

Straubing, January 25, 2001

TEST - REPORT

No. 50217-00699

for

Car Access System 125 kHz CAS

Transceiver

Applicant: Bayerische Motorenwerke AG

Purpose of testing: To show compliance with

FCC Code of Federal Regulations,
Part 15 Subpart C, Section §15.209

Industry Canada Radio Standards
Specification RSS-210 Issue 2,
Section 6.1 (Category I Equipment)

Note:

The test data of this report relate only to the individual item which has been tested. This report shall not be reproduced except in full extent without the written approval of the testing laboratory.

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1. Administrative Data

Equipment Under Test (EUT): Car Access System 125 kHz CAS
Serial number(s): Sample 1: CM5LL; Ser.-No. 302
Sample 2: CM5RL; Ser.-No. 400

Parts/accessories: ---

FCC-ID: ---

Applicant:
(full address) Bayerische Motorenwerke AG
Petuelring 130
D-80788 München

Contract identification: ---

Contact person: Mr. Hochleitner

Manufacturer: Bayerische Motorenwerke AG

Receipt of EUT: December 6, 2000

Date of test: December 2000 to January 2001

Note: ---

Responsible for testing: Rupert Kohlhäufel

Responsible for test report: Rupert Kohlhäufel (cj)

2. Identification of Test Laboratory

Test Laboratory: (full address):	Senton GmbH EMI/EMC Test Center Aeussere Fruehlingstrasse 45 D-94315 Straubing Germany
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Contact person:	Mr. Johann Roidt
Communication:	Telephone (+49) 0 94 21 / 55 22-0 Fax (+49) 0 94 21 / 55 22-99 eMail: Office@senton.de

FCC registration number:	90926
Industry Canada file number:	IC 3050

3. Summary of Test Results

The tested samples are in compliance with the requirements set forth in the

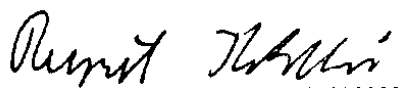
**Code of Regulations Part 15 Subpart C, Section §15.209 (intentional radiators) of
the Federal Communication Commission (FCC)**

and the

**Radio Standards Specification RSS-210 Issue 2, Section 6.1 for Low Power
Licence-Exempt Radiocommunication Devices of Industry Canada.**



Johann Roidt
Technical Manager



Rupert Kohlhäufel
Test Engineer

4. Operation Mode of EUT

TX in stand by mode (equal RX mode)
TX active
with / without tag

5. Configuration of EUT and Peripheral Devices

Configuration of cables of EUT

cable connected to test adapter (1 m)

Configuration of peripheral devices connected to EUT

test adapter connected to EUT

6. Measuring Methods

6.1. Radiated Emission 9 kHz - 30 MHz (§15.31.d,f, §15.209, §15.205 a,b / RSS-210 Sections 6.2.1, 6.3)

Radiated emissions were measured over the frequency range from 9 kHz to 30 MHz. The bandwidth of the EMI-receiver was set to 200 Hz below 150 kHz and to 10 kHz above 150 kHz. According to section §15.209 (d) final measurements were performed with the detector set to CISPR quasi-peak except for the frequency bands 9 - 90 kHz and 110 - 490 kHz where average detector is employed.

The test setup was made in accordance with ANSI C63.4-1992.

Preliminary scans were taken in a shielded room with a test-distance of 3 meters and detector-function of EMI-receiver set to peak. To search for the maximum emission EUT was placed in three orthogonal planes and rotated all around as well as the vertically polarized loop antenna on its vertical axis by 360°. Cables and equipment were placed and moved within the range of positions likely to find their maximum emissions. As a result of these preparations worst case configuration was recorded to determine the radiated EMI-profile of the EUT.

Final test was performed using an open-area test-site with a test-distance of 30 meters. In cases the regulation requires testing at 300 meters distance the results are extrapolated by using either an inverse linear distance extrapolation factor of 40 dB/decade or the extrapolation factor is determined by making a second measurement at 10 meters distance. The provisions of §15.31 (d) and §15.31 (f) apply.

See figure 1 for the measurement setup.

Test equipment used (see equipment list for details):

03, 04, 37, 60, 63, 66

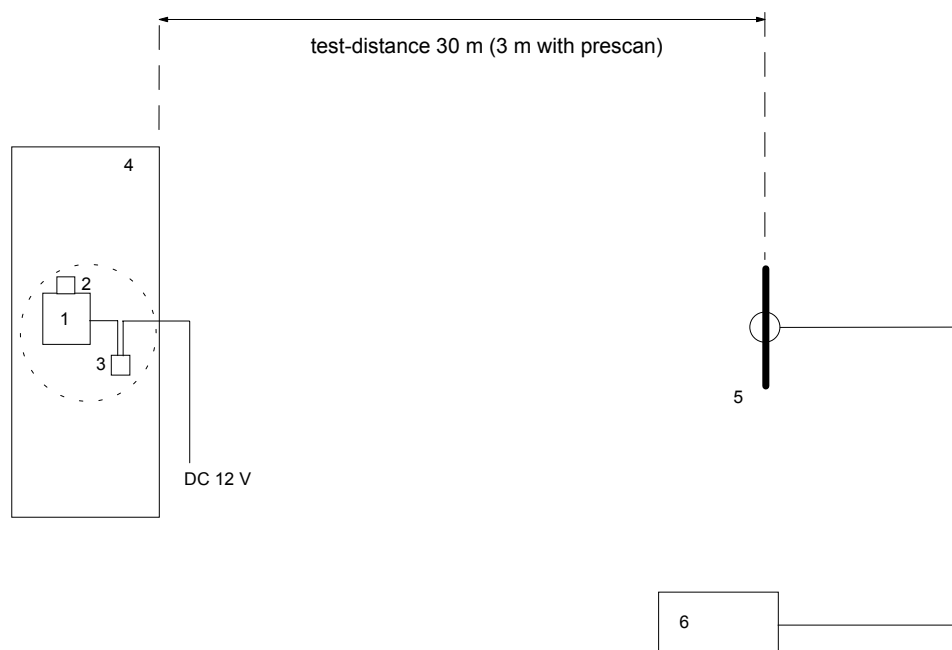


Figure 1: Measurement setup for radiated emission test below 30 MHz

- | | |
|-----------------------------------|------------------------------|
| 1 Transceiver (EUT) | 5 Measurement antenna |
| 2 Tag | 6 Test receiver |
| 3 Test adapter with switch | |
| 4 Wooden table | |

6.2. Radiated Emission 30 MHz - 1 GHz (FCC §15.209, / RSS-210 Sections 6.1.1.b, 6.3)

Radiated emissions are measured over the frequency range from 30 MHz to 1 GHz. The bandwidth of the EMI-receiver is set to 120 kHz and the detector-function is set to CISPR quasi-peak.

The test setup is made in accordance with ANSI C63.4-1992.

Measurements are made in both the horizontal and vertical planes of polarization. Preliminary scans are taken in a semi-anechoic room using a spectrum analyzer with the detector function set to peak. Hand-held or body-worn devices are rotated through three orthogonal axes to determine which attitude and configuration produces the highest emission relative to the limit and therefore shall be used for final testing.

All tests are performed at a test-distance of 3 meters.

For final testing an open-area test-site is used. During the tests the EUT is rotated all around and the receiving-antenna is raised and lowered from 1 meter to 4 meters to find the maximum levels of emissions. The cables and equipment is placed and moved within the range of position likely to find their maximum emissions.

See figure 2 for the measurement setup.

Test equipment used (see equipment list for details):

01, 02, 05, 12, 38, 39, 40, 41, 58, 61, 64, 66

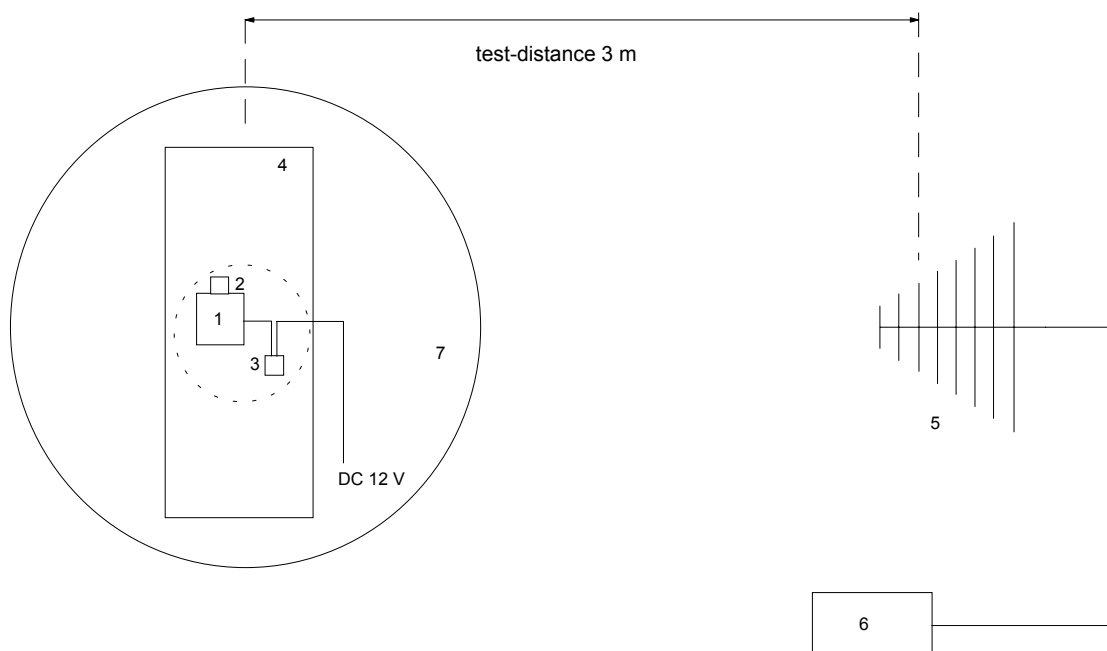


Figure 2: Measurement setup for radiated emission test below 1 GHz

- | | | | |
|---|--------------------------|---|---------------------|
| 1 | Transceiver (EUT) | 5 | Measurement antenna |
| 2 | Tag | 6 | Test receiver |
| 3 | Test adapter with switch | 7 | Turn table |
| 4 | Wooden table | | |

7. Equipment List

To facilitate reference to test equipment used for related tests, each item of test equipment and ancillaries such as cables are identified (numbered) by the Test Laboratory.

No.	Type	Model	Serial Number	Manufacturer
01	Spectrum Analyzer	R 3271	05050023	Advantest
02	EMI Test Receiver	ESMI	839379/013 839587/006	Rohde & Schwarz
03	Test Receiver	ESH 3	880112/032	Rohde & Schwarz
04	Test Receiver	ESHS 10	860043/016	Rohde & Schwarz
05	Test Receiver	ESV	881414/009	Rohde & Schwarz
06	Test Receiver	ESVP	881120/024	Rohde & Schwarz
07	Audio Analyzer	UPA	862954	Rohde & Schwarz
08	Power Meter	NRVS	836856/015	Rohde & Schwarz
09	Power Sensor	NRV-Z52	837901/030	Rohde & Schwarz
10	Power Sensor	NRV-Z4	863828/015	Rohde & Schwarz
11	Preamplifier	ESV-Z3	860907/004	Rohde & Schwarz
12	Preamplifier	R14601		Advantest
13	Preamplifier	ACX/080-3030	32640	CTT
14	Preamplifier	ACO/180-3530	32641	CTT
15	Signal Generator	SMS	872166/039	Rohde & Schwarz
16	Signal Generator	HP 8673 D	2930A00966	Hewlett Packard
17	Waveform Generator	HP 33120 A	US34005375	Hewlett Packard
18	Attenuator 20 dB	4776-20	9503	Narda
19	Attenuator 10 dB	4776-10	9412	Narda
20	Pulse Limiter	ESH 3-Z2	1144	Rohde & Schwarz
21	Pulse Limiter	11947 A	3107A00566	Hewlett Packard
22	V-Network	ESH 3-Z5	862770/018	Rohde & Schwarz
23	V-Network	ESH 3-Z5	894785/005	Rohde & Schwarz
24	V-Network	ESH 3-Z5	830952/025	Rohde & Schwarz
25	V-Network	ESH 3-Z6	830722/010	Rohde & Schwarz
26	V-Network	NSLK 8127	8127152	Schwarzbeck
27	V-Network	NNLA 8119	8119148	Schwarzbeck
28	V-Network	SE 01	01	Senton
29	T-Network	ESH 3-Z4	890602/011	Rohde & Schwarz
30	T-Network	ESH 3-Z4	890602/012	Rohde & Schwarz
31	High Impedance Probe	TK 9416	01	Schwarzbeck
32	High Impedance Probe	TK 9416	02	Schwarzbeck
33	Current Probe	ESH 2-Z1	863366/18	Rohde & Schwarz
34	Current Probe	ESV-Z1	862553/3	Rohde & Schwarz

No.	Type	Model	Serial Number	Manufacturer
35	Absorbing Clamp	MDS 21	80911	Lüthi
36	Absorbing Clamp	MDS 21	79690	Lüthi
37	Loop Antenna	HFH2-Z2	882964/1	Rohde & Schwarz
38	Biconical Antenna	HK 116	842204/001	Rohde & Schwarz
39	Biconical Antenna	HK 116	836239/02	Rohde & Schwarz
40	Log. Periodic Antenna	HL 223	841516/023	Rohde & Schwarz
41	Log. Periodic Antenna	HL 223	834408/12	Rohde & Schwarz
42	Horn Antenna	3115	9508-4553	Emco
43	Horn Antenna	3160-03	9112-1003	Emco
44	Horn Antenna	3160-04	9112-1001	Emco
45	Horn Antenna	3160-05	9112-1001	Emco
46	Horn Antenna	3160-06	9112-1001	Emco
47	Horn Antenna	3160-07	9112-1008	Emco
48	Horn Antenna	3160-08	9112-1002	Emco
49	Horn Antenna	3160-09	9403-1025	Emco
50	Digital multimeter	199	463386	Keithley
51	DC Power Supply	NGSM 32/10	203	Rohde & Schwarz
52	DC Power Supply	NGB	2455	Rohde & Schwarz
53	DC Power Supply	NGA	386	Rohde & Schwarz
54	Temperature Test Chamber	HT4010	07065550	Heraeus
55	Cable	RG214	1309	Senton
56	Cable	200CM_001	1357	Rosenberger
57	Cable	150CM_001	1479	Rosenberger
58	Cable Set EG1	RG214	1189 - 1191	Senton
59	Cable Set Cabine 1	RG214		Senton
60	Cable Set Cabine 2	RG214		Senton
61	Cable Set Cabine 3	RG214		Senton
62	Shielded Room	No. 1	1451	Senton
63	Shielded Room	No. 2	1452	Senton
64	Semi-anechoic Chamber	No. 3	1453	Siemens
65	Shielded Room	No. 4	1454	Euroshield
66	Open Area Test Site	EG 1		Senton
67	Test fixture			Senton

8. Photographs Taken During Testing

Photos No. 8.1 - 8.2

Test setup for radiated emission pre-test 9 kHz - 30 MHz



Photos No. 8.3 - 8.4

**Test setup for radiated emission pre-test 9 kHz - 30 MHz
- continued -**



Photos No. 8.5 - 8.6

Test setup for radiated emission final test 9 kHz - 30 MHz



Photos No. 8.7 - 8.8

Test setup for radiated emission pre- test 30 MHz - 1 GHz
- anechoic chamber -



Photos No. 8.9 - 8.10

**Test setup for radiated emission pre- test 30 MHz - 1 GHz
- anechoic chamber -(continued)**



Photos No. 8.11 - 8.12

**Test setup for radiated emission final test 30 MHz - 1 GHz
- open area test site -**



Photos No. 8.13 - 8.14

**Test setup for radiated emission final test 30 MHz - 1 GHz
- open area test site - (continued)**



9. List of Measurements

9.1. List of Measurements According To FCC Part 15 Subpart C

FCC Part 15 Subpart C				
Section(s):	Test	Page(s)		Result
		Sample 1 CM5LL	Sample 2 CM5RL	
§15.207.c	Conducted emission test 450 kHz - 30 MHz	---	---	Not Applicable
§15.31.d,f §15.209 §15.205.a,b	Radiated emission test 9 kHz - 30 MHz	28 - 40	64 - 76	Passed
§15.209	Radiated emission test 30 MHz - 1 GHz	41 - 62	77 - 98	Passed

9.2. List of Measurements According To Industry Canada RSS-210

Industry Canada RSS-210 Issue 2				
Section(s):	Test	Page(s)		Result
		Sample 1 CM5LL	Sample 2 CM5RL	
6.1.1.b 6.3	Radiated emission test 9 kHz - 30 MHz	28 - 40	64 - 76	Passed
6.1.1.b 6.3	Radiated emission test 30 MHz - 1 GHz	41 - 62	77 - 98	Passed

10. Referenced Regulations

All tests were performed with reference to the following regulations and standards:

☒	FCC Part 15 Subpart A	Code of Regulations Part 15 (Radio Frequency Devices), Subpart A (General) of the Federal Communication Commission (FCC)	October 20, 1997
☐	FCC Part 15 Subpart B	Code of Regulations Part 15 (Radio Frequency Devices), Subpart B (Unintentional Radiators) of the Federal Communication Commission (FCC)	October 20, 1997
☒	FCC Part 15 Subpart C	Code of Regulations Part 15 (Radio Frequency Devices), Subpart C (Intentional Radiators) of the Federal Communication Commission (FCC)	October 20, 1997
☒	ANSI C63.4	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz - 40 GHz	October, 1992
☒	RSS-210	Radio Standards Specification RSS-210 Issue 2 for Low Power Licence-Exempt Radiocommunication Devices of Industry Canada	February 24, 1996

11. Test Results

11.1. Test Results of Sample 1 CM5LL

Radiated Emission Test 9 kHz - 30 MHz
according to FCC Part 15 Subpart C, §15.209

Model: Car access system 125 kHz CAS
Type: Remote control transmitter
Serial No.: 302
Applicant: Bayerische Motoren Werke AG
Test-site: Open area test-site I
Test distances: 3 meters
Date of test: 01/22/2001
Operator: R. Kohlhäufel
Mode:
- Hardware CM 5LL
- TX active (125 kHz)
- with tag

Frequency [MHz]	Detector	Measuring Bandwidth [kHz]	Received Voltage			Correction [dB]	Fieldstrength				Limit [dBμV/m]
			3 m [dBμV]	10 m [dBμV]	30 m [dBμV]		3 m [dBμV/m]	10 m [dBμV/m]	30 m [dBμV/m]	300 m [dBμV/m]	
0.125	QP	0.2	63.0	36.6	< 11.0	20.0	83.0	56.6	< 31.0	-18.0	
0.125	AV	0.2	63.0	36.5	< 11.0	20.0	83.0	56.5	< 31.0	-18.4	25.7

Note 1: Fieldstrength value in 300 meters distance is extrapolated according to §15.31 f(2) performing two measurements in 3 and 10 meters distance

Note 2: Frequencies are selected according to prescan in shielded room with test distance 3 meters

Result: The limits are kept.

Radiated Emission Test 9 kHz - 30 MHz
according to FCC Part 15 Subpart C, §15.209

Model: Car access system 125 kHz CAS
Type: Remote control transmitter
Serial No.: 302
Applicant: Bayerische Motoren Werke AG
Test-site: Open area test-site I
Test distances: 3 meters
Date of test: 01/22/2001
Operator: R. Kohlhäufel
Mode:
- Hardware CM 5LL
- TX active (125 kHz)
- without tag

Frequency [MHz]	Detector	Measuring Bandwidth [kHz]	Received Voltage			Correction [dB]	Fieldstrength				Limit [dBμV/m]
			3 m [dBμV]	10 m [dBμV]	30 m [dBμV]		3 m [dBμV/m]	10 m [dBμV/m]	30 m [dBμV/m]	300 m [dBμV/m]	
0.125	QP	0.2	64.1	37.6	< 11.0	20.0	84.1	57.6	< 31.0	-17.3	
0.125	AV	0.2	64.0	37.5	< 11.0	20.0	84.0	57.5	< 31.0	-17.4	25.7

Note 1: Fieldstrength value in 300 meters distance is extrapolated according to §15.31 f(2) performing two measurements in 3 and 10 meters distance

Note 2: Frequencies are selected according to prescan in shielded room with test distance 3 meters

Result: The limits are kept.

Radiated Emission Test 9 kHz - 30 MHz
according to FCC Part 15 Subpart C, §15.209

Model: Car access system 125 kHz CAS
Type: Remote control transmitter
Serial No.: 302
Applicant: Bayerische Motoren Werke AG
Test-site: Open area test-site I
Test distances: 3 meters
Date of test: 01/22/2001
Operator: R. Kohlhäufel
Mode: - Hardware CM 5LL
- TX in Stand by mode

Frequency [MHz]	Detector	Measuring Bandwidth [kHz]	Received Voltage			Correction [dB]	Fieldstrength				Limit [dBμV/m]
			3 m [dBμV]	10 m [dBμV]	30 m [dBμV]		3 m [dBμV/m]	10 m [dBμV/m]	30 m [dBμV/m]	300 m [dBμV/m]	
0.009-30								(*)	(*)	(*)	

(*) = No levels above noise floor detected

Note 1: Fieldstrength value in 300 meters distance is extrapolated according to §15.31 f(2) performing two measurements in 3 and 10 meters distance

Note 2: Frequencies are selected according to prescan in shielded room with test distance 3 meters

Result: The limits are kept.

Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

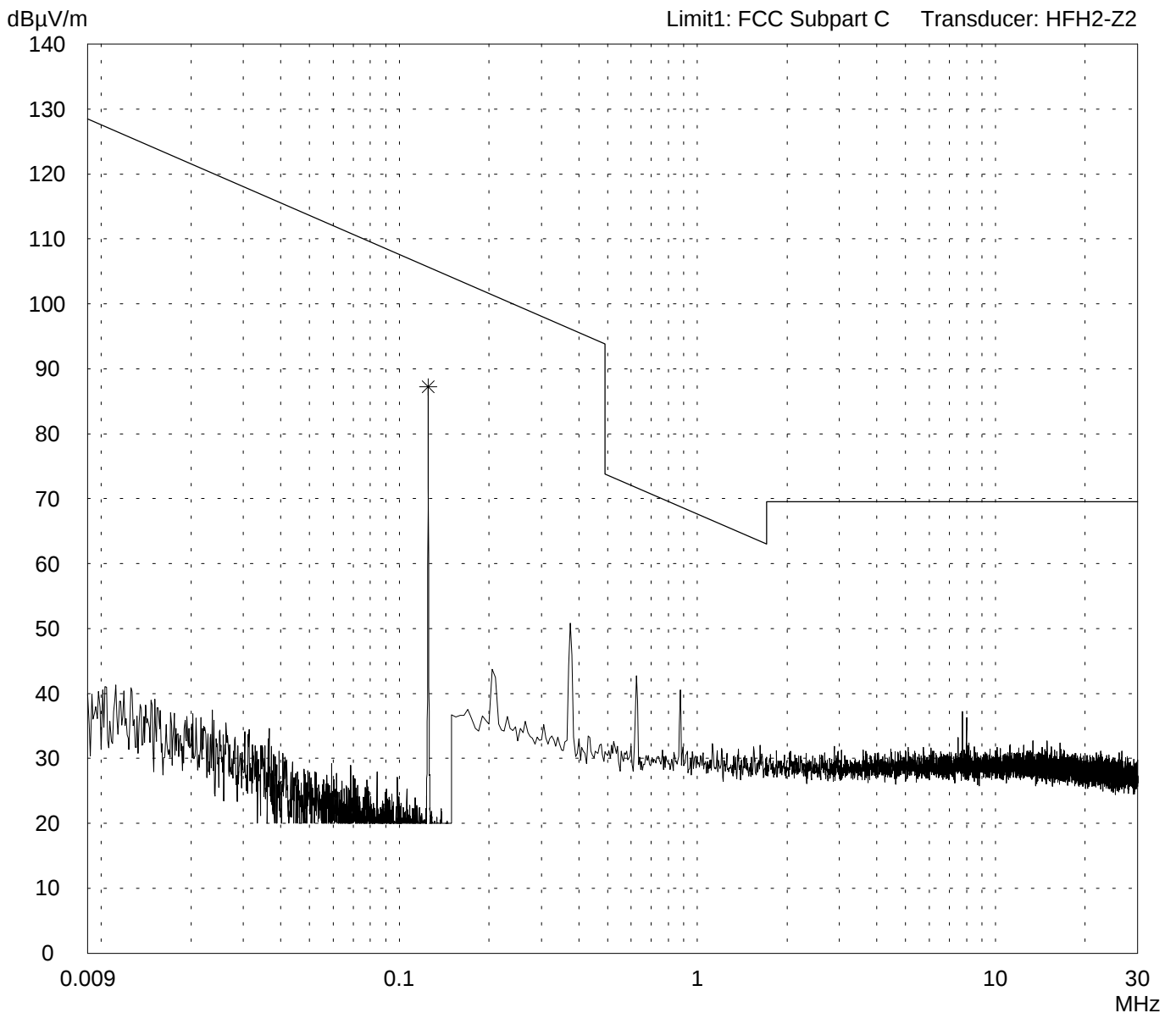
Date of test: 01/18/2001
Operator: R. Kohlhäufel

Test performed: automatically
File name:

Mode:
- Hardware CM 5LL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Peak / Final Results: QP

Final results:
20 dB Margin 25 Subranges



Result:
Prescan

Project file:
50217-00699

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Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model: Car access system 125 kHz CAS	Mode: - Hardware CM 5LL - TX active (125 kHz) - with tag - External power supply: DC 12.0 V
Serial no.: 302	
Applicant: Bayerische Motoren Werke AG	
Test site: Shielded room, cabin no. 2	
Tested on: Test distance 3 metres	
Date of test: 01/18/2001 Operator: R. Kohlhäufel	
Test performed: automatically File name:	

Detector:	Final results:
Peak / Final Results: QP	20 dB Margin 25 Subranges

<i>Frequency MHz</i>	<i>Reading dBμV</i>	<i>Correction factor dB</i>	<i>Value dBμV/m</i>	<i>Limit dBμV/m</i>	<i>Limit exceeded</i>
0.125	67.2	20.0	87.2	105.7	

Result: Prescan	Project file: 50217-00699	Page 32 of 98 Pages
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Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

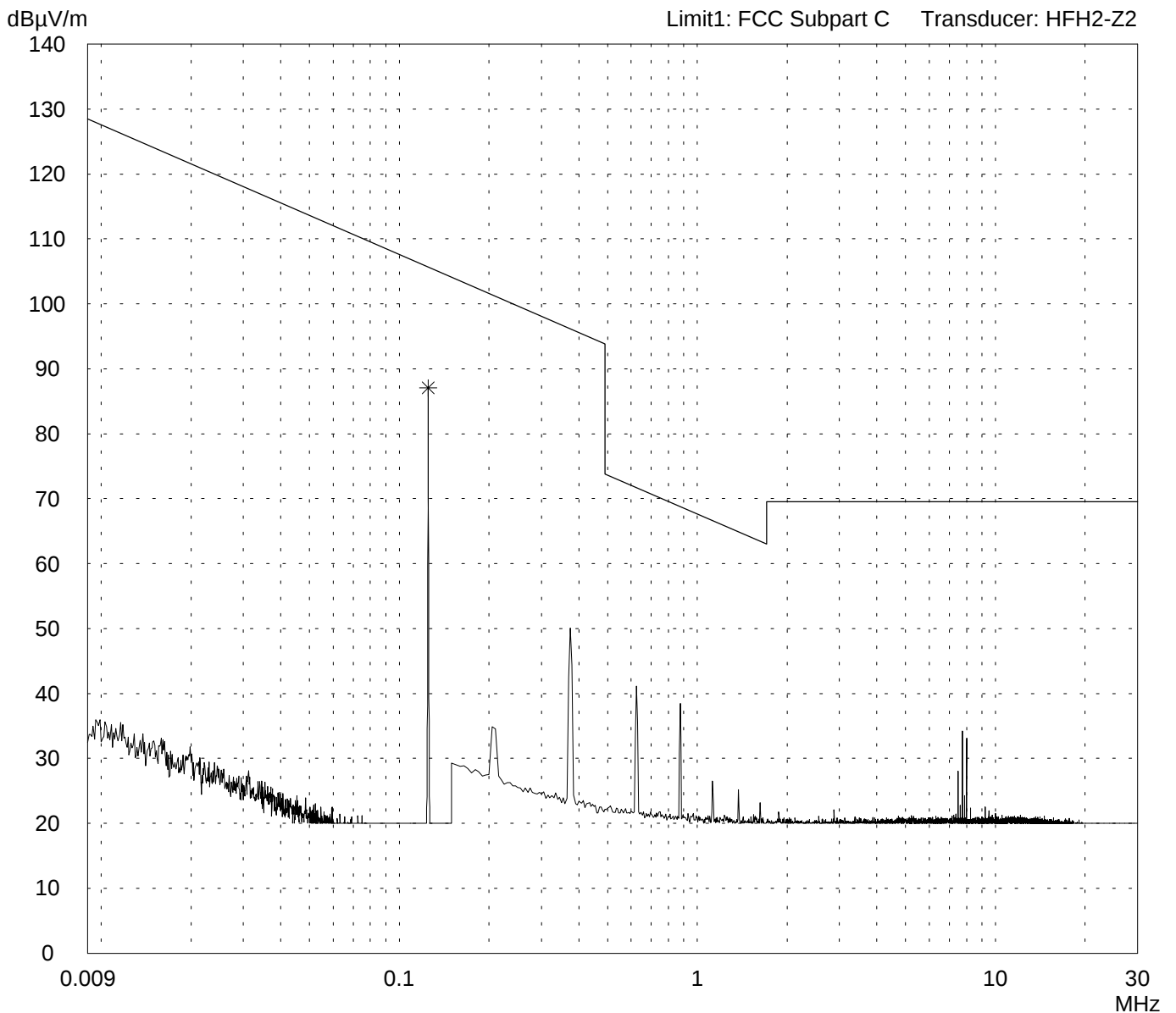
Date of test: 01/18/2001
Operator: R. Kohlhäufel

Test performed: automatically
File name:

Mode:
- Hardware CM 5LL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Average / Final Results: AV

Final results:
20 dB Margin 25 Subranges



Result:
Prescan

Project file:
50217-00699

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Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model: Car access system 125 kHz CAS	Mode: - Hardware CM 5LL - TX active (125 kHz) - with tag - External power supply: DC 12.0 V
Serial no.: 302	
Applicant: Bayerische Motoren Werke AG	
Test site: Shielded room, cabin no. 2	
Tested on: Test distance 3 metres	
Date of test: 01/18/2001 Operator: R. Kohlhäufel	
Test performed: automatically File name:	

Detector: Average / Final Results: AV	Final results: 20 dB Margin	25 Subranges
--	--------------------------------	--------------

Frequency MHz	Reading dBμV	Correction factor dB	Value dBμV/m	Limit dBμV/m	Limit exceeded
0.125	67.1	20.0	87.1	105.7	

Result: Prescan	Project file: 50217-00699	Page 34 of 98 Pages
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Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

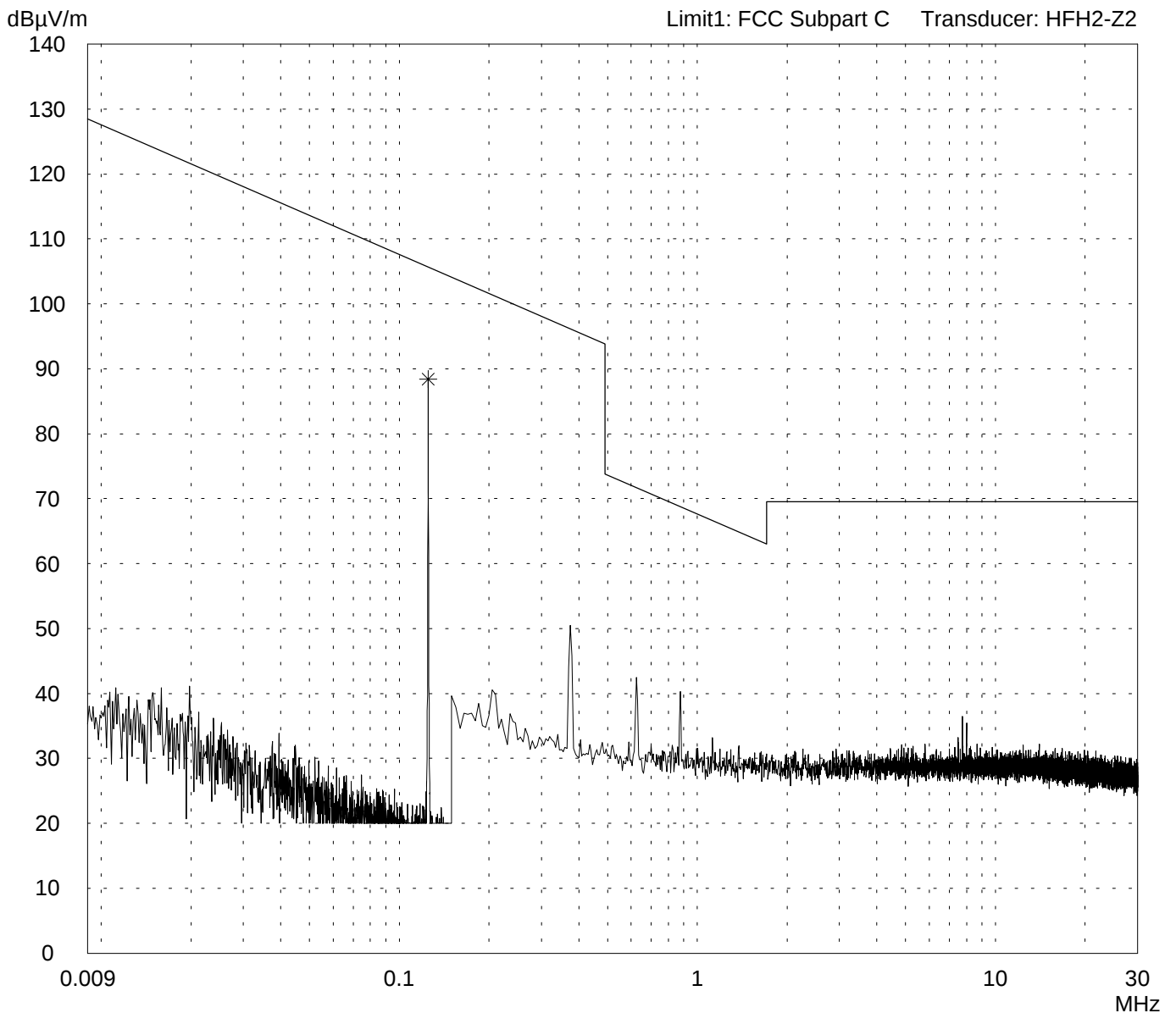
Date of test: 01/18/2001
Operator: R. Kohlhäufel

Test performed: automatically
File name:

Mode:
- Hardware CM 5LL
- TX active (125 kHz)
- without tag
- External power supply: DC 12.0 V

Detector:
Peak / Final Results: QP

Final results:
20 dB Margin 25 Subranges



Result:
Prescan

Project file:
50217-00699

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Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model: Car access system 125 kHz CAS	Mode: - Hardware CM 5LL - TX active (125 kHz) - without tag - External power supply: DC 12.0 V
Serial no.: 302	
Applicant: Bayerische Motoren Werke AG	
Test site: Shielded room, cabin no. 2	
Tested on: Test distance 3 metres	
Date of test: 01/18/2001 Operator: R. Kohlhäufel	
Test performed: automatically File name:	

Detector:	Final results:
Peak / Final Results: QP	20 dB Margin 25 Subranges

<i>Frequency MHz</i>	<i>Reading dBμV</i>	<i>Correction factor dB</i>	<i>Value dBμV/m</i>	<i>Limit dBμV/m</i>	<i>Limit exceeded</i>
0.125	68.4	20.0	88.4	105.7	

Result: Prescan	Project file: 50217-00699	Page 36 of 98 Pages
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Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

Date of test:
01/18/2001

Operator:
R. Kohlhäufel

Test performed:
automatically

File name:

Mode:

- Hardware CM 5LL
- TX active (125 kHz)
- without tag
- External power supply: DC 12.0 V

Detector:

Average / Final Results: AV

Final results:

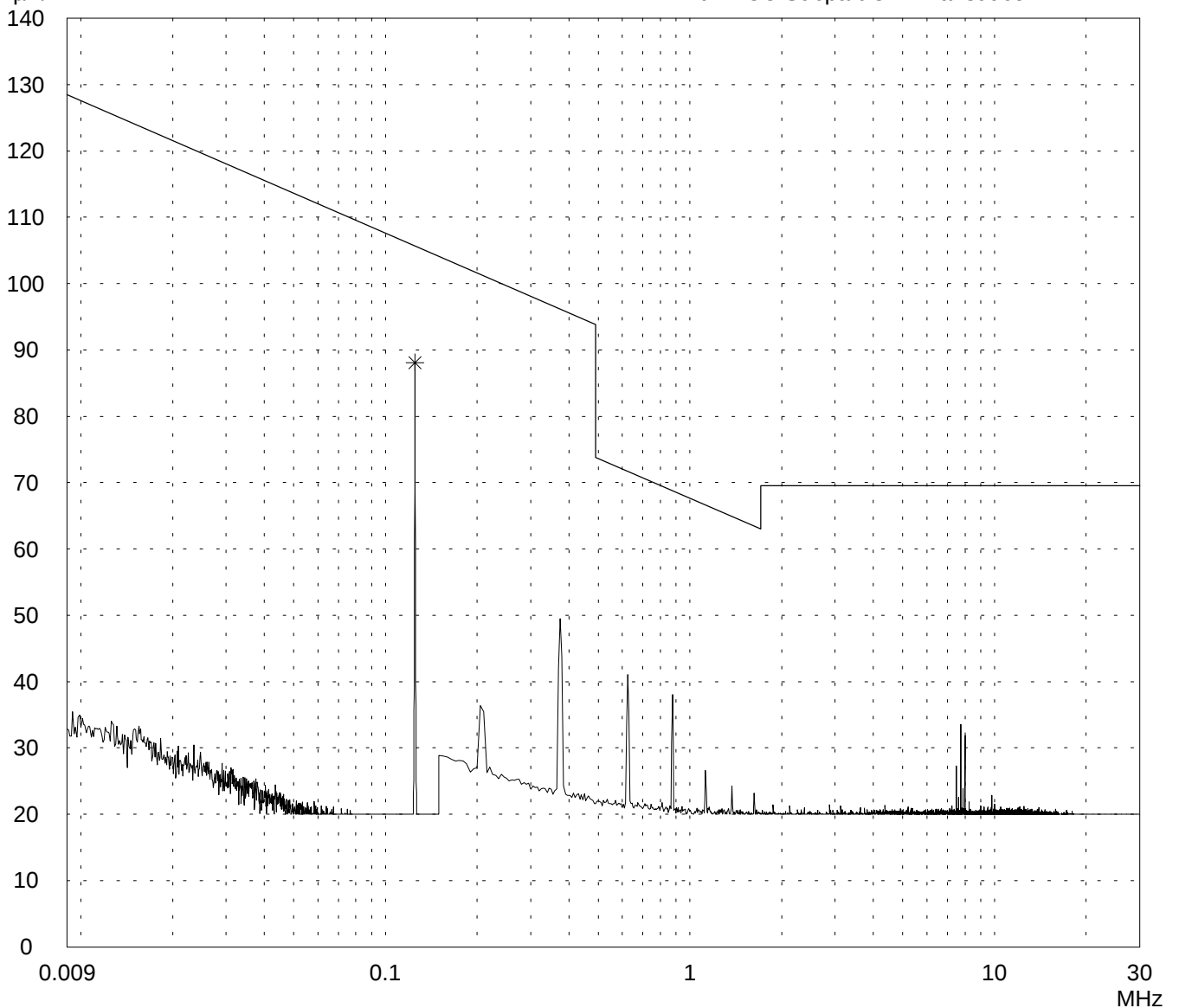
20 dB Margin

25 Subranges

dB μ V/m

Limit1: FCC Subpart C

Transducer: HFH2-Z2



Result:
Prescan

Project file:
50217-00699

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Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model: Car access system 125 kHz CAS	Mode: - Hardware CM 5LL - TX active (125 kHz) - without tag - External power supply: DC 12.0 V
Serial no.: 302	
Applicant: Bayerische Motoren Werke AG	
Test site: Shielded room, cabin no. 2	
Tested on: Test distance 3 metres	
Date of test: 01/18/2001 Operator: R. Kohlhäufel	
Test performed: automatically File name:	

Detector: Average / Final Results: AV	Final results: 20 dB Margin	25 Subranges
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Frequency MHz	Reading dBµV	Correction factor dB	Value dBµV/m	Limit dBµV/m	Limit exceeded
0.125	68.1	20.0	88.1	105.7	

Result: Prescan	Project file: 50217-00699	Page 38 of 98 Pages
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Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

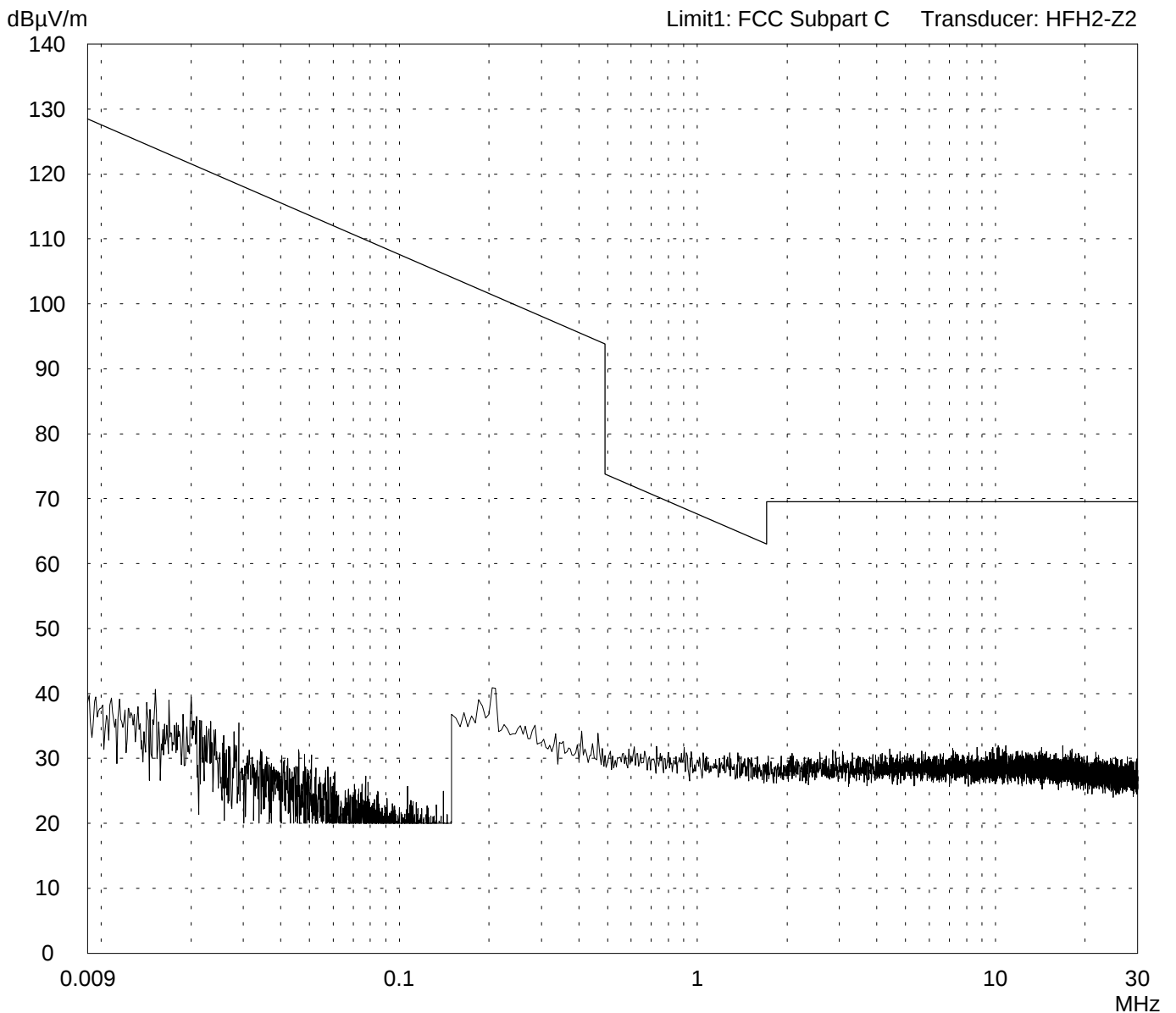
Date of test: 01/18/2001
Operator: R. Kohlhäufel

Test performed: automatically
File name:

Mode:
- Hardware CM 5LL
- TX in stand by mode
- with tag
- External power supply: DC 12.0 V

Detector:
Peak / Final Results: QP

Final results:
20 dB Margin 25 Subranges



Result:
Prescan

Project file:
50217-00699

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Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

Date of test: 01/18/2001
Operator: R. Kohlhäufel

Test performed: automatically
File name:

Mode:
- Hardware CM 5LL
- TX in stand by mode
- with tag
- External power supply: DC 12.0 V

Detector:
Peak / Final Results: QP

Final results:
20 dB Margin 25 Subranges

<i>Frequency MHz</i>	<i>Reading dBμV</i>	<i>Correction factor dB</i>	<i>Value dBμV/m</i>	<i>Limit dBμV/m</i>	<i>Limit exceeded</i>
no results					

Result:
Prescan

Project file:
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**Radiated Emission 30 MHz - 1 GHz (Final Test)
according to FCC Part 15 Subpart C, §15.209**

Model: Car access system 125 kHz CAS
 Type: Remote control transmitter
 Serial No.: 302
 Applicant: Bayerische Motoren Werke AG
 Test-site: Open area test-site I
 Test distance: 3 meters
 Date of test: 01/22/2001
 Operator: R. Kohlhäufel
 Mode:
 - Hardware CM 5LL
 - TX active (125 kHz)
 - without tag

Detector: Quasi-Peak (CISPR)

Polarization: horizontal

Frequency [MHz]	Receiver reading [dBμV]	Correction factor [dB]	Fieldstrength [dBμV/m]	Limit Average [dBμV/m]
30-1000			(*)	

(*) = No levels above noise floor detected

Result: The limits are kept.

**Radiated Emission 30 MHz - 1 GHz (Final Test)
according to FCC Part 15 Subpart C, §15.231.b**

Model: Car access system 125 kHz CAS
 Type: Remote control transmitter
 Serial No.: 302
 Applicant: Bayerische Motoren Werke AG
 Test-site: Open area test-site I
 Test distance: 3 meters
 Date of test: 01/22/2001
 Operator: R. Kohlhäufel
 Mode:
 - Hardware CM 5LL
 - TX active (125 kHz)
 - without tag

Detector: Quasi-Peak (CISPR)

Polarization: vertical

Frequency [MHz]	Receiver reading [dBμV]	Correction factor [dB]	Fieldstrength [dBμV/m]	Limit Average [dBμV/m]
30-1000			(*)	

(*) = No levels above noise floor detected

Result: The limits are kept.

