

Straubing, January 22, 2001

TEST - REPORT

No. 50217-00696-1

for

Funkfernbedienung 868 MHz, Typ 765

Remote control transmitter

Applicant: Bayerische Motorenwerke AG

Purpose of testing: To show compliance with

FCC Code of Federal Regulations,
Part 15 Subpart C, Section §15.231

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):	Funkfernbedienung 868 MHz, Typ 765
Serial number(s):	01
Type of equipment:	Remote control transmitter
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 Kohlhäufl
Responsible for test report:	Rupert Kohlhäufl (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 sample complies with the requirements set forth in the

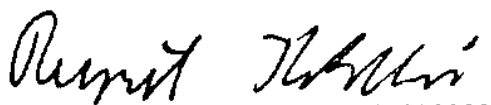
**Code of Regulations Part 15 Subpart C, Section §15.231 (intentional radiators) of
the Federal Communication Commission (FCC)**

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 Kohlhäufli
Test Engineer

4. Operation Mode of EUT

Transmitter in TX mode

5. Configuration of EUT and Peripheral Devices

Configuration of cables of EUT

Configuration of peripheral devices connected to EUT

6. Measuring Methods

6.1. Bandwidth of Emission(FCC §15.231.c / RSS-210 Section 6.1.1.c)

The Bandwidth of Emission is measured with a spectrum analyzer connected to measuring antenna (radiated measurement) or test fixture while EUT is operating in transmit mode with modulation at the appropriate center frequency. To increase received signal level distance to EUT is reduced (appropriate level offset is included).

The spectrum analyzer was set to:

RBW = 10 kHz, VBW = 10 kHz, span = 1 MHz, sweep = 40 ms

See figure 1 for the measurement setup.

Test equipment used (see equipment list for details):

02, 55, 67

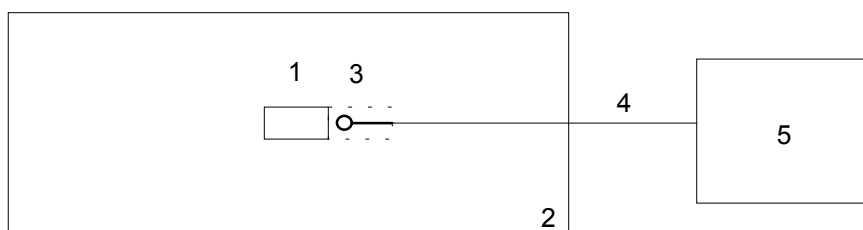


Figure 1: Measurement setup for bandwidth of emission test

- | | | | |
|---|-------------------|---|-------------------|
| 1 | Transmitter (EUT) | 3 | Test fixture |
| 2 | Wooden table | 4 | Test cable |
| | | 5 | Spectrum analyzer |

6.2. Radiated Emission 30 MHz - 1 GHz (FCC §15.205.a,b, §15.209, §15.231.b / 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

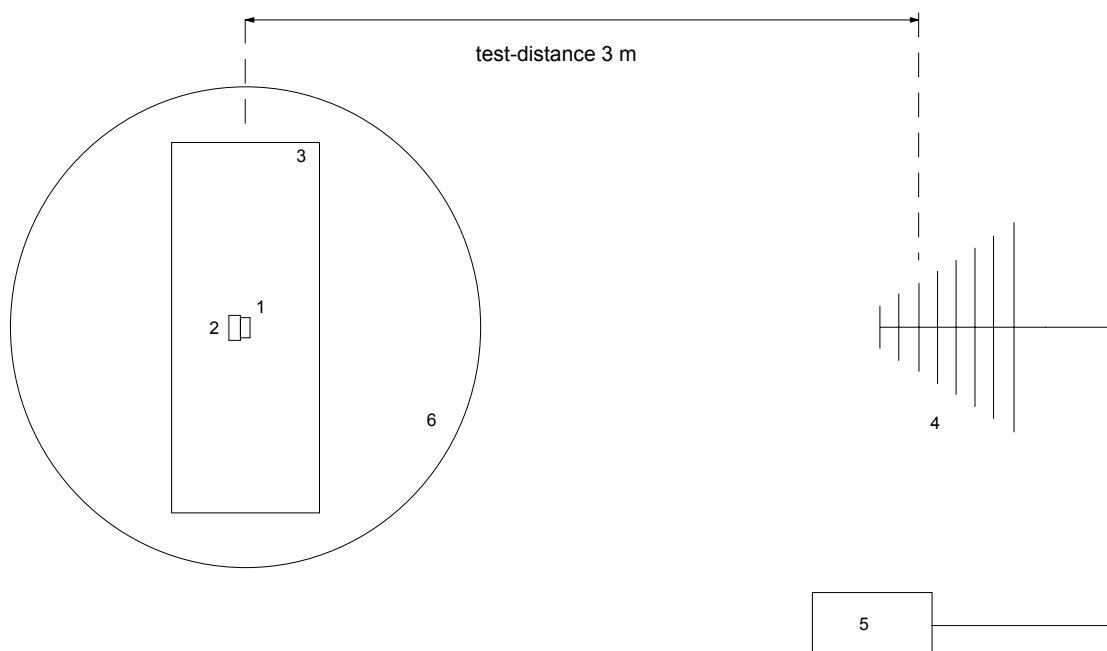


Figure 2: Measurement setup for radiated emission test below 1 GHz

- | | | | |
|---|--------------------------------|---|---------------------|
| 1 | Transmitter (EUT) | 4 | Measurement antenna |
| 2 | Wooden pedestal (if necessary) | 5 | Test receiver |
| 3 | Wooden table | 6 | Turn table |

6.3. Radiated Emission 1 GHz - 8.7 GHz (FCC §15.205.a,b, §15.209, §15.231.b / RSS-210 Sections 6.1.1.b, 6.3)

Radiated emissions are measured in the frequency range 1 GHz to 8.7 GHz. Resolution and video bandwidth of the spectrum analyzer are set to 1 MHz.

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.

Additional measurements are performed at critical frequencies with reduced span.

EUT is rotated all around and receiving antenna is raised and lowered to find the maximum levels of emission. The cables and equipment are placed and moved within the range of position likely to find their maximum emissions.

All tests are performed in a semi-anechoic chamber with a test-distance of 3 meters.

If possible preamplifiers are used for the whole frequency range. Special care is taken to avoid overload in transmit mode (using appropriate attenuators if necessary).

See figure 3 for the measurement setup.

Test equipment used (see equipment list for details):

