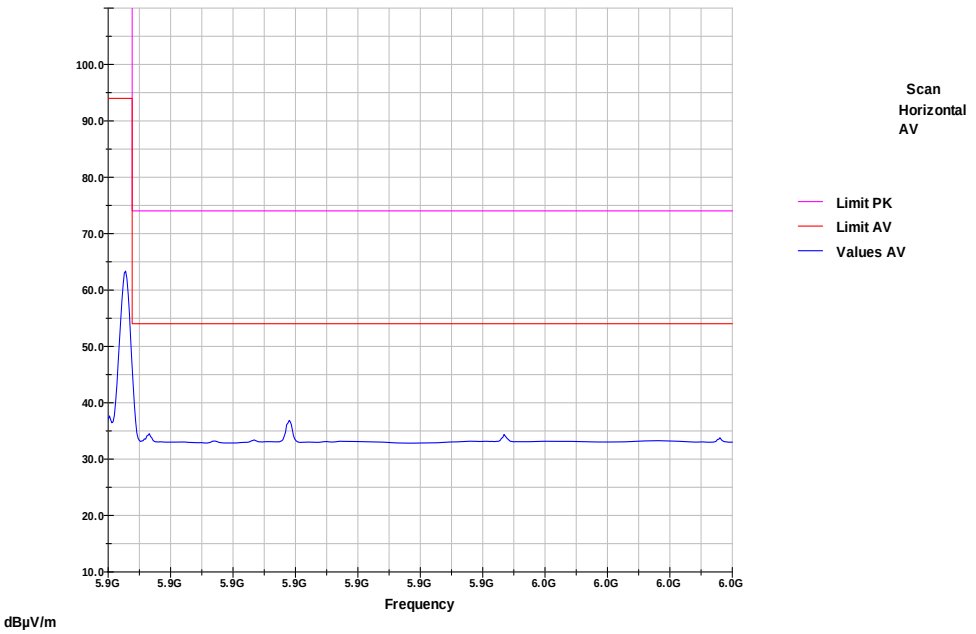




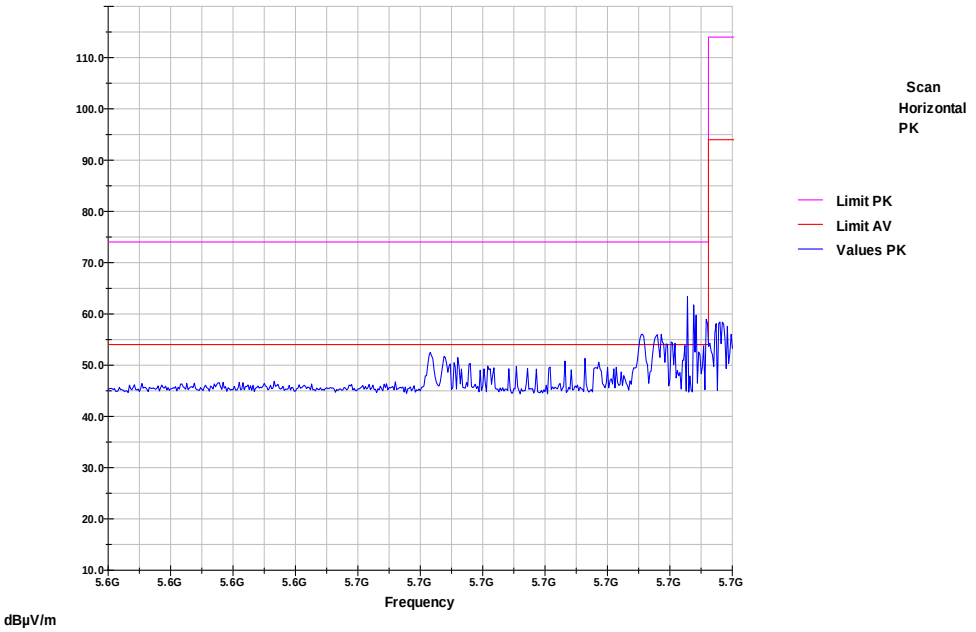
File No. **T-0329-3618-02 JP**

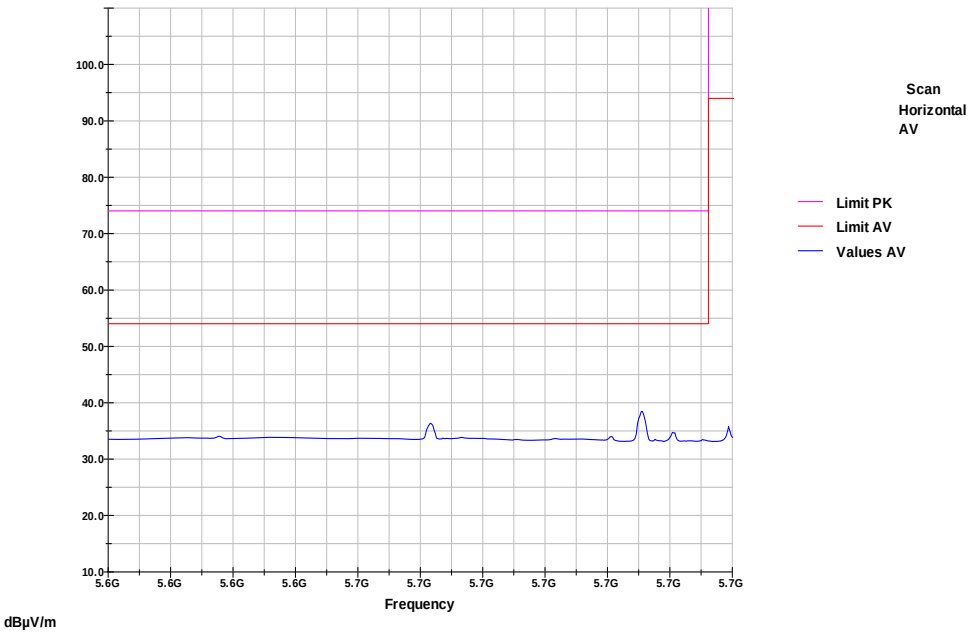
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	High bandedge, antenna port 3



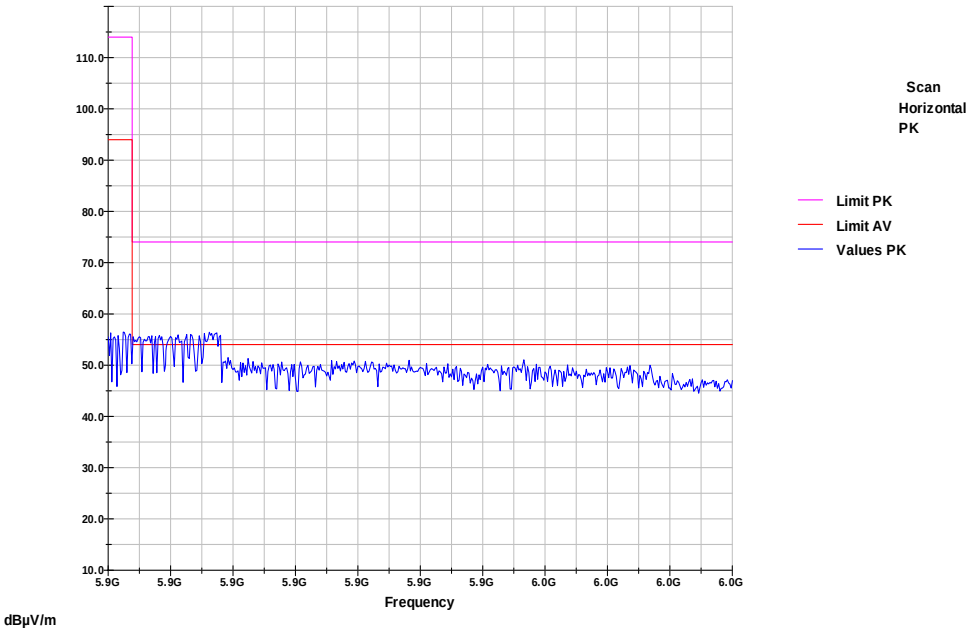


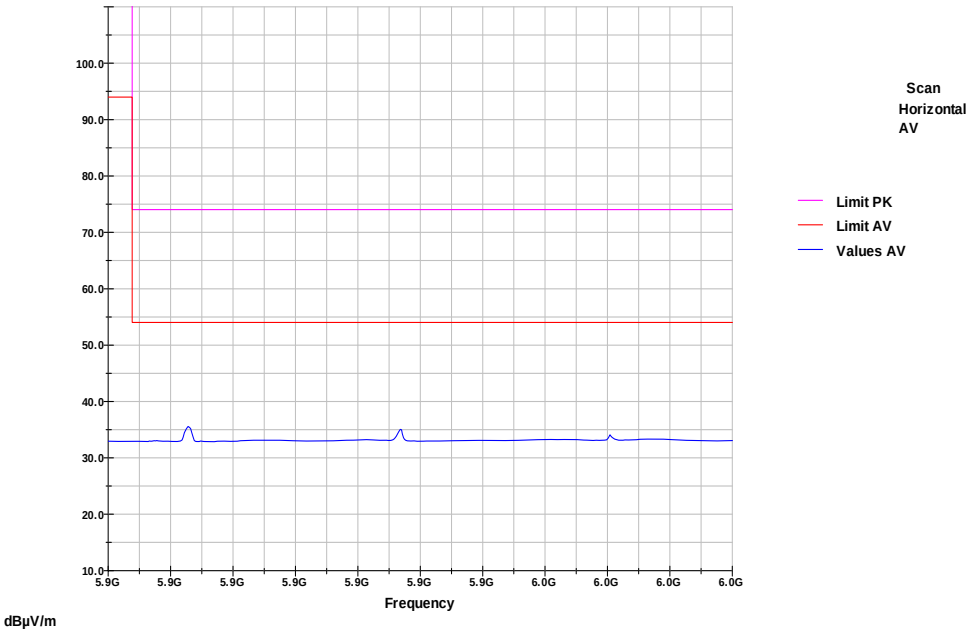
Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	Low bandedge, antenna port 3





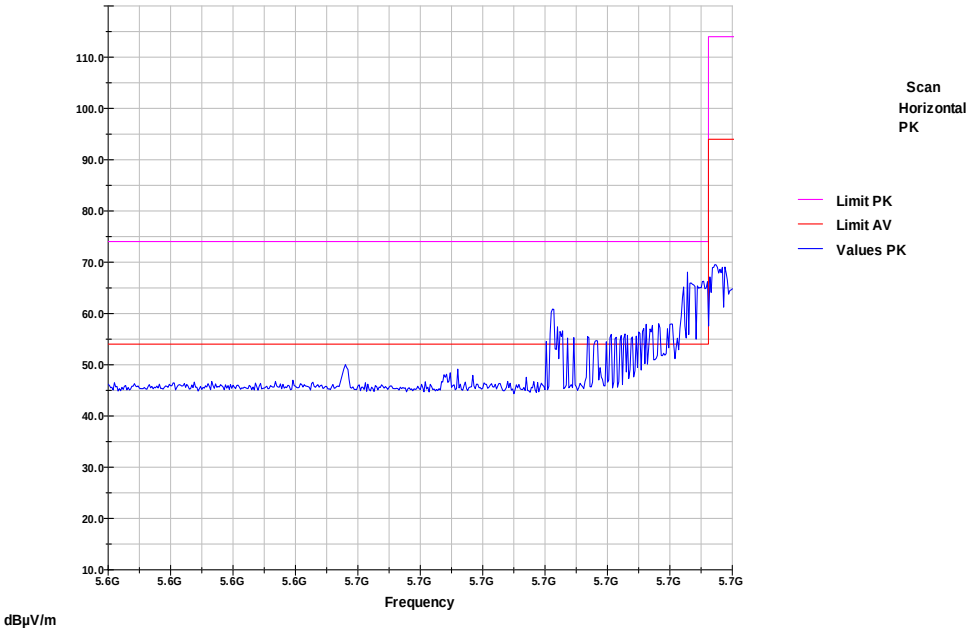
Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	High bandedge, antenna port 3

