

**Conducted Emission Test 450 kHz - 30 MHz
according to FCC Part 15 Subpart C**

Model:
BEDAS 9320 legic

Serial no.:
--

Applicant:
Kaba Benzing GmbH

Test site:
Shielded room, cabin no. 2

Tested on:
**Linecord EUT
Phase N**

Date of test: 07/22/1997 Operator:
P. Zisterer

Test performed: automatically File name:

Mode:
- Reading of transponder

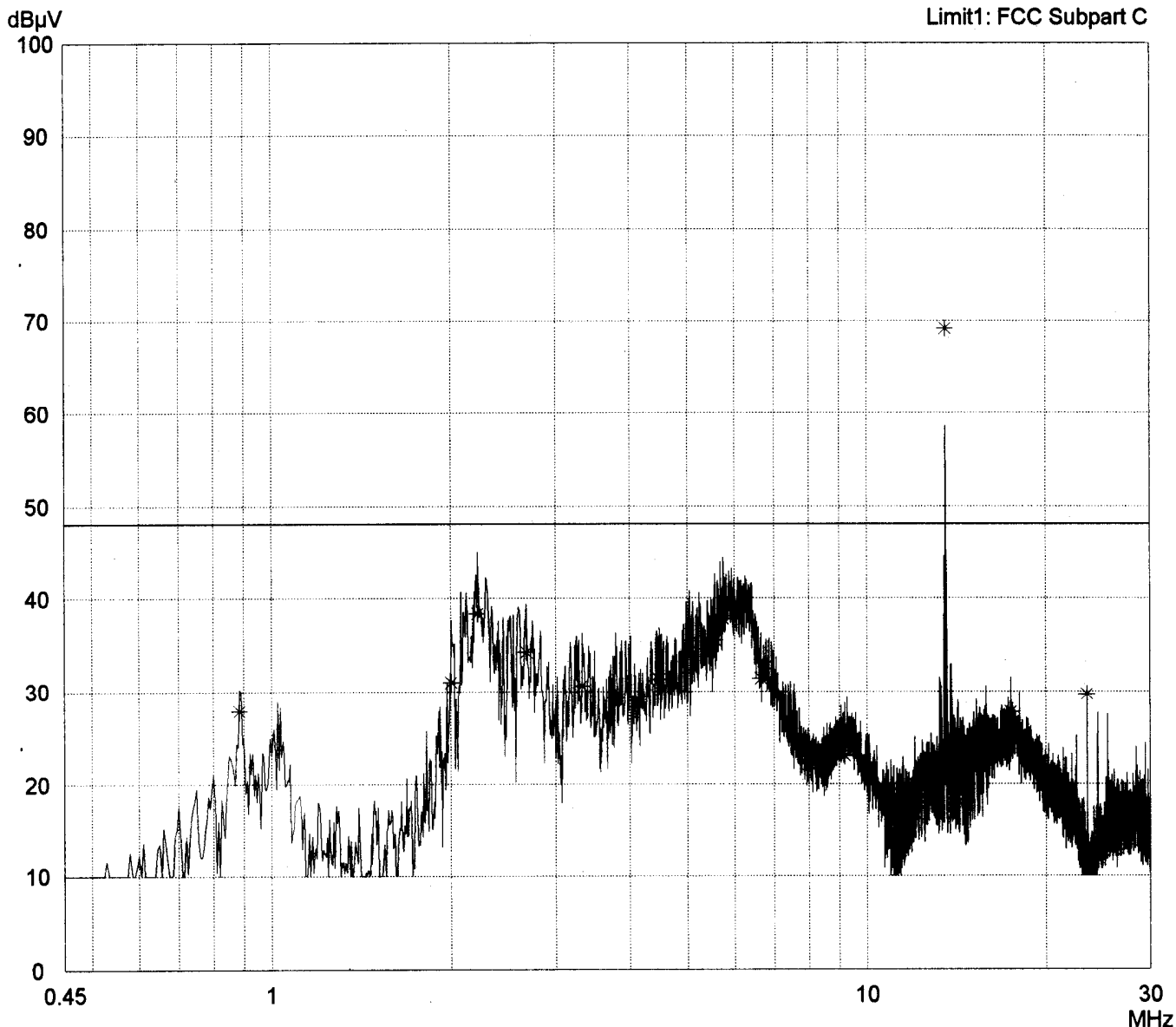
- EUT is connected with PC (NCR) by RS485/
232-Converter