02, 13, 14, 16, ,42, 44, 45, 57, 64

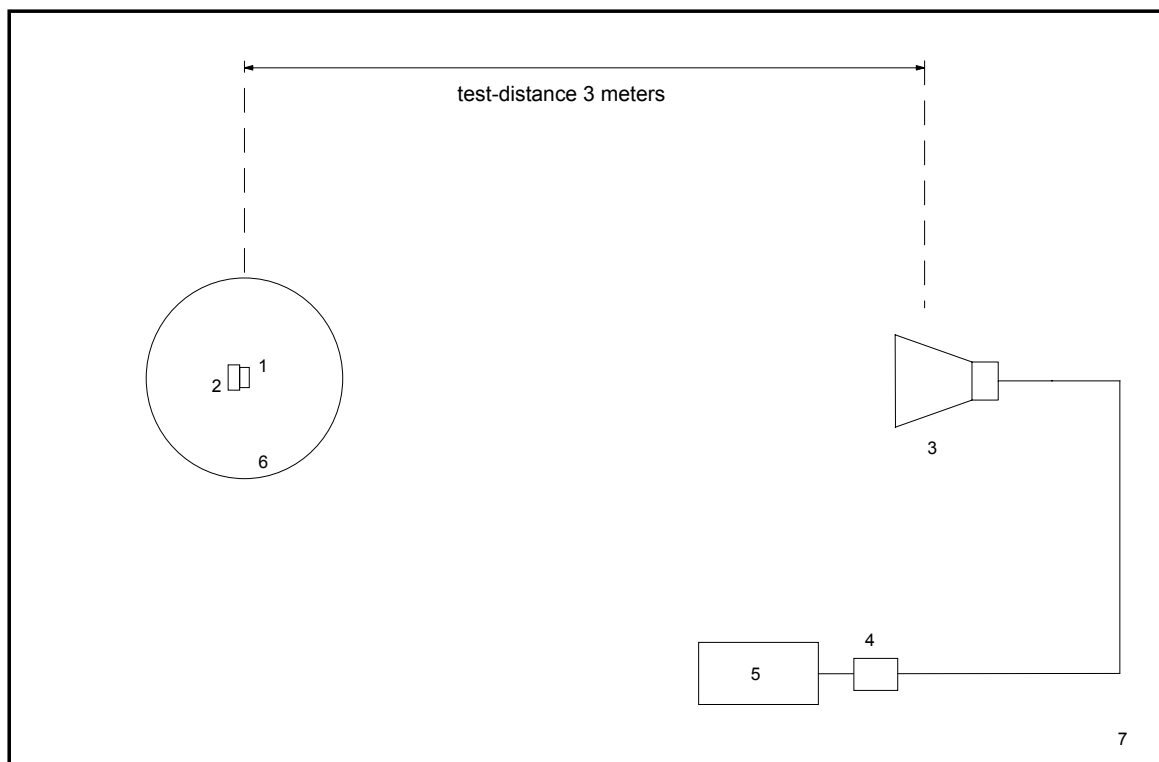


Figure 3: Measurement setup for radiated emission test above 1 GHz

- | | | | |
|---|--------------------------------|---|------------------------------|
| 1 | Transmitter (EUT) | 3 | Measurement antenna |
| 2 | Wooden pedestal (if necessary) | 4 | Preamplifier (if applicable) |
| | | 5 | Spectrum analyzer |
| | | 6 | Turn table |
| | | 7 | Semi anechoic room |

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 30 MHz - 1 GHz
and final test 1 GHz - 8.7 GHz
(semi anechoic room)**



Photos No. 8.3 - 8.4

Test setup for radiated emission pre-test 30 MHz - 1 GHz
and final test 1 GHz - 8.7 GHz
(semi anechoic room) - continued



Photos No. 8.5 - 8.6

**Test setup for radiated emission pre-test 30 MHz - 1 GHz
and final test 1 GHz - 8.7 GHz
(semi anechoic room) continued**



Photos No. 8.7 - 8.8

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



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
§15.231.c	Bandwidth of emission		Passed
§15.231.b §15.209 §15.205.a,b	Radiated emission test 9 kHz - 30 MHz	---	Not Applicable (acc. to §15.33)
§15.231.b §15.209 §15.205.a,b	Radiated emission test 30 MHz - 1 GHz		Passed
§15.231.b §15.209 §15.205.a,b	Radiated emission test 1 GHz - 8.7 GHz		Passed

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

Industry Canada RSS-210 Issue 2			
Section(s):	Test	Page(s)	Result
6.1.1.c	Bandwidth		Passed
6.1.1.b 6.3	Radiated emission test 9 kHz - 30 MHz	---	Not Applicable (acc. to 6.3.e)
6.1.1.b 6.3	Radiated emission test 30 MHz - 1 GHz		Passed
6.1.1.b 6.3	Radiated emission test 1 GHz - 8.7 GHz		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

Bandwidth of emission according to FCC Part 15/C

Model:
Funkfernbedienung 868 MHz, Typ 765

Serial No.:
01

Applicant:
Bayerische Motorenwerke AG

Mode:
Transmitter in TX mode

Battery supply: 3.0 V DC

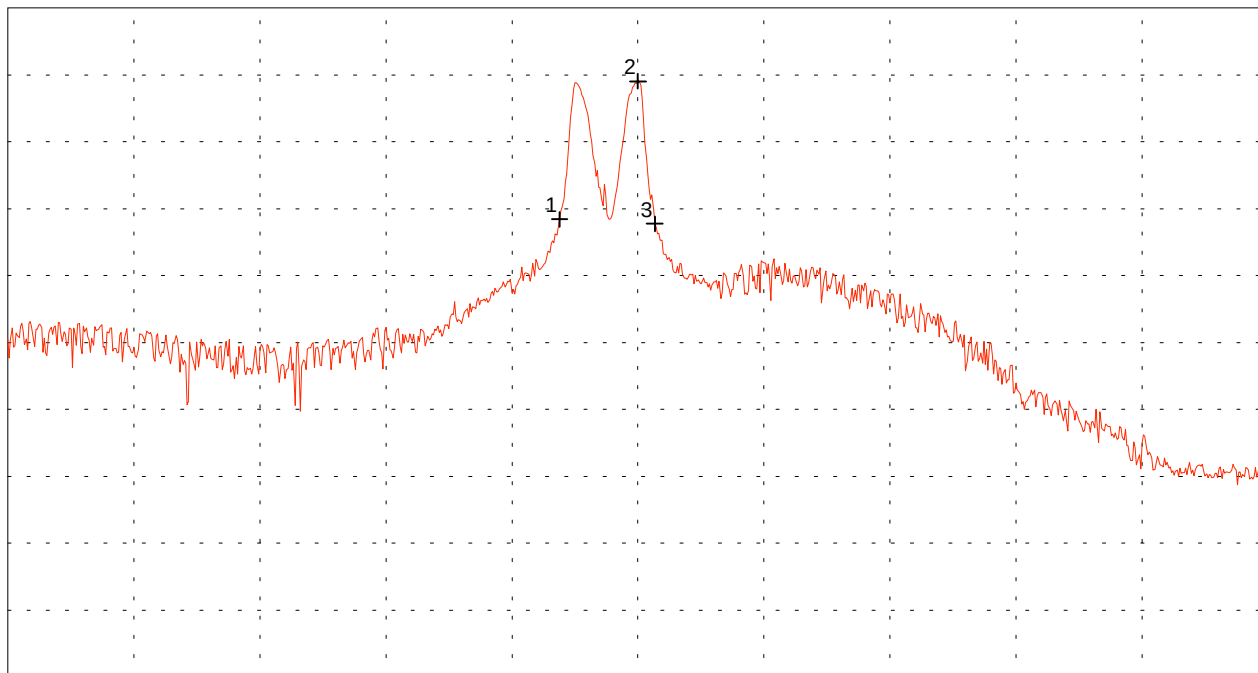
Maximum Bandwidth:

0.25% of center frequency = 2.17 MHz

Measured bandwidth: 0.15 MHz

Ref.Level 100 dB μ V/m
10 dB/Div.

ATT 25 dB



Start 867.431111 MHz
RBW 10 kHz

VBW 10 kHz

Stop 869.431111 MHz
SWP 60 ms

Multi Marker List

No. 1	868.306667 MHz	68.42 dB μ V/m
No. 2	868.431111 MHz	89.03 dB μ V/m
No. 3	868.457778 MHz	67.73 dB μ V/m

Tested by:
Rupert Kohlhäufel

Date:
12/22/2000

Project-No.:
50217-00696-1

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

Model: Funkfernbedienung 868 MHz, Typ 765
 Type: Remote control transmitter
 Serial No.: eng 01
 Applicant: Bayerische Motorenwerke AG
 Test-site: Open area test-site I
 Test distance: 3 meters
 Date of test: 01/09/2001
 Operator: R. Kohlhäufel
 Mode: - transmitting continuously
 - with battery supply 3 V DC

EUT in horizontal position with rear on table

Detector: Peak
 Polarization: horizontal

Frequency [MHz]	Receiver reading [dBμV]	Correction factor [dB]	Fieldstrength Peak [dBμV/m]	Limit Peak dBμV/m	Duty cycle correction [dB]	Fieldstrength Average [dBμV/m]	Limit Average [dBμV/m]	Limit exceeded
868.33	48.0	33.3	81.3	101.9	5.1	76.2	81.9	

Result: The limits are kept.

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

Model: Funkfernbedienung 868 MHz, Typ 765
 Type: Remote control transmitter
 Serial No.: eng 01
 Applicant: Bayerische Motorenwerke AG
 Test-site: Open area test-site I
 Test distance: 3 meters
 Date of test: 01/09/2001
 Operator: R. Kohlhäufel
 Mode: - transmitting continuously
 - with battery supply 3 V DC

EUT in horizontal position with rear on table

Detector: Peak
 Polarization: vertical

Frequency [MHz]	Receiver reading [dBμV]	Correction factor [dB]	Fieldstrength Peak [dBμV/m]	Limit Peak dBμV/m	Duty cycle correction [dB]	Fieldstrength Average [dBμV/m]	Limit Average [dBμV/m]	Limit exceeded
868.33	33.5	33.3	66.8	101.9	5.1	61.7	81.9	

Result: The limits are kept.