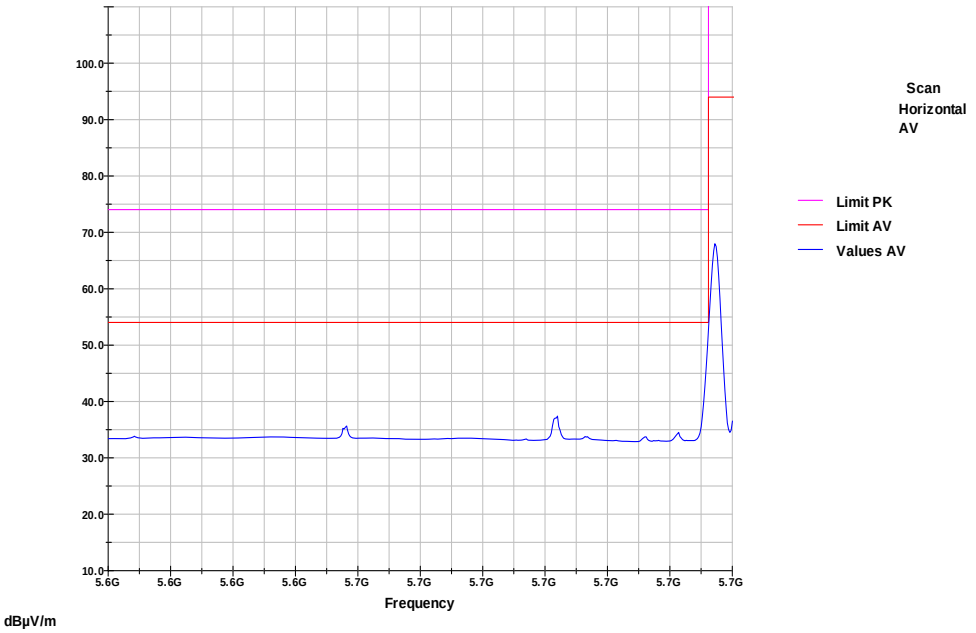




File No. **T-0329-3618-02 JP**

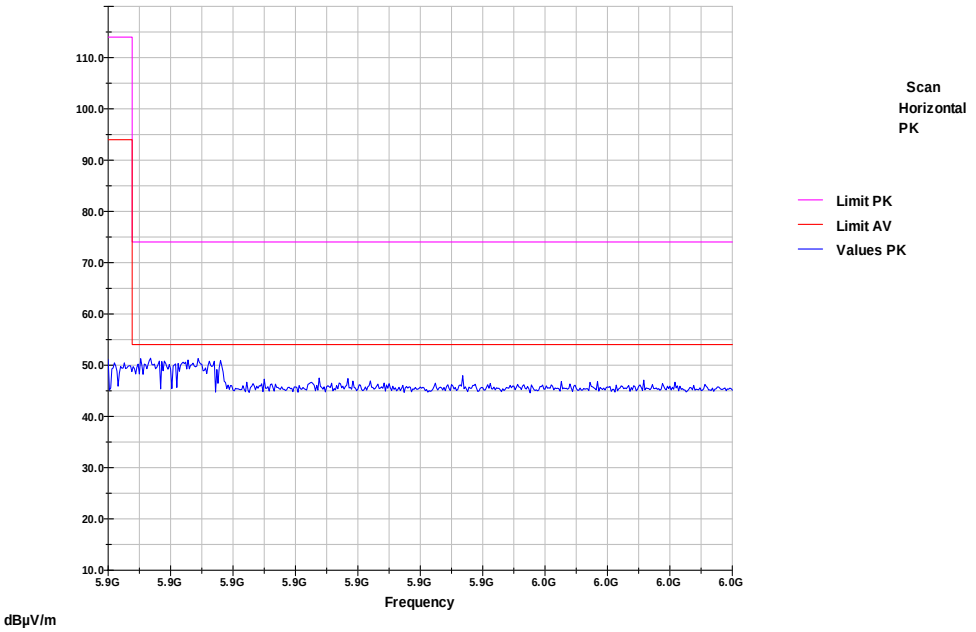
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	Low bandedge, antenna port 3

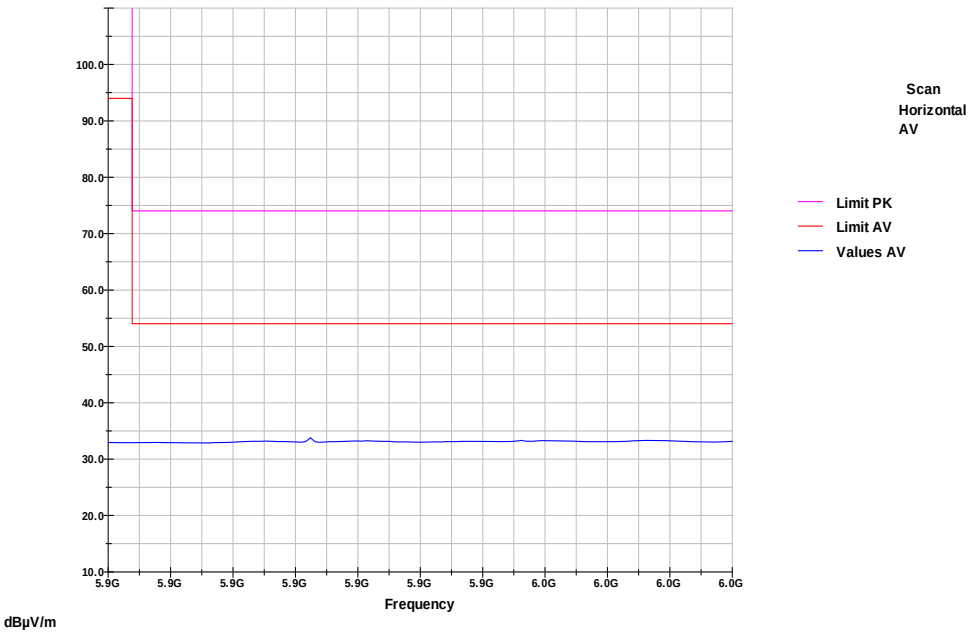




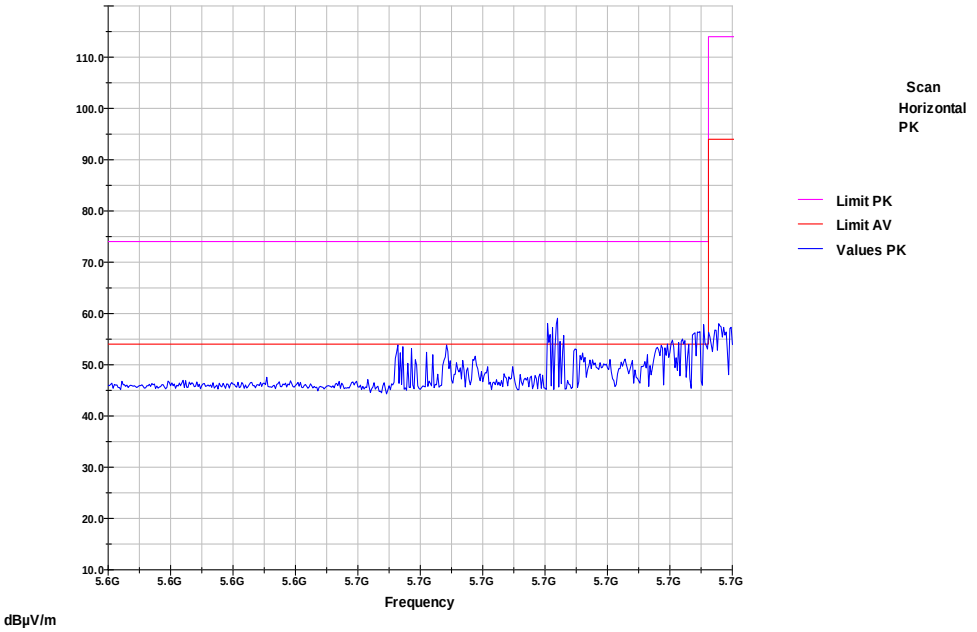
File No. **T-0329-3618-02 JP**

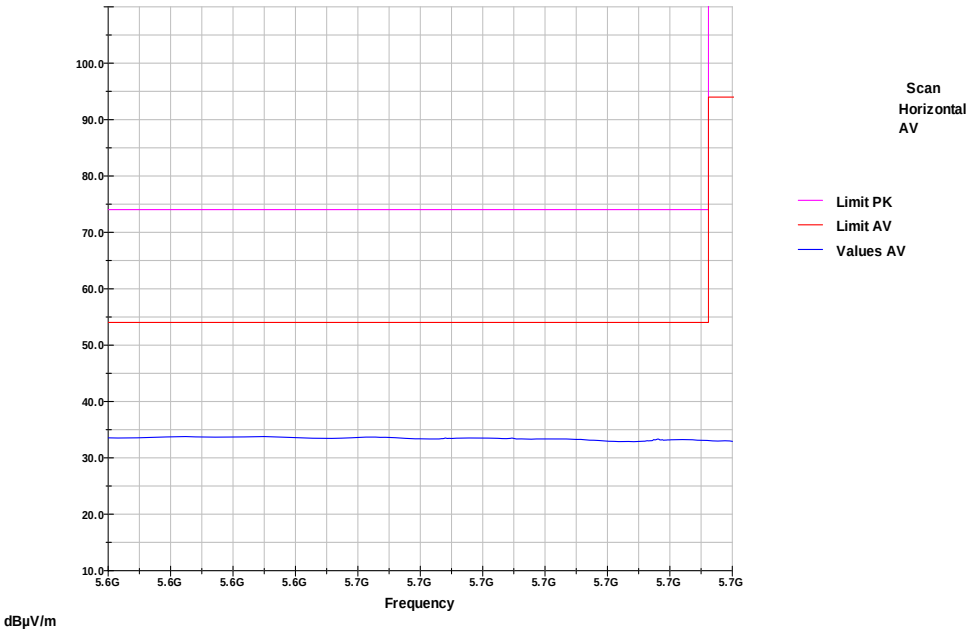
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	High bandedge, antenna port 3





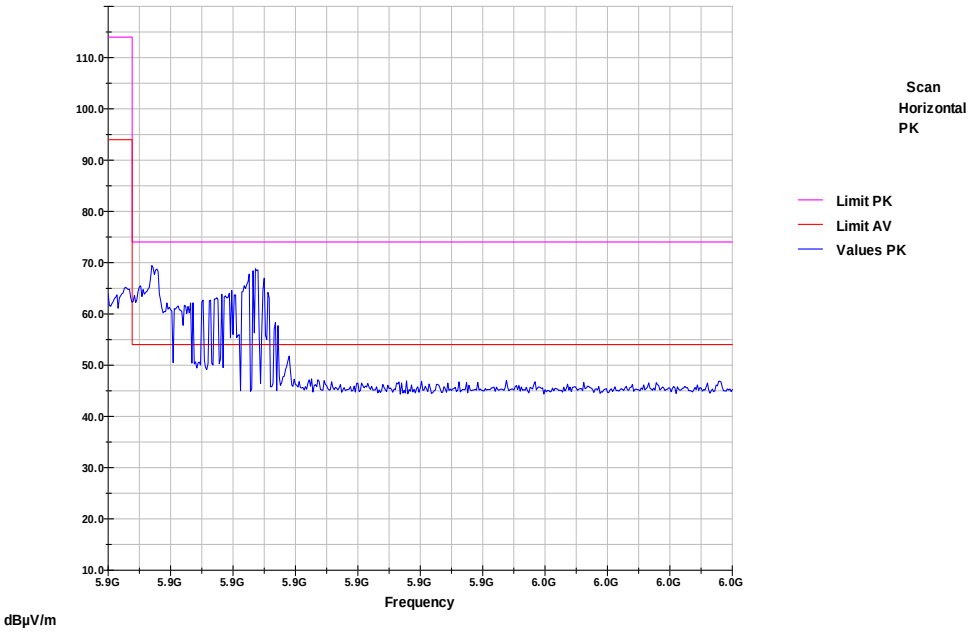
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	Low bandedge, antenna port 4