**Radiated Emission 30 MHz - 1 GHz (Final Test)
according to FCC Part 15 Subpart C, §15.209**

Model: Car access system 125 kHz CAS
 Type: Remote control transmitter
 Serial No.: 302
 Applicant: Bayerische Motoren Werke AG
 Test-site: Open area test-site I
 Test distance: 3 meters
 Date of test: 01/22/2001
 Operator: R. Kohlhäufel
 Mode:
 - Hardware CM 5LL
 - TX active (125 kHz)
 - with tag

Detector: Quasi-Peak (CISPR)

Polarization: horizontal

Frequency [MHz]	Receiver reading [dBμV]	Correction factor [dB]	Fieldstrength [dBμV/m]	Limit Average [dBμV/m]
30-1000			(*)	

(*) = No levels above noise floor detected

Result: The limits are kept.

**Radiated Emission 30 MHz - 1 GHz (Final Test)
according to FCC Part 15 Subpart C, §15.231.b**

Model: Car access system 125 kHz CAS
 Type: Remote control transmitter
 Serial No.: 302
 Applicant: Bayerische Motoren Werke AG
 Test-site: Open area test-site I
 Test distance: 3 meters
 Date of test: 01/22/2001
 Operator: R. Kohlhäufel
 Mode:
 - Hardware CM 5LL
 - TX active (125 kHz)
 - with tag

Detector: Quasi-Peak (CISPR)

Polarization: vertical

Frequency [MHz]	Receiver reading [dBμV]	Correction factor [dB]	Fieldstrength [dBμV/m]	Limit Average [dBμV/m]
30-1000			(*)	

(*) = No levels above noise floor detected

Result: The limits are kept.

**Radiated Emission 30 MHz - 1 GHz (Final Test)
according to FCC Part 15 Subpart C, §15.209**

Model: Car access system 125 kHz CAS
 Type: Remote control transmitter
 Serial No.: 302
 Applicant: Bayerische Motoren Werke AG
 Test-site: Open area test-site I
 Test distance: 3 meters
 Date of test: 01/22/2001
 Operator: R. Kohlhäufel
 Mode: - Hardware CM 5LL
 -TX in Stand by mode

Detector: Quasi-Peak (CISPR)

Polarization: horizontal

Frequency [MHz]	Receiver reading [dBμV]	Correction factor [dB]	Fieldstrength [dBμV/m]	Limit Average [dBμV/m]
30-1000			(*)	

(*) = No levels above noise floor detected

Result: The limits are kept.

**Radiated Emission 30 MHz - 1 GHz (Final Test)
according to FCC Part 15 Subpart C, §15.231.b**

Model: Car access system 125 kHz CAS
 Type: Remote control transmitter
 Serial No.: 302
 Applicant: Bayerische Motoren Werke AG
 Test-site: Open area test-site I
 Test distance: 3 meters
 Date of test: 01/22/2001
 Operator: R. Kohlhäufel
 Mode: - Hardware CM 5LL
 -TX in Stand by mode

Detector: Quasi-Peak (CISPR)

Polarization: vertical

Frequency [MHz]	Receiver reading [dBμV]	Correction factor [dB]	Fieldstrength [dBμV/m]	Limit Average [dBμV/m]
30-1000			(*)	

(*) = No levels above noise floor detected

Result: The limits are kept.

Radiated Emission Test 30 MHz - 300 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Horizontal Polarization

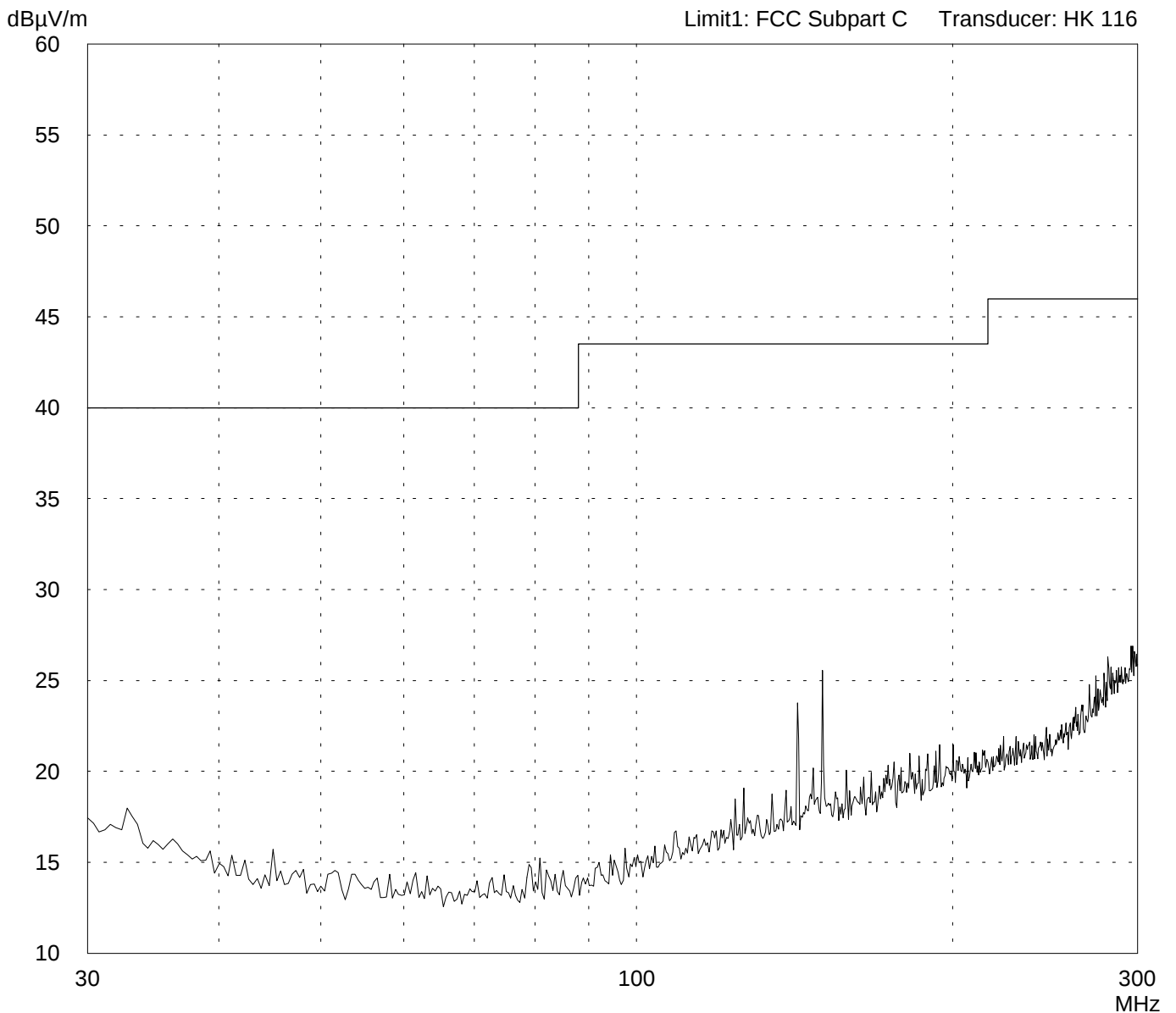
Date of test: 01/17/2001 Operator: R. Kohlhäufel

Test performed: automatically File name:

Mode:
- Hardware CM 5LL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Peak

List of values:
10 dB Margin 50 Subranges



Result:
Prescan

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Radiated Emission Test 300 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Horizontal Polarization

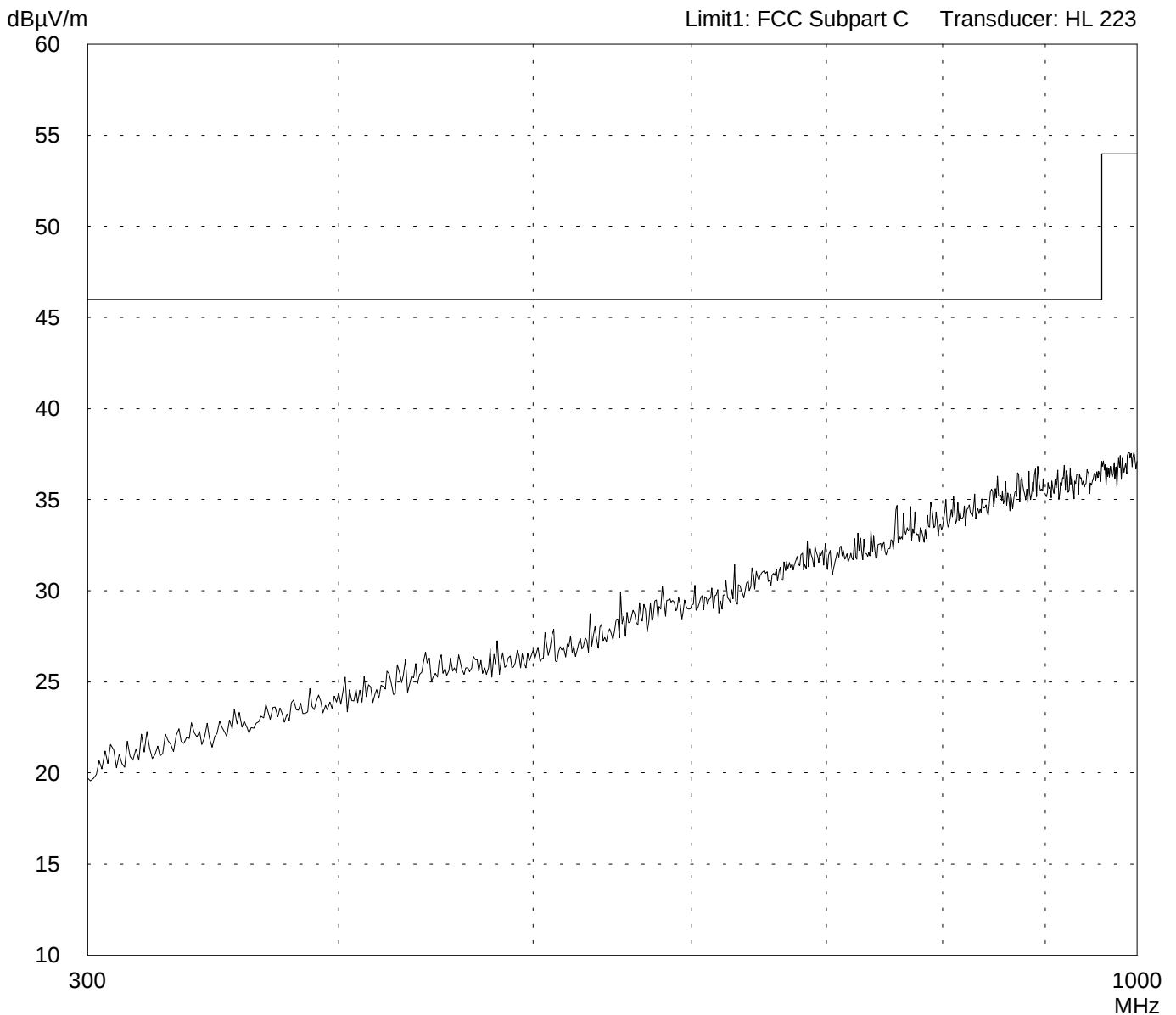
Date of test: 01/17/2001 Operator: R. Kohlhäufel

Test performed: automatically File name:

Mode:
- Hardware CM 5LL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Peak

List of values:
Selected by hand



Result:
Prescan

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Radiated Emission Test 30 MHz - 300 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Vertical Polarization

Date of test: 01/17/2001
Operator: R. Kohlhäufel

Test performed: automatically
File name:

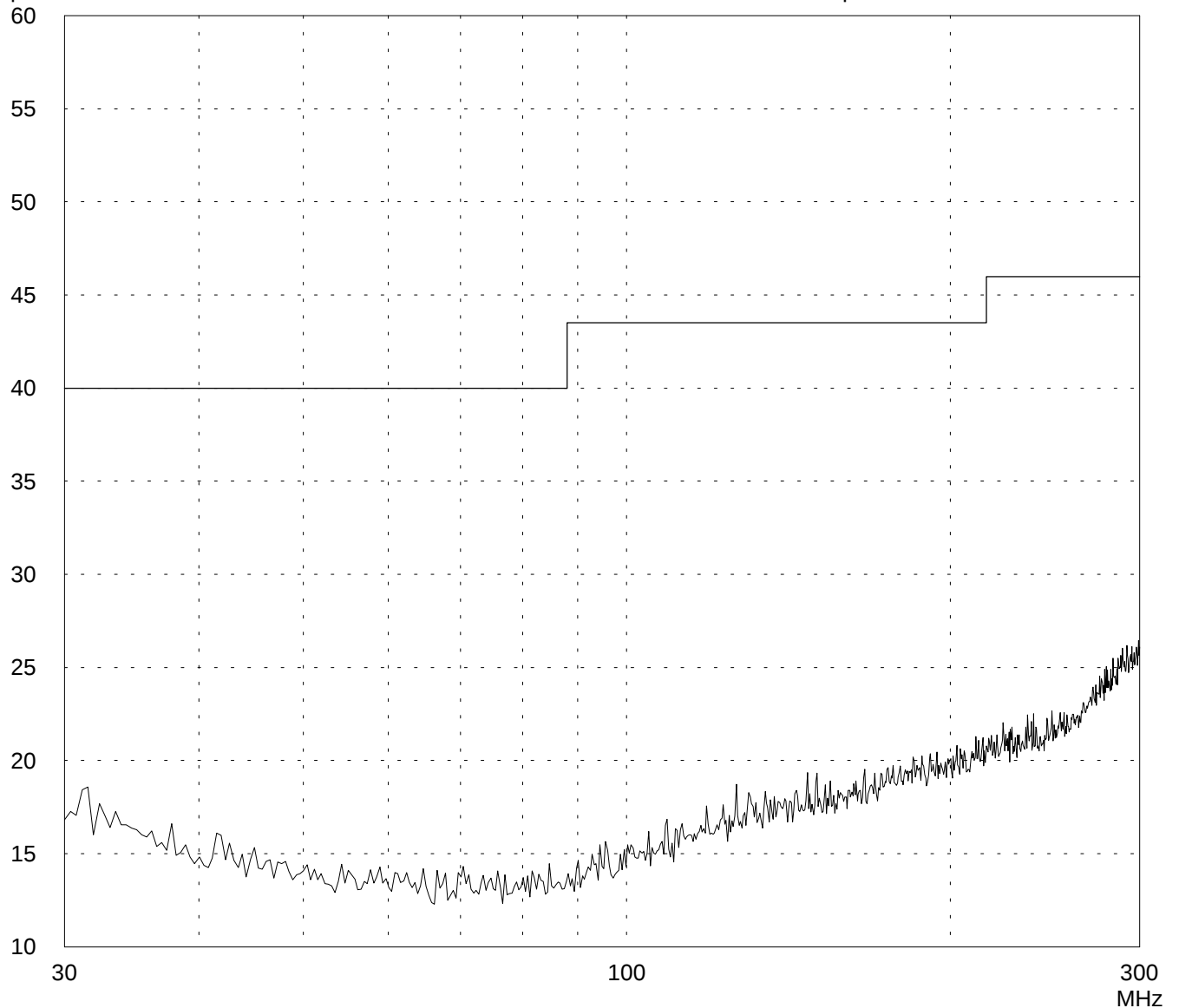
Mode:
- Hardware CM 5LL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Peak

List of values:
10 dB Margin 50 Subranges

$\text{dB}\mu\text{V/m}$

Limit1: FCC Subpart C Transducer: HK 116



Result:
Prescan

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Radiated Emission Test 300 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Vertical Polarization

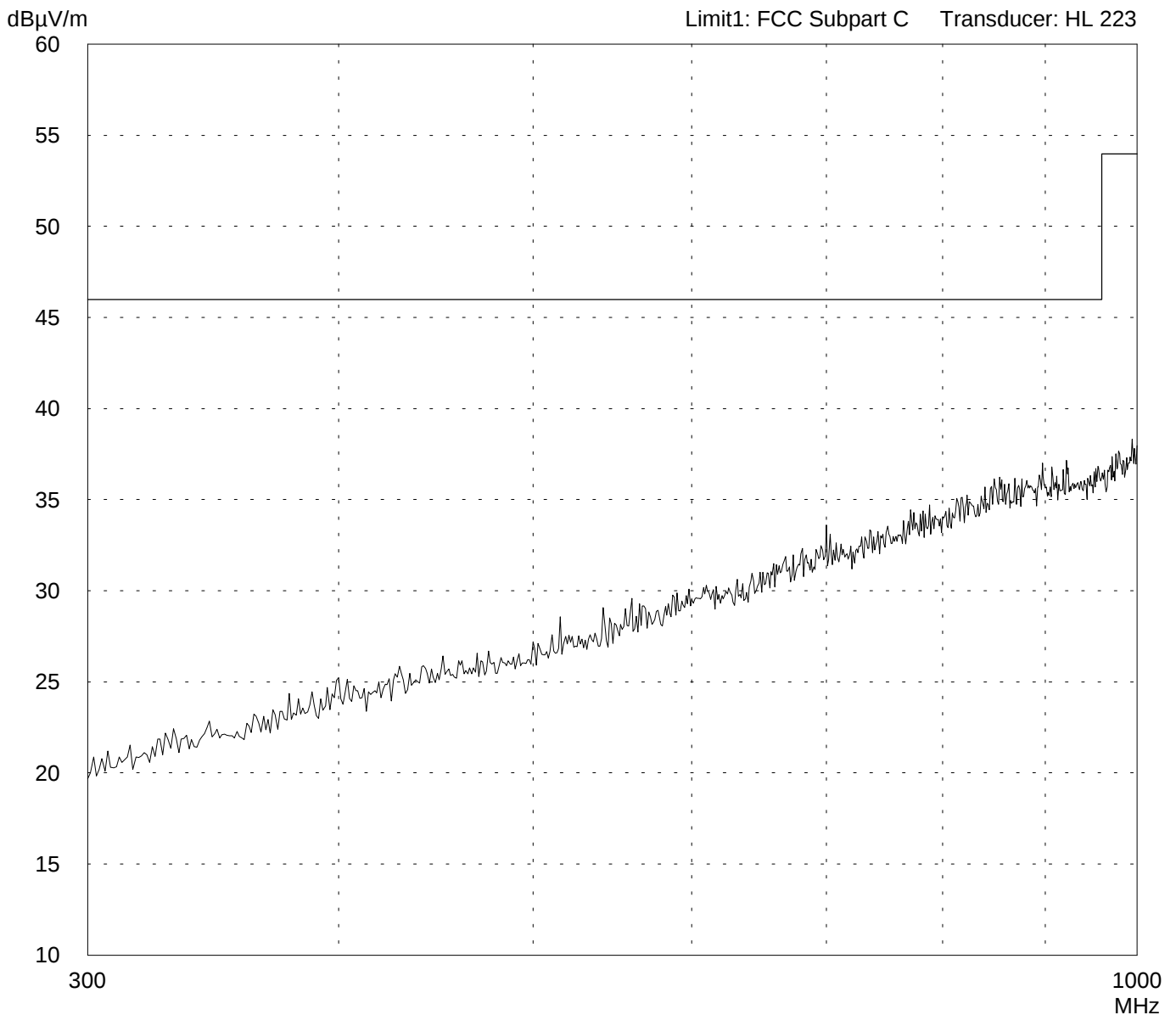
Date of test: 01/17/2001
Operator: R. Kohlhäufel

Test performed: automatically
File name:

Mode:
- Hardware CM 5LL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Peak

List of values:
Selected by hand



Result:
Prescan

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Radiated Emission Test 30 MHz - 300 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Horizontal Polarization

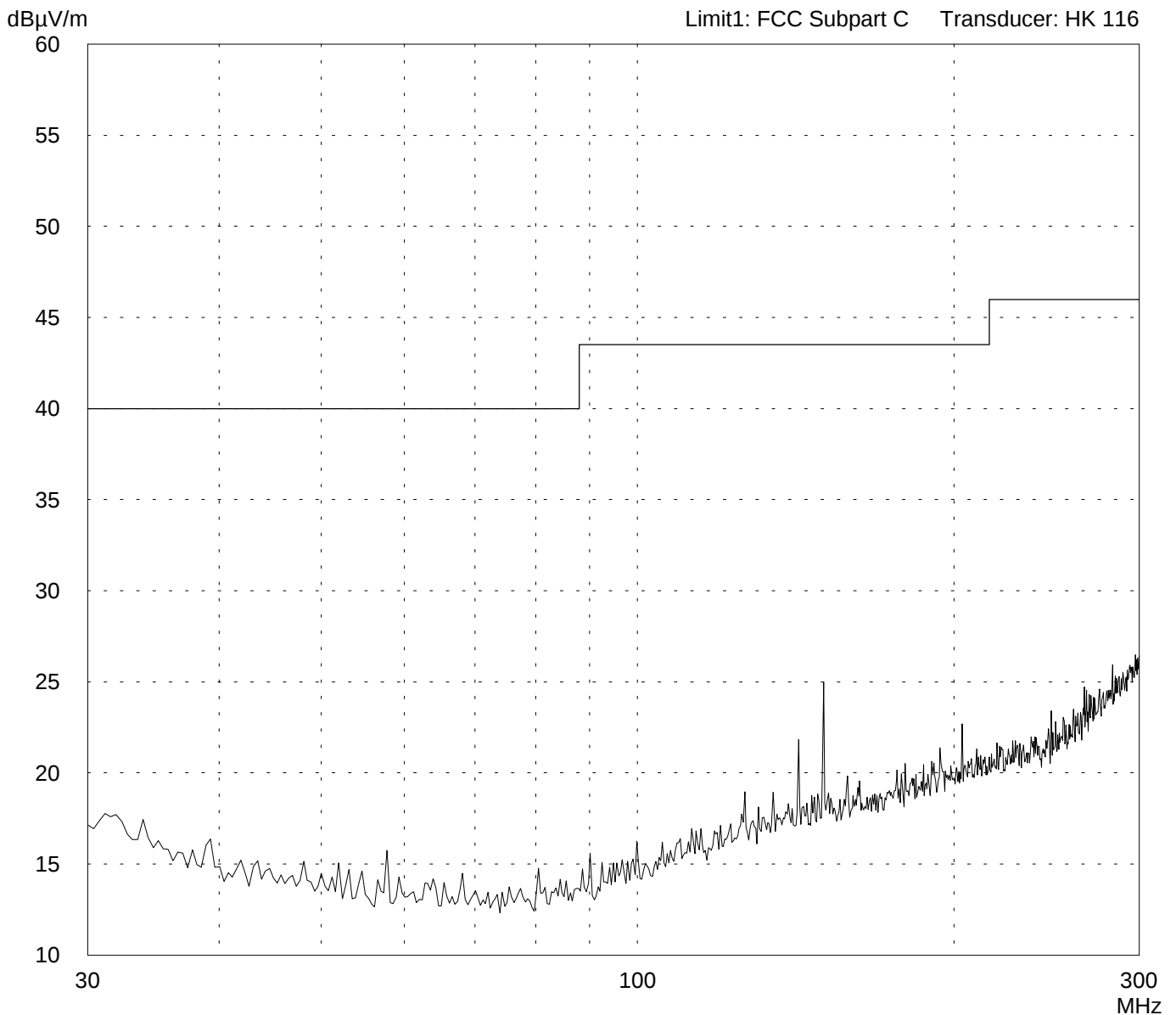
Date of test: 01/17/2001
Operator: R. Kohlhäufel

Test performed: automatically
File name:

Mode:
- Hardware CM 5LL
- TX in stand by mode
- with tag
- External power supply: DC 12.0 V

Detector:
Peak

List of values:
10 dB Margin 50 Subranges



Result:
Prescan

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Radiated Emission Test 300 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Horizontal Polarization