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

Model:
Funkfernbedienung 868 MHz, Typ 765

Serial no.:
01

Applicant:
Bayerische Motorenwerke AG

Test site:
Open area test-site I

Tested on:
Test distance 3 meters
Horizontal Polarization

Date of test: 12/21/2000 Operator: R. Kohlhäufel

Test performed: by hand File name:

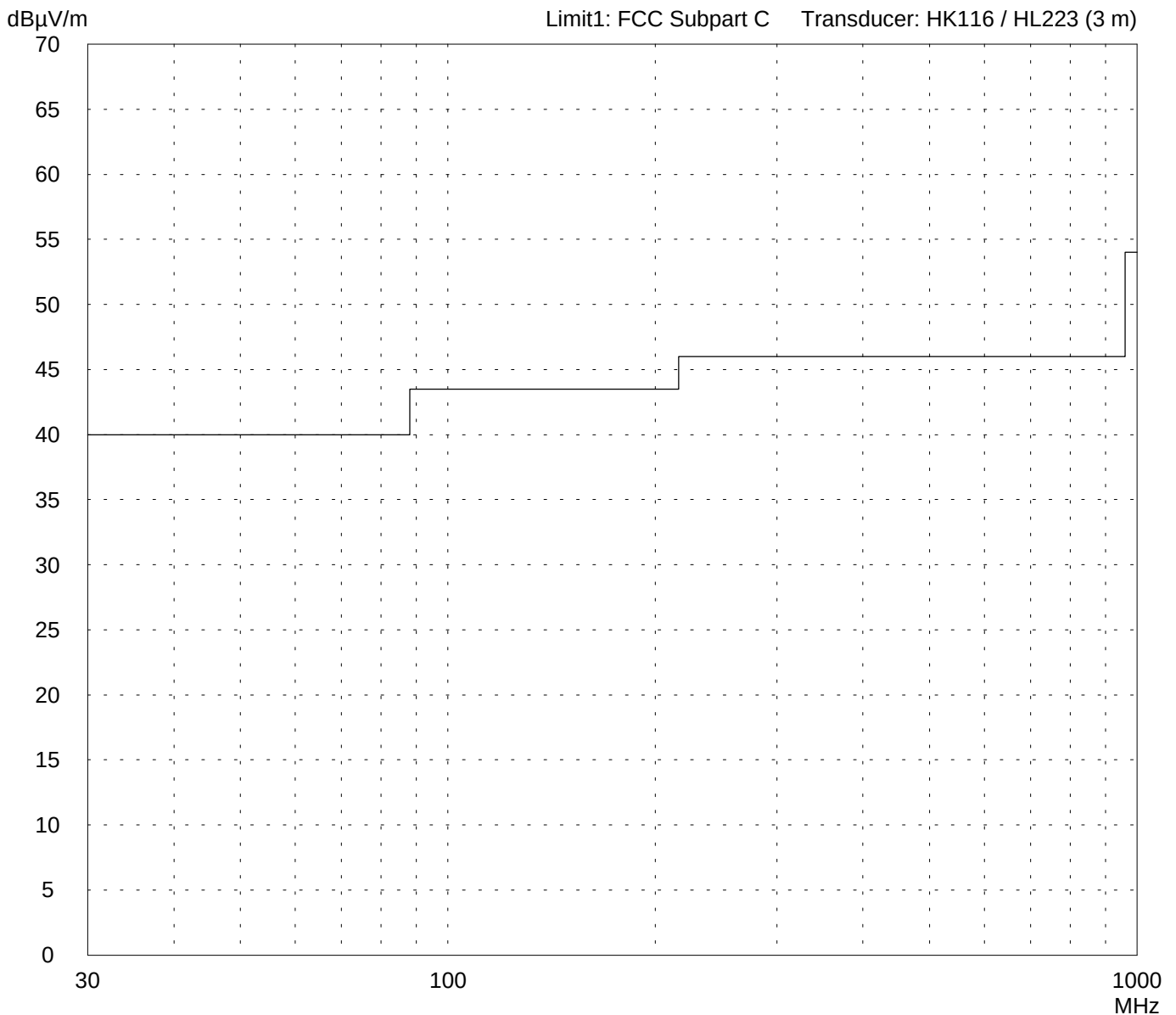
Mode:
Transmitter in TX mode

Battery supply: 3.0 V DC

EUT in horizontal position with rear on table

Detector:
Peak

List of values:
Selected by hand



Result:

Project file:
50217-00696-1

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

Model: Funkfernbedienung 868 MHz, Typ 765	Mode: Transmitter in TX mode
Serial no.: 01	Battery supply: 3.0 V DC
Applicant: Bayerische Motorenwerke AG	EUT in horizontal position with rear on table
Test site: Open area test-site I	
Tested on: Test distance 3 meters Horizontal Polarization	
Date of test: 12/21/2000	Operator: R. Kohlhäufel
Test performed: by hand	File name:

Detector: Peak	List of values: Selected by hand
-------------------	-------------------------------------

Frequency MHz	Reading dBμV	Correction factor dB	Value dBμV/m	Limit dBμV/m	Limit exceeded
868.33	48.0	33.3	81.3	46.0	*

Result:	Project file: 50217-00696-1	Page 29 of 46 Pages
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Radiated Emission Test 30 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
Funkfernbedienung 868 MHz, Typ 765

Serial no.:
01

Applicant:
Bayerische Motorenwerke AG

Test site:
Open area test-site I

Tested on:
Test distance 3 meters
Vertical Polarization

Date of test: 12/21/2000 Operator: R. Kohlhäufl

Test performed: by hand File name:

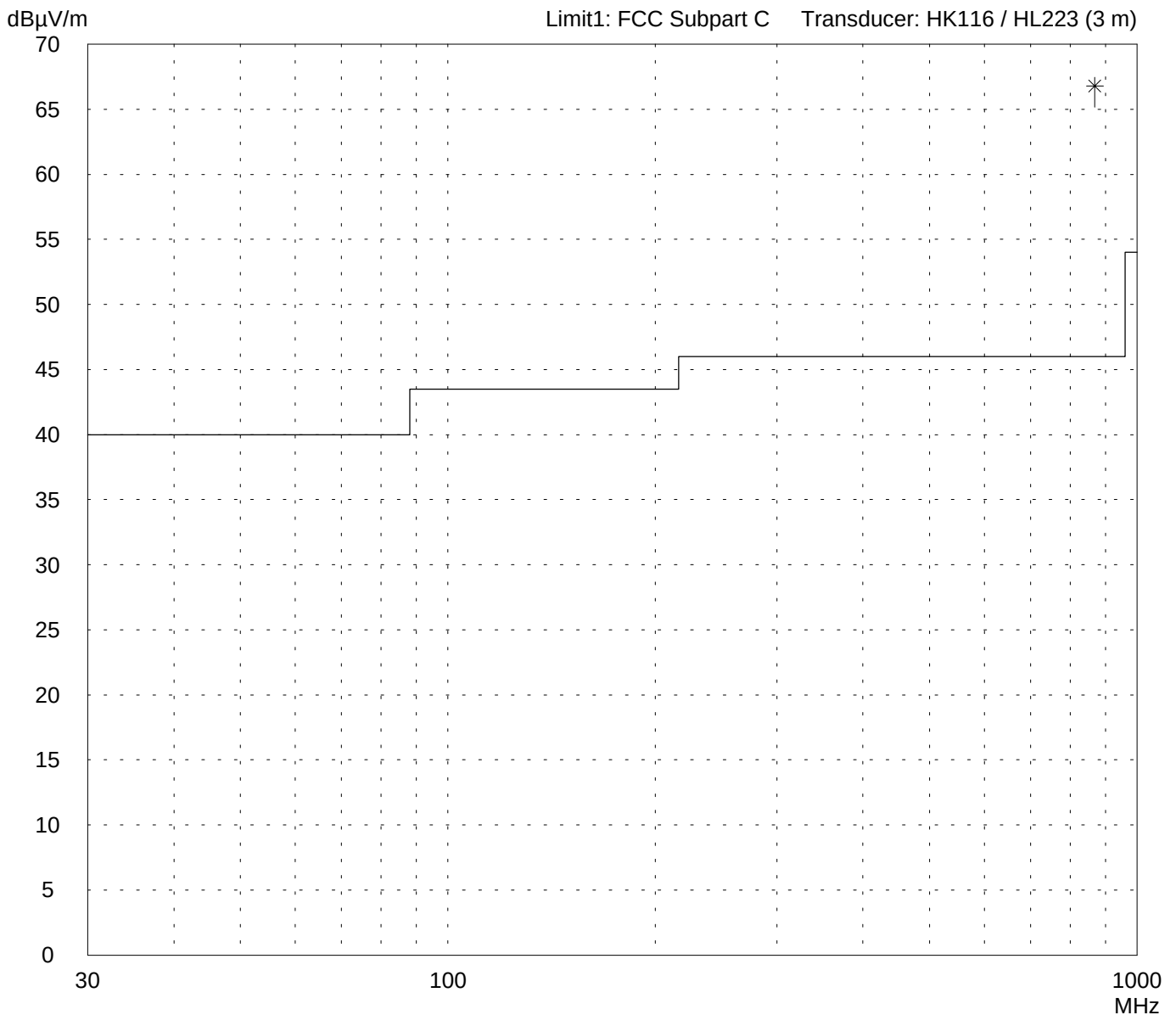
Mode:
Transmitter in TX mode

Battery supply: 3.0 V DC

EUT in horizontal position with rear on table

Detector:
Peak

List of values:
Selected by hand



Result:

Project file:
50217-00696-1

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

Model: Funkfernbedienung 868 MHz, Typ 765	Mode: Transmitter in TX mode
Serial no.: 01	Battery supply: 3.0 V DC
Applicant: Bayerische Motorenwerke AG	EUT in horizontal position with rear on table
Test site: Open area test-site I	
Tested on: Test distance 3 meters Vertical Polarization	
Date of test: 12/21/2000	Operator: R. Kohlhäufel
Test performed: by hand	File name:

Detector: 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>
868.33	33.5	33.3	66.8	46.0	*

Result:	Project file: 50217-00696-1	Page 31 of 46 Pages
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Radiated emissions 30 MHz - 1 GHz acc. to FCC Part 15 Subpart C

Model:
Funkfernbedienung 868 MHz, Typ 765

Serial No.:
01

Applicant:
Bayerische Motorenwerke AG

Mode:
Transmitter in TX mode

Battery supply: 3.0 V DC

EUT in horizontal position with rear on table

Test distance: 3 meters

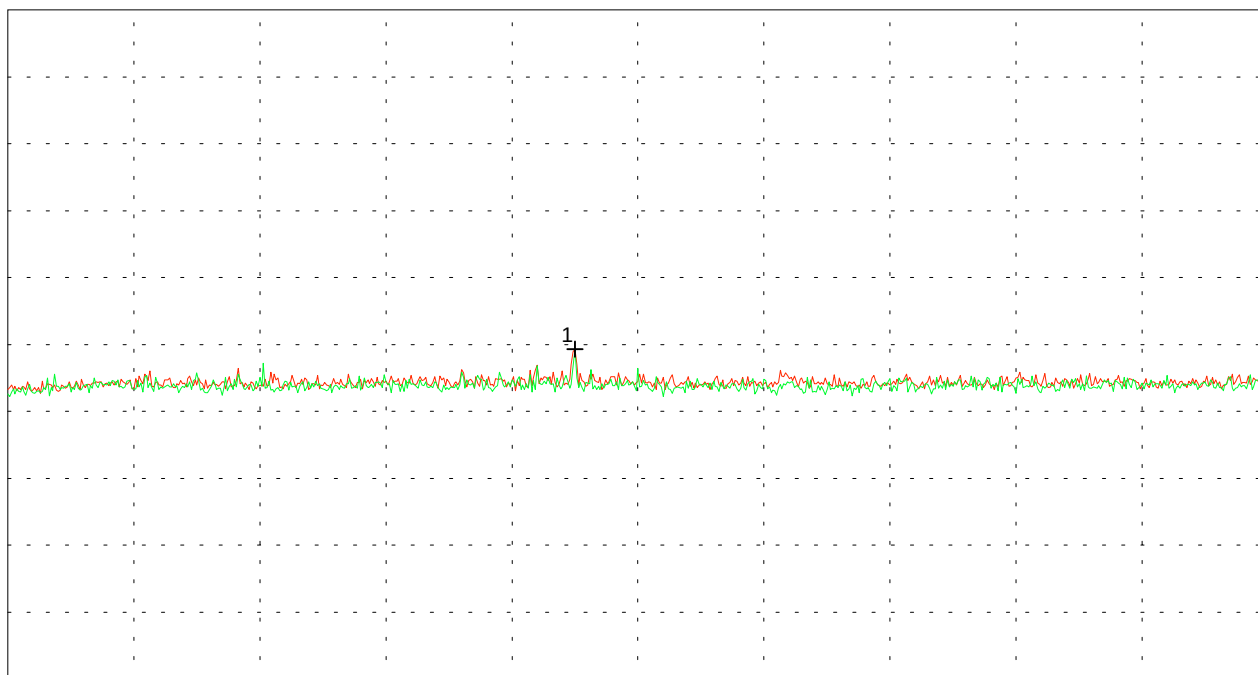
Channel A: Horizontal polarization

Channel B: Vertical polarization

PRESCAN WITHOUT ANY CORRECTIONS

Ref.Level 80 dBuV
10 dB/Div.

ATT 0 dB



Start 30.000 MHz
RBW 100 kHz

VBW 100 kHz

Stop 300.000 MHz
SWP 60 ms

Multi Marker List

No.	Frequency (MHz)	Amplitude (dBuV)	Polarization
No. 1	151.500000 MHz	29.31 dBuV	A

Tested by:
Rupert Kohlhäufel

Date:
08/01/2001

Project-No.:
50217-00696-1

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Radiated emissions 30 MHz - 1 GHz acc. to FCC Part 15 Subpart C

Model:
Funkfernbedienung 868 MHz, Typ 765

Serial No.:
01

Applicant:
Bayerische Motorenwerke AG

Mode:
Transmitter in TX mode

Battery supply: 3.0 V DC

EUT in horizontal position with rear on table

Test distance: 3 meters

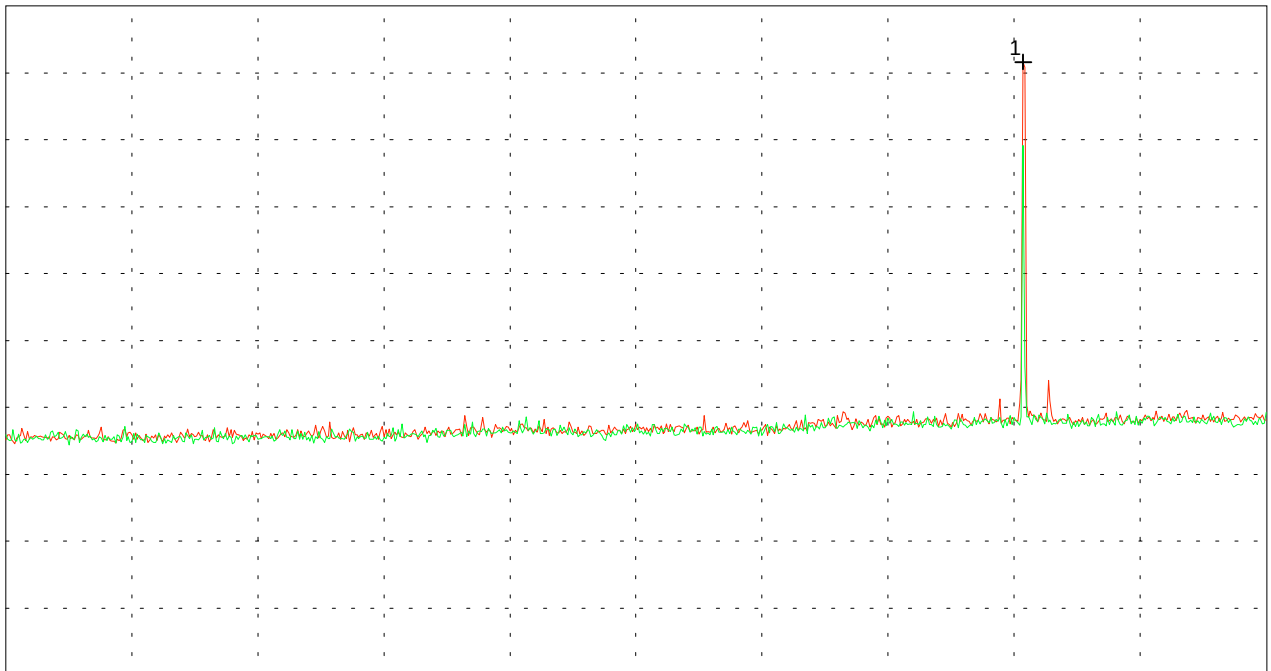
Channel A: Horizontal polarization

Channel B: Vertical polarization

PRESCAN WITHOUT ANY CORRECTIONS

Ref.Level 90 dBuV
10 dB/Div.