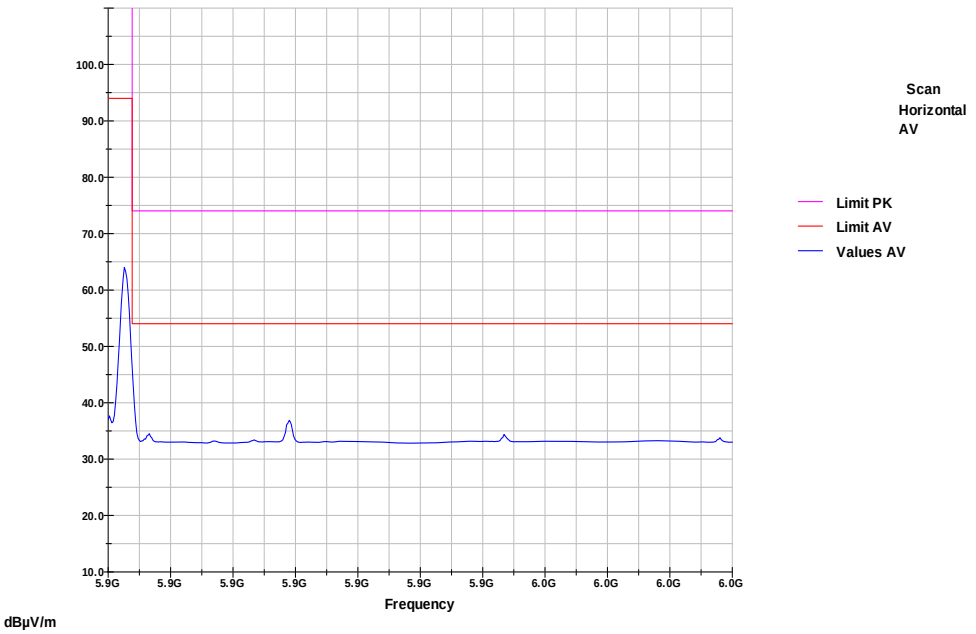




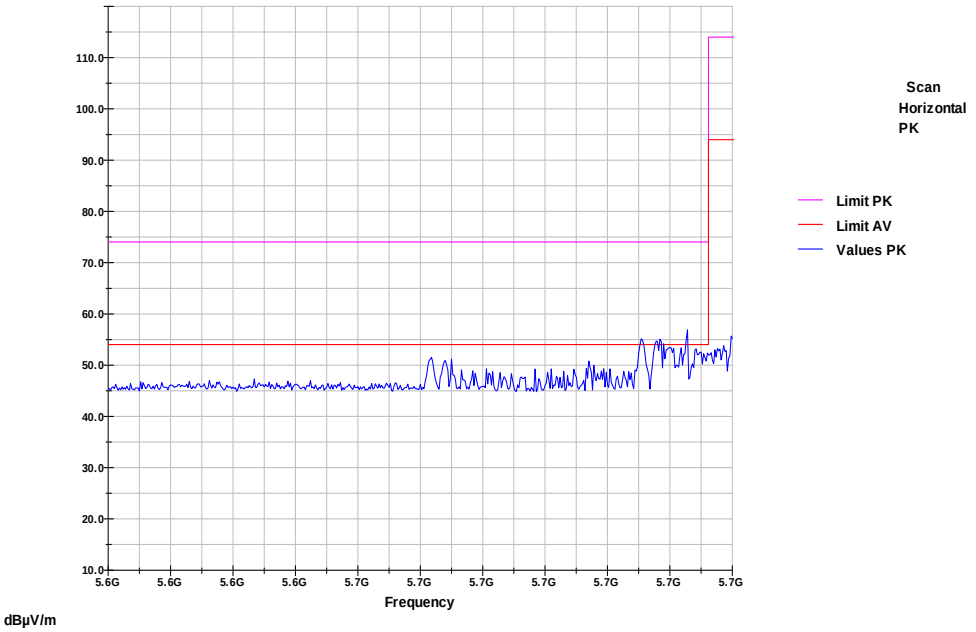
File No. **T-0329-3618-02 JP**

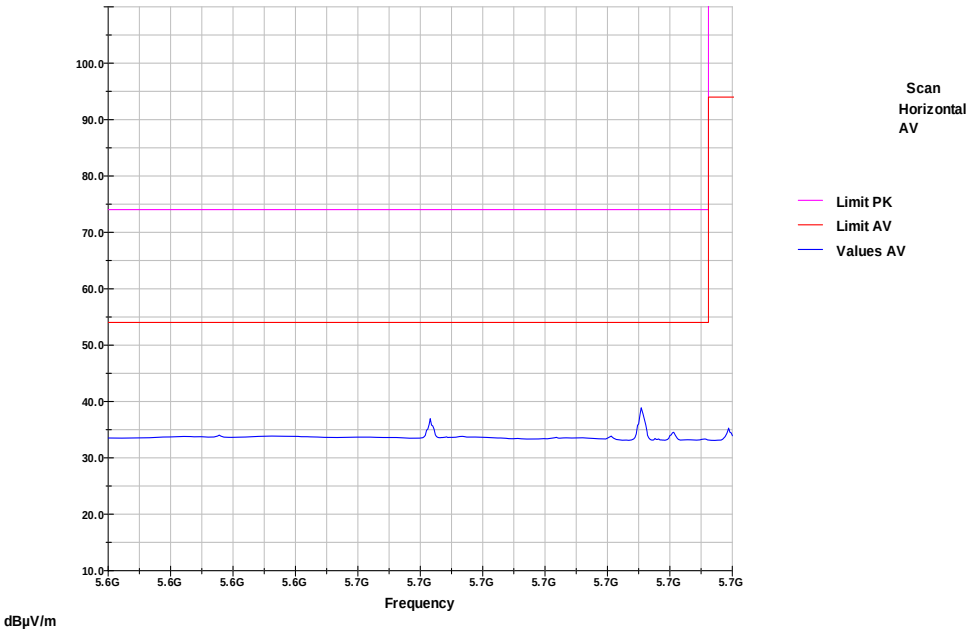
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	High bandedge, antenna port 4





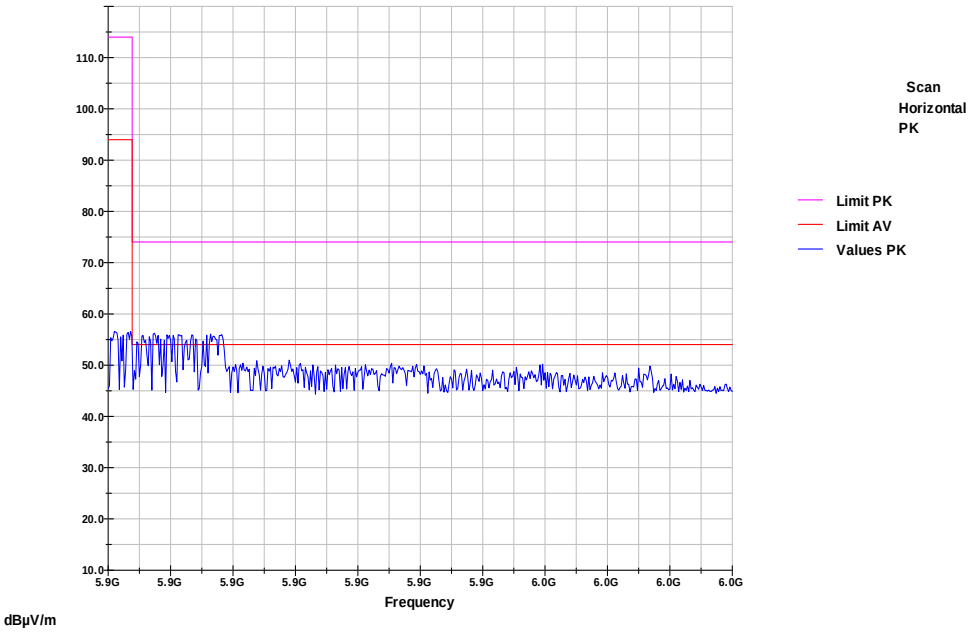
Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	Low bandedge, antenna port 4

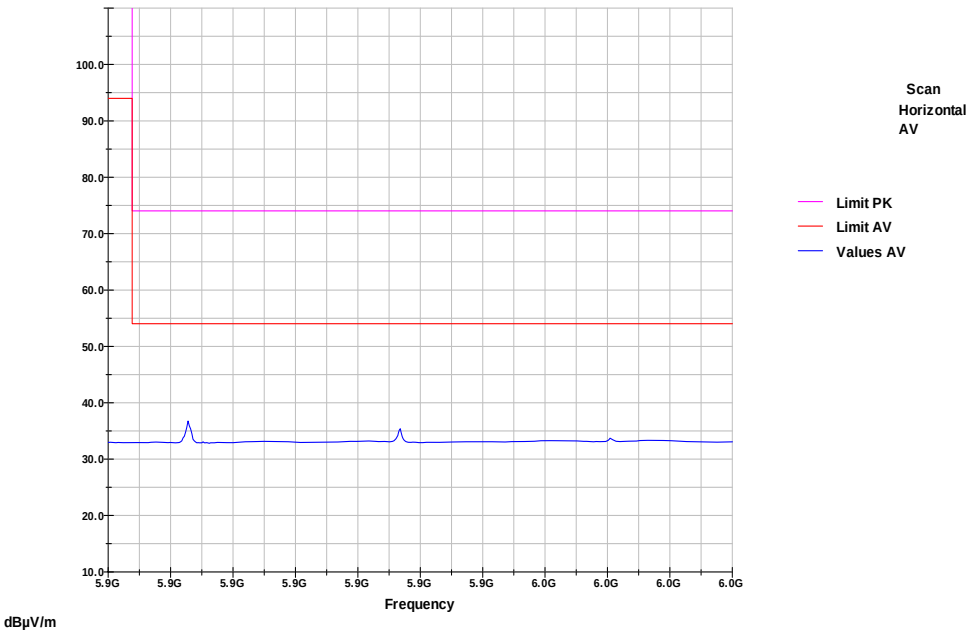




File No. **T-0329-3618-02 JP**

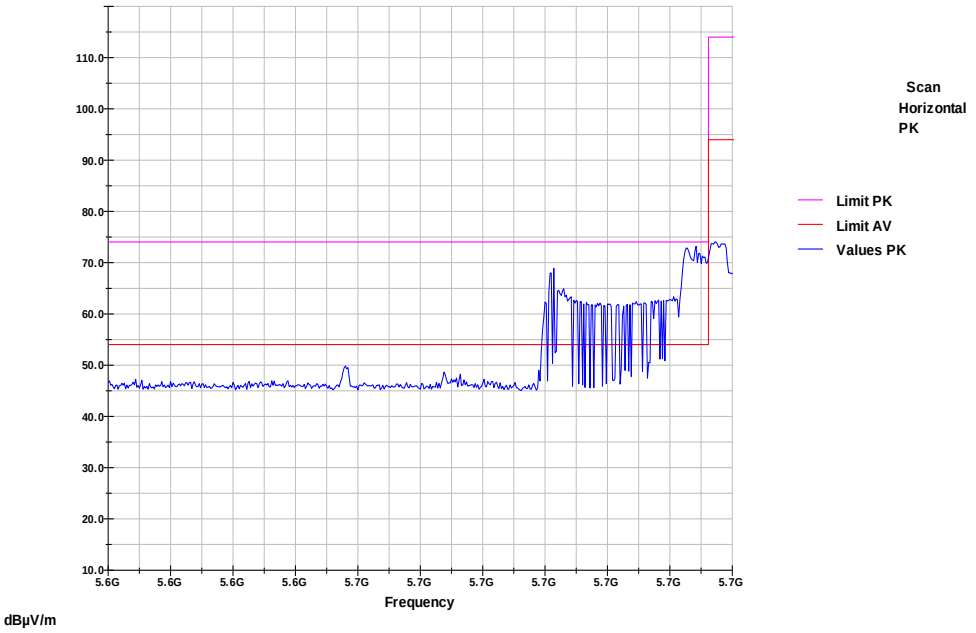
Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	High bandedge, antenna port 4