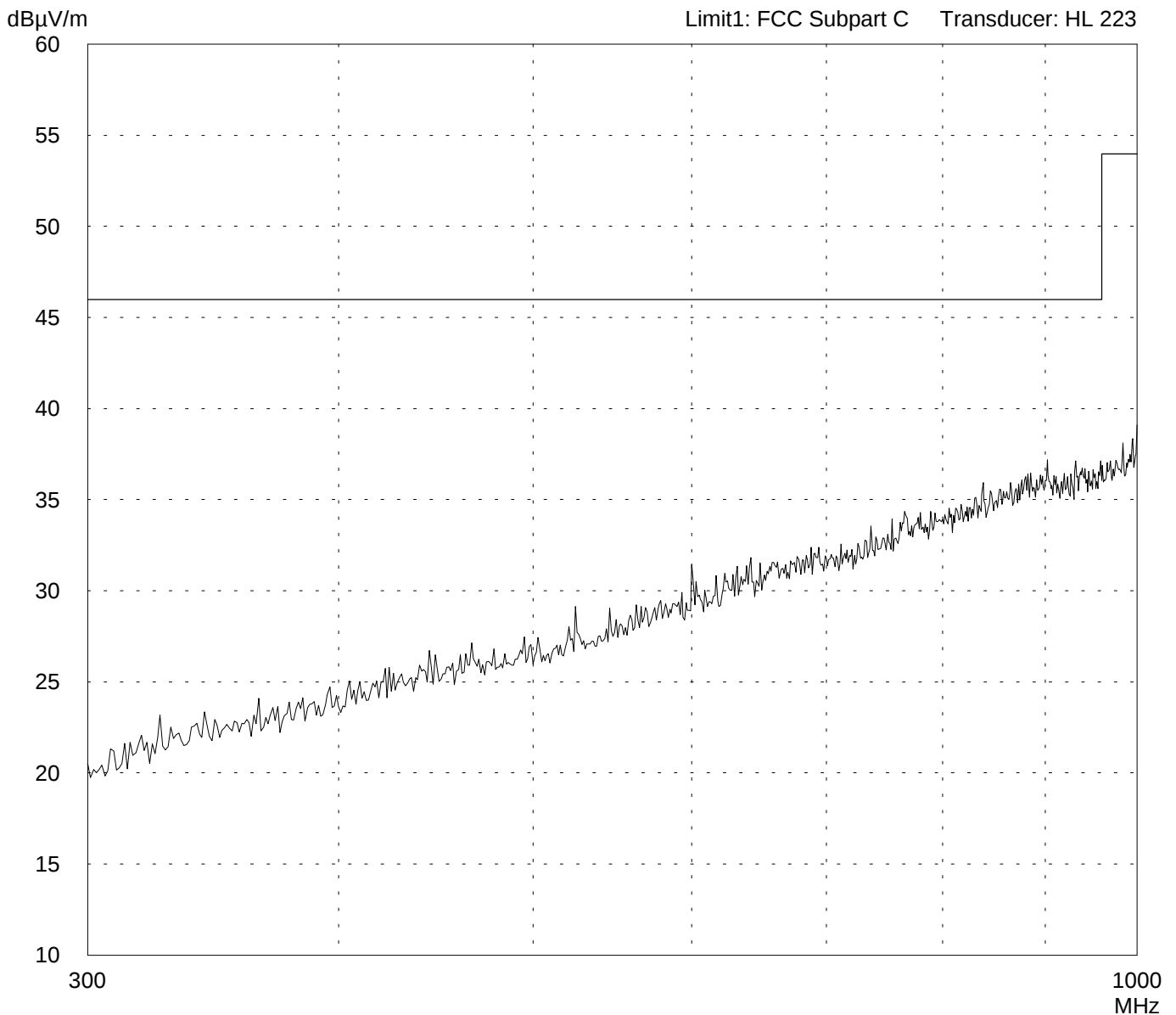
Date of test: 01/17/2001
Operator: R. Kohlhäufel

Test performed: automatically
File name:

Mode:
- Hardware CM 5LL
- TX in stand by mode
- with tag
- External power supply: DC 12.0 V

Detector:
Peak

List of values:
Selected by hand



Result:
Prescan

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Radiated Emission Test 30 MHz - 300 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Vertical Polarization

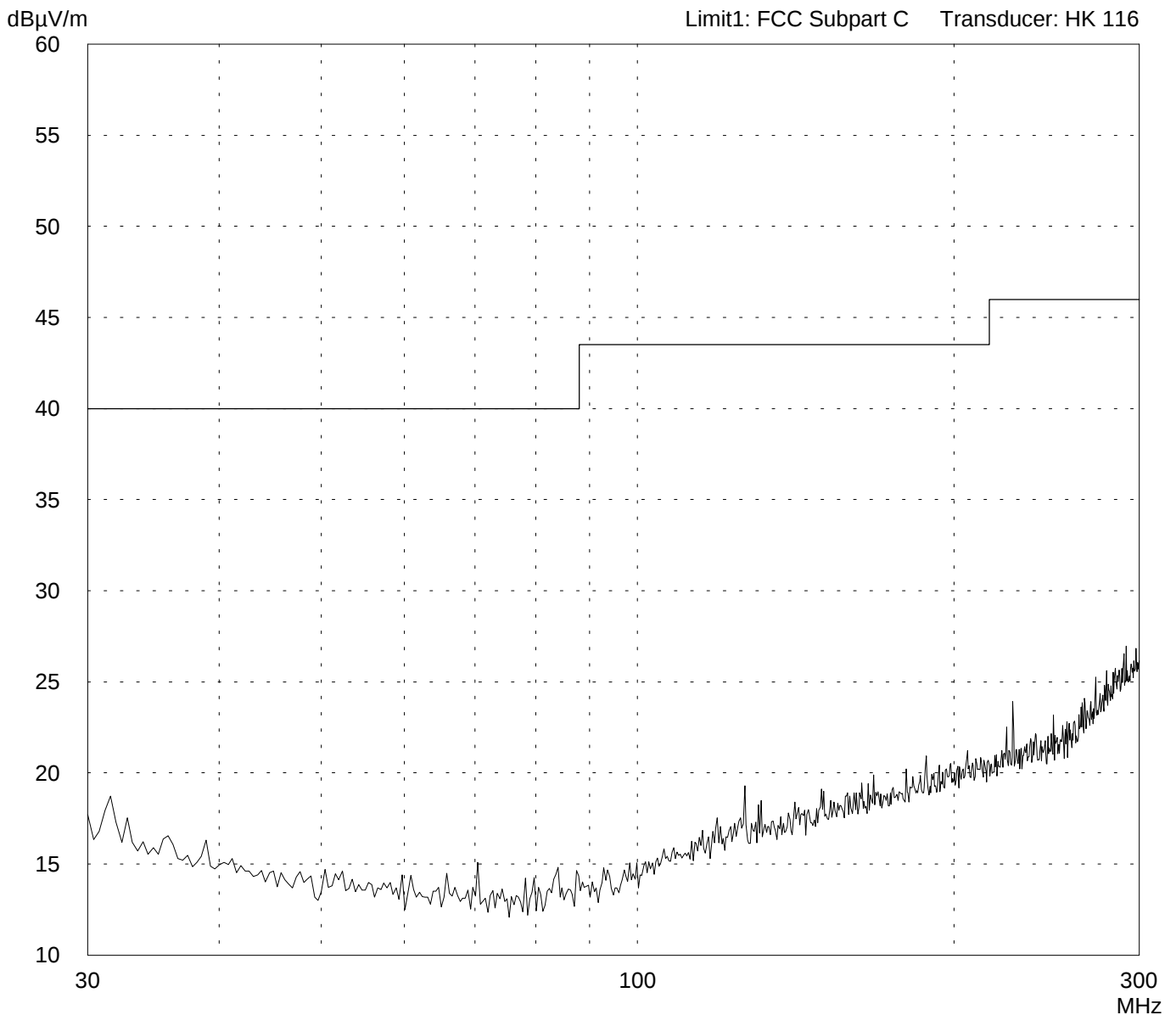
Date of test: 01/17/2001
Operator: R. Kohlhäufel

Test performed: automatically
File name:

Mode:
- Hardware CM 5LL
- TX in stand by mode
- with tag
- External power supply: DC 12.0 V

Detector:
Peak

List of values:
10 dB Margin 50 Subranges



Result:
Prescan

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Radiated Emission Test 300 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Vertical Polarization

Date of test: 01/17/2001 Operator: R. Kohlhäufel

Test performed: automatically File name:

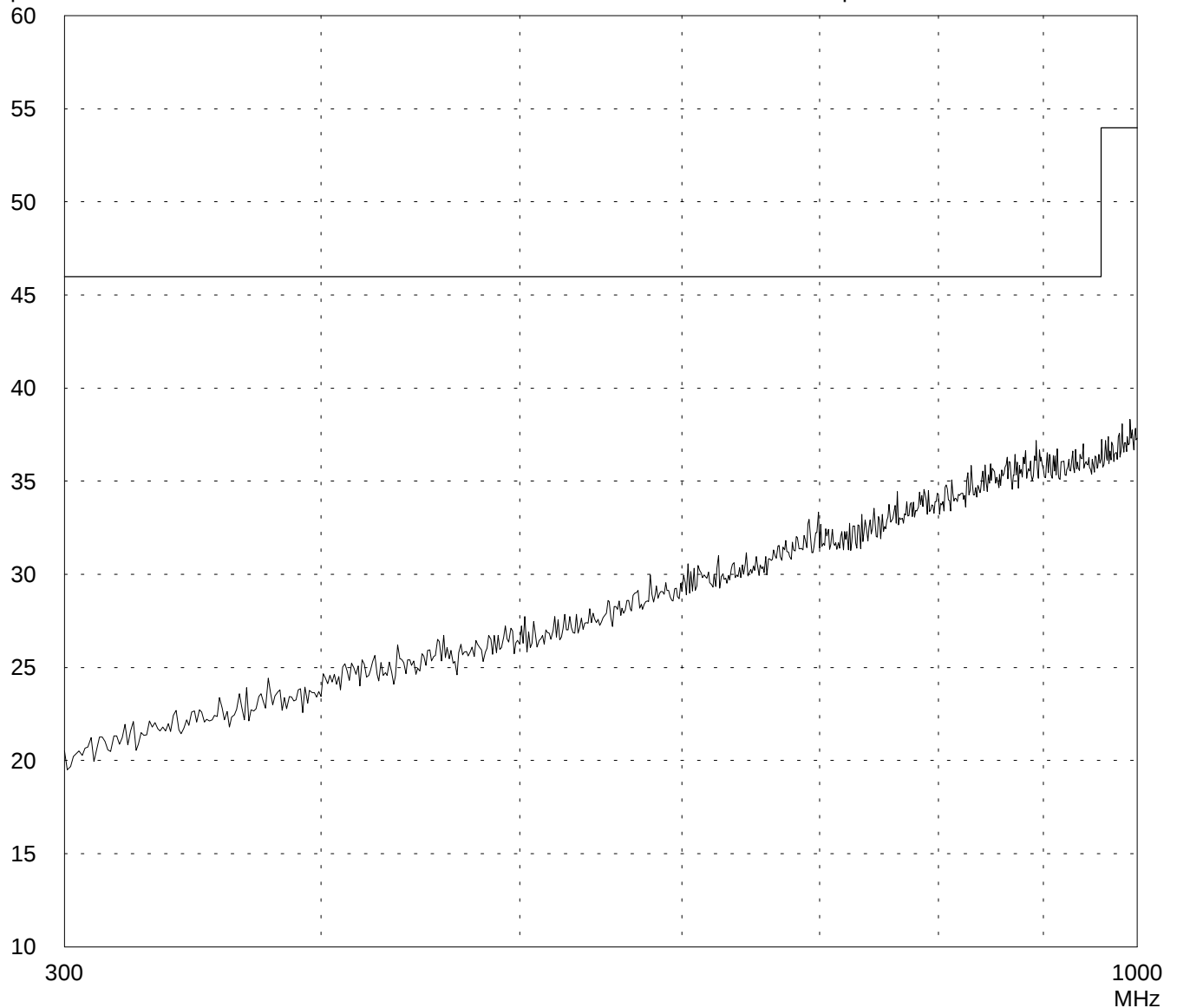
Mode:
- Hardware CM 5LL
- TX in stand by mode
- with tag
- External power supply: DC 12.0 V

Detector:
Peak

List of values:
Selected by hand

dB μ V/m

Limit1: FCC Subpart C Transducer: HL 223



Result:
Prescan

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Radiated Emission Test 30 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Open area test-site I

Tested on:
Test distance 3 meters
Horizontal Polarization

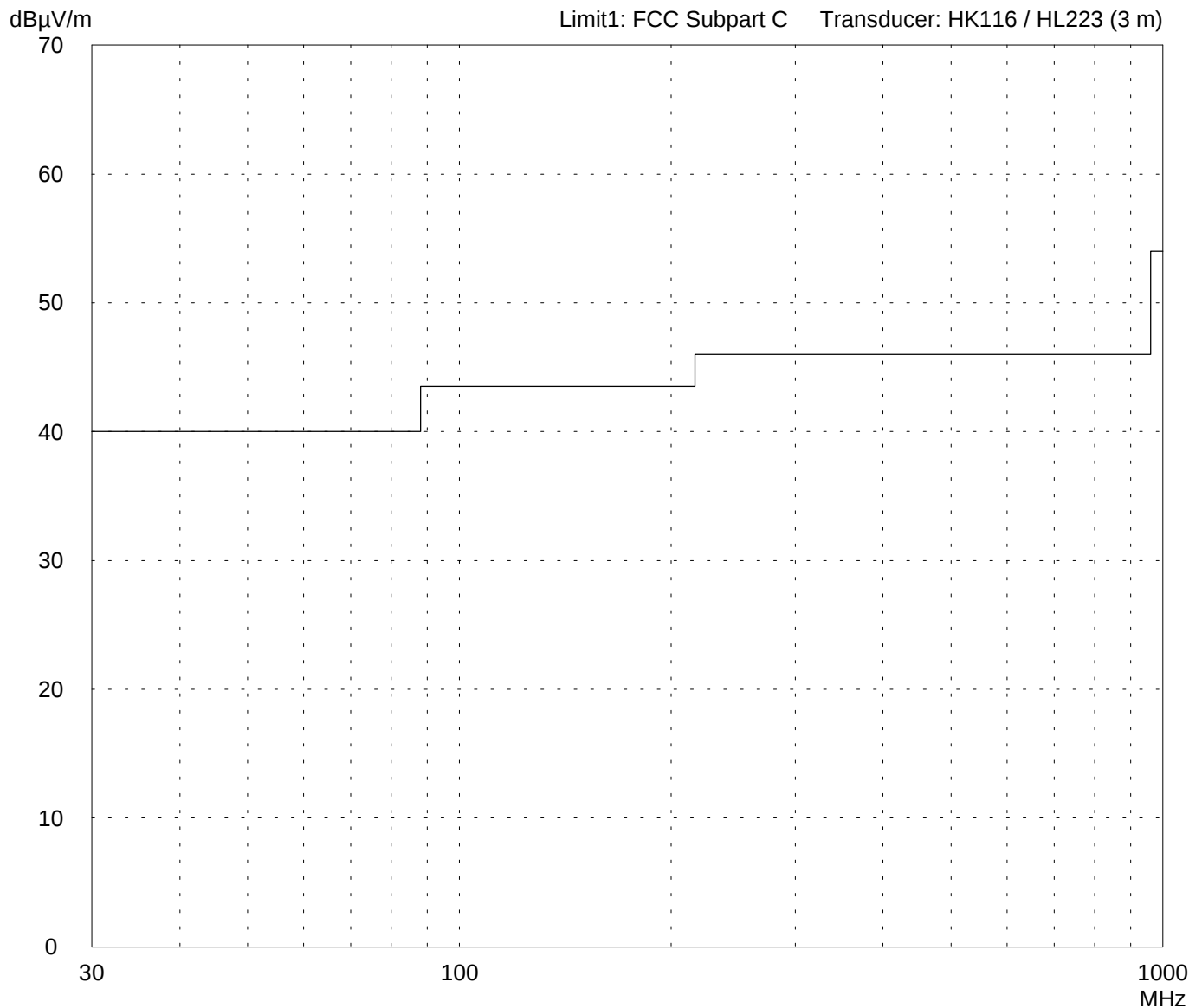
Date of test: 01/18/2001 Operator: R. Kohlhäufel

Test performed: by hand File name:

Mode:
- Hardware CM 5LL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Quasi-Peak

List of values:
Selected by hand



Result:
Limit kept

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Radiated Emission Test 30 MHz - 1 GHz
according to FCC Part 15 Subpart C

Model: Car access system 125 kHz CAS	
Serial no.: 302	
Applicant: Bayerische Motoren Werke AG	
Test site: Open area test-site I	
Tested on: Test distance 3 meters Horizontal Polarization	
Date of test: 01/18/2001	Operator: R. Kohlhäufel
Test performed: by hand	File name:

Mode:

- Hardware CM 5LL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Quasi-Peak

List of values:
Selected by hand

<i>Frequency MHz</i>	<i>Reading dBμV</i>	<i>Correction factor dB</i>	<i>Value dBμV/m</i>	<i>Limit dBμV/m</i>	<i>Limit exceeded</i>
no results					

Result:
Limit kept

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Radiated Emission Test 30 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Open area test-site I

Tested on:
Test distance 3 meters
Vertical Polarization

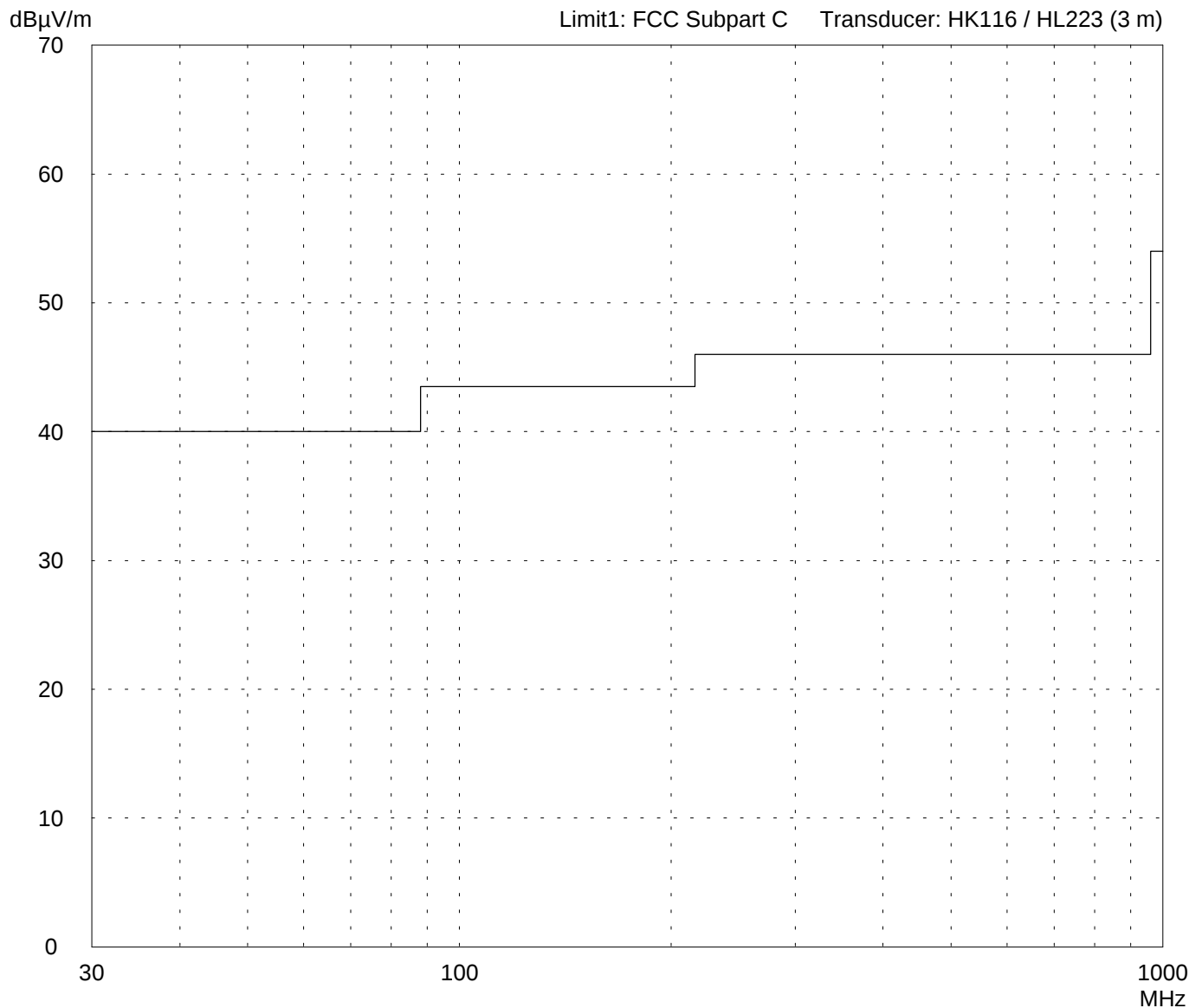
Date of test: 01/18/2001 Operator: R. Kohlhäufel

Test performed: by hand File name:

Mode:
- Hardware CM 5LL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Quasi-Peak

List of values:
Selected by hand



Result:
Limit kept

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Radiated Emission Test 30 MHz - 1 GHz
according to FCC Part 15 Subpart C

Model: Car access system 125 kHz CAS	
Serial no.: 302	
Applicant: Bayerische Motoren Werke AG	
Test site: Open area test-site I	
Tested on: Test distance 3 meters Vertical Polarization	
Date of test: 01/18/2001	Operator: R. Kohlhäufel
Test performed: by hand	File name:

Mode:

- Hardware CM 5LL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Quasi-Peak

List of values:
Selected by hand

<i>Frequency MHz</i>	<i>Reading dBμV</i>	<i>Correction factor dB</i>	<i>Value dBμV/m</i>	<i>Limit dBμV/m</i>	<i>Limit exceeded</i>
no results					

Result:
Limit kept

Project file:
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Radiated Emission Test 30 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Open area test-site I

Tested on:
Test distance 3 meters
Horizontal Polarization

Date of test: 01/18/2001 Operator: R. Kohlhäufel

Test performed: by hand File name:

Mode:
- Hardware CM 5LL

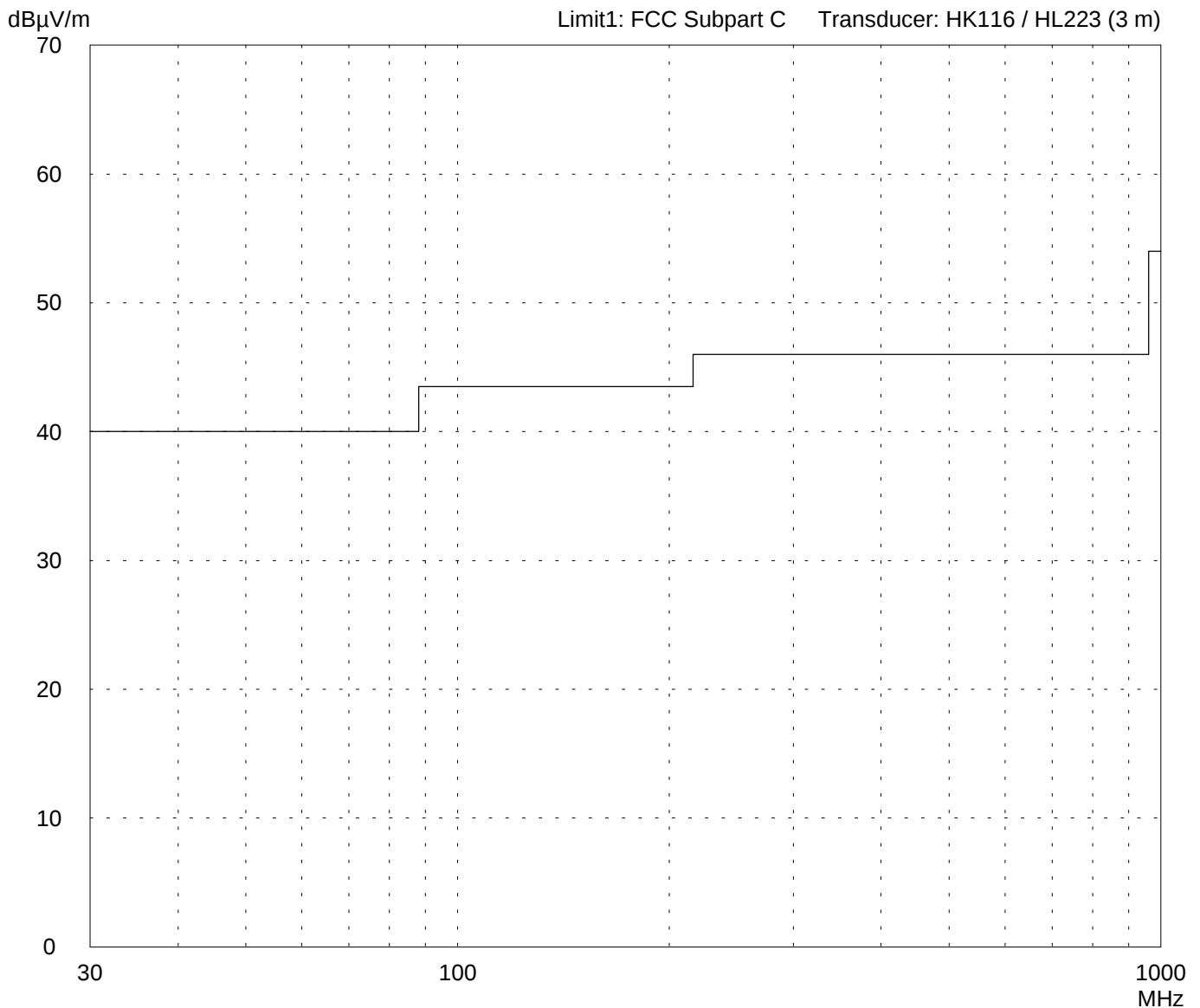
- TX in stand by mode

- with tag

- External power supply: DC 12.0 V

Detector:
Quasi-Peak

List of values:
Selected by hand



Result:
Limit kept

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Radiated Emission Test 30 MHz - 1 GHz
according to FCC Part 15 Subpart C

Model: Car access system 125 kHz CAS	
Serial no.: 302	
Applicant: Bayerische Motoren Werke AG	
Test site: Open area test-site I	
Tested on: Test distance 3 meters Horizontal Polarization	
Date of test: 01/18/2001	Operator: R. Kohlhäufel
Test performed: by hand	File name:

Mode:

- Hardware CM 5LL
- TX in stand by mode
- with tag
- External power supply: DC 12.0 V

Detector:
Quasi-Peak

List of values:
Selected by hand

<i>Frequency MHz</i>	<i>Reading dBμV</i>	<i>Correction factor dB</i>	<i>Value dBμV/m</i>	<i>Limit dBμV/m</i>	<i>Limit exceeded</i>
no results					

Result:
Limit kept

Project file:
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Radiated Emission Test 30 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Open area test-site I

Tested on:
Test distance 3 meters
Vertical Polarization

Date of test: 01/18/2001 Operator: R. Kohlhäufel

Test performed: by hand File name:

Mode:
- Hardware CM 5LL

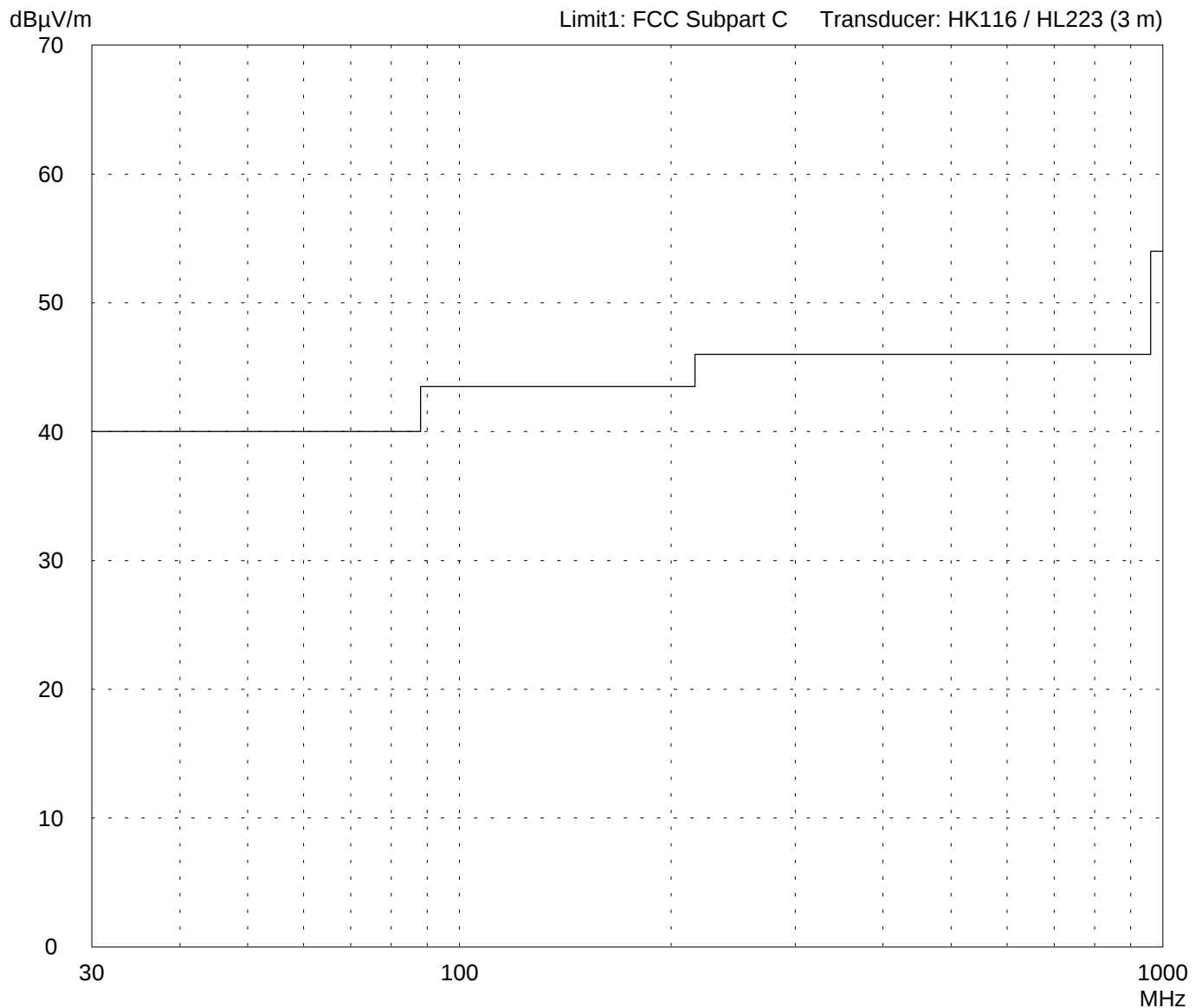
- TX in stand by mode

- with tag

- External power supply: DC 12.0 V

Detector:
Quasi-Peak

List of values:
Selected by hand



Result:
Limit kept

Project file:
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Radiated Emission Test 30 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
302

Applicant:
Bayerische Motoren Werke AG

Test site:
Open area test-site I

Tested on:
Test distance 3 meters
Vertical Polarization

Date of test: 01/18/2001 Operator: R. Kohlhäufel

Test performed: by hand File name:

Mode:
- Hardware CM 5LL

- TX in stand by mode

- with tag

- External power supply: DC 12.0 V

Detector:
Quasi-Peak

List of values:
Selected by hand

<i>Frequency MHz</i>	<i>Reading dBμV</i>	<i>Correction factor dB</i>	<i>Value dBμV/m</i>	<i>Limit dBμV/m</i>	<i>Limit exceeded</i>
no results					

Result:
Limit kept

Project file:
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11.2. Test Results of Sample 2 CM5RL

Radiated Emission Test 9 kHz - 30 MHz
according to FCC Part 15 Subpart C, §15.209

Model: Car access system 125 kHz CAS
Type: Remote control transmitter
Serial No.: 302
Applicant: Bayerische Motoren Werke AG
Test-site: Open area test-site I
Test distances: 3 meters
Date of test: 01/22/2001
Operator: R. Kohlhäufel
Mode:
- Hardware 5RL
- TX active (125 kHz)
- without tag

Frequency [MHz]	Detector	Measuring Bandwidth [kHz]	Received Voltage			Correction [dB]	Fieldstrength				Limit [dBμV/m]
			3 m [dBμV]	10 m [dBμV]	30 m [dBμV]		3 m [dBμV/m]	10 m [dBμV/m]	30 m [dBμV/m]	300 m [dBμV/m]	
0.125	QP	0.2	63.7	37.4	< 11.0	20.0	83.7	57.4	< 31.0	-16.9	
0.125	AV	0.2	63.7	37.3	< 11.0	20.0	83.7	57.3	< 31.0	-17.3	25.7

Note 1: Fieldstrength value in 300 meters distance is extrapolated according to §15.31 f(2) performing two measurements in 3 and 10 meters distance

Note 2: Frequencies are selected according to prescan in shielded room with test distance 3 meters

Result: The limits are kept.

**Radiated Emission Test 9 kHz - 30 MHz
according to FCC Part 15 Subpart C, §15.209**

Model: Car access system 125 kHz CAS
Type: Remote control transmitter
Serial No.: 302
Applicant: Bayerische Motoren Werke AG
Test-site: Open area test-site I
Test distances: 3 meters
Date of test: 01/22/2001
Operator: R. Kohlhäufel
Mode:
- Hardware 5RL
- TX active (125 kHz)
- with tag

Frequency [MHz]	Detector	Measuring Bandwidth [kHz]	Received Voltage			Correction [dB]	Fieldstrength				Limit [dBμV/m]
			3 m [dBμV]	10 m [dBμV]	30 m [dBμV]		3 m [dBμV/m]	10 m [dBμV/m]	30 m [dBμV/m]	300 m [dBμV/m]	
0.125	QP	0.2	62.7	36.2	< 11.0	20.0	82.7	56.2	< 31.0	-18.7	
0.125	AV	0.2	62.7	36.0	< 11.0	20.0	82.7	56.0	< 31.0	-19.4	25.7

Note 1: Fieldstrength value in 300 meters distance is extrapolated according to §15.31 f(2) performing two measurements in 3 and 10 meters distance

Note 2: Frequencies are selected according to prescan in shielded room with test distance 3 meters

Result: The limits are kept.

Radiated Emission Test 9 kHz - 30 MHz
according to FCC Part 15 Subpart C, §15.209

Model: Car access system 125 kHz CAS
Type: Remote control transmitter
Serial No.: 302
Applicant: Bayerische Motoren Werke AG
Test-site: Open area test-site I
Test distances: 3 meters
Date of test: 01/22/2001
Operator: R. Kohlhäufel
Mode: - Hardware 5RL
- TX in Stand by mode

Frequency [MHz]	Detector	Measuring Bandwidth [kHz]	Received Voltage			Correction [dB]	Fieldstrength				Limit [dBμV/m]
			3 m [dBμV]	10 m [dBμV]	30 m [dBμV]		3 m [dBμV/m]	10 m [dBμV/m]	30 m [dBμV/m]	300 m [dBμV/m]	
0.009-30								(*)	(*)	(*)	

(*) = No levels above noise floor detected

Note 1: Fieldstrength value in 300 meters distance is extrapolated according to §15.31 f(2) performing two measurements in 3 and 10 meters distance

Note 2: Frequencies are selected according to prescan in shielded room with test distance 3 meters

Result: The limits are kept.

Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
400

Applicant:
Bayerische Motoren Werke AG

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

Date of test:
01/18/2001

Operator:
R. Kohlhäufel

Test performed:
automatically

File name:

Mode:

- Hardware CM 5RL

- TX active (125 kHz)

- without tag

- External power supply: DC 12.0 V

Detector:

Peak / Final Results: QP

Final results:

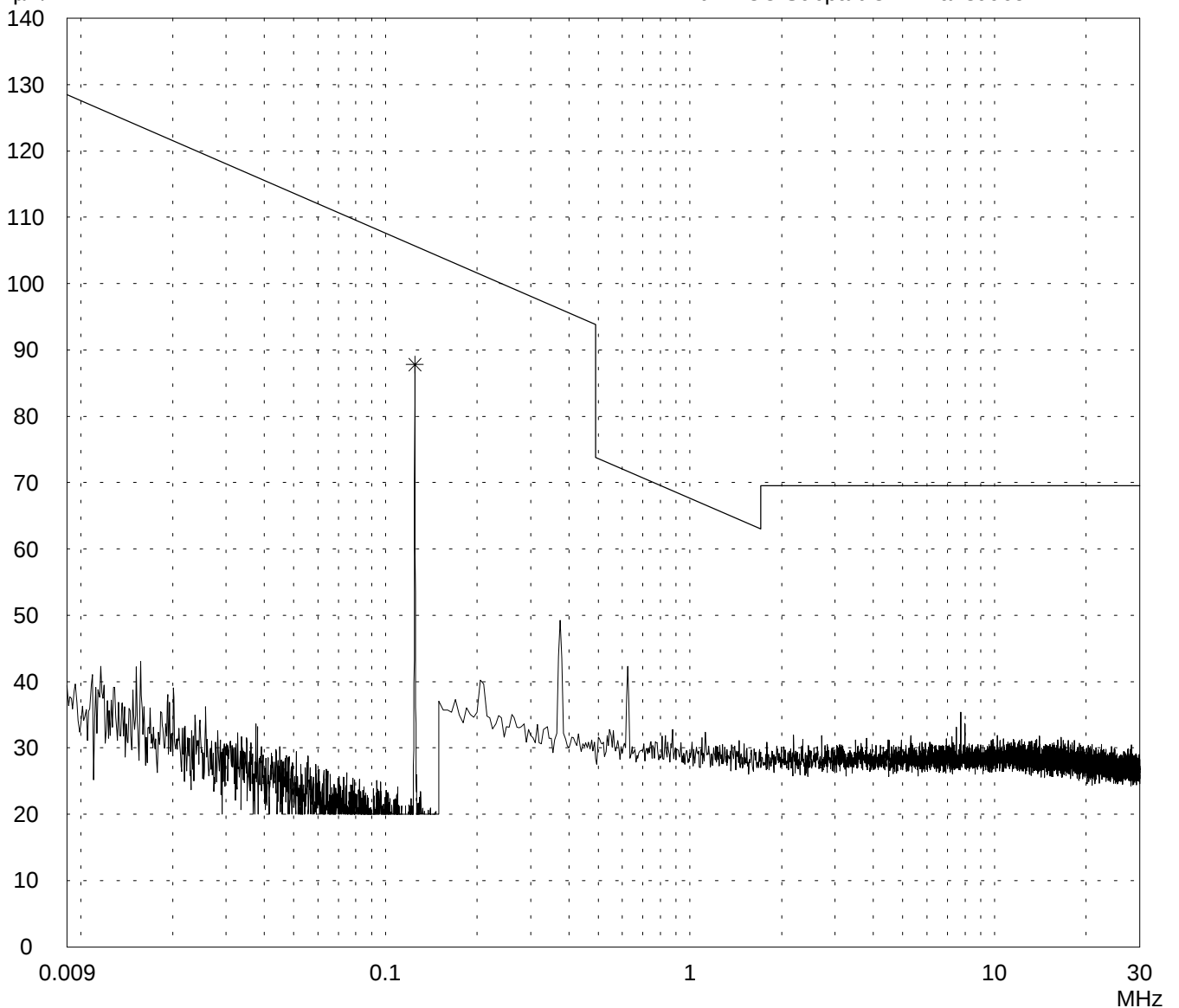
20 dB Margin

25 Subranges

dB μ V/m

Limit1: FCC Subpart C

Transducer: HFH2-Z2



Result:
Prescan

Project file:
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Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model: Car access system 125 kHz CAS	Mode: - Hardware CM 5RL - TX active (125 kHz) - without tag - External power supply: DC 12.0 V
Serial no.: 400	
Applicant: Bayerische Motoren Werke AG	
Test site: Shielded room, cabin no. 2	
Tested on: Test distance 3 metres	
Date of test: 01/18/2001 Operator: R. Kohlhäufel	
Test performed: automatically File name:	

Detector:	Final results:
Peak / Final Results: QP	20 dB Margin 25 Subranges

Frequency MHz	Reading dBμV	Correction factor dB	Value dBμV/m	Limit dBμV/m	Limit exceeded
0.1249	67.8	20.0	87.8	105.7	

Result: Prescan	Project file: 50217-00699	Page 68 of 98 Pages
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Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
400

Applicant:
Bayerische Motoren Werke AG

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

Date of test:
01/18/2001

Operator:
R. Kohlhäufel

Test performed:
automatically

File name:

Mode:

- Hardware CM 5RL

- TX active (125 kHz)

- without tag

- External power supply: DC 12.0 V

Detector:

Average / Final Results: AV

Final results:

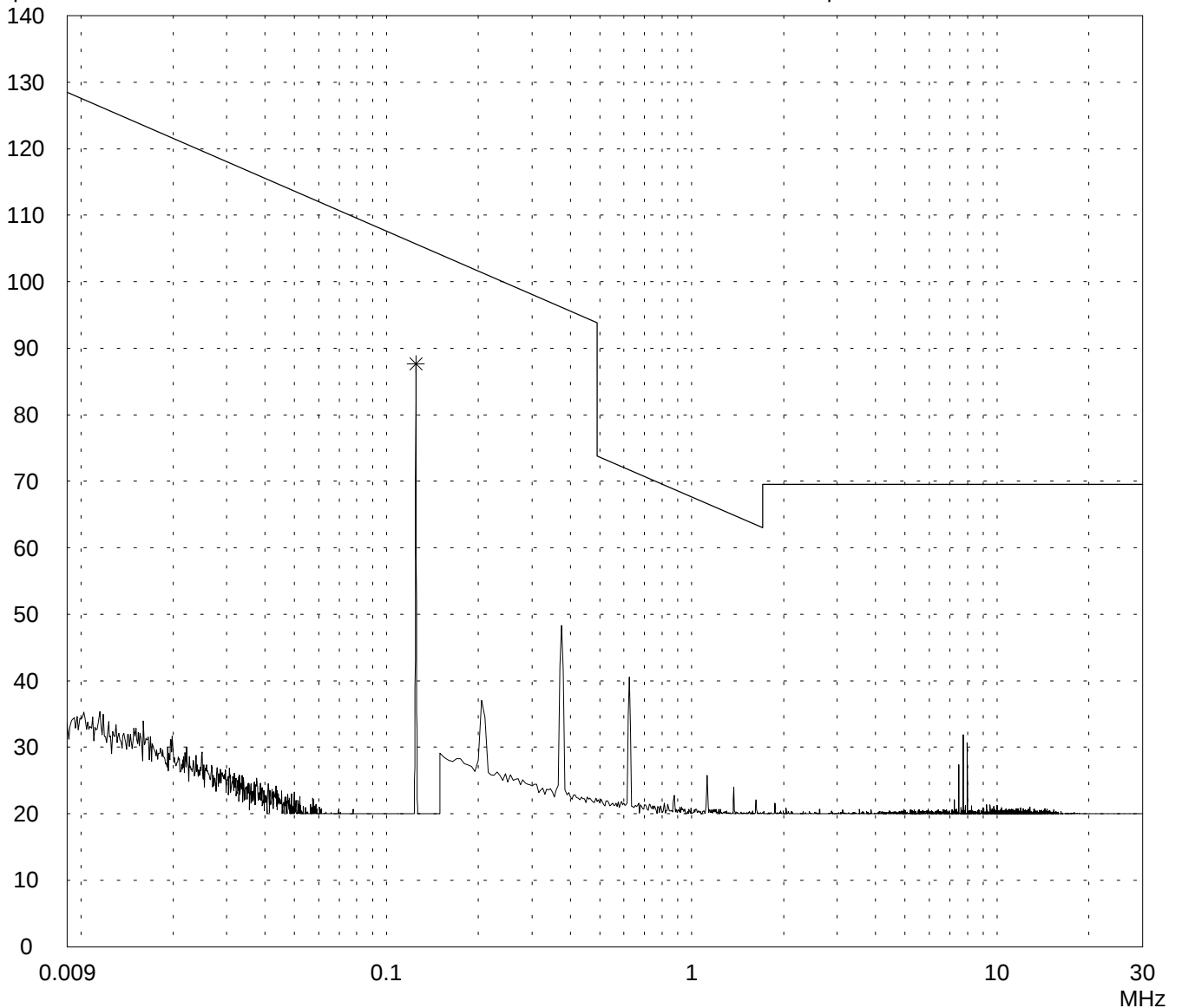
20 dB Margin

25 Subranges

$\text{dB}\mu\text{V/m}$

Limit1: FCC Subpart C

Transducer: HFH2-Z2



Result:
Prescan

Project file:
50217-00699

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Radiated Emission Test 9 kHz - 30 MHz
according to FCC Part 15 Subpart C

Model: Car access system 125 kHz CAS	Mode: - Hardware CM 5RL - TX active (125 kHz) - without tag - External power supply: DC 12.0 V
Serial no.: 400	
Applicant: Bayerische Motoren Werke AG	
Test site: Shielded room, cabin no. 2	
Tested on: Test distance 3 metres	
Date of test: 01/18/2001	Operator: R. Kohlhäufel
Test performed: automatically	File name:

Detector: Average / Final Results: AV	Final results: 20 dB Margin	25 Subranges
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<i>Frequency MHz</i>	<i>Reading dBμV</i>	<i>Correction factor dB</i>	<i>Value dBμV/m</i>	<i>Limit dBμV/m</i>	<i>Limit exceeded</i>
0.1249	67.6	20.0	87.6	105.7	

Result: Prescan	Project file: 50217-00699	Page 70 of 98 Pages
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Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
400