ATT 0 dB



Start 300.000 MHz
RBW 100 kHz

VBW 100 kHz

Stop 1.000 GHz
SWP 140 ms

Multi Marker List

No.	Frequency (MHz)	Level (dBuV)	Polarization
No. 1	865.000000 MHz	81.63 dBuV	A

Tested by:
Rupert Kohlhäufel

Date:
08/01/2001

Project-No.:
50217-00696-1

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Radiated emissions 30 MHz - 1 GHz acc. to FCC Part 15 Subpart C

Model:
Funkfernbedienung 868 MHz, Typ 765

Serial No.:
01

Applicant:
Bayerische Motorenwerke AG

Mode:
Transmitter in TX mode

Battery supply: 3.0 V DC

EUT in vertical position with front to the top

Test distance: 3 meters

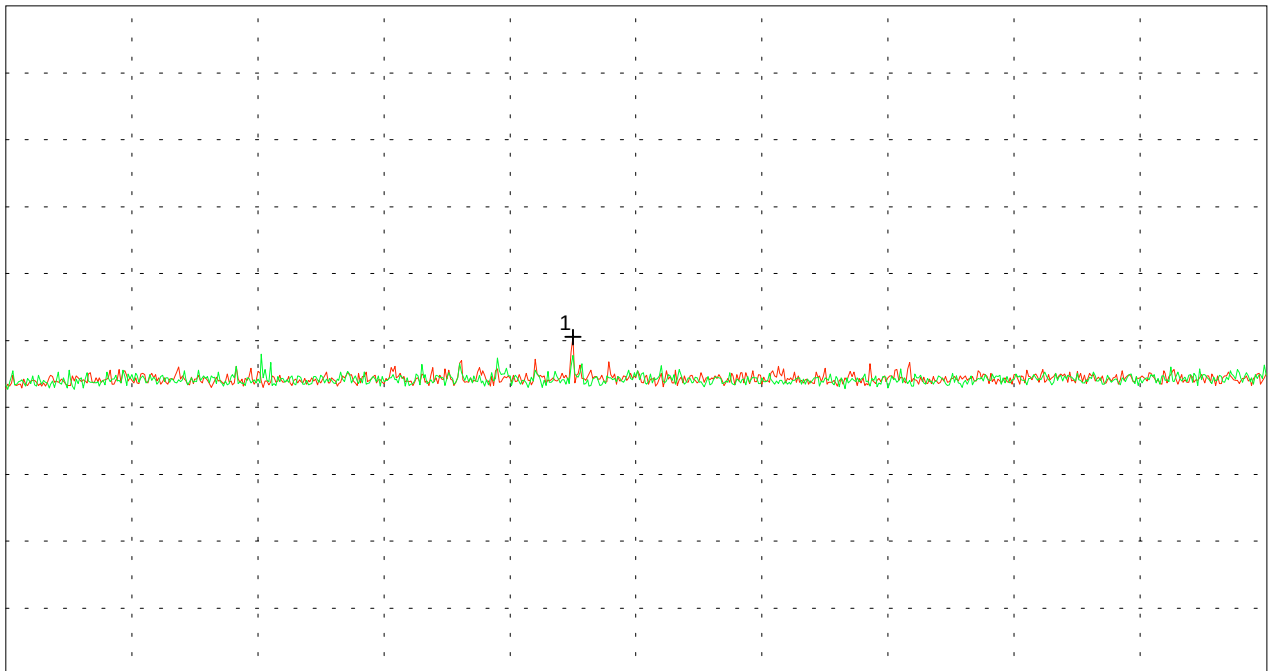
Channel A: Horizontal polarization

Channel B: Vertical polarization

PRESCAN WITHOUT ANY CORRECTIONS

Ref.Level 80 dBuV
10 dB/Div.

ATT 0 dB



Start 30.000 MHz
RBW 100 kHz

VBW 100 kHz

Stop 300.000 MHz
SWP 60 ms

Multi Marker List

No.	Frequency (MHz)	Amplitude (dBuV)	Marker
No. 1	151.500000 MHz	30.53 dBuV	A

Tested by:
Rupert Kohlhäufel

Date:
08/01/2001

Project-No.:
50217-00696-1

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Radiated emissions 30 MHz - 1 GHz acc. to FCC Part 15 Subpart C

Model:
Funkfernbedienung 868 MHz, Typ 765

Serial No.:
01

Applicant:
Bayerische Motorenwerke AG

Mode:
Transmitter in TX mode

Battery supply: 3.0 V DC

EUT in vertical position with front to the top

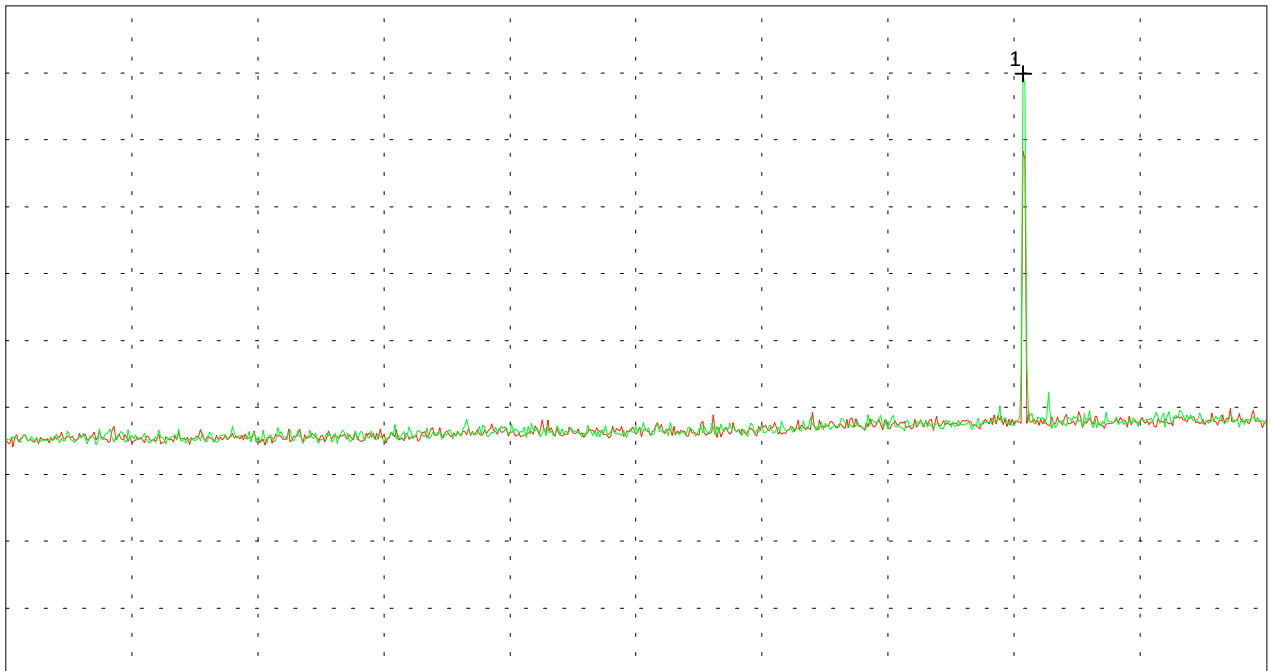
Test distance: 3 meters

Channel A: Horizontal polarization
Channel B: Vertical polarization

PRESCAN WITHOUT ANY CORRECTIONS

Ref.Level 90 dBuV
10 dB/Div.