- Software "Service V2.84"

Remark: Operating frequency of EUT:
13.56 MHz

Detector:
Peak / Final Results: QP

Final results:
Selected by hand



Result:
Limit kept

Project file:
51116-70522

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Conducted Emission Test 450 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
BEDAS 9320 legic

Serial no.:
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Applicant:
Kaba Benzing GmbH

Test site:
Shielded room, cabin no. 2

Tested on:
Linecord EUT
Phase N

Date of test: 07/22/1997 **Operator:** P. Zisterer

Test performed: automatically **File name:**

Mode:

- Reading of transponder

- EUT is connected with PC (NCR) by RS485/
232-Converter

- Software "Service V2.84"

Remark: Operating frequency of EUT:
13.56 MHz

Detector:

Peak / Final Results: QP

Final results:

Selected by hand

Frequency MHz	Reading dBµV	Correction factor dB	Value dBµV	Limit dBµV	Limit exceeded
0.885	27.9		27.9	48.0	
2.005	31.0		31.0	48.0	
2.220	38.4		38.4	48.0	
2.680	34.2		34.2	48.0	
3.330	30.6		30.6	48.0	
3.790	29.3		29.3	48.0	
4.490	31.3		31.3	48.0	
5.565	35.5		35.5	48.0	
5.750	37.8		37.8	48.0	
6.650	31.4		31.4	48.0	
9.185	23.0		23.0	48.0	
13.560	69.2		69.2	48.0	*
17.460	27.8		27.8	48.0	
23.500	29.7		29.7	48.0	

Result:
Limit kept

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**Conducted Emission Test 450 kHz - 30 MHz
according to FCC Part 15 Subpart C**

Model:
BEDAS 9320 legic

Serial no.:
--

Applicant:
Kaba Benzing GmbH

Test site:
Shielded room, cabin no. 2

Tested on:
**Linecord EUT
Phase L1**

Date of test: 07/22/1997 Operator:
P. Zisterer

Test performed: automatically File name:

Mode:
- Reading of transponder

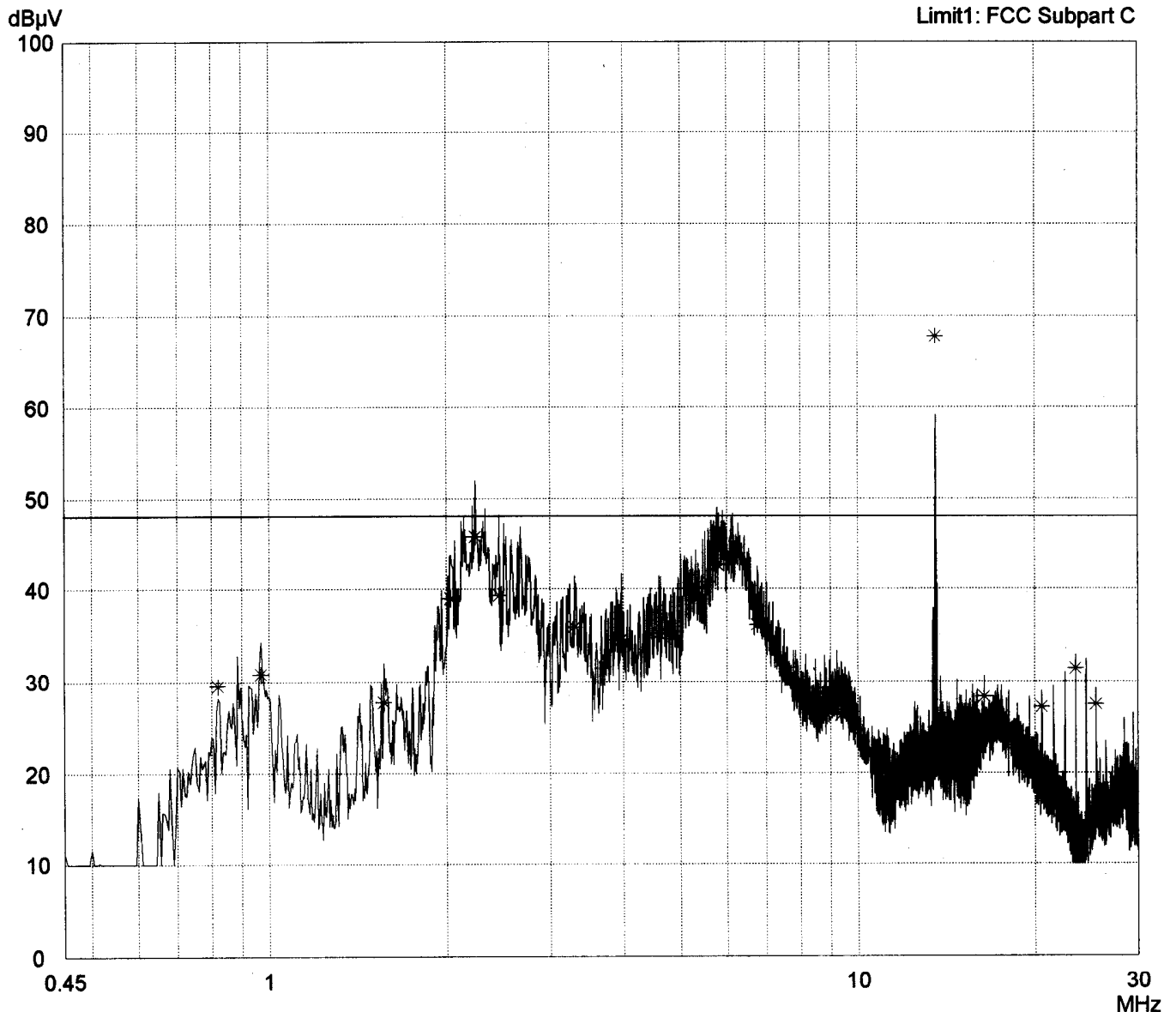
- EUT is connected with PC (NCR) by RS485/
232-Converter