Applicant:
Bayerische Motoren Werke AG

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

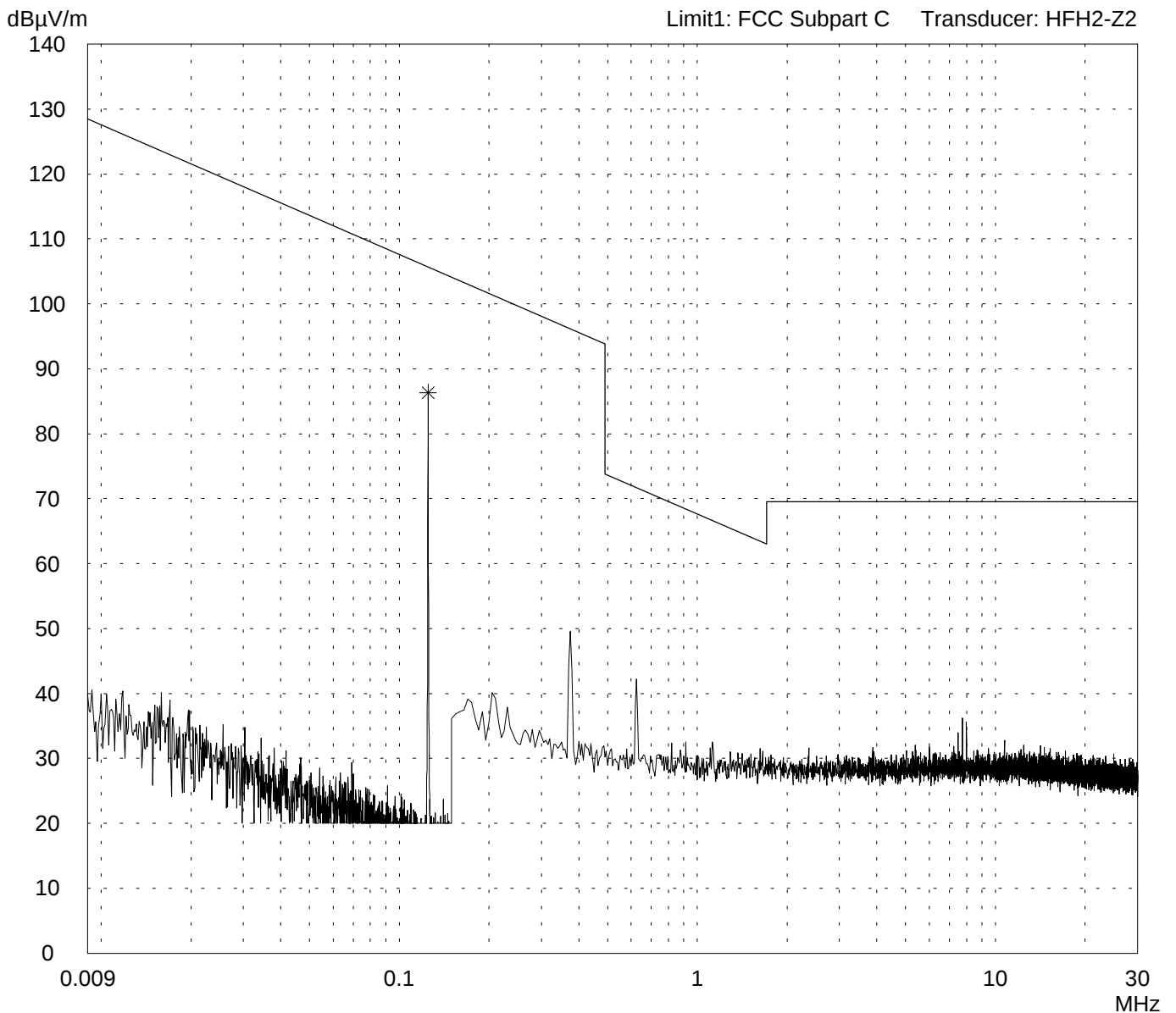
Date of test: 01/18/2001
Operator: R. Kohlhäufel

Test performed: automatically
File name:

Mode:
- Hardware CM 5RL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Peak / Final Results: QP

Final results:
20 dB Margin 25 Subranges



Result:
Prescan

Project file:
50217-00699

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Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model: Car access system 125 kHz CAS	Mode: - Hardware CM 5RL - TX active (125 kHz) - with tag - External power supply: DC 12.0 V
Serial no.: 400	
Applicant: Bayerische Motoren Werke AG	
Test site: Shielded room, cabin no. 2	
Tested on: Test distance 3 metres	
Date of test: 01/18/2001 Operator: R. Kohlhäufel	
Test performed: automatically File name:	

Detector:	Final results:
Peak / Final Results: QP	20 dB Margin 25 Subranges

<i>Frequency MHz</i>	<i>Reading dBμV</i>	<i>Correction factor dB</i>	<i>Value dBμV/m</i>	<i>Limit dBμV/m</i>	<i>Limit exceeded</i>
0.1249	66.3	20.0	86.3	105.7	

Result: Prescan	Project file: 50217-00699	Page 72 of 98 Pages
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Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
400

Applicant:
Bayerische Motoren Werke AG

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

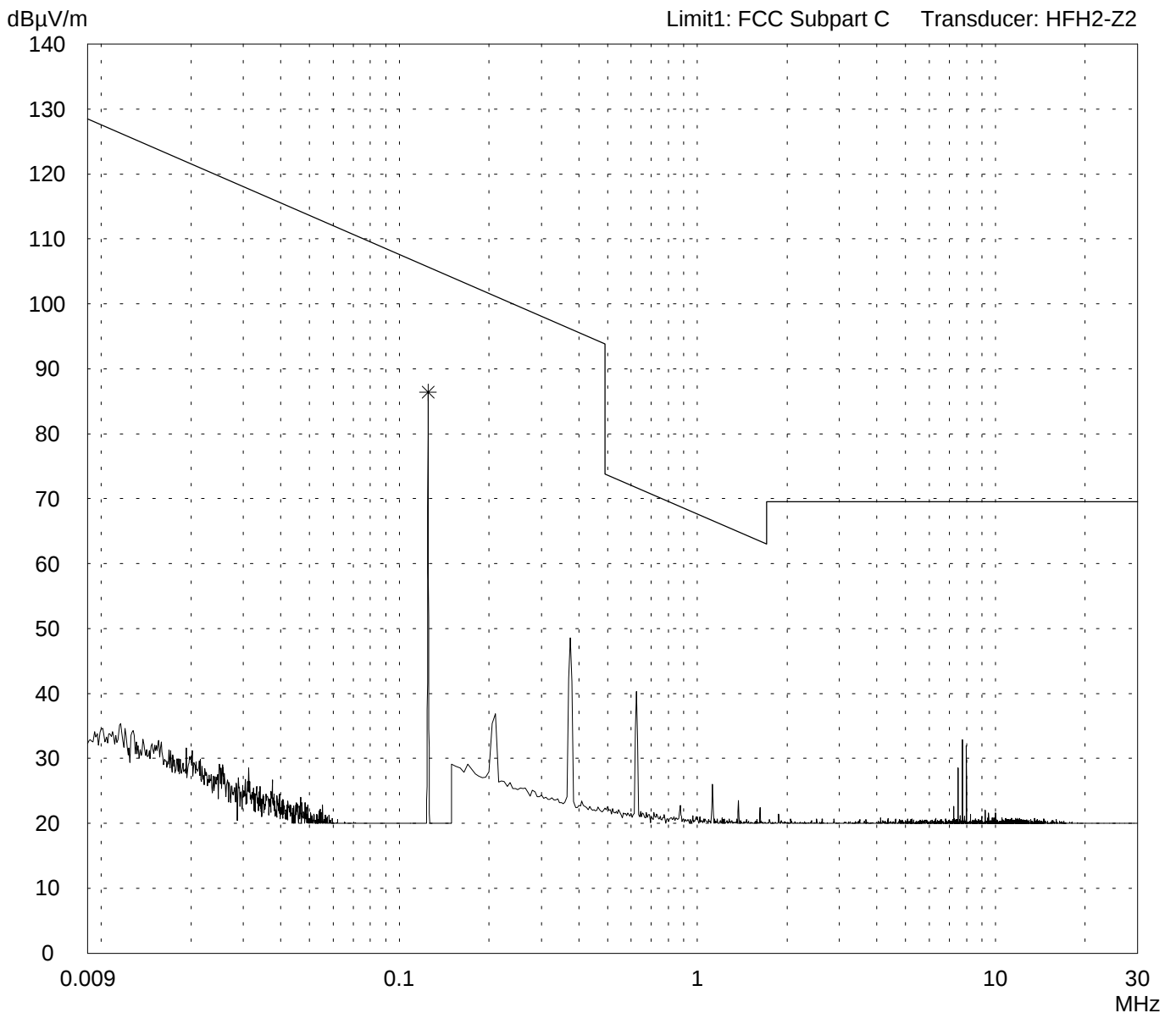
Date of test: 01/18/2001
Operator: R. Kohlhäufel

Test performed: automatically
File name:

Mode:
- Hardware CM 5RL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Average / Final Results: AV

Final results:
20 dB Margin 25 Subranges



Result:
Prescan

Project file:
50217-00699

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Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model: Car access system 125 kHz CAS	Mode: - Hardware CM 5RL - TX active (125 kHz) - with tag - External power supply: DC 12.0 V
Serial no.: 400	
Applicant: Bayerische Motoren Werke AG	
Test site: Shielded room, cabin no. 2	
Tested on: Test distance 3 metres	
Date of test: 01/18/2001 Operator: R. Kohlhäufel	
Test performed: automatically File name:	

Detector: Average / Final Results: AV	Final results: 20 dB Margin	25 Subranges
--	--------------------------------	--------------

Frequency MHz	Reading dBμV	Correction factor dB	Value dBμV/m	Limit dBμV/m	Limit exceeded
0.1249	66.4	20.0	86.4	105.7	

Result: Prescan	Project file: 50217-00699	Page 74 of 98 Pages
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Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
400

Applicant:
Bayerische Motoren Werke AG

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

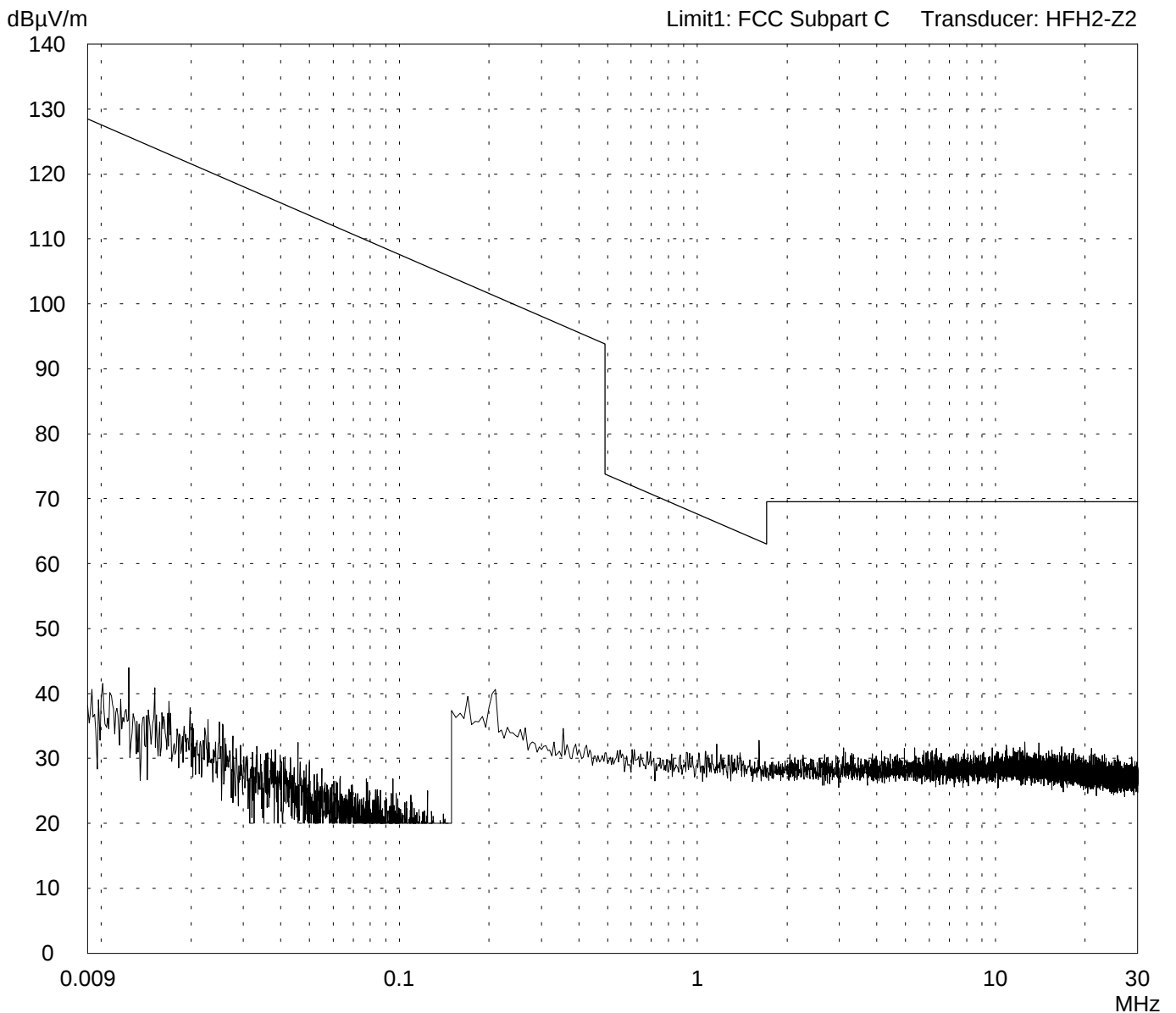
Date of test: 01/18/2001
Operator: R. Kohlhäufel

Test performed: automatically
File name:

Mode:
- Hardware CM 5RL
- TX in stand by mode
- with tag
- External power supply: DC 12.0 V

Detector:
Peak / Final Results: QP

Final results:
20 dB Margin 25 Subranges



Result:
Prescan

Project file:
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Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
400

Applicant:
Bayerische Motoren Werke AG

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

Date of test: 01/18/2001 Operator: R. Kohlhäufel

Test performed: automatically File name:

Mode:
- Hardware CM 5RL
- TX in stand by mode
- with tag
- External power supply: DC 12.0 V

Detector:
Peak / Final Results: QP

Final results:
20 dB Margin 25 Subranges

<i>Frequency MHz</i>	<i>Reading dBμV</i>	<i>Correction factor dB</i>	<i>Value dBμV/m</i>	<i>Limit dBμV/m</i>	<i>Limit exceeded</i>
no results					

Result:
Prescan

Project file:
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**Radiated Emission 30 MHz - 1 GHz (Final Test)
according to FCC Part 15 Subpart C, §15.209**

Model: Car access system 125 kHz CAS
 Type: Remote control transmitter
 Serial No.: 302
 Applicant: Bayerische Motoren Werke AG
 Test-site: Open area test-site I
 Test distance: 3 meters
 Date of test: 01/22/2001
 Operator: R. Kohlhäufel
 Mode:
 - Hardware CM 5RL
 - TX active (125 kHz)
 - without tag

Detector: Quasi-Peak (CISPR)

Polarization: horizontal

Frequency [MHz]	Receiver reading [dBμV]	Correction factor [dB]	Fieldstrength [dBμV/m]	Limit Average [dBμV/m]
30-1000			(*)	

(*) = No levels above noise floor detected

Result: The limits are kept.

**Radiated Emission 30 MHz - 1 GHz (Final Test)
according to FCC Part 15 Subpart C, §15.231.b**

Model: Car access system 125 kHz CAS
 Type: Remote control transmitter
 Serial No.: 302
 Applicant: Bayerische Motoren Werke AG
 Test-site: Open area test-site I
 Test distance: 3 meters
 Date of test: 01/22/2001
 Operator: R. Kohlhäufel
 Mode:
 - Hardware CM 5RL
 - TX active (125 kHz)
 - without tag

Detector: Quasi-Peak (CISPR)

Polarization: vertical

Frequency [MHz]	Receiver reading [dBμV]	Correction factor [dB]	Fieldstrength [dBμV/m]	Limit Average [dBμV/m]
30-1000			(*)	

(*) = No levels above noise floor detected

Result: The limits are kept.

**Radiated Emission 30 MHz - 1 GHz (Final Test)
according to FCC Part 15 Subpart C, §15.209**

Model: Car access system 125 kHz CAS
 Type: Remote control transmitter
 Serial No.: 302
 Applicant: Bayerische Motoren Werke AG
 Test-site: Open area test-site I
 Test distance: 3 meters
 Date of test: 01/22/2001
 Operator: R. Kohlhäufel
 Mode:
 - Hardware CM 5RL
 - TX active (125 kHz)
 - with tag

Detector: Quasi-Peak (CISPR)

Polarization: horizontal

Frequency [MHz]	Receiver reading [dBμV]	Correction factor [dB]	Fieldstrength [dBμV/m]	Limit Average [dBμV/m]
30-1000			(*)	

(*) = No levels above noise floor detected

Result: The limits are kept.

**Radiated Emission 30 MHz - 1 GHz (Final Test)
according to FCC Part 15 Subpart C, §15.231.b**

Model: Car access system 125 kHz CAS
 Type: Remote control transmitter
 Serial No.: 302
 Applicant: Bayerische Motoren Werke AG
 Test-site: Open area test-site I
 Test distance: 3 meters
 Date of test: 01/22/2001
 Operator: R. Kohlhäufel
 Mode:
 - Hardware CM 5RL
 - TX active (125 kHz)
 - with tag

Detector: Quasi-Peak (CISPR)

Polarization: vertical

Frequency [MHz]	Receiver reading [dBμV]	Correction factor [dB]	Fieldstrength [dBμV/m]	Limit Average [dBμV/m]
30-1000			(*)	

(*) = No levels above noise floor detected

Result: The limits are kept.

**Radiated Emission 30 MHz - 1 GHz (Final Test)
according to FCC Part 15 Subpart C, §15.209**

Model: Car access system 125 kHz CAS
 Type: Remote control transmitter
 Serial No.: 302
 Applicant: Bayerische Motoren Werke AG
 Test-site: Open area test-site I
 Test distance: 3 meters
 Date of test: 01/22/2001
 Operator: R. Kohlhäufel
 Mode: - Hardware CM 5RL
 -TX in Stand by mode

Detector: Quasi-Peak (CISPR)

Polarization: horizontal

Frequency [MHz]	Receiver reading [dBμV]	Correction factor [dB]	Fieldstrength [dBμV/m]	Limit Average [dBμV/m]
30-1000			(*)	

(*) = No levels above noise floor detected

Result: The limits are kept.

**Radiated Emission 30 MHz - 1 GHz (Final Test)
according to FCC Part 15 Subpart C, §15.231.b**

Model: Car access system 125 kHz CAS
 Type: Remote control transmitter
 Serial No.: 302
 Applicant: Bayerische Motoren Werke AG
 Test-site: Open area test-site I
 Test distance: 3 meters
 Date of test: 01/22/2001
 Operator: R. Kohlhäufel
 Mode: - Hardware CM 5RL
 -TX in Stand by mode

Detector: Quasi-Peak (CISPR)

Polarization: vertical

Frequency [MHz]	Receiver reading [dBμV]	Correction factor [dB]	Fieldstrength [dBμV/m]	Limit Average [dBμV/m]
30-1000			(*)	

(*) = No levels above noise floor detected

Result: The limits are kept.

Radiated Emission Test 30 MHz - 300 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
400

Applicant:
Bayerische Motoren Werke AG

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Horizontal Polarization

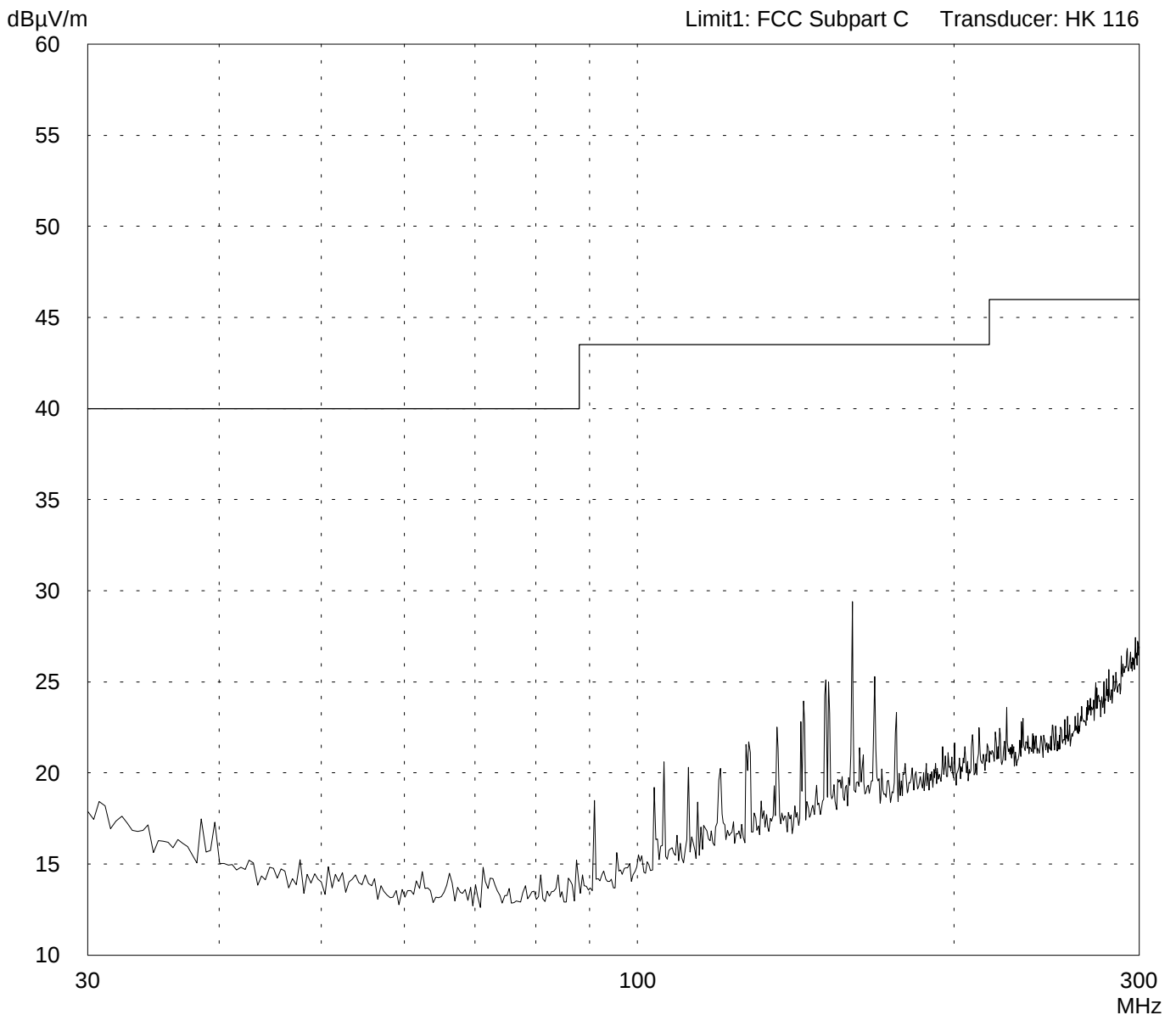
Date of test: 01/17/2001 Operator: R. Kohlhäufel

Test performed: automatically File name:

Mode:
- Hardware CM 5RL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Peak

List of values:
10 dB Margin 50 Subranges



Result:
Prescan

Project file:
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Radiated Emission Test 300 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
400

Applicant:
Bayerische Motoren Werke AG

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Horizontal Polarization

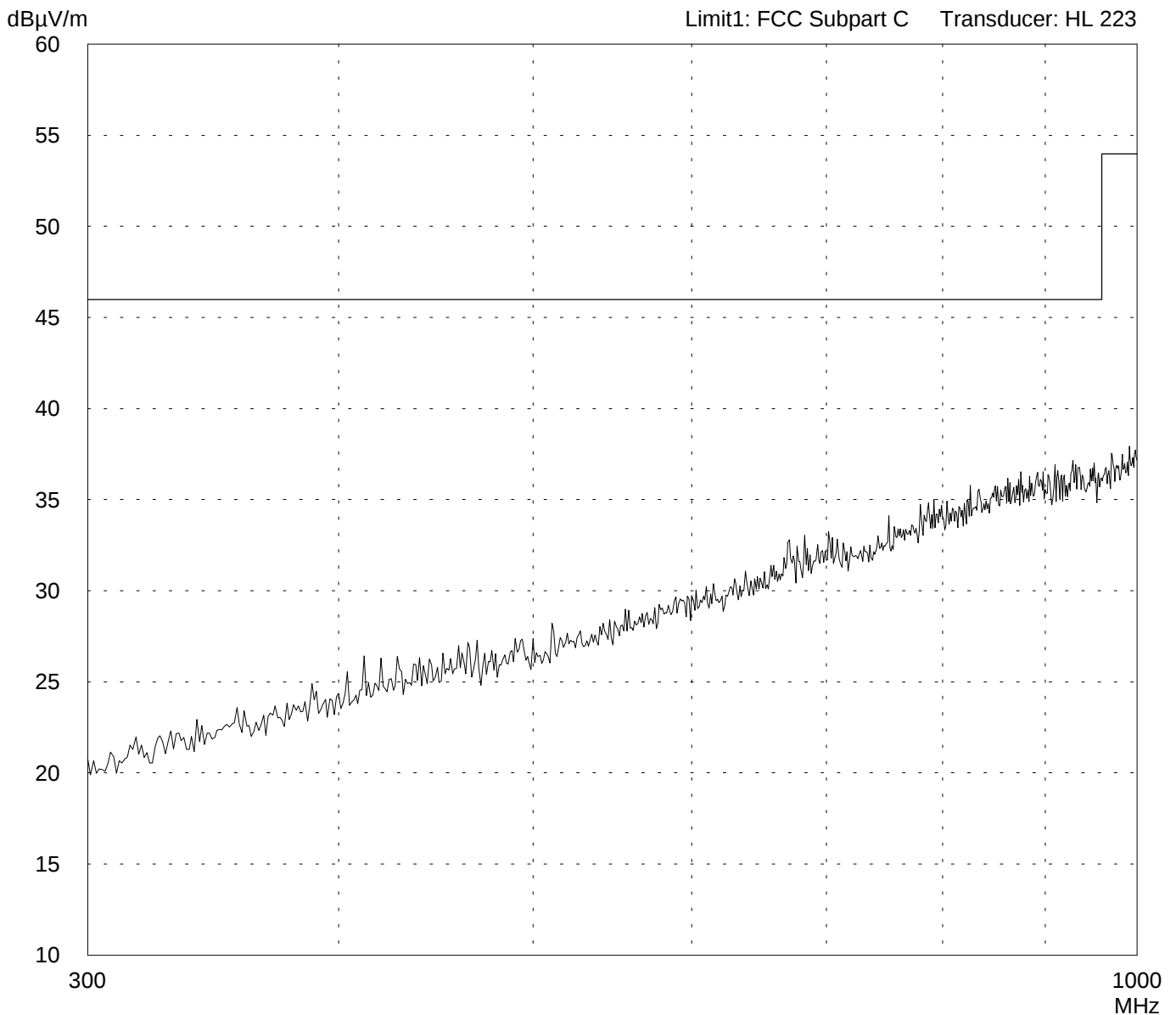
Date of test: 01/17/2001 Operator: R. Kohlhäufel