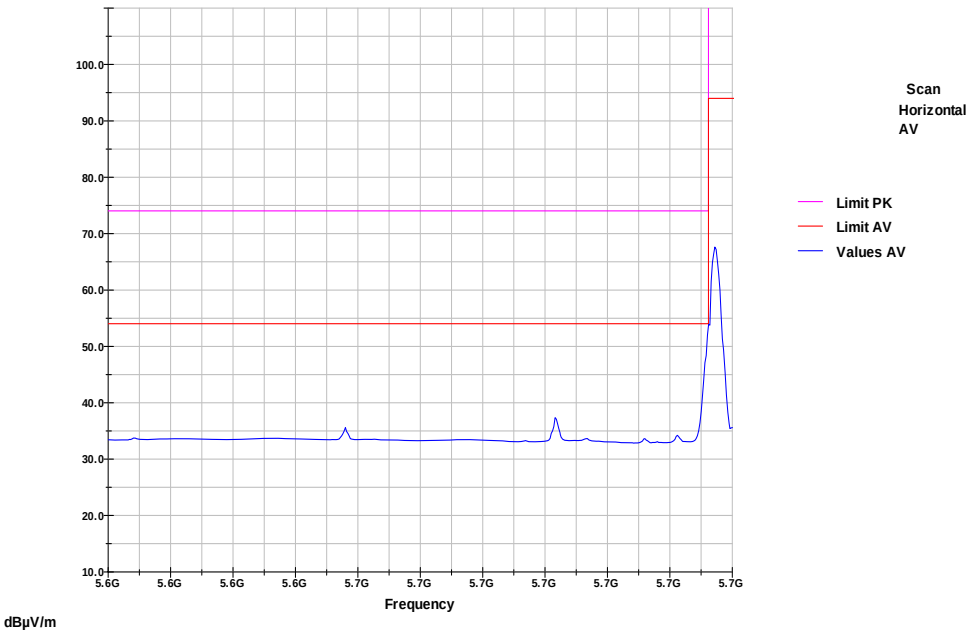




File No. **T-0329-3618-02 JP**

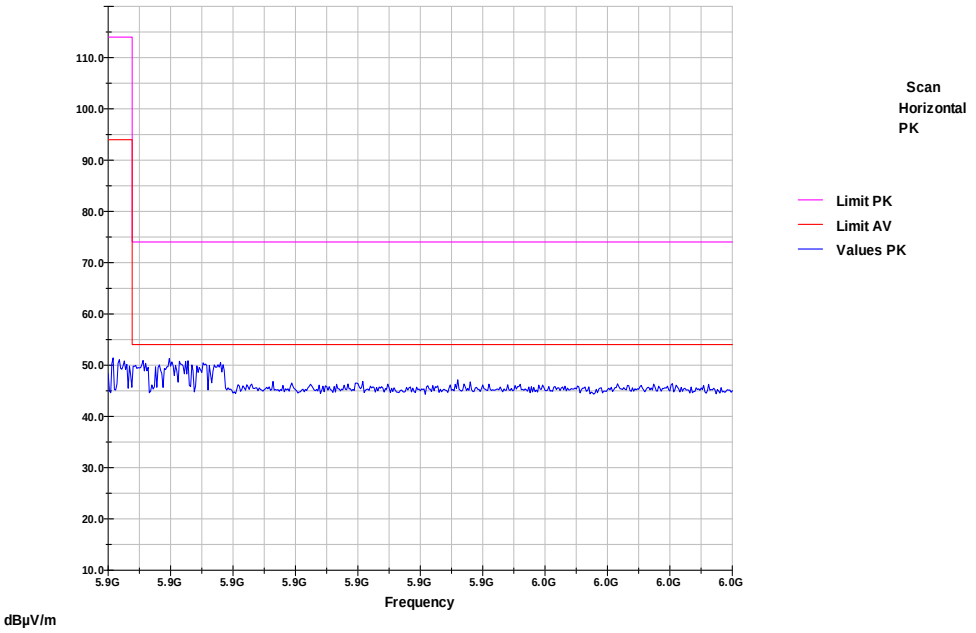
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	Low bandedge, antenna port 4

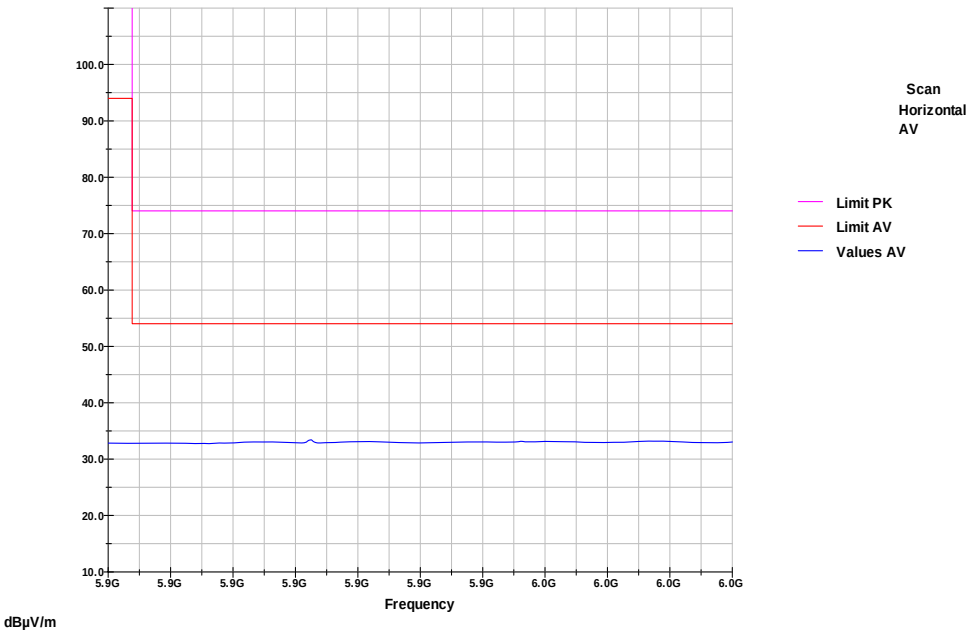




File No. **T-0329-3618-02 JP**

Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.249
Test:	bandedge
Detector:	PK / AV
Result:	Limit kept
Applied to:	Horizontal
Remark:	High bandedge, antenna port 4





6.6 Field strength of emission within band

For test instruments and accessories used see section 7 Part **SER 3**.

6.6.1 Description of the test location

Test location: Anechoic Chamber A4

Test distance: 3 metres

6.6.2 Photo documentation of the test set-up

6.6.3 Test specification

Environmental conditions: Temperature: 25° C Humidity: 40% Atmospheric pressure: 98kPa

Frequency range:

The test was carried out in the following operation mode(s):
- Testsoftware active, CH08 adjusted
- Testsoftware active, CH27 adjusted
- Testsoftware active, CH45 adjusted

6.6.4 Test result

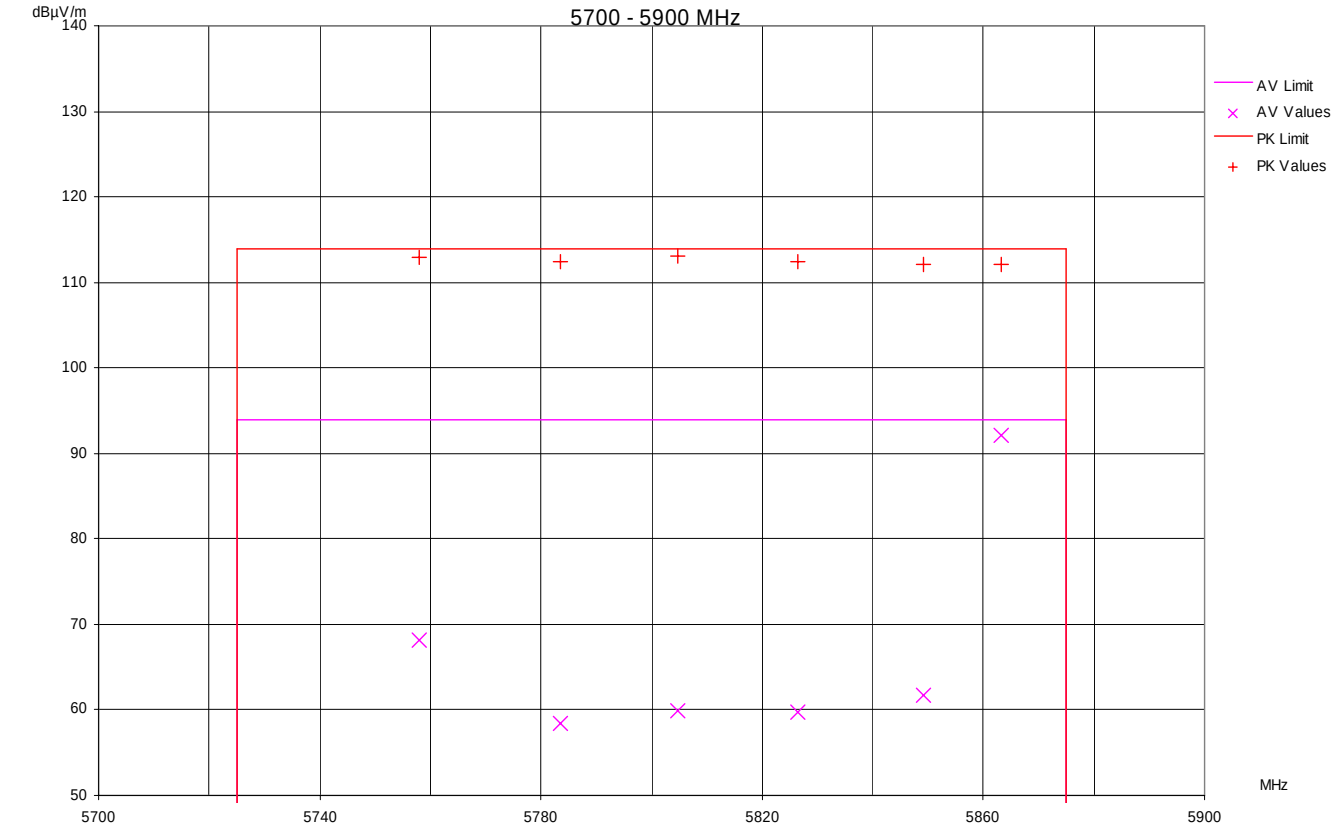
The requirements are **FULFILLED.**

Remarks: The testing was performed in horizontal polarization only, pretests show the highest

Field strength in band occur in horizontal polarization.

6.6.5 Test protocol

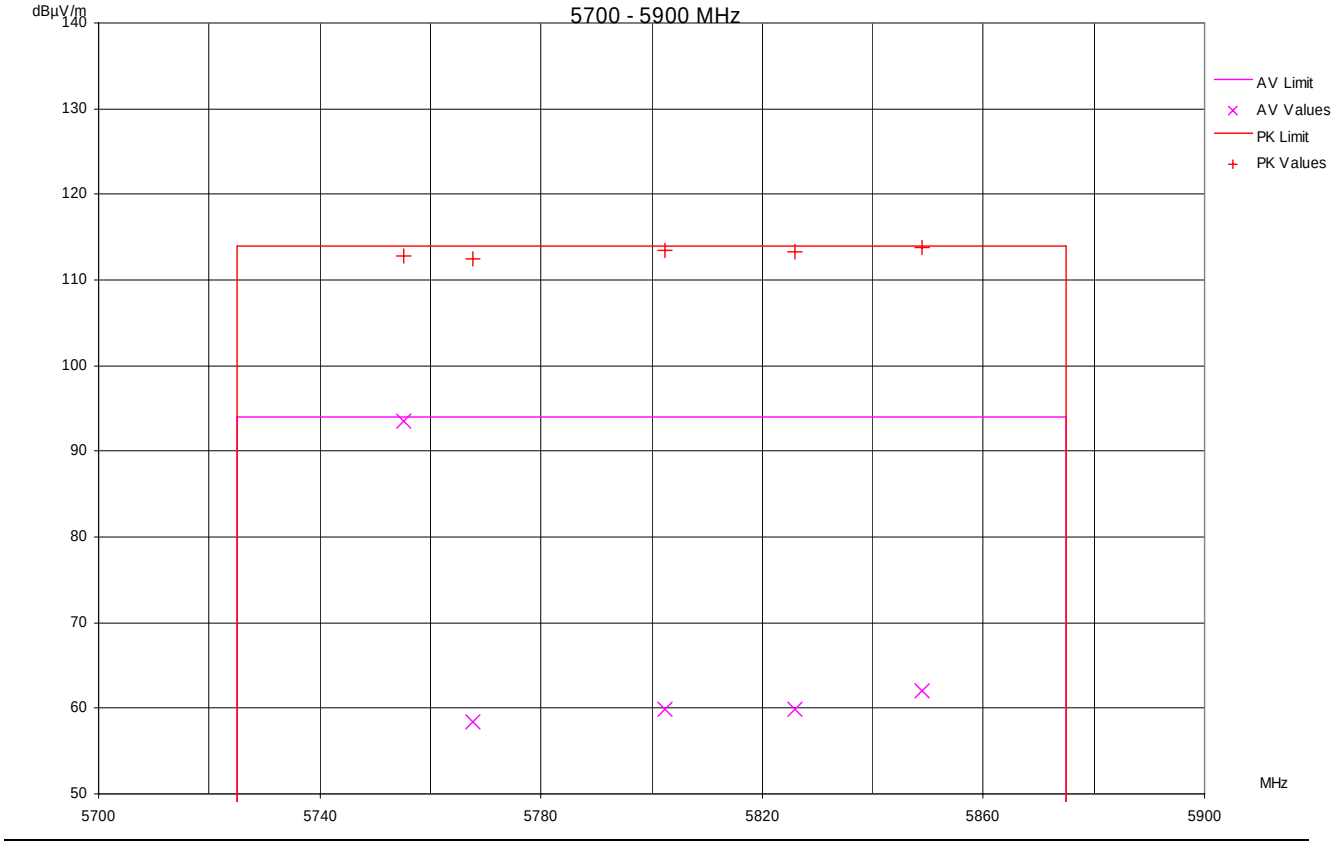
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.249
Test:	field strength in band
Detector:	AV / PK
Result:	Limit kept
Applied to:	Horizontal
Remark:	Antenna port 1