- Software "Service V2.84"

Remark: Operating frequency of EUT:
13.56 MHz

Detector:
Peak / Final Results: QP

Final results:
Selected by hand



Result:
Limit kept

Project file:
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Conducted Emission Test 450 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
BEDAS 9320 legic

Serial no.:
--

Applicant:
Kaba Benzing GmbH

Test site:
Shielded room, cabin no. 2

Tested on:
Linecord EUT
Phase L1

Date of test: 07/22/1997 Operator: P. Zisterer

Test performed: automatically File name:

Mode:
- Reading of transponder

- EUT is connected with PC (NCR) by RS485/
232-Converter

- Software "Service V2.84"

Remark: Operating frequency of EUT:
13.56 MHz

Detector:
Peak / Final Results: QP

Final results:
Selected by hand

Frequency MHz	Reading dBµV	Correction factor dB	Value dBµV	Limit dBµV	Limit exceeded
0.820	29.5		29.5	48.0	
0.970	30.8		30.8	48.0	
1.565	27.7		27.7	48.0	
2.035	39.0		39.0	48.0	
2.240	45.8		45.8	48.0	
2.460	39.3		39.3	48.0	
3.305	35.9		35.9	48.0	
3.975	34.5		34.5	48.0	
4.600	35.1		35.1	48.0	
5.575	40.7		40.7	48.0	
5.780	42.7		42.7	48.0	
6.770	36.1		36.1	48.0	
9.225	26.6		26.6	48.0	
9.380	26.3		26.3	48.0	
13.560	67.8		67.8	48.0	*
16.400	28.3		28.3	48.0	
20.565	27.2		27.2	48.0	
23.510	31.4		31.4	48.0	
25.470	27.5		27.5	48.0	