ATT 0 dB



Start 300.000 MHz
RBW 100 kHz

VBW 100 kHz

Stop 1.000 GHz
SWP 140 ms

Multi Marker List

No.	Frequency (MHz)	Power (dBuV)	Polarization
No. 1	865.000000 MHz	79.88 dBuV	A

Tested by:
Rupert Kohlhäufel

Date:
08/01/2001

Project-No.:
50217-00696-1

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Radiated emissions 30 MHz - 1 GHz acc. to FCC Part 15 Subpart C

Model:
Funkfernbedienung 868 MHz, Typ 765

Serial No.:
01

Applicant:
Bayerische Motorenwerke AG

Mode:
Transmitter in TX mode

Battery supply: 3.0 V DC

EUT in vertical position with right hand side on table

Test distance: 3 meters

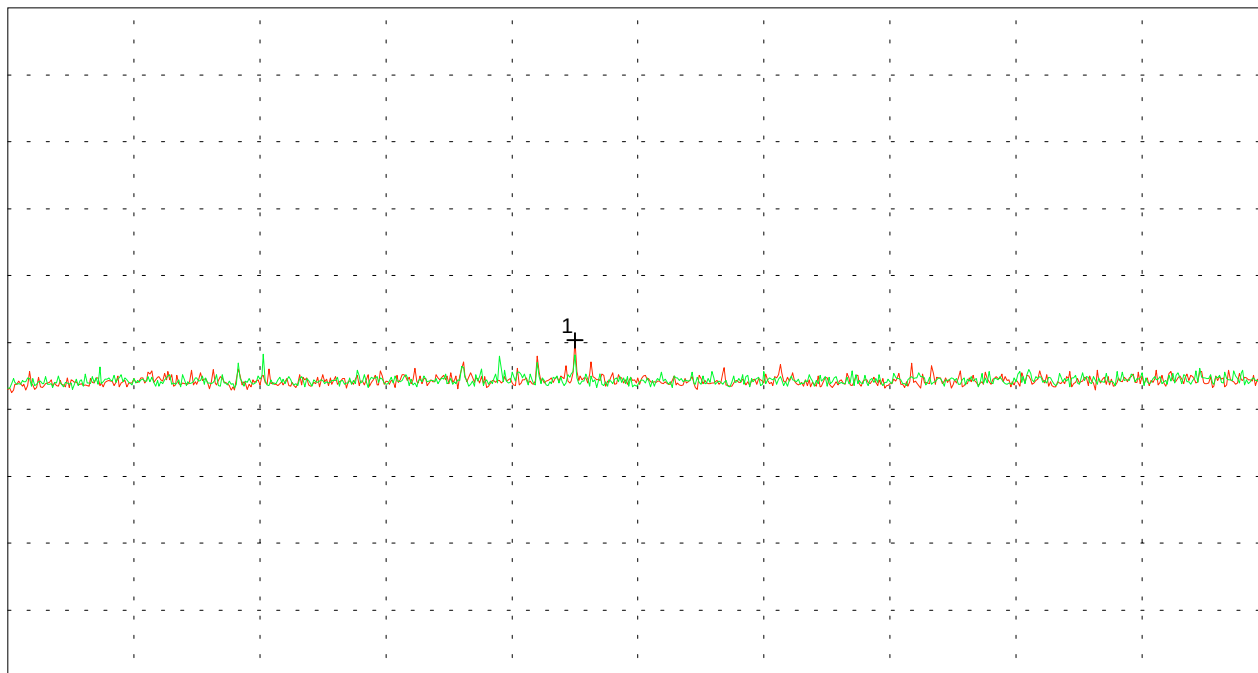
Channel A: Horizontal polarization

Channel B: Vertical polarization

PRESCAN WITHOUT ANY CORRECTIONS

Ref.Level 80 dBuV
10 dB/Div.

ATT 0 dB



Start 30.000 MHz
RBW 100 kHz

VBW 100 kHz

Stop 300.000 MHz
SWP 60 ms

Multi Marker List

No.	Frequency (MHz)	Amplitude (dBuV)	Marker
No. 1	151.500000 MHz	30.31 dBuV	A

Tested by:
Rupert Kohlhäufel

Date:
08/01/2001

Project-No.:
50217-00696-1

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Radiated emissions 30 MHz - 1 GHz acc. to FCC Part 15 Subpart C

Model:
Funkfernbedienung 868 MHz, Typ 765

Serial No.:
01

Applicant:
Bayerische Motorenwerke AG

Mode:
Transmitter in TX mode

Battery supply: 3.0 V DC

EUT in vertical position with right hand side on table

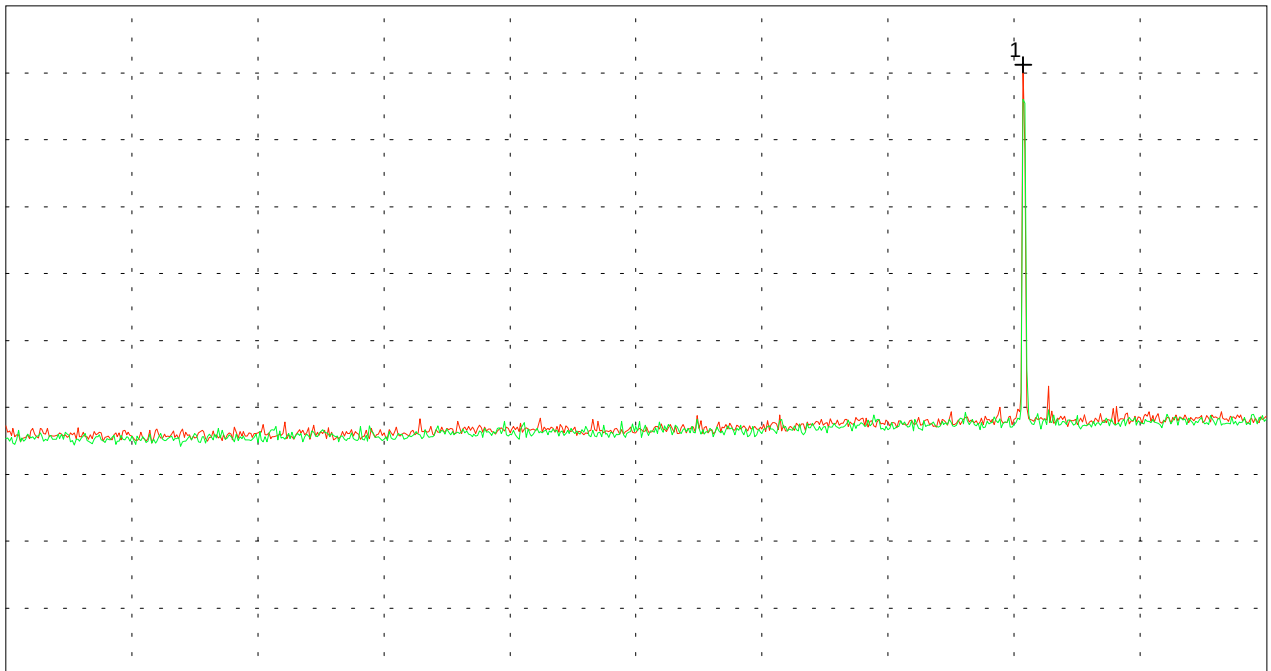
Test distance: 3 meters

Channel A: Horizontal polarization
Channel B: Vertical polarization

PRESCAN WITHOUT ANY CORRECTIONS

Ref.Level 90 dBuV
10 dB/Div.

ATT 0 dB



Start 300.000 MHz
RBW 100 kHz

VBW 100 kHz

Stop 1.000 GHz
SWP 140 ms

Multi Marker List

No.	Frequency (MHz)	Power (dBuV)	Marker
No. 1	865.000000 MHz	81.22 dBuV	A

Tested by:
Rupert Kohlhäufel

Date:
08/01/2001

Project-No.:
50217-00696-1

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**Radiated Emission 1 GHz - 8.7 GHz
according to FCC Part 15 Subpart C, §15.231.b**

Model: Funkfernbedienung 868 MHz, Typ 765
 Type: Remote control transmitter
 Serial No.: eng 01
 Applicant: Bayerische Motorenwerke AG
 Test-site: Semi anechoic room
 Test distance: 3 meters
 Date of test: 01/09/2001
 Operator: R. Kohlhäufel
 Mode: - transmitting continuously
 - with battery supply 3 V DC

- EUT in horizontal position with rear on table
 Detector: Peak

Frequency [GHz]	Polarization	Analyzer- reading [dBμV]	Antenna- correction [dB]	Cable- correction [dB]	Fieldstrength Peak [dBμV/m]	Limit Peak [dBμV/m]	Duty cycle correction [dB]	Fieldstrength Average [dBμV/m]	Limit Average [dBμV/m]	Limit exceeded
1.7367	horizontal	27.2	27.9	0.5	55.6	81.9	5.1	50.5	61.9	
4.3417	horizontal	25.9	27.2	0.8	53.9	74.0	5.1	48.8	54.0	

Note: Frequency error of markers is depending on span of analyzer. Therefore exact frequency values are calculated as harmonics of fundamental frequency.

Result: The limits are kept.