Minimum margin to limit: -1,0 dB

Frequency [MHz]	Reading [dBµV] AV	Reading [dBµV] PK	Correction [dB]	Values [dBµV/m] AV	Values [dBµV/m] PK	Limit [dBµV/m] AV	Limit [dBµV/m] PK	Margin [dB] AV	Margin [dB] PK
5758,000	30,6	75,3	37,6	68,1	112,9	94,0	114,0	-25,8	-1,1
5783,600	20,9	74,8	37,5	58,4	112,4	94,0	114,0	-35,6	-1,6
5804,800	22,3	75,5	37,5	59,9	113,0	94,0	114,0	-34,1	-1,0
5826,400	22,1	74,9	37,6	59,7	112,5	94,0	114,0	-34,2	-1,5
5849,200	24,0	74,4	37,7	61,7	112,1	94,0	114,0	-32,3	-1,9
5863,200	54,4	74,4	37,7	92,1	112,1	94,0	114,0	-1,9	-1,8

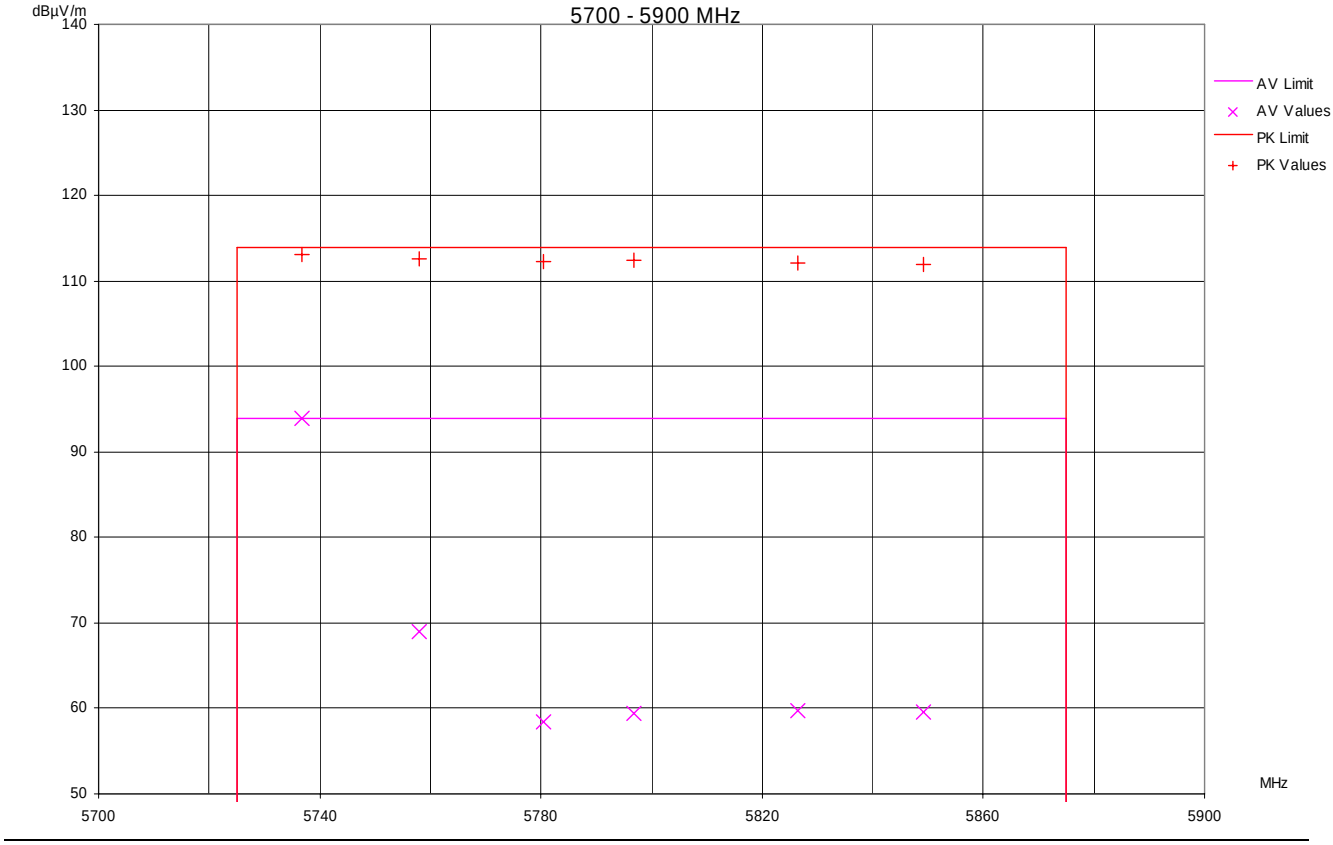
Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.249
Test:	field strength in band
Detector:	AV / PK
Result:	Limit kept
Applied to:	Horizontal
Remark:	Antenna port 1



Minimum margin to limit: -0,2 dB

Frequency [MHz]	Reading [dBµV] AV	Reading [dBµV] PK	Correction [dB]	Values [dBµV/m] AV	Values [dBµV/m] PK	Limit [dBµV/m] AV	Limit [dBµV/m] PK	Margin [dB] AV	Margin [dB] PK
5755,200	55,9	75,3	37,6	93,5	112,9	94,0	114,0	-0,5	-1,1
5767,600	20,8	74,9	37,5	58,4	112,4	94,0	114,0	-35,6	-1,5
5802,400	22,4	76,0	37,5	59,9	113,5	94,0	114,0	-34,1	-0,4
5826,000	22,3	75,7	37,6	59,9	113,3	94,0	114,0	-34,0	-0,7
5849,000	24,4	76,1	37,7	62,0	113,8	94,0	114,0	-31,9	-0,2

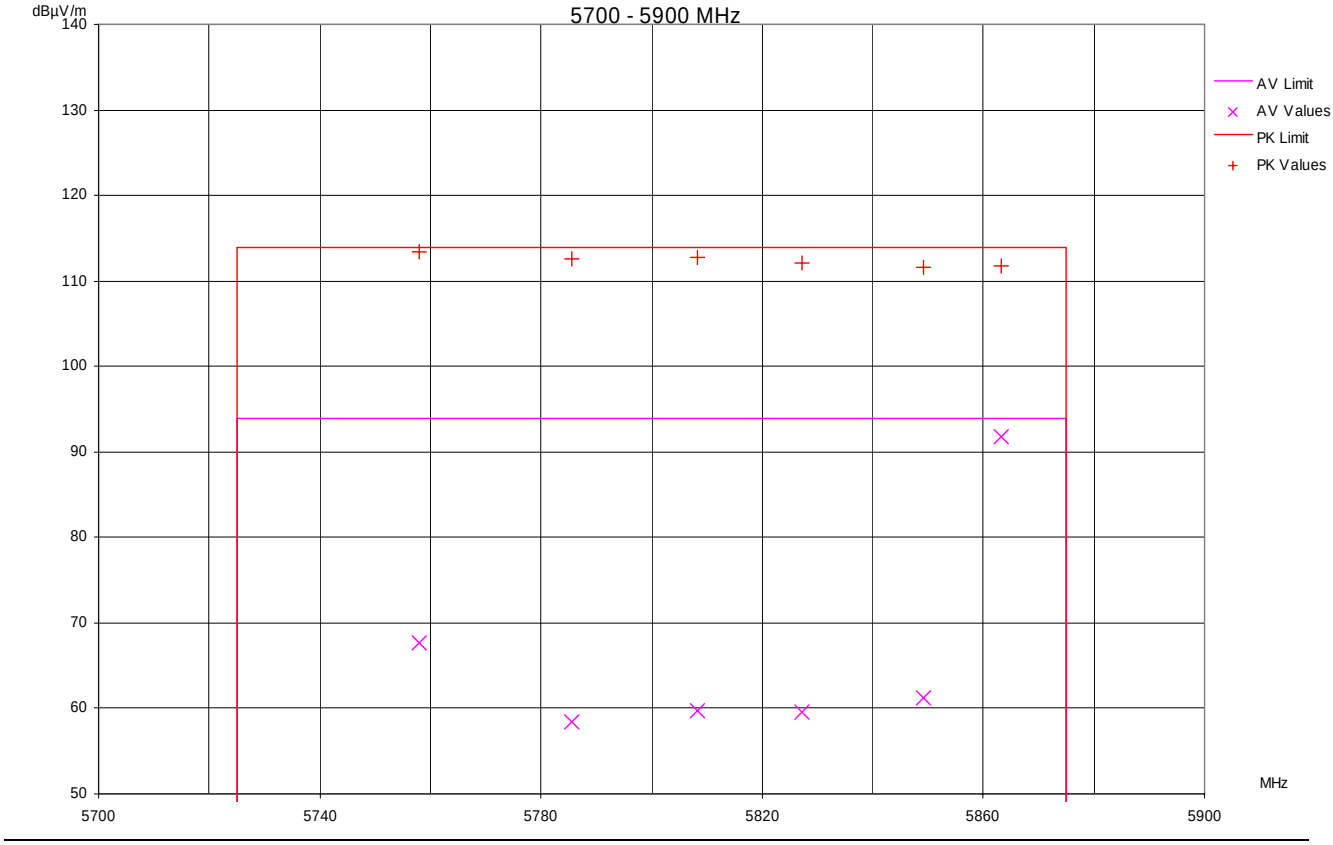
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.249
Test:	field strength in band
Detector:	AV / PK
Result:	Limit kept
Applied to:	Horizontal
Remark:	Antenna port 1



Minimum margin to limit: -0,1 dB

Frequency [MHz]	Reading [dBµV] AV	Reading [dBµV] PK	Correction [dB]	Values [dBµV/m] AV	Values [dBµV/m] PK	Limit [dBµV/m] AV	Limit [dBµV/m] PK	Margin [dB] AV	Margin [dB] PK
5736,800	56,3	75,5	37,6	93,9	113,0	94,0	114,0	-0,1	-0,9
5758,000	31,4	75,1	37,6	69,0	112,6	94,0	114,0	-25,0	-1,3
5780,400	20,8	74,7	37,5	58,4	112,2	94,0	114,0	-35,6	-1,8
5796,800	21,9	74,9	37,5	59,4	112,4	94,0	114,0	-34,6	-1,6
5826,400	22,1	74,5	37,6	59,7	112,1	94,0	114,0	-34,3	-1,8
5849,200	21,8	74,2	37,7	59,5	111,9	94,0	114,0	-34,5	-2,1

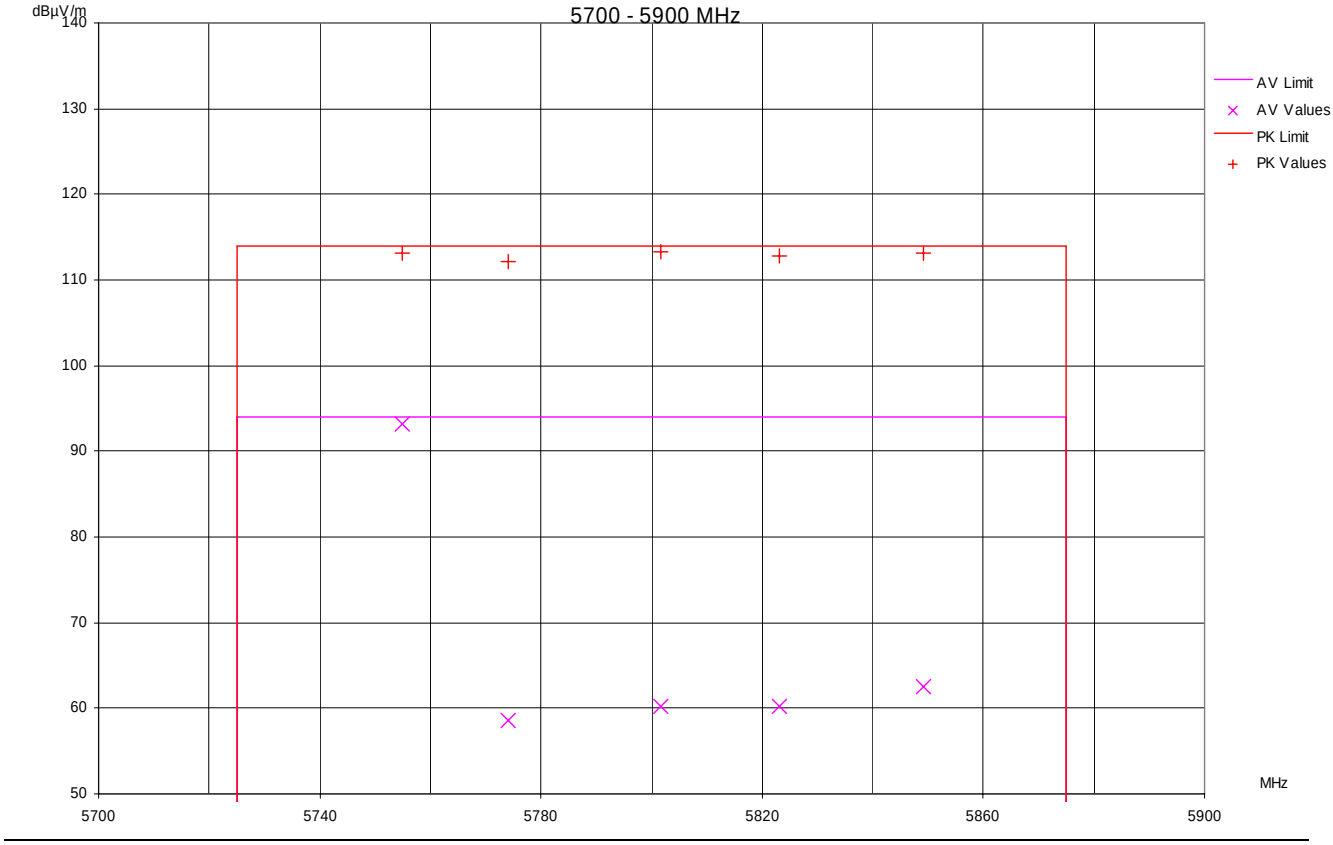
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.249
Test:	field strength in band
Detector:	AV / PK
Result:	Limit kept
Applied to:	Horizontal
Remark:	Antenna port 2