Test performed: automatically File name:

Mode:
- Hardware CM 5RL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Peak

List of values:
Selected by hand



Result:
Prescan

Project file:
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Radiated Emission Test 30 MHz - 300 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
400

Applicant:
Bayerische Motoren Werke AG

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Vertical Polarization

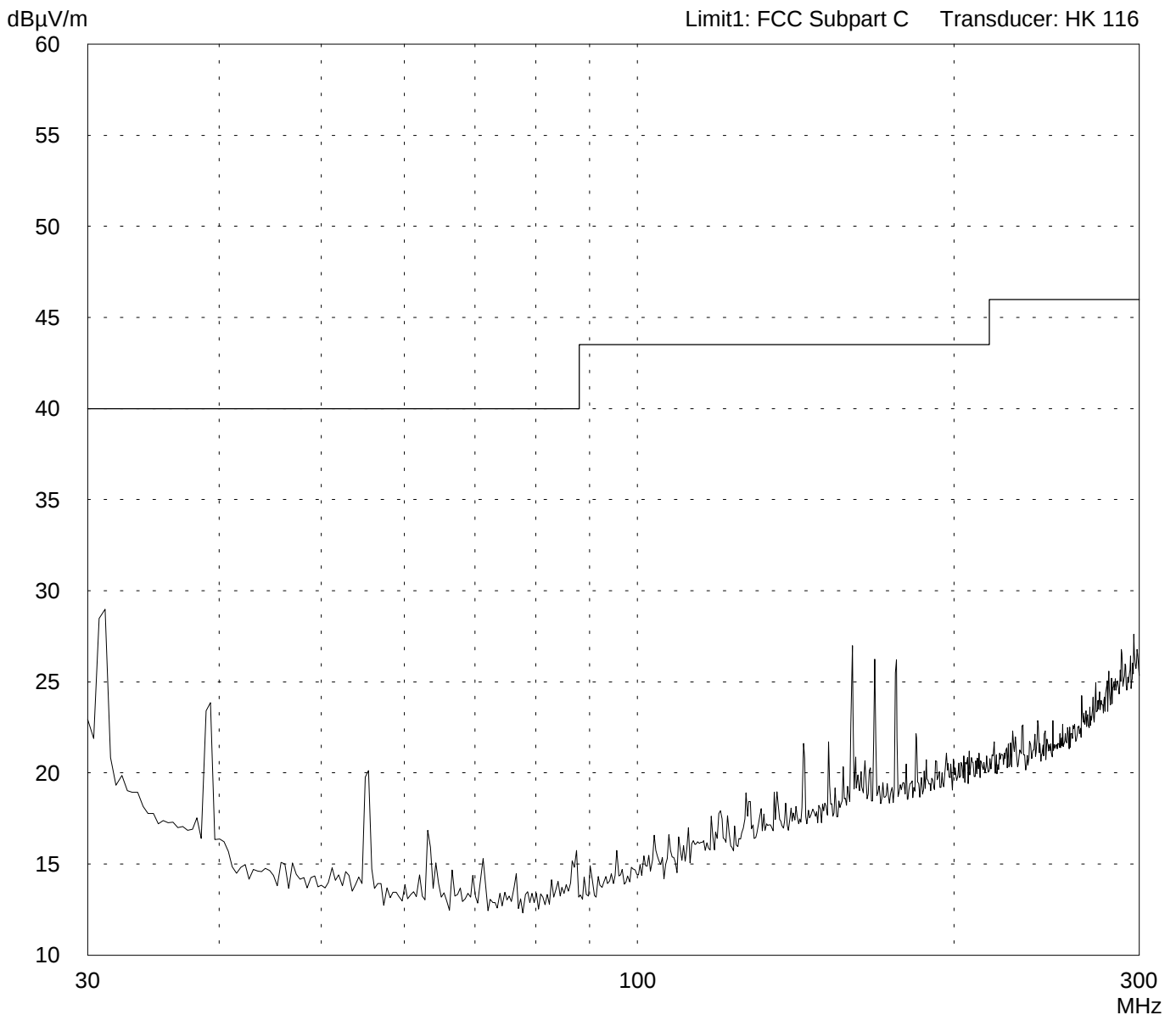
Date of test: 01/17/2001
Operator: R. Kohlhäufel

Test performed: automatically
File name:

Mode:
- Hardware CM 5RL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Peak

List of values:
10 dB Margin 50 Subranges



Result:
Prescan

Project file:
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Radiated Emission Test 300 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
400

Applicant:
Bayerische Motoren Werke AG

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Vertical Polarization

Date of test: 01/17/2001 Operator: R. Kohlhäufel

Test performed: automatically File name:

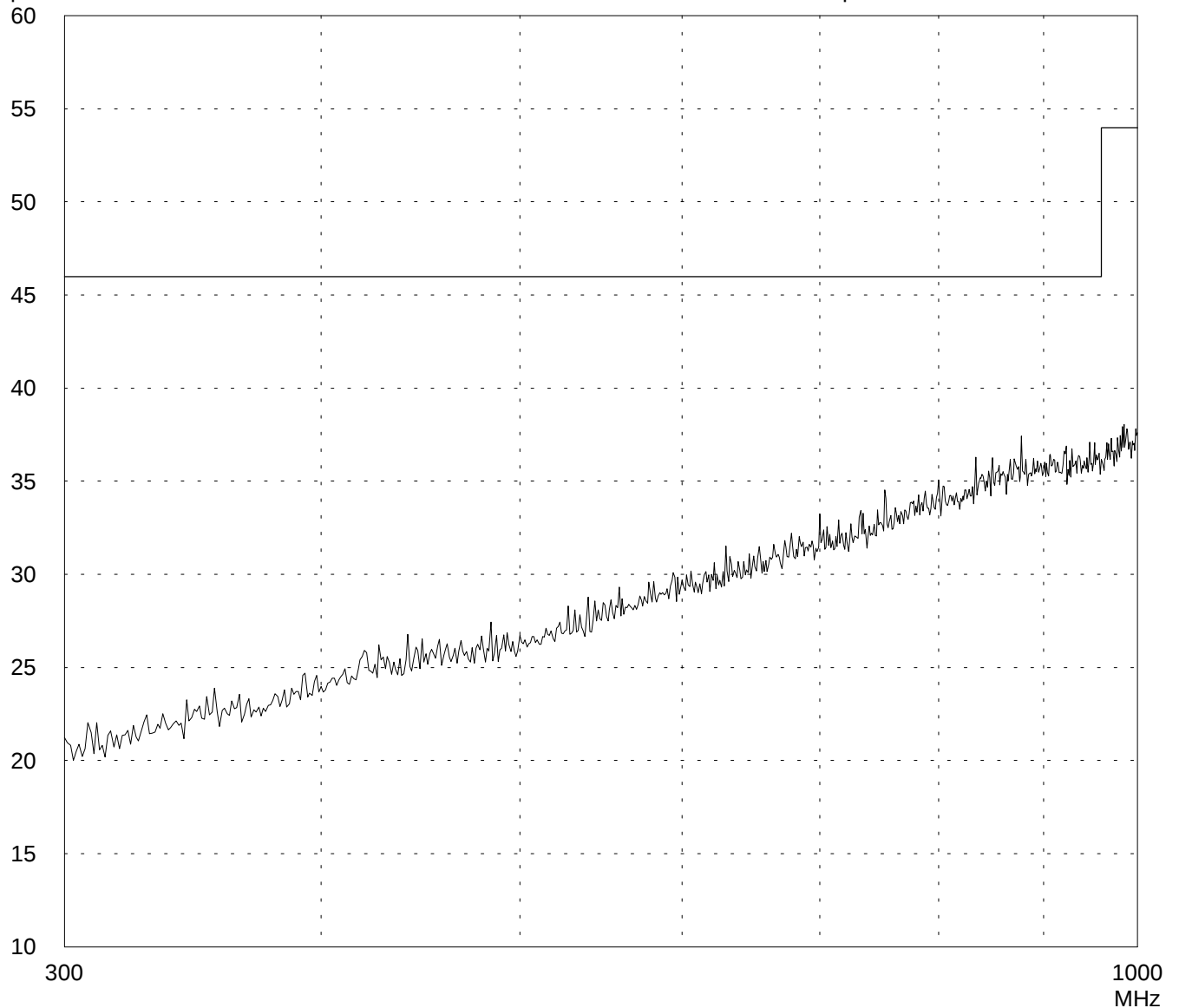
Mode:
- Hardware CM 5RL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Peak

List of values:
Selected by hand

dB μ V/m

Limit1: FCC Subpart C Transducer: HL 223



Result:
Prescan

Project file:
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Radiated Emission Test 30 MHz - 300 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
400

Applicant:
Bayerische Motoren Werke AG

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Horizontal Polarization

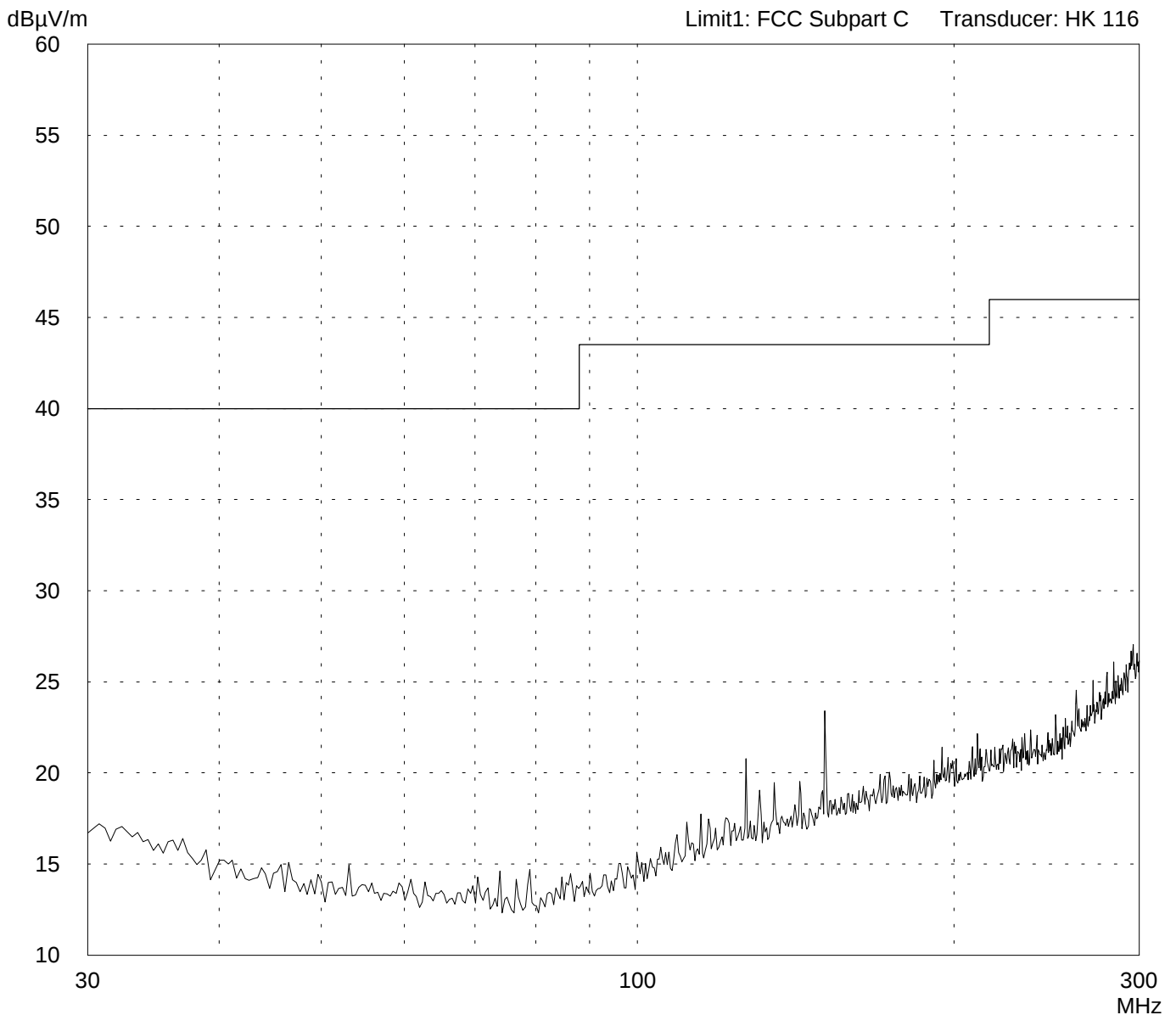
Date of test: 01/17/2001 Operator: R. Kohlhäufel

Test performed: automatically File name:

Mode:
- Hardware CM 5RL
- TX in stand by mode
- with tag
- External power supply: DC 12.0 V

Detector:
Peak

List of values:
10 dB Margin 50 Subranges



Result:
Prescan

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Radiated Emission Test 300 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
400

Applicant:
Bayerische Motoren Werke AG

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Horizontal Polarization

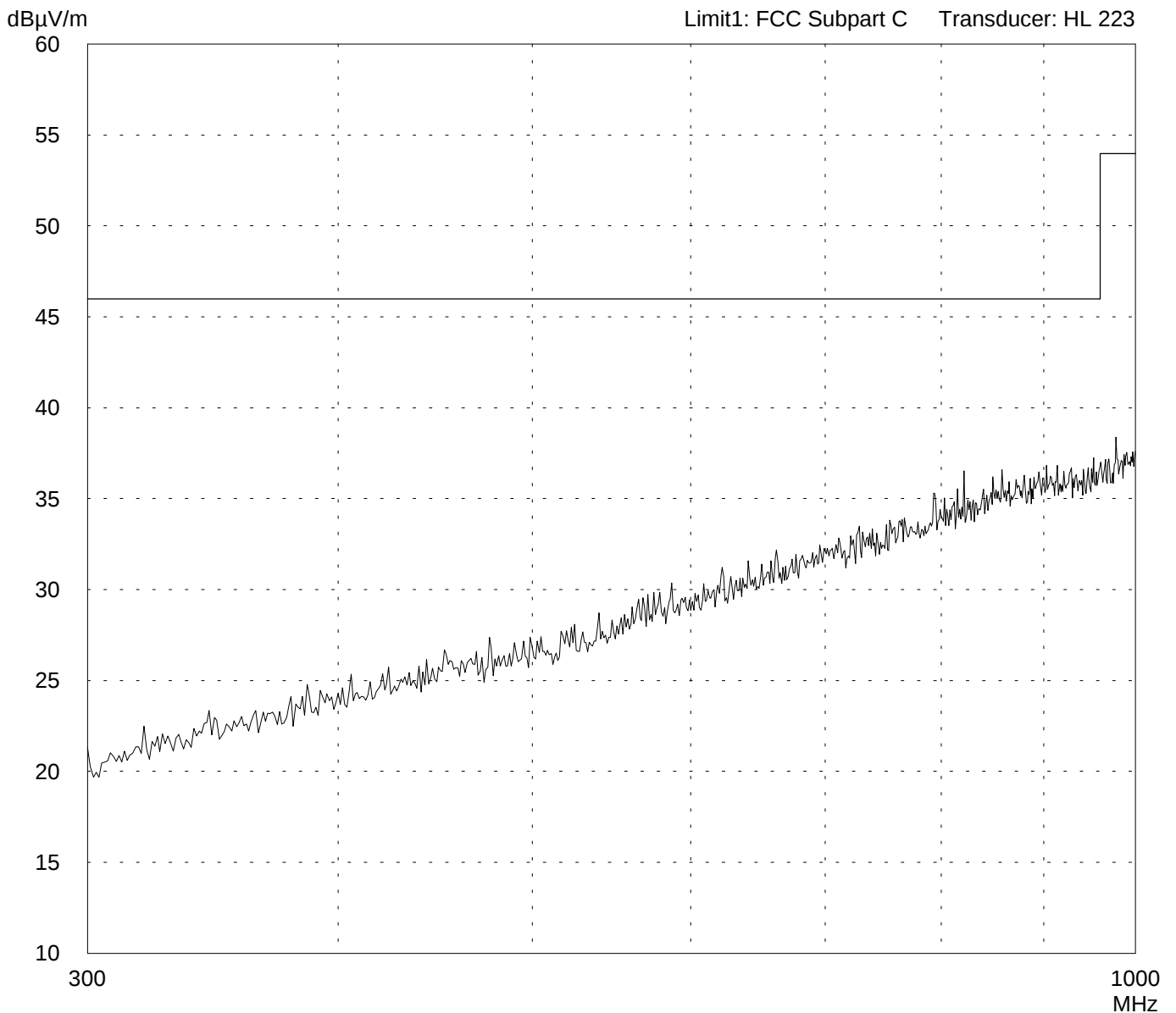
Date of test: 01/17/2001
Operator: R. Kohlhäufel

Test performed: automatically
File name:

Mode:
- Hardware CM 5RL
- TX in stand by mode
- with tag
- External power supply: DC 12.0 V

Detector:
Peak

List of values:
Selected by hand



Result:
Prescan

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Radiated Emission Test 30 MHz - 300 MHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
400

Applicant:
Bayerische Motoren Werke AG

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Vertical Polarization

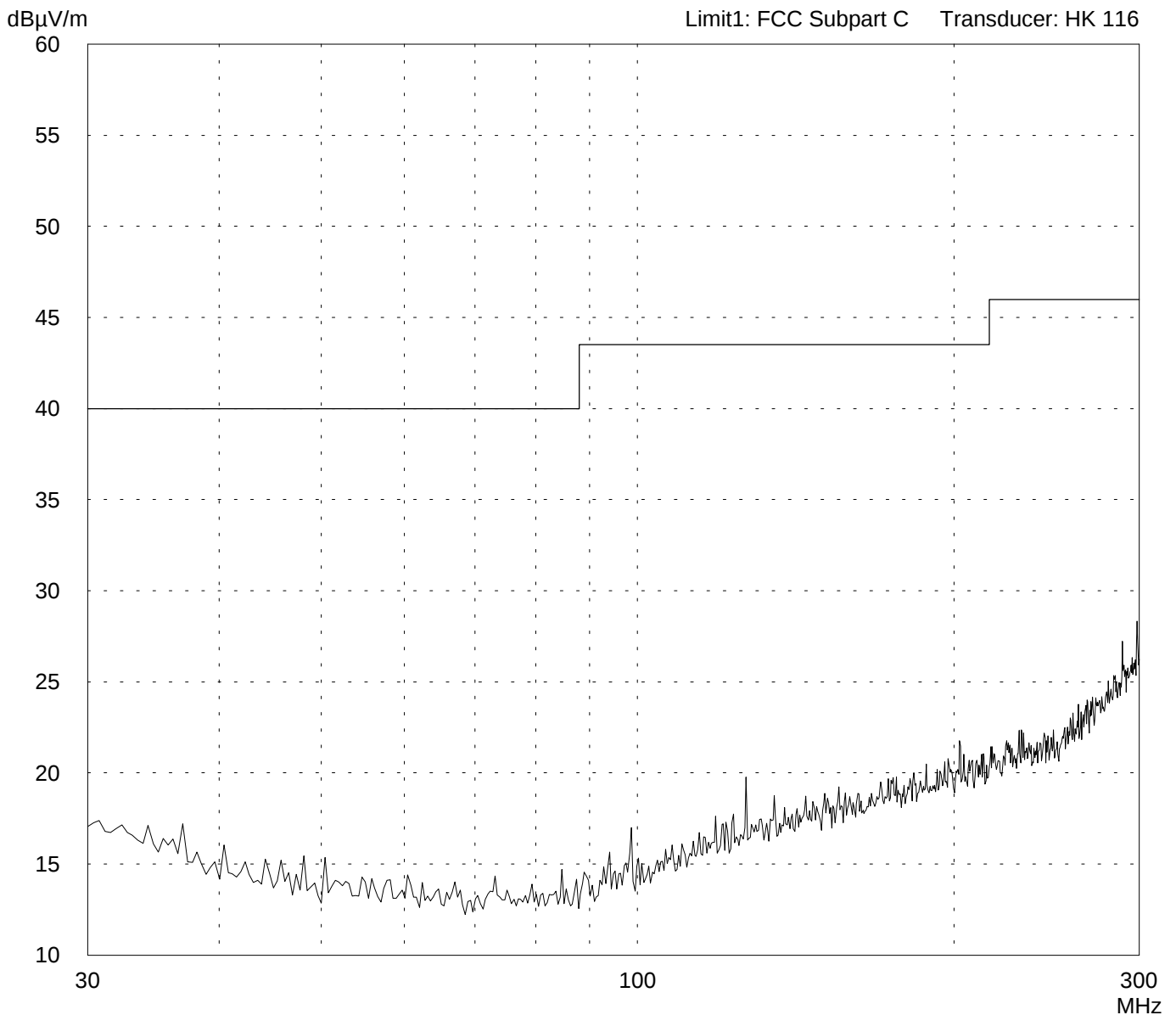
Date of test: 01/17/2001
Operator: R. Kohlhäufel

Test performed: automatically
File name:

Mode:
- Hardware CM 5RL
- TX in stand by mode
- with tag
- External power supply: DC 12.0 V

Detector:
Peak

List of values:
10 dB Margin 50 Subranges



Result:
Prescan

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Radiated Emission Test 300 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
400