Result:
Limit kept

Project file:
51116-70522

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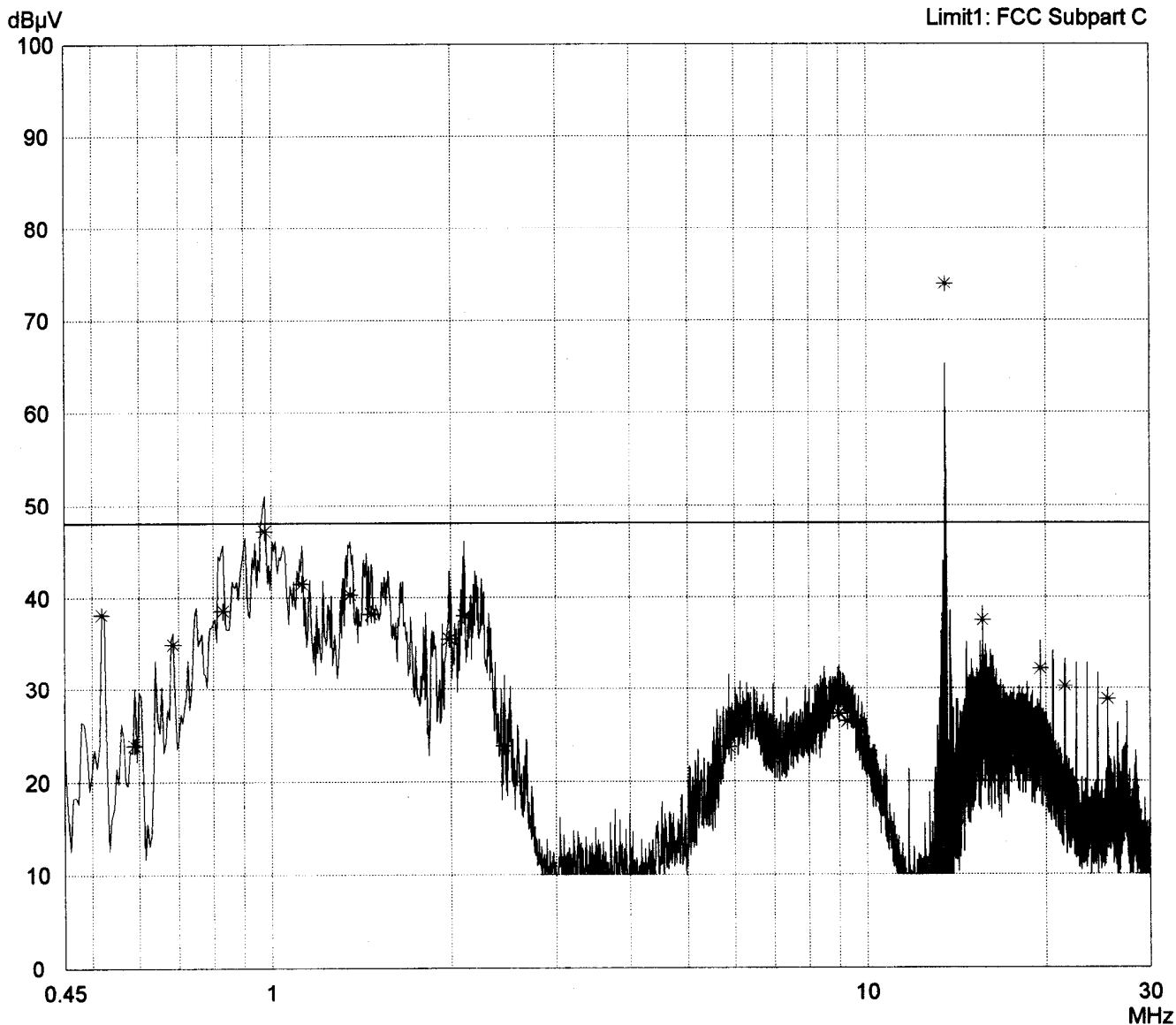
Conducted Emission Test 450 kHz - 30 MHz according to FCC Part 15 Subpart C

Model: BEDAS 9320 legic	
Serial no.: --	
Applicant: Kaba Benzing GmbH	
Test site: Shielded room, cabin no. 2	
Tested on: Linecord PC Phase N	
Date of test: 07/22/1997	Operator: P. Zisterer
Test performed: automatically	File name:

Mode: - Reading of transponder - EUT is connected with PC (NCR) by RS485/ 232-Converter - Software "Service V2.84"
Remark: Operating frequency of EUT: 13.56 MHz

Detector: Peak / Final Results: QP

Final results: Selected by hand



Result: Limit kept

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Conducted Emission Test 450 kHz - 30 MHz according to FCC Part 15 Subpart C

Model: BEDAS 9320 legic	Mode: - Reading of transponder - EUT is connected with PC (NCR) by RS485/232-Converter - Software "Service V2.84"
Serial no.: --	Remark: Operating frequency of EUT: 13.56 MHz
Applicant: Kaba Benzing GmbH	
Test site: Shielded room, cabin no. 2	
Tested on: Linecord PC Phase N	
Date of test: 07/22/1997	
Operator: P. Zisterer	
Test performed: automatically	File name:

Detector: Peak / Final Results: QP	Final results: Selected by hand
--	---

Frequency MHz	Reading dBµV	Correction factor dB	Value dBµV	Limit dBµV	Limit exceeded
0.520	38.2		38.2	48.0	
0.590	23.9		23.9	48.0	
0.685	34.9		34.9	48.0	
0.830	38.6		38.6	48.0	
0.975	47.2		47.2	48.0	
1.125	41.5		41.5	48.0	
1.355	40.3		40.3	48.0	
1.470	38.3		38.3	48.0	
1.990	35.5		35.5	48.0	
2.110	38.1		38.1	48.0	
2.460	23.8		23.8	48.0	
5.865	23.7		23.7	48.0	
6.960	22.4		22.4	48.0	
8.970	27.3		27.3	48.0	
9.275	26.5		26.5	48.0	
13.560	74.0		74.0	48.0	*
15.670	37.6		37.6	48.0	
19.600	32.2		32.2	48.0	
21.560	30.3		30.3	48.0	
25.475	28.8		28.8	48.0	

Result: Limit kept	Project file: 51116-70522
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Conducted Emission Test 450 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
BEDAS 9320 legic

Serial no.:
--

Applicant:
Kaba Benzing GmbH

Test site:
Shielded room, cabin no. 2

Tested on:
Linecord PC
Phase L1

Date of test: 07/22/1997
Operator: P. Zisterer

Test performed: automatically
File name:

Mode:
- Reading of transponder

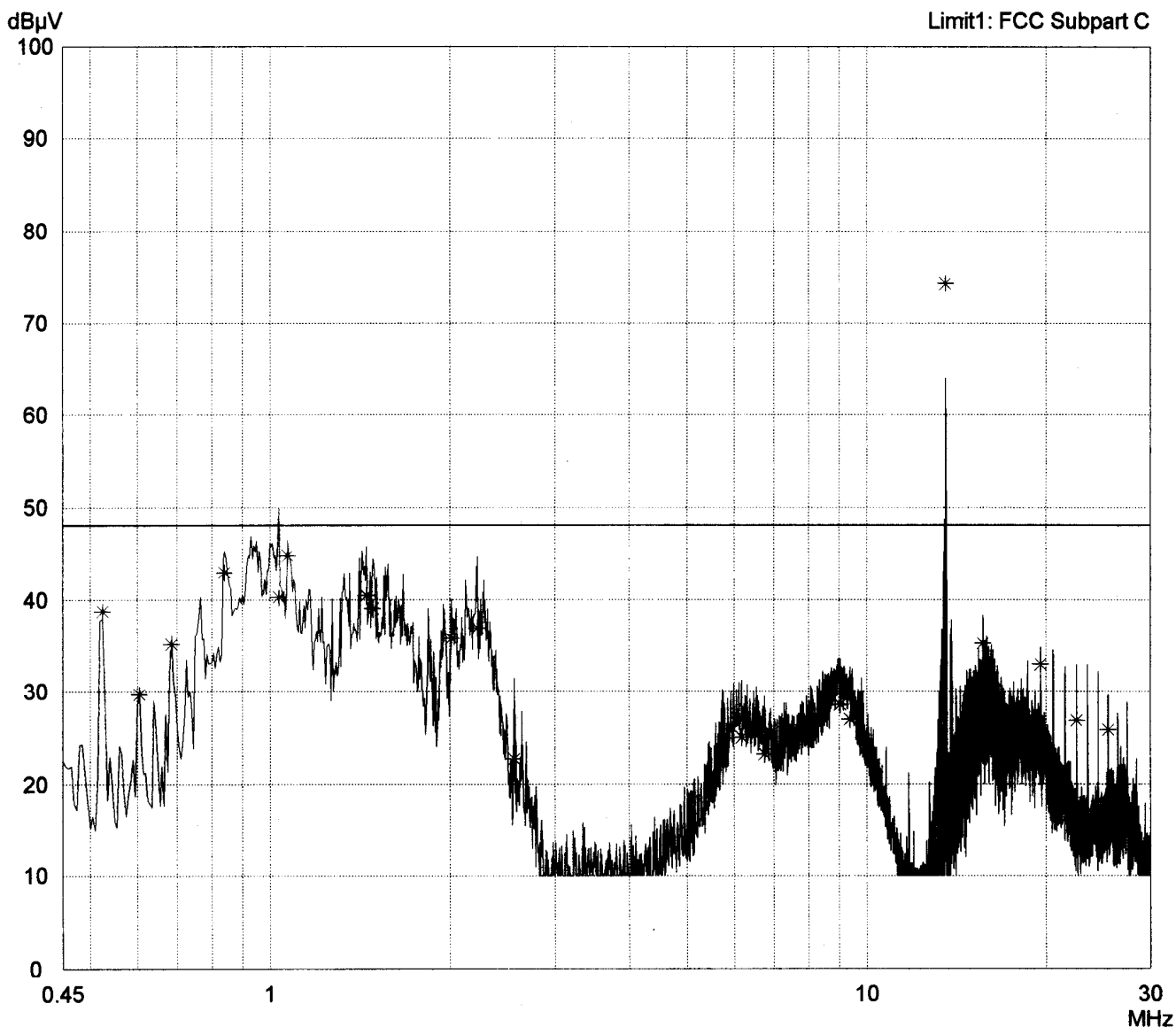
- EUT is connected with PC (NCR) by RS485/
232-Converter