Minimum margin to limit: -0,6 dB

Frequency	Reading [dBµV]		Correction	Values [dBµV/m]		Limit [dBµV/m]		Margin [dB]	
[MHz]	AV	PK	[dB]	AV	PK	AV	PK	AV	PK
5758,000	30,1	75,8	37,6	67,6	113,4	94,0	114,0	-26,4	-0,6
5785,600	20,9	75,1	37,5	58,4	112,6	94,0	114,0	-35,5	-1,4
5808,400	22,2	75,2	37,5	59,8	112,7	94,0	114,0	-34,2	-1,3
5827,200	22,0	74,5	37,6	59,6	112,1	94,0	114,0	-34,4	-1,9
5849,200	23,6	74,0	37,7	61,3	111,7	94,0	114,0	-32,7	-2,3
5863,200	54,1	74,0	37,7	91,8	111,7	94,0	114,0	-2,2	-2,3

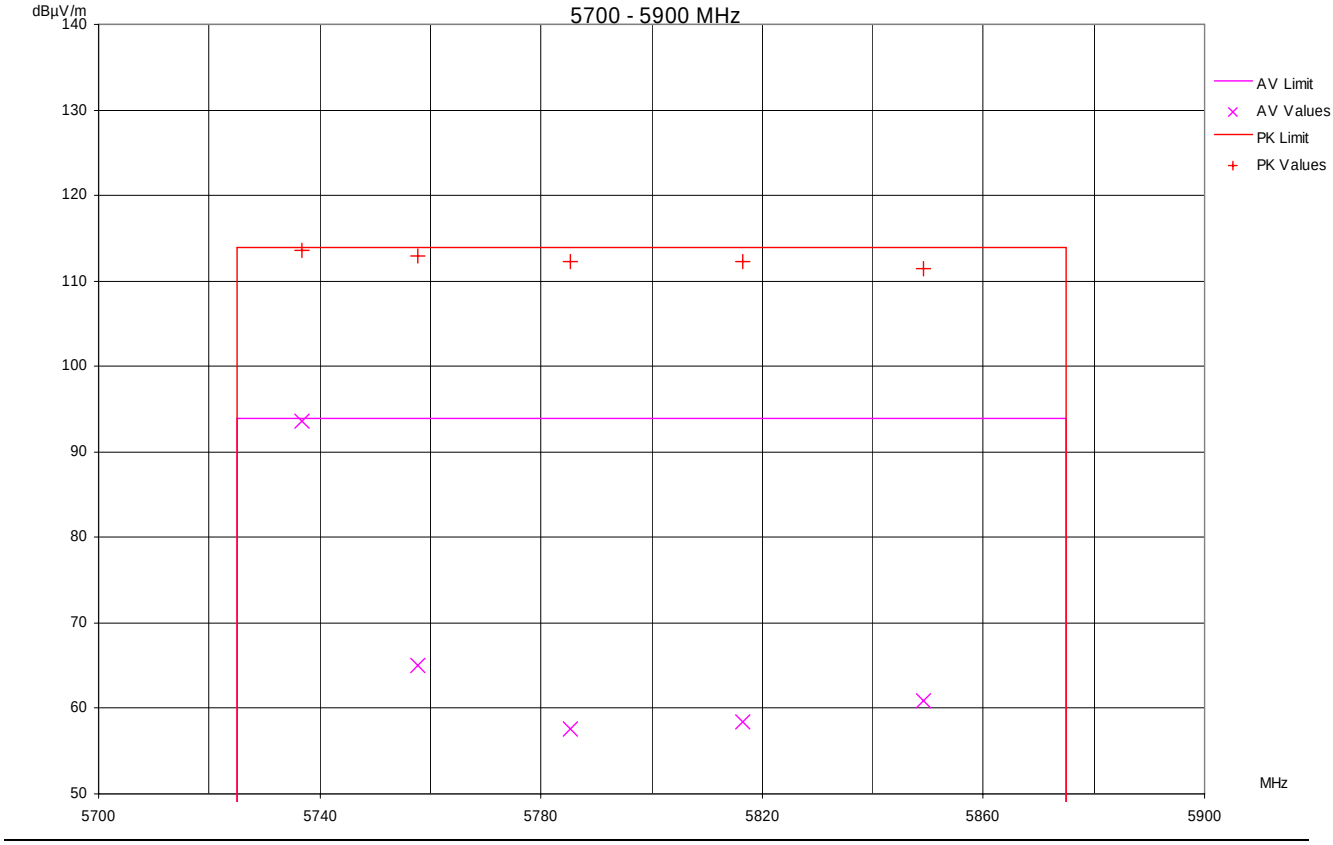
Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.249
Test:	field strength in band
Detector:	AV / PK
Result:	Limit kept
Applied to:	Horizontal
Remark:	Antenna port 2



Minimum margin to limit: -0,7 dB

Frequency	Reading [dBµV]		Correction	Values [dBµV/m]		Limit [dBµV/m]		Margin [dB]	
[MHz]	AV	PK	[dB]	AV	PK	AV	PK	AV	PK
5754,800	55,6	75,6	37,6	93,1	113,2	94,0	114,0	-0,8	-0,8
5774,000	21,0	74,6	37,5	58,5	112,1	94,0	114,0	-35,4	-1,8
5801,600	22,6	75,7	37,5	60,2	113,2	94,0	114,0	-33,8	-0,7
5823,200	22,6	75,2	37,6	60,1	112,8	94,0	114,0	-33,8	-1,2
5849,200	24,9	75,4	37,7	62,5	113,1	94,0	114,0	-31,4	-0,9

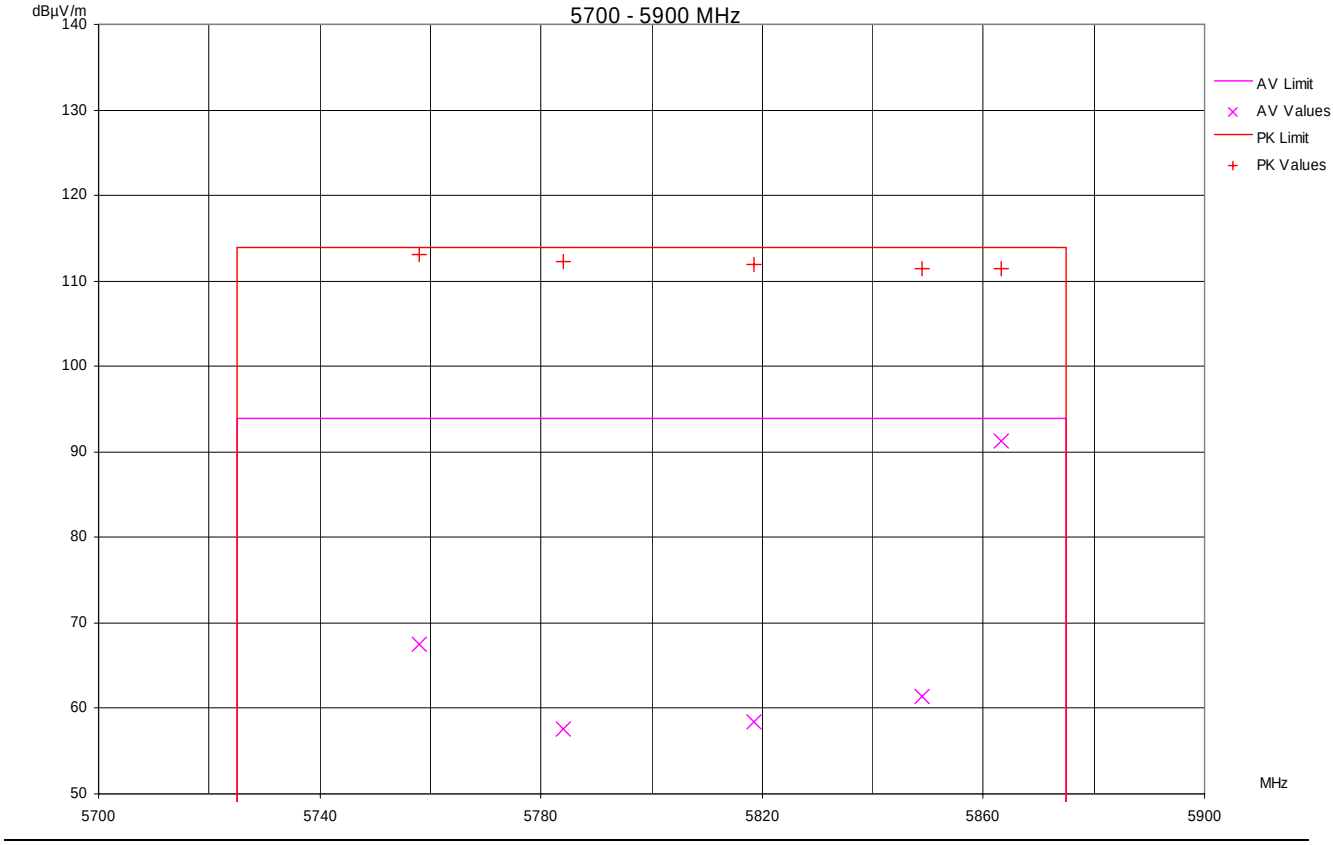
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.249
Test:	field strength in band
Detector:	AV / PK
Result:	Limit kept
Applied to:	Horizontal
Remark:	Antenna port 2



Minimum margin to limit: -0,4 dB

Frequency	Reading [dBµV]		Correction	Values [dBµV/m]		Limit [dBµV/m]		Margin [dB]	
[MHz]	AV	PK	[dB]	AV	PK	AV	PK	AV	PK
5736,800	56,0	76,0	37,6	93,6	113,6	94,0	114,0	-0,4	-0,4
5757,600	27,4	75,4	37,6	65,0	113,0	94,0	114,0	-29,0	-1,0
5785,200	20,1	74,8	37,5	57,7	112,3	94,0	114,0	-36,3	-1,6
5816,400	20,8	74,6	37,6	58,4	112,2	94,0	114,0	-35,6	-1,8
5849,200	23,2	73,8	37,7	60,9	111,5	94,0	114,0	-33,1	-2,5