Radiated Emission 1 GHz - 8.7 GHz
according to FCC Part 15 Subpart C, §15.231.b

Model: Funkfernbedienung 868 MHz, Typ 765
 Type: Remote control transmitter
 Serial No.: eng 01
 Applicant: Bayerische Motorenwerke AG
 Test-site: Open area test-site I
 Test distance: 3 meters
 Date of test: 01/09/2001
 Operator: R. Kohlhäufel
 Mode: - transmitting continuously
 - with battery supply 3 V DC

- EUT in vertical position with antenna to the top
 Detector: Peak

Frequency [GHz]	Polarization	Analyzer- reading [dBμV]	Antenna- correction [dB]	Cable- correction [dB]	Fieldstrength Peak [dBμV/m]	Limit Peak [dBμV/m]	Duty cycle correction [dB]	Fieldstrength Average [dBμV/m]	Limit Average [dBμV/m]	Limit exceeded
1.7367	vertical	29.5	27.9	0.5	58.0	81.9	5.1	52.9	61.9	
3.4733	vertical	15.1	33.2	0.7	49.0	81.9	5.1	43.9	61.9	
4.3417	vertical	18.5	34.3	0.8	53.7	74.0	5.1	48.6	54.0	

Note: Frequency error of markers is depending on span of analyzer. Therefore exact frequency values are calculated as harmonics of fundamental frequency.

Result: The limits are kept.

Radiated Emission 1 GHz - 8.7 GHz
according to FCC Part 15 Subpart C, §15.231.b

Model: Funkfernbedienung 868 MHz, Typ 765
 Type: Remote control transmitter
 Serial No.: eng 01
 Applicant: Bayerische Motorenwerke AG
 Test-site: Open area test-site I
 Test distance: 3 meters
 Date of test: 01/09/2001
 Operator: R. Kohlhäufel
 Mode: - transmitting continuously
 - with battery supply 3 V DC

- EUT in vertical position with right hand side on table
 Detector: Peak

Frequency [GHz]	Polarization	Analyzer- reading [dBμV]	Antenna- correction [dB]	Cable- correction [dB]	Fieldstrength Peak [dBμV/m]	Limit Peak [dBμV/m]	Duty cycle correction [dB]	Fieldstrength Average [dBμV/m]	Limit Average [dBμV/m]	Limit exceeded
1.7367	vertical	25.6	27.9	0.5	54.0	81.9	5.1	48.9	61.9	
4.3417	vertical	16.3	34.3	0.8	51.4	74.0	5.1	46.3	54.0	

Note: Frequency error of markers is depending on span of analyzer. Therefore exact frequency values are calculated as harmonics of fundamental frequency.

Result: The limits are kept.

Radiated emissions 1 GHz - 8.7 GHz acc. to FCC Part 15 Subpart C

Model:
Funkfernbedienung 868 MHz, Typ 765

Serial No.:
01

Applicant:
Bayerische Motorenwerke AG

Mode:
Transmitter in TX mode

Battery supply: 3.0 V DC

EUT in horizontal position with rear on table

Test distance: 3 meters

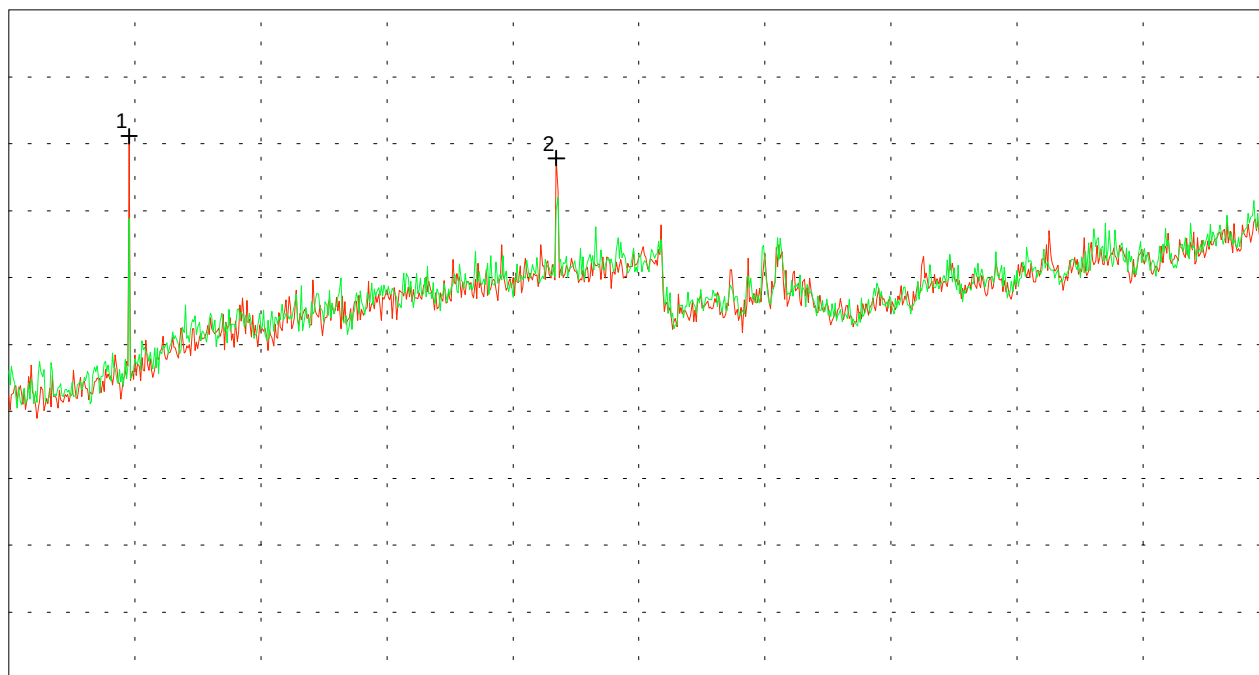
Channel A: Horizontal polarization

Channel B: Vertical polarization

Ref.Level 65 dB μ V/m
5 dB/Div.

ATT 0 dB

Ref. Offset -29.5 dB



Start 1.000 GHz
RBW 1 MHz

VBW 1 MHz

Stop 8.700 GHz
SWP 40 ms

Multi Marker List

No. 1	1.735778 GHz	55.58 dB μ V/m	A
No. 2	4.345222 GHz	53.93 dB μ V/m	A

Tested by:
Rupert Kohlhäufel

Date:
08/01/2001

Project-No.:
50217-00696-1

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Radiated emissions 1 GHz - 8.7 GHz acc. to FCC Part 15 Subpart C

Model:
Funkfernbedienung 868 MHz, Typ 765

Serial No.:
01

Applicant:
Bayerische Motorenwerke AG

Mode:
Transmitter in TX mode

Battery supply: 3.0 V DC

EUT in vertical position with front to the top

Test distance: 3 meters

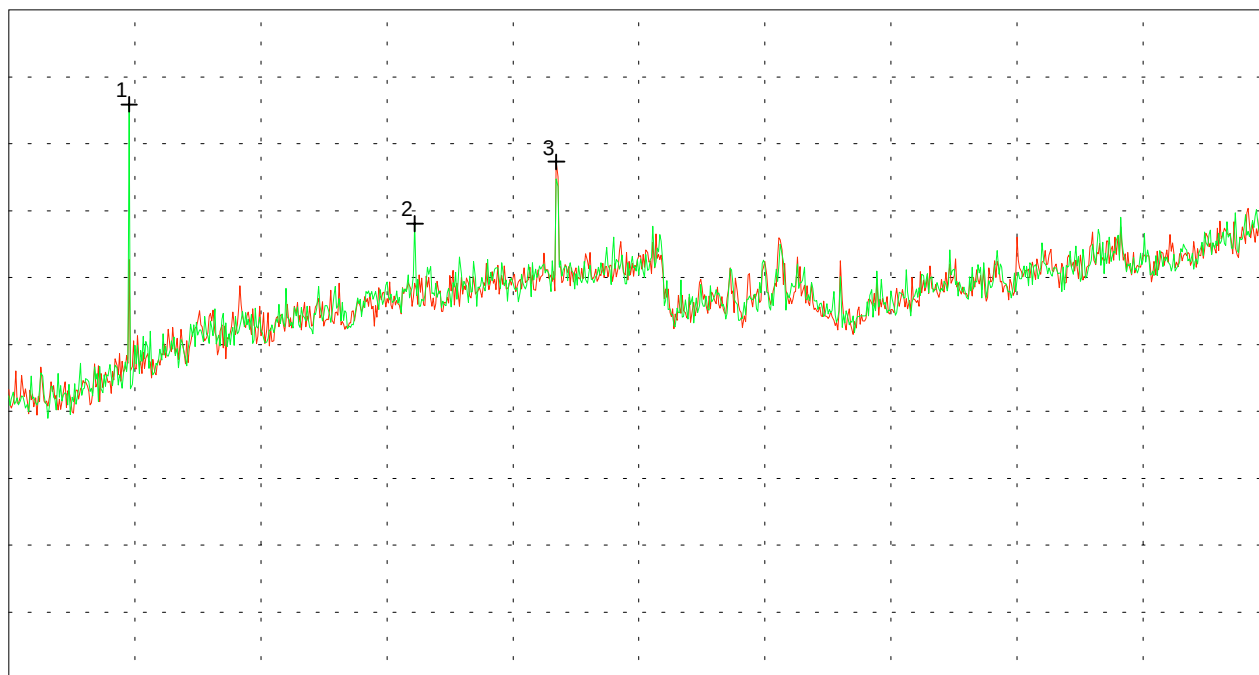
Channel A: Horizontal polarization

Channel B: Vertical polarization

Ref.Level 65 dB μ V/m
5 dB/Div.