Applicant:
Bayerische Motoren Werke AG

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Vertical Polarization

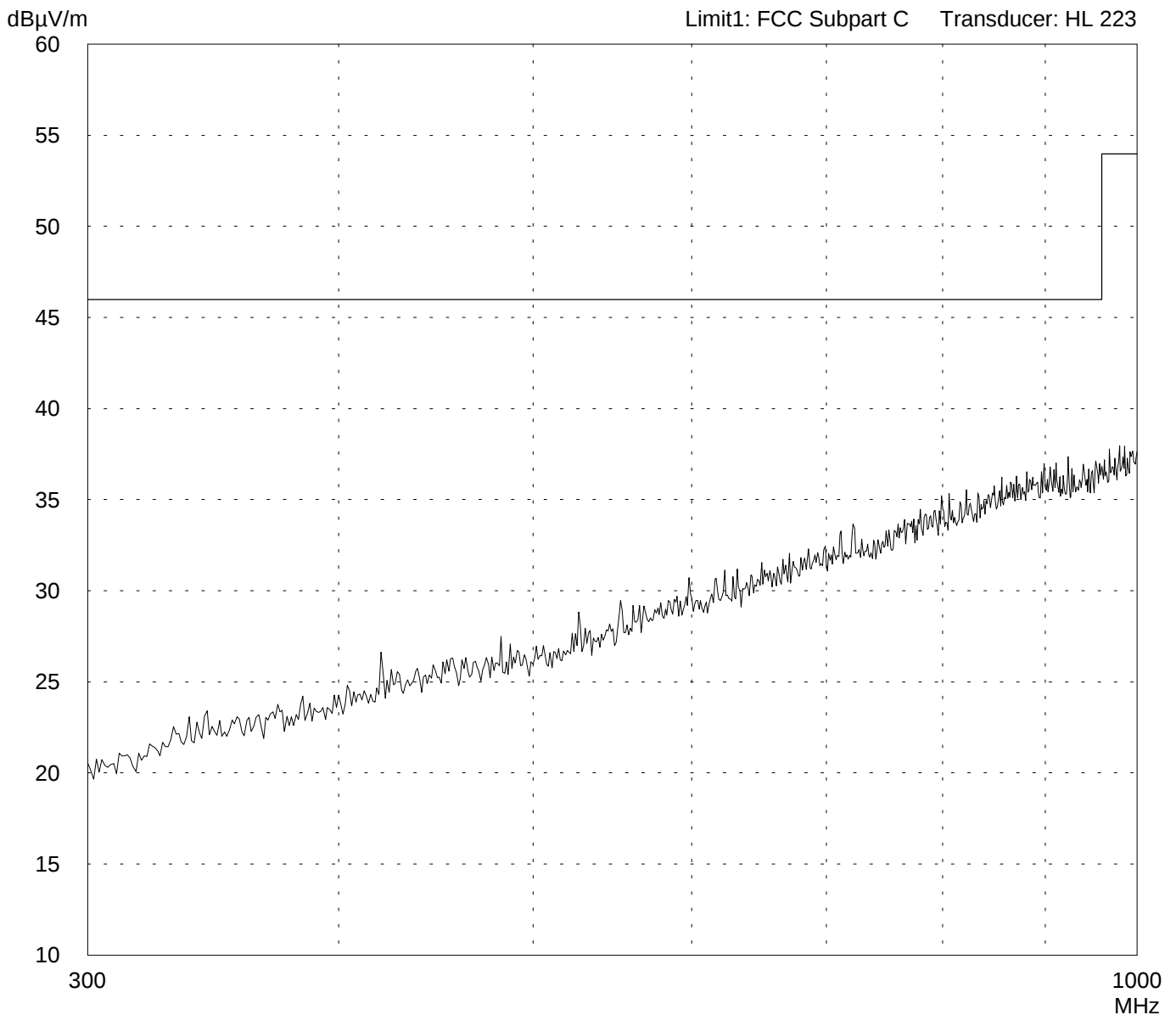
Date of test: 01/17/2001 Operator: R. Kohlhäufel

Test performed: automatically File name:

Mode:
- Hardware CM 5RL
- TX in stand by mode
- with tag
- External power supply: DC 12.0 V

Detector:
Peak

List of values:
Selected by hand



Result:
Prescan

Project file:
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Radiated Emission Test 30 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
400

Applicant:
Bayerische Motoren Werke AG

Test site:
Open area test-site I

Tested on:
Test distance 3 meters
Horizontal Polarization

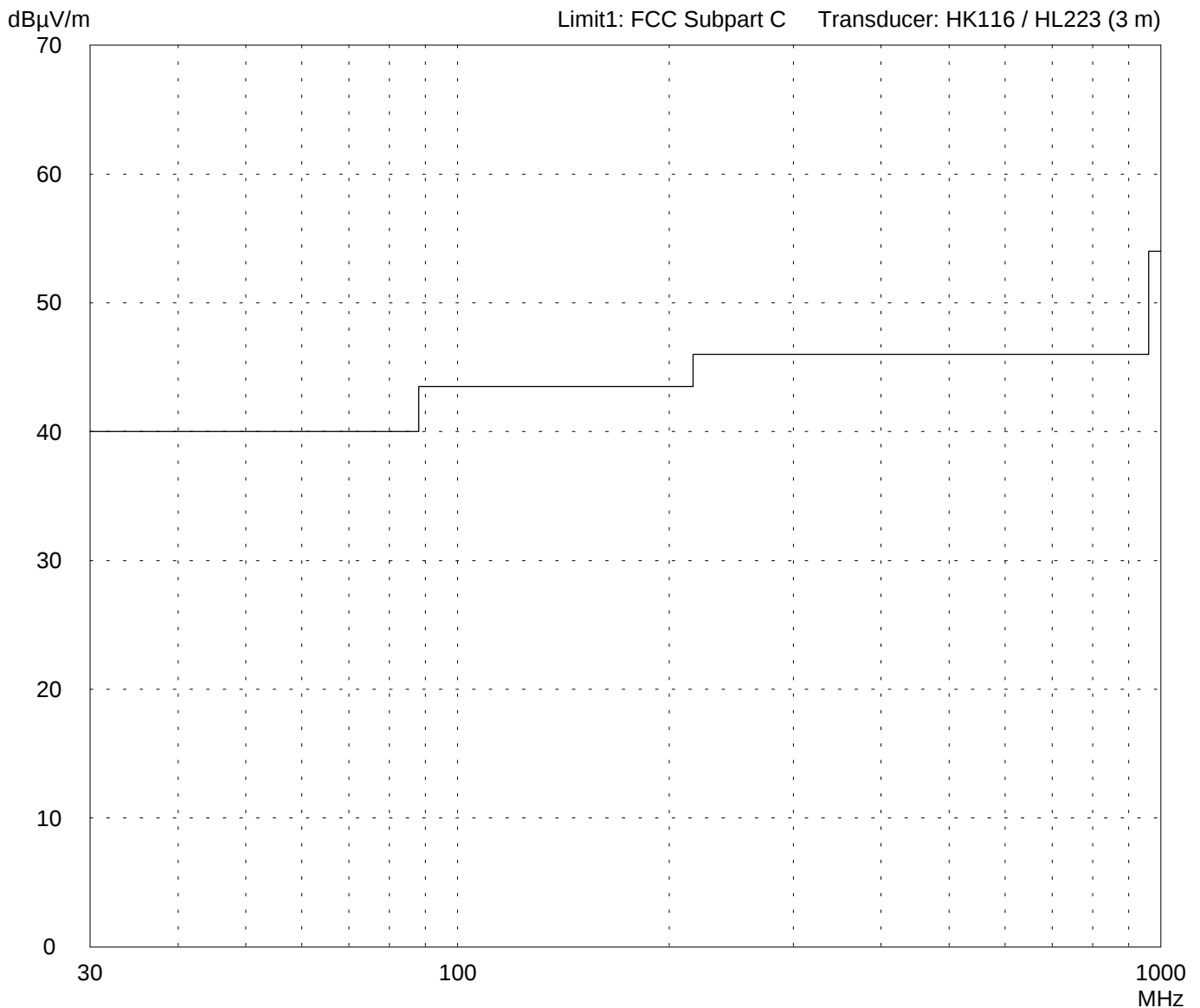
Date of test: 01/18/2001 Operator: R. Kohlhäufel

Test performed: by hand File name:

Mode:
- Hardware CM 5RL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Quasi-Peak

List of values:
Selected by hand



Result:
Limit kept

Project file:
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Radiated Emission Test 30 MHz - 1 GHz
according to FCC Part 15 Subpart C

Model: Car access system 125 kHz CAS	
Serial no.: 400	
Applicant: Bayerische Motoren Werke AG	
Test site: Open area test-site I	
Tested on: Test distance 3 meters Horizontal Polarization	
Date of test: 01/18/2001	Operator: R. Kohlhäufel
Test performed: by hand	File name:

Mode:

- Hardware CM 5RL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Quasi-Peak

List of values:
Selected by hand

<i>Frequency MHz</i>	<i>Reading dBμV</i>	<i>Correction factor dB</i>	<i>Value dBμV/m</i>	<i>Limit dBμV/m</i>	<i>Limit exceeded</i>
no results					

Result:
Limit kept

Project file:
50217-00699

Radiated Emission Test 30 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
400

Applicant:
Bayerische Motoren Werke AG

Test site:
Open area test-site I

Tested on:
Test distance 3 meters
Vertical Polarization

Date of test: 01/18/2001 Operator: R. Kohlhäufel

Test performed: by hand File name:

Mode:
- Hardware CM 5RL

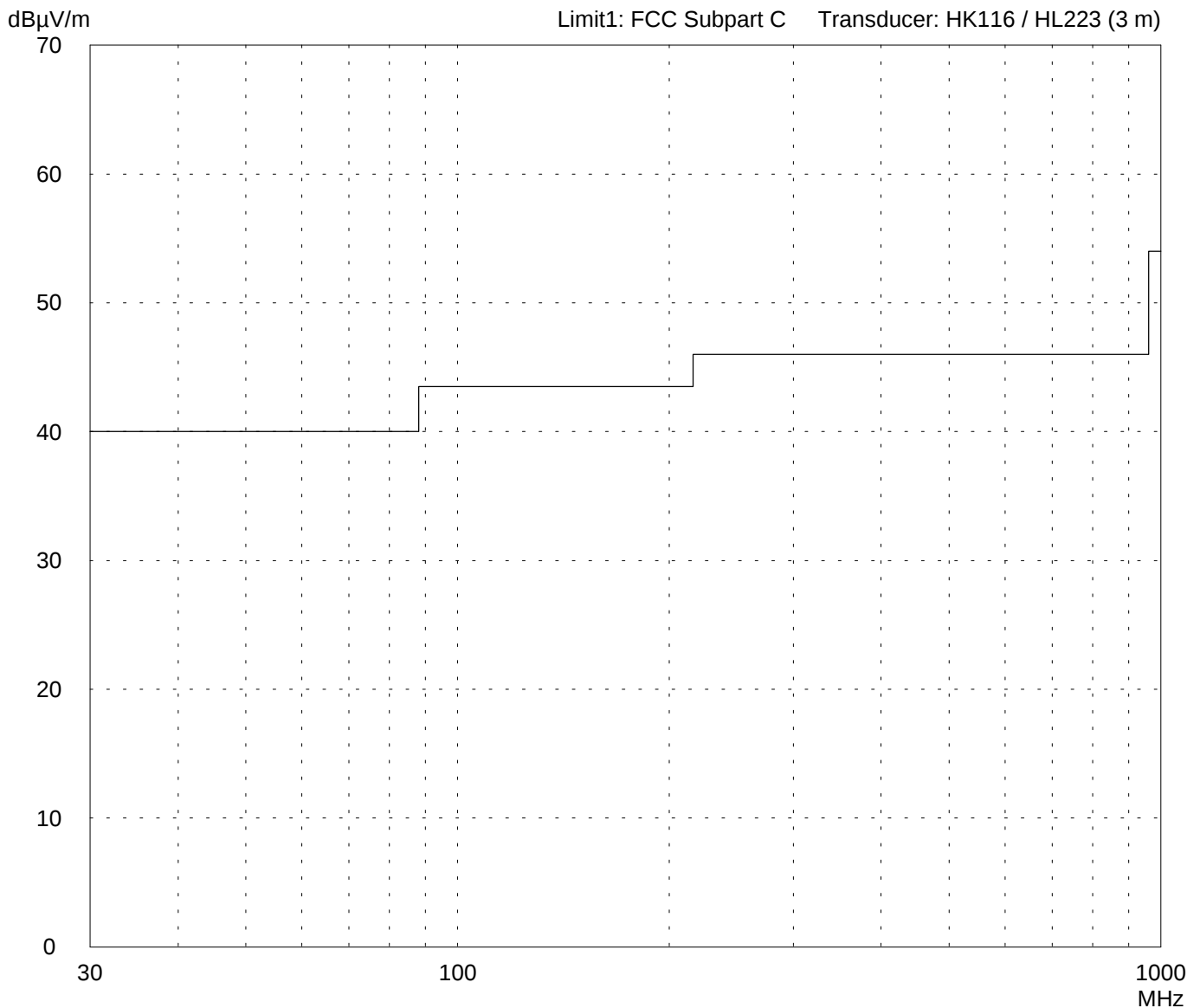
- TX active (125 kHz)

- with tag

- External power supply: DC 12.0 V

Detector:
Quasi-Peak

List of values:
Selected by hand



Result:
Limit kept

Project file:
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Radiated Emission Test 30 MHz - 1 GHz
according to FCC Part 15 Subpart C

Model: Car access system 125 kHz CAS	
Serial no.: 400	
Applicant: Bayerische Motoren Werke AG	
Test site: Open area test-site I	
Tested on: Test distance 3 meters Vertical Polarization	
Date of test: 01/18/2001	Operator: R. Kohlhäufel
Test performed: by hand	File name:

Mode:

- Hardware CM 5RL
- TX active (125 kHz)
- with tag
- External power supply: DC 12.0 V

Detector:
Quasi-Peak

List of values:
Selected by hand

<i>Frequency MHz</i>	<i>Reading dBμV</i>	<i>Correction factor dB</i>	<i>Value dBμV/m</i>	<i>Limit dBμV/m</i>	<i>Limit exceeded</i>
no results					

Result:
Limit kept

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Radiated Emission Test 30 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
400

Applicant:
Bayerische Motoren Werke AG

Test site:
Open area test-site I

Tested on:
Test distance 3 meters
Horizontal Polarization

Date of test: 01/18/2001 Operator: R. Kohlhäufel

Test performed: by hand File name:

Mode:
- Hardware CM 5RL

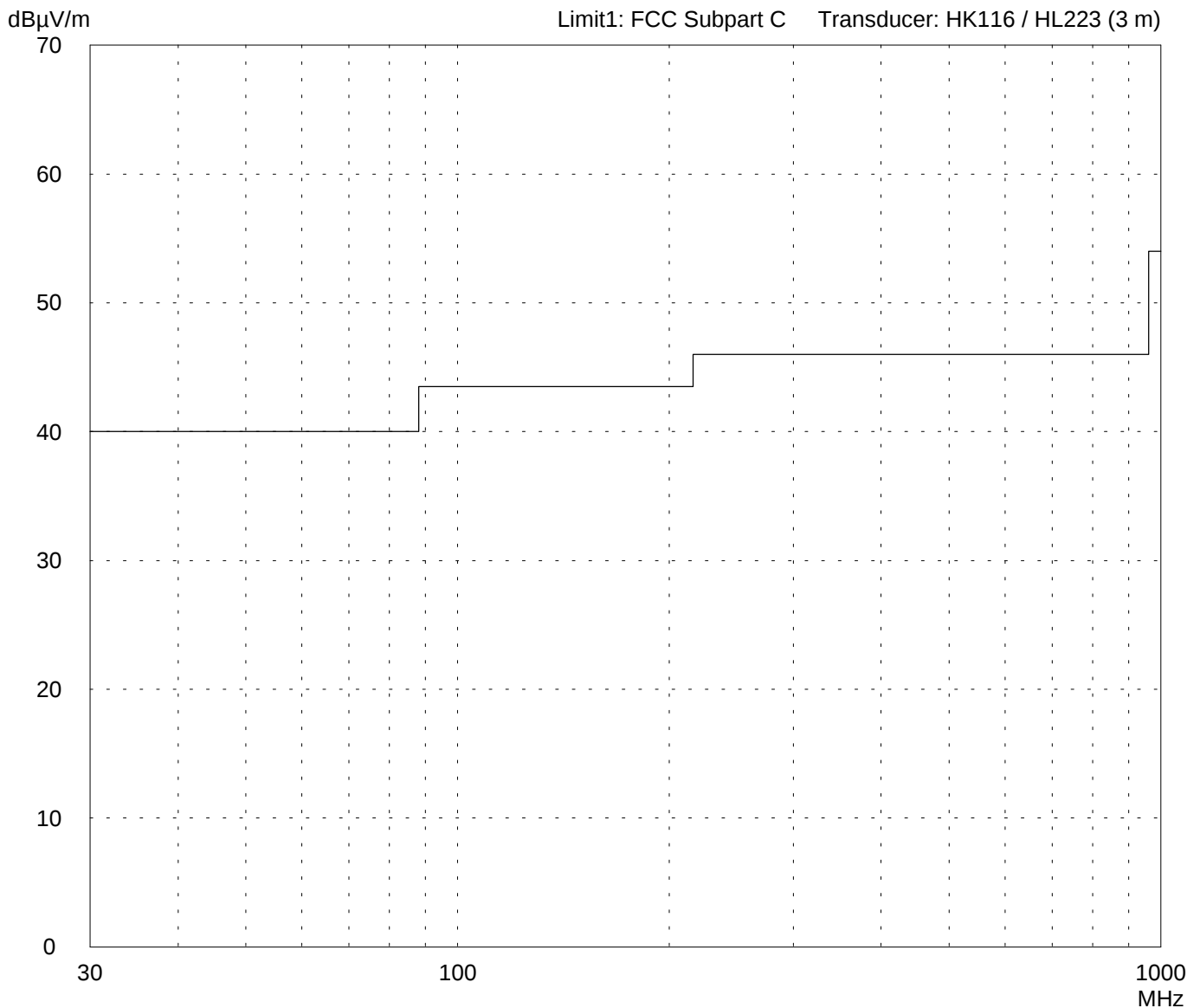
- TX in stand by mode

- with tag

- External power supply: DC 12.0 V

Detector:
Quasi-Peak

List of values:
Selected by hand



Result:
Limit kept

Project file:
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Radiated Emission Test 30 MHz - 1 GHz
according to FCC Part 15 Subpart C

Model: Car access system 125 kHz CAS	
Serial no.: 400	
Applicant: Bayerische Motoren Werke AG	
Test site: Open area test-site I	
Tested on: Test distance 3 meters Horizontal Polarization	
Date of test: 01/18/2001	Operator: R. Kohlhäufel
Test performed: by hand	File name:

Mode:

- Hardware CM 5RL
- TX in stand by mode
- with tag
- External power supply: DC 12.0 V

Detector:
Quasi-Peak

List of values:
Selected by hand

<i>Frequency MHz</i>	<i>Reading dBμV</i>	<i>Correction factor dB</i>	<i>Value dBμV/m</i>	<i>Limit dBμV/m</i>	<i>Limit exceeded</i>
no results					

Result:
Limit kept

Project file: 50217-00699 Page 96 of 98 Pages

Radiated Emission Test 30 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
Car access system 125 kHz CAS

Serial no.:
400

Applicant:
Bayerische Motoren Werke AG

Test site:
Open area test-site I

Tested on:
Test distance 3 meters
Vertical Polarization

Date of test: 01/18/2001 Operator: R. Kohlhäufel

Test performed: by hand File name:

Mode:
- Hardware CM 5RL

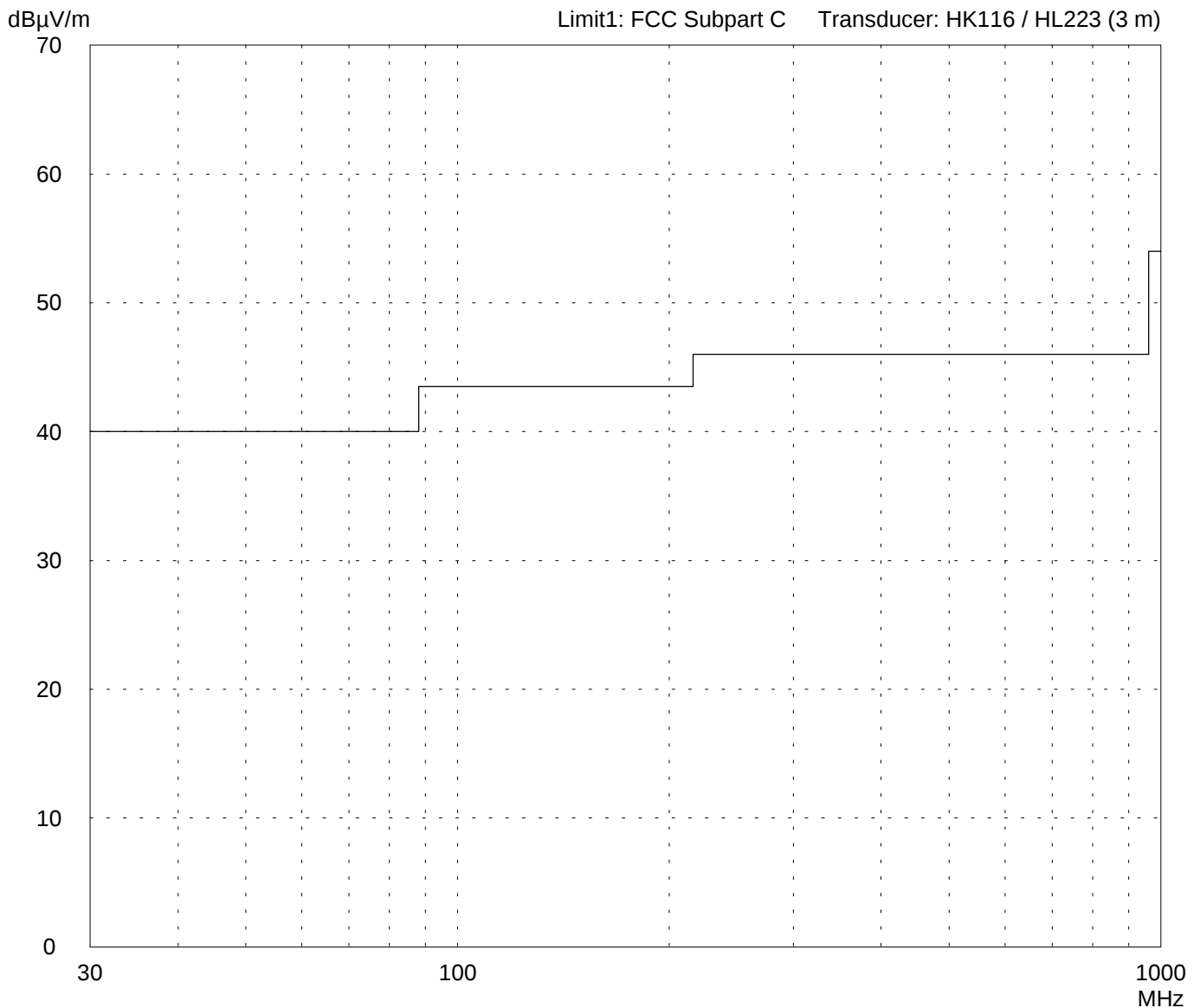
- TX in stand by mode

- with tag

- External power supply: DC 12.0 V

Detector:
Quasi-Peak

List of values:
Selected by hand



Result:
Limit kept

Project file:
50217-00699

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Radiated Emission Test 30 MHz - 1 GHz
according to FCC Part 15 Subpart C

Model: Car access system 125 kHz CAS	
Serial no.: 400	
Applicant: Bayerische Motoren Werke AG	
Test site: Open area test-site I	
Tested on: Test distance 3 meters Vertical Polarization	
Date of test: 01/18/2001	Operator: R. Kohlhäufel
Test performed: by hand	File name:

Mode:

- Hardware CM 5RL
- TX in stand by mode
- with tag
- External power supply: DC 12.0 V

Detector:
Quasi-Peak

List of values:
Selected by hand

<i>Frequency MHz</i>	<i>Reading dBμV</i>	<i>Correction factor dB</i>	<i>Value dBμV/m</i>	<i>Limit dBμV/m</i>	<i>Limit exceeded</i>
no results					

Result:
Limit kept

Project file: 50217-00699 Page 98 of 98 Pages