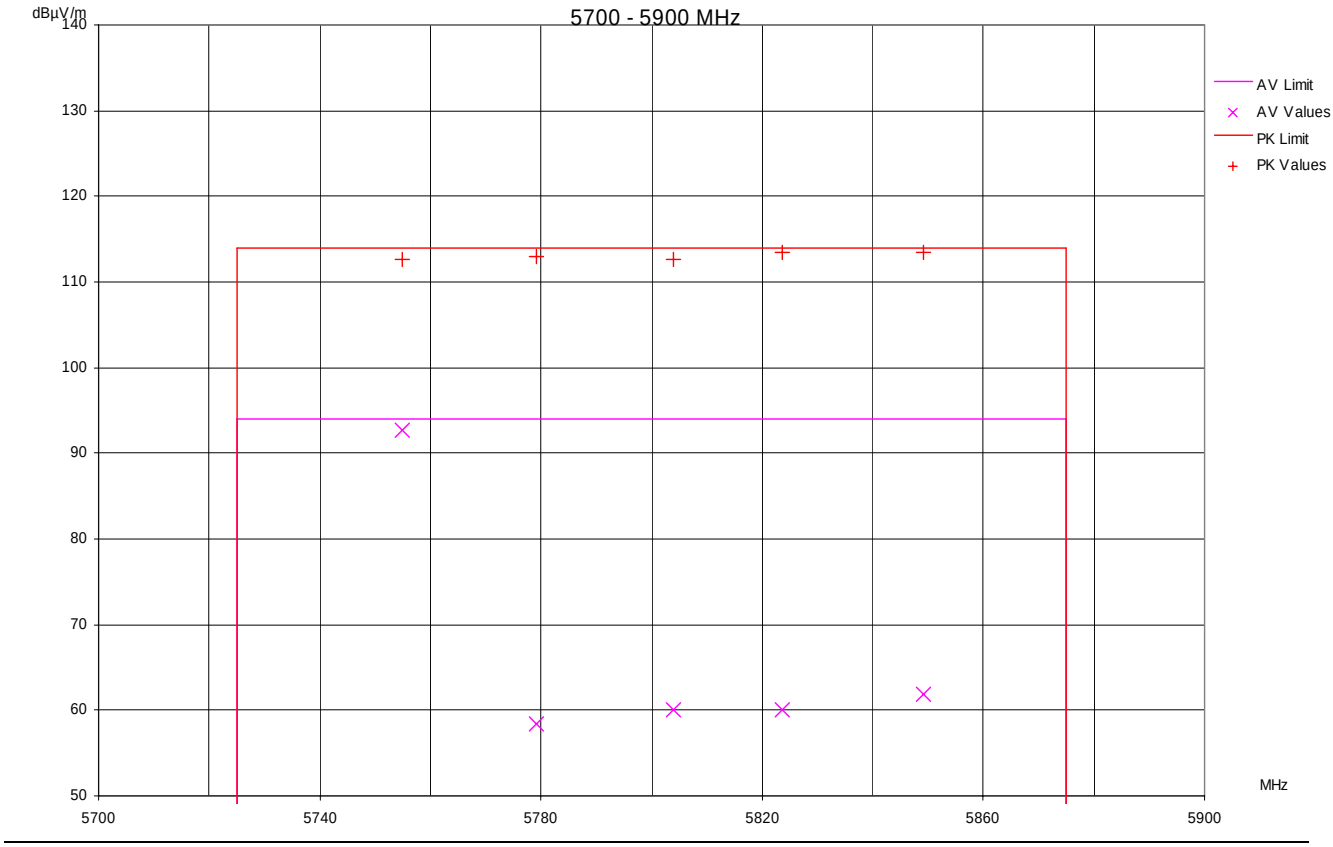
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.249
Test:	field strength in band
Detector:	AV / PK
Result:	Limit kept
Applied to:	Horizontal
Remark:	Antenna port 3



Minimum margin to limit: -0,9 dB

Frequency [MHz]	Reading [dBµV] AV	Reading [dBµV] PK	Correction [dB]	Values [dBµV/m] AV	Values [dBµV/m] PK	Limit [dBµV/m] AV	Limit [dBµV/m] PK	Margin [dB] AV	Margin [dB] PK
5758,000	29,9	75,5	37,6	67,4	113,1	94,0	114,0	-26,5	-0,9
5784,000	20,1	74,7	37,5	57,6	112,3	94,0	114,0	-36,3	-1,7
5818,400	20,8	74,4	37,6	58,4	112,0	94,0	114,0	-35,6	-2,0
5848,800	23,7	73,8	37,7	61,3	111,5	94,0	114,0	-32,6	-2,5
5863,200	53,6	73,7	37,7	91,4	111,5	94,0	114,0	-2,6	-2,5

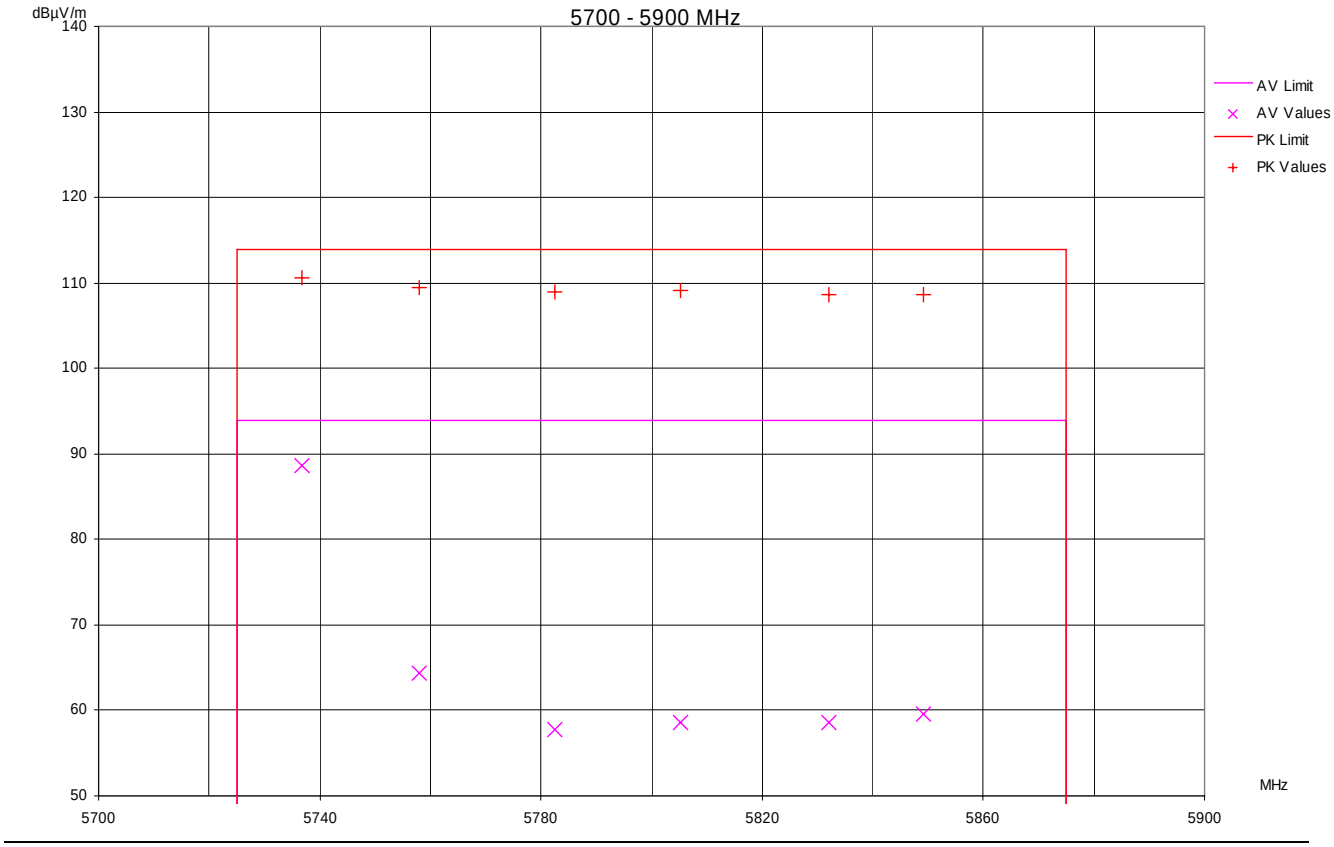
Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.249
Test:	field strength in band
Detector:	AV / PK
Result:	Limit kept
Applied to:	Horizontal
Remark:	Antenna port 3



Minimum margin to limit: -0,4 dB

Frequency [MHz]	Reading [dBµV] AV	Reading [dBµV] PK	Correction [dB]	Values [dBµV/m] AV	Values [dBµV/m] PK	Limit [dBµV/m] AV	Limit [dBµV/m] PK	Margin [dB] AV	Margin [dB] PK
5754,800	55,1	75,0	37,6	92,6	112,6	94,0	114,0	-1,4	-1,4
5779,200	20,9	75,4	37,5	58,4	113,0	94,0	114,0	-35,5	-1,0
5804,000	22,5	75,1	37,5	60,0	112,6	94,0	114,0	-34,0	-1,3
5823,600	22,4	75,9	37,6	60,0	113,5	94,0	114,0	-34,0	-0,4
5849,200	24,2	75,7	37,7	61,9	113,4	94,0	114,0	-32,1	-0,6

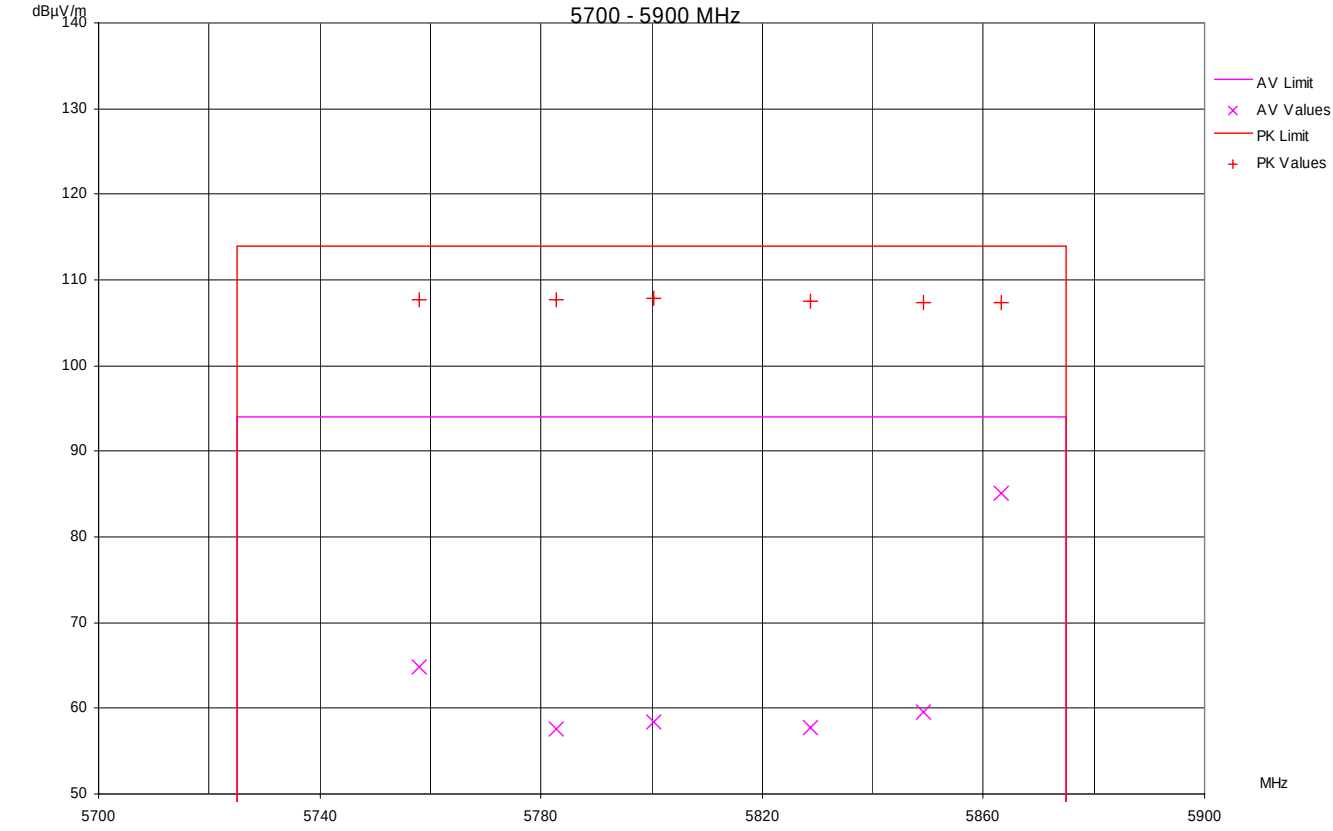
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.249
Test:	field strength in band
Detector:	AV / PK
Result:	Limit kept
Applied to:	Horizontal
Remark:	Antenna port 3



Minimum margin to limit: -3,4 dB

Frequency	Reading [dBµV]		Correction	Values [dBµV/m]		Limit [dBµV/m]		Margin [dB]	
[MHz]	AV	PK	[dB]	AV	PK	AV	PK	AV	PK
5736,800	51,2	73,0	37,6	88,7	110,5	94,0	114,0	-5,3	-3,4
5758,000	26,8	71,9	37,6	64,4	109,5	94,0	114,0	-29,6	-4,5
5782,400	20,3	71,5	37,5	57,8	109,0	94,0	114,0	-36,2	-5,0
5805,200	21,1	71,6	37,5	58,6	109,1	94,0	114,0	-35,4	-4,8
5832,000	21,0	71,0	37,6	58,6	108,6	94,0	114,0	-35,3	-5,4
5849,200	21,9	71,0	37,7	59,6	108,7	94,0	114,0	-34,4	-5,3