ATT 0 dB

Ref. Offset -29.5 dB



Start 1.000 GHz
RBW 1 MHz

VBW 1 MHz

Stop 8.700 GHz
SWP 40 ms

Multi Marker List

No. 1	1.735778 GHz	57.95 dB μ V/m	B
No. 2	3.481111 GHz	49.03 dB μ V/m	B
No. 3	4.345222 GHz	53.65 dB μ V/m	A

Tested by:
Rupert Kohlhäufel

Date:
08/01/2001

Project-No.:
50217-00696-1

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Radiated emissions 1 GHz - 8.7 GHz acc. to FCC Part 15 Subpart C

Model:
Funkfernbedienung 868 MHz, Typ 765

Serial No.:
01

Applicant:
Bayerische Motorenwerke AG

Mode:
Transmitter in TX mode

Battery supply: 3.0 V DC

EUT in vertical position with right hand side on table

Test distance: 3 meters

Channel A: Horizontal polarization

Channel B: Vertical polarization

Ref.Level 65 dB μ V/m
5 dB/Div.

ATT 0 dB

Ref. Offset -29.5 dB



Start 1.000 GHz
RBW 1 MHz

VBW 1 MHz

Stop 8.700 GHz
SWP 40 ms

Multi Marker List

No. 1	1.735778 GHz	54.01 dB μ V/m	B
No. 2	4.345222 GHz	51.42 dB μ V/m	B

Tested by:
Rupert Kohlhäufel

Date:
08/01/2001

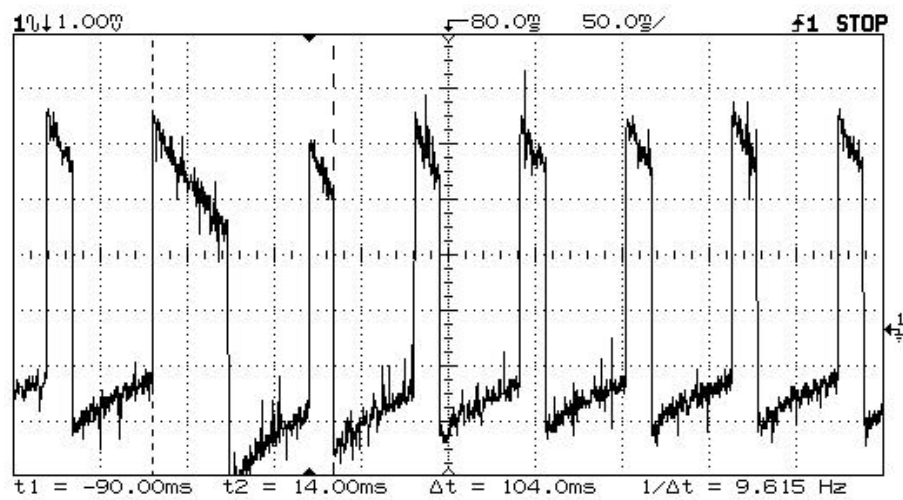
Project-No.:
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Duty Cycle Test
according to FCC Part 15 Subpart C, §15.231 / ANSI C63.4-1992 (14.10)

Model: Funkfernbedienung 868 MHz, Typ 765
Type: Remote control transmitter
Serial No.: eng 01
Applicant: Bayerische Motorenwerke AG
Test-site: Open area test-site I

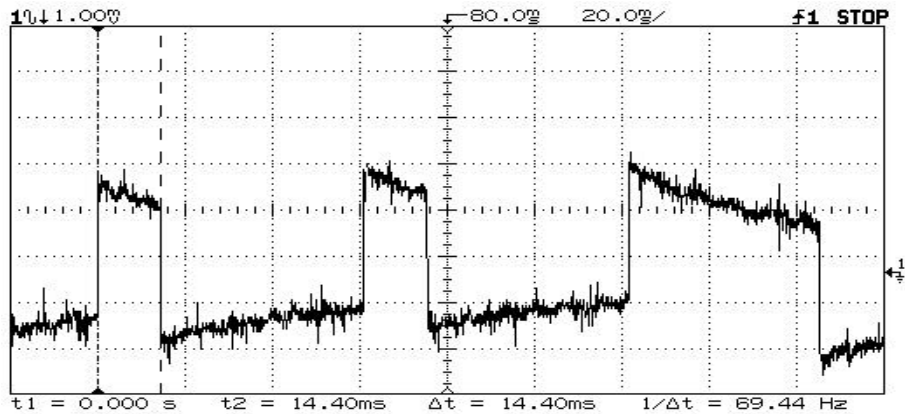
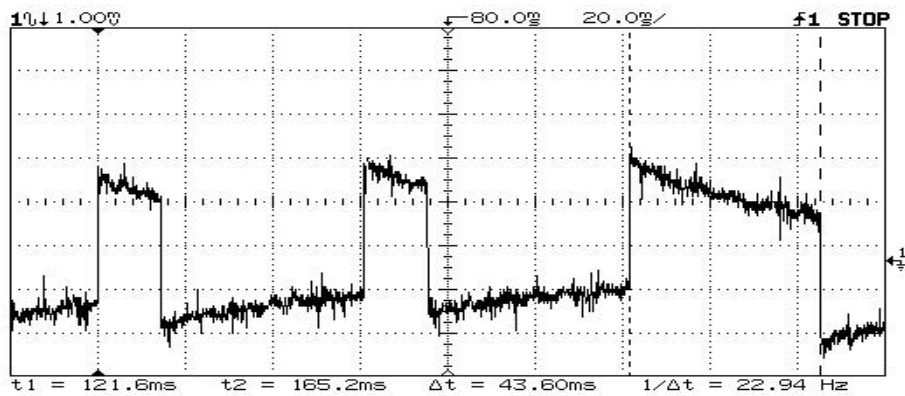
Date of test: 01/09/2001
Operator: R. Kohlhäufel
Mode: - transmitting continuously
- with battery supply 3 V DC



Duty Cycle Test (continued)
according to FCC Part 15 Subpart C, §15.231 / ANSI C63.4-1992 (14.10)

Model: Funkfernbedienung 868 MHz, Typ 765
 Type: Remote control transmitter
 Serial No.: eng 01
 Applicant: Bayerische Motorenwerke AG
 Test-site: Open area test-site I

Date of test: 01/09/2001
 Operator: R. Kohlhäufel
 Mode:
 - transmitting continuously
 - with battery supply 3 V DC



Duty Cycle Test (continued)
according to FCC Part 15 Subpart C, §15.231 / ANSI C63.4-1992 (14.10)

Model: Funkfernbedienung 868 MHz, Typ 765
Type: Remote control transmitter
Serial No.: eng 01
Applicant: Bayerische Motorenwerke AG
Test-site: Open area test-site I

Date of test: 01/09/2001
Operator: R. Kohlhäufel
Mode: - transmitting continuously
- with battery supply 3 V DC

(standard mode)

	Number of pulses	T [ms]	Duty Cycle	Duty Cycle Correction [dB]
Pulse Train		104.000	0.277	-11.2
Transmitter ON (long time)	0	43.600		
Transmitter ON (short time)	2	14.400		

(worst case mode)

	Number of pulses	T [ms]	Duty Cycle	Duty Cycle Correction [dB]
Pulse Train		104.000	0.558	-5.1
Transmitter ON (long time)	1	43.600		
Transmitter ON (short time)	1	14.400		