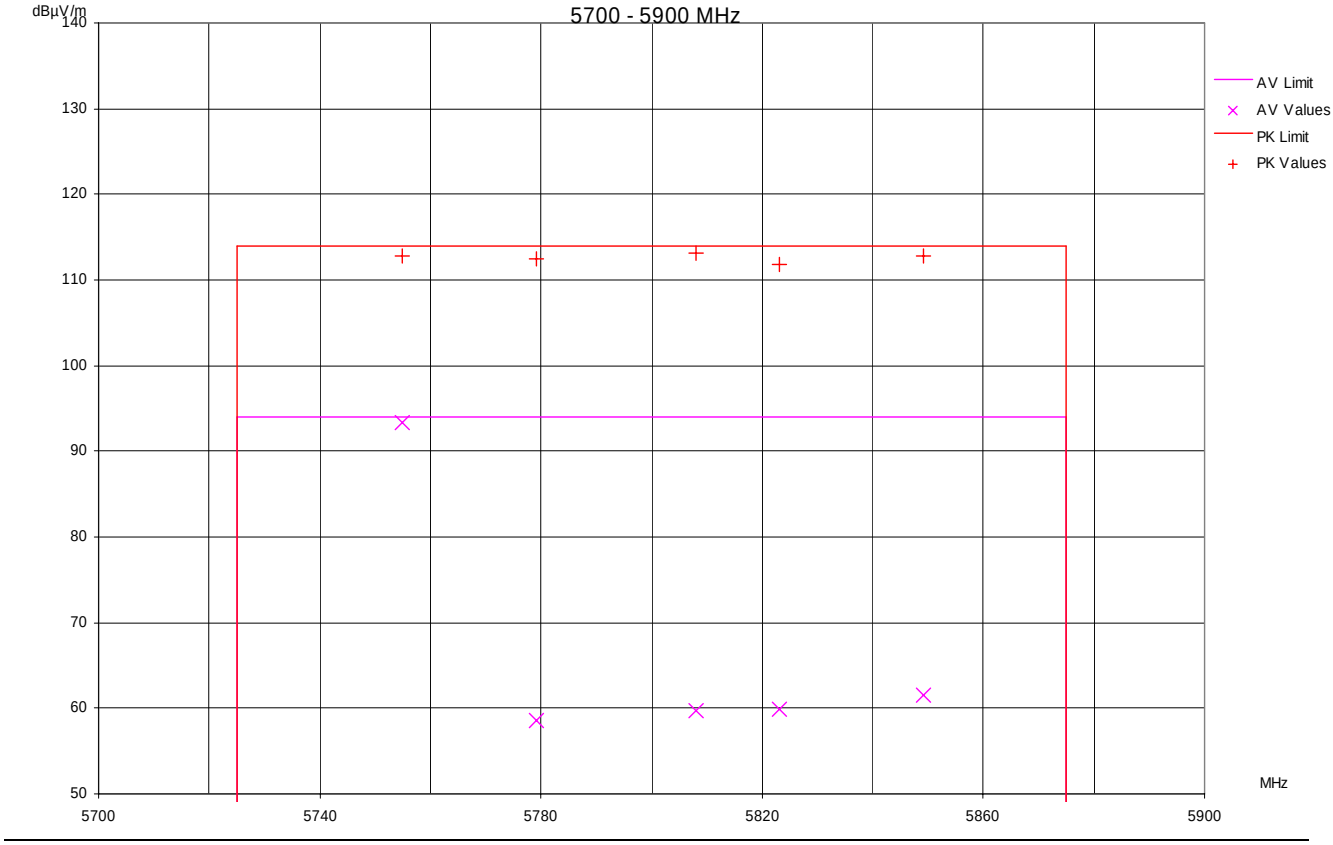
Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH08 adjusted
Standard:	FCC Part 15.249
Test:	field strength in band
Detector:	AV / PK
Result:	Limit kept
Applied to:	Horizontal
Remark:	



Minimum margin to limit: -6,1 dB

Frequency [MHz]	Reading [dBµV] AV	Reading [dBµV] PK	Correction [dB]	Values [dBµV/m] AV	Values [dBµV/m] PK	Limit [dBµV/m] AV	Limit [dBµV/m] PK	Margin [dB] AV	Margin [dB] PK
5758,000	27,3	70,2	37,6	64,8	107,8	94,0	114,0	-29,1	-6,2
5782,800	20,1	70,1	37,5	57,6	107,6	94,0	114,0	-36,3	-6,4
5800,400	20,9	70,3	37,5	58,4	107,9	94,0	114,0	-35,6	-6,1
5828,800	20,2	70,0	37,6	57,8	107,6	94,0	114,0	-36,2	-6,4
5849,200	21,9	69,7	37,7	59,6	107,4	94,0	114,0	-34,4	-6,6
5863,200	47,3	69,6	37,7	85,0	107,3	94,0	114,0	-8,9	-6,6

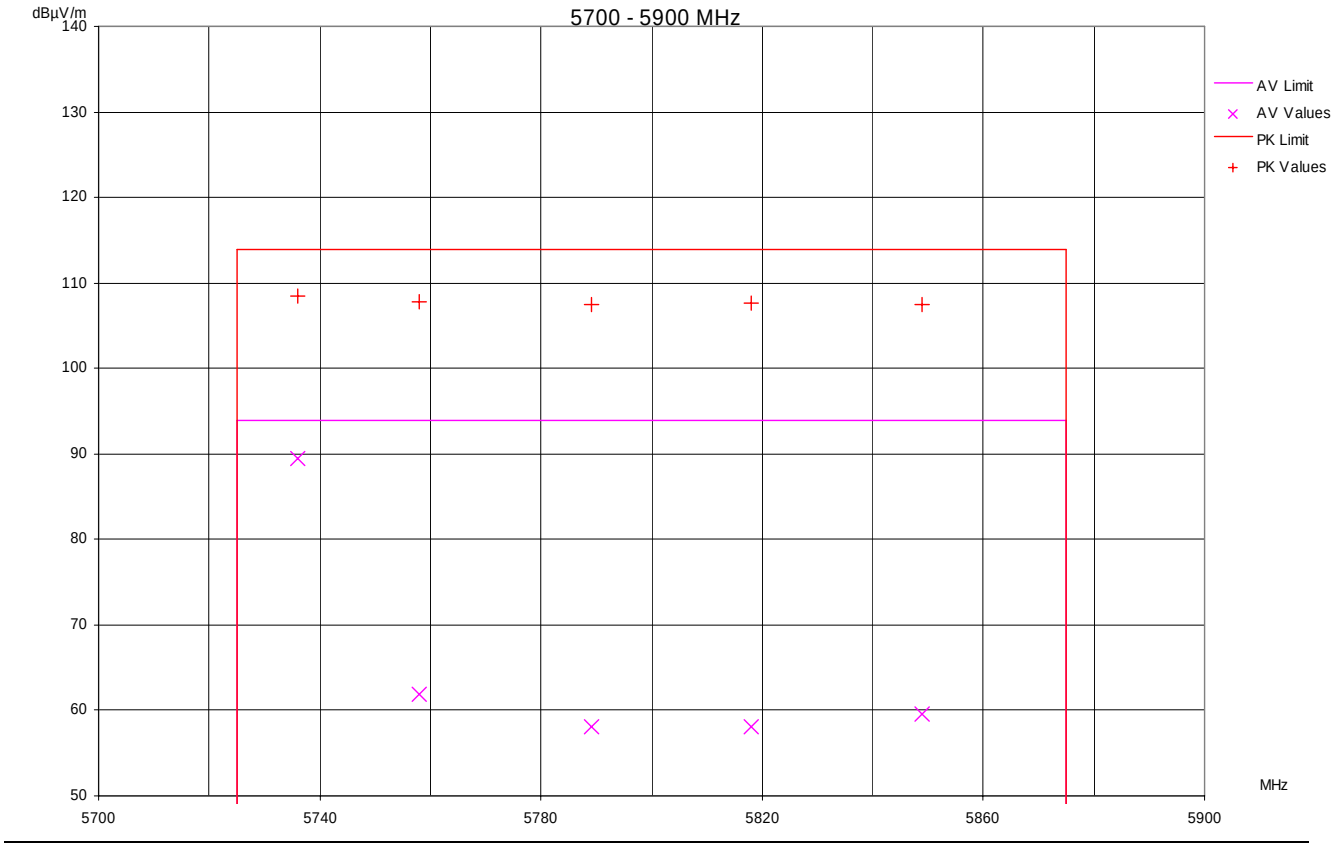
Date of test:	2010-07-22
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH27 adjusted
Standard:	FCC Part 15.249
Test:	field strength in band
Detector:	AV / PK
Result:	Limit kept
Applied to:	Horizontal
Remark:	Antenna port 4



Minimum margin to limit: -0,6 dB

Frequency [MHz]	Reading [dBµV] AV	Reading [dBµV] PK	Correction [dB]	Values [dBµV/m] AV	Values [dBµV/m] PK	Limit [dBµV/m] AV	Limit [dBµV/m] PK	Margin [dB] AV	Margin [dB] PK
5754,800	55,8	75,2	37,6	93,4	112,8	94,0	114,0	-0,6	-1,2
5779,200	21,1	75,0	37,5	58,6	112,5	94,0	114,0	-35,3	-1,4
5808,000	22,1	75,6	37,5	59,6	113,1	94,0	114,0	-34,3	-0,8
5823,000	22,3	74,3	37,6	59,9	111,9	94,0	114,0	-34,1	-2,1
5849,200	23,9	75,1	37,7	61,6	112,8	94,0	114,0	-32,4	-1,2

Date of test:	2010-06-24
Operator:	Jürgen Pessinger
Mode:	Testsoftware active, CH45 adjusted
Standard:	FCC Part 15.249
Test:	field strength in band
Detector:	AV / PK
Result:	Limit kept
Applied to:	Horizontal
Remark:	Antenna port 4



Minimum margin to limit: -4,5 dB

Frequency	Reading [dBµV]		Correction	Values [dBµV/m]		Limit [dBµV/m]		Margin [dB]	
[MHz]	AV	PK	[dB]	AV	PK	AV	PK	AV	PK
5736,000	51,9	71,0	37,6	89,5	108,5	94,0	114,0	-4,5	-5,4
5758,000	24,4	70,2	37,6	62,0	107,8	94,0	114,0	-32,0	-6,2
5789,200	20,5	69,9	37,5	58,0	107,5	94,0	114,0	-35,9	-6,5
5818,000	20,5	70,1	37,6	58,1	107,6	94,0	114,0	-35,9	-6,3
5848,800	21,9	69,8	37,7	59,6	107,5	94,0	114,0	-34,4	-6,5

7 USED TEST EQUIPMENT AND ACCESSORIES

All test instruments used, in addition to the test accessories, are calibrated and verified regularly.

Test ID	Model Type	Equipment No.	Next Calib.	Last Calib.	Next Verif.	Last Verif.
A 4	ESH 3	01-02/03-01-005	18/02/2011	18/02/2010		
	ESH 2 - Z 5	01-02/20-01-001			12/04/2011	12/04/2010
	ESH 3 - Z 2	01-02/50-02-020	18/02/2011	18/02/2010		
	BNC-3000-N	01-02/50-07-008				
	N-5000-N	01-02/50-07-009				
	Tile Version 3.4K20	01-02/68-09-001				
SER 1	ESH 3	01-02/03-01-005	18/02/2011	18/02/2010		
	FMZB 1516	01-02/24-01-018			15/02/2011	15/02/2010
	BNC-3000-N	01-02/50-07-008				
	N-5000-N	01-02/50-07-009				
SER 2	ESVP	01-02/03-01-002	13/11/2010	13/11/2009		
	HM 5012	01-02/11-01-001				
	VULB 9163	01-02/24-01-006	24/10/2011	24/10/2008		
	N-40000-N	01-02/50-05-043				
	N-30000-N	01-02/50-05-044				
SER 3	AMF-40-005-180-24-10P	01-02/17-02-009			01/12/2010	01/12/2009
	3115	01-02/24-01-011	08/05/2013	08/05/2008		
	HCC	01-02/50-01-021				
	FA210A0050M0000	01-02/50-01-067				
	RST 070	01-05/60-02-003				
	FSP 30	02-02/11-05-001	04/05/2011	04/05/2010		
	R2	02-02/30-09-001			22/02/2011	22/02/2010
	C12-K1K1-157	02-02/50-06-001				