- Software "Service V2.84"

Remark: Operating frequency of EUT:
13.56 MHz

Detector:
Peak / Final Results: QP

Final results:
Selected by hand



Result:
Limit kept

Project file:
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Conducted Emission Test 450 kHz - 30 MHz according to FCC Part 15 Subpart C

Model: BEDAS 9320 Iegic	Mode: - Reading of transponder - EUT is connected with PC (NCR) by RS485/232-Converter - Software "Service V2.84" Remark: Operating frequency of EUT: 13.56 MHz
Serial no.: ---	
Applicant: Kaba Benzing GmbH	
Test site: Shielded room, cabin no. 2	
Tested on: Linecord PC Phase L1	
Date of test: 07/22/1997 Operator: P. Zisterer	
Test performed: automatically	File name:

Detector: Peak / Final Results: QP	Final results: Selected by hand
--	---

Frequency MHz	Reading dBµV	Correction factor dB	Value dBµV	Limit dBµV	Limit exceeded
0.525	38.8		38.8	48.0	
0.605	29.7		29.7	48.0	
0.685	35.2		35.2	48.0	
0.840	43.0		43.0	48.0	
1.035	40.3		40.3	48.0	
1.070	44.8		44.8	48.0	
1.450	40.5		40.5	48.0	
1.485	39.1		39.1	48.0	
2.015	35.8		35.8	48.0	
2.225	37.0		37.0	48.0	
2.565	22.7		22.7	48.0	
6.180	25.1		25.1	48.0	
6.755	23.2		23.2	48.0	
9.035	28.6		28.6	48.0	
9.375	27.0		27.0	48.0	
13.560	74.4		74.4	48.0	*
15.675	35.3		35.3	48.0	
19.595	33.0		33.0	48.0	
22.545	26.9		26.9	48.0	
25.480	25.9		25.9	48.0	

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Conducted Emission Test 450 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
BEDAS 9320 legic

Serial no.:
--

Applicant:
Kaba Benzing GmbH

Test site:
Shielded room, cabin no. 2

Tested on:
**Linecord Printer + RS232/485-Converter
Phase N**

Date of test: 07/22/1997
Operator: P. Zisterer

Test performed: automatically
File name:

Mode:
- Reading of transponder

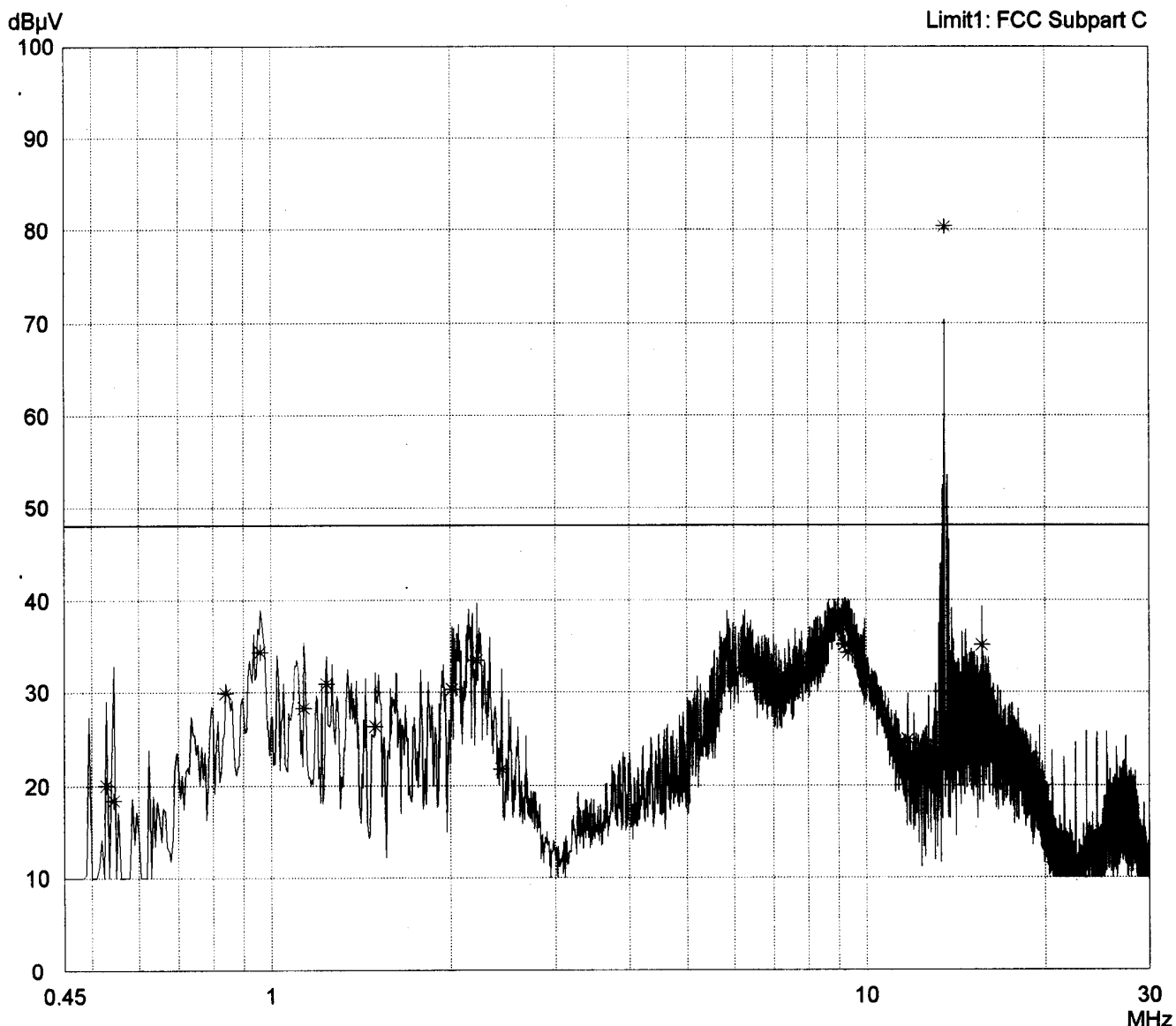
- EUT is connected with PC (NCR) by RS485/
232-Converter

- Software "Service V2.84"

Remark: Operating frequency of EUT:
13.56 MHz

Detector:
Peak / Final Results: QP

Final results:
Selected by hand



Result:
Limit kept

Project file:
51116-70522

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Conducted Emission Test 450 kHz - 30 MHz according to FCC Part 15 Subpart C

Model: BEDAS 9320 legic	Mode: - Reading of transponder - EUT is connected with PC (NCR) by RS485/232-Converter - Software "Service V2.84" Remark: Operating frequency of EUT: 13.56 MHz
Serial no.: --	
Applicant: Kaba Benzing GmbH	
Test site: Shielded room, cabin no. 2	
Tested on: Linecord Printer + RS232/485-Converter Phase N	
Date of test: 07/22/1997	
Operator: P. Zisterer	
Test performed: automatically	File name:

Detector: Peak / Final Results: QP	Final results: Selected by hand
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Frequency MHz	Reading dBµV	Correction factor dB	Value dBµV	Limit dBµV	Limit exceeded
0.530	20.1		20.1	48.0	
0.545	18.4		18.4	48.0	
0.840	29.9		29.9	48.0	
0.960	34.4		34.4	48.0	
1.135	28.3		28.3	48.0	
1.240	30.9		30.9	48.0	
1.495	26.4		26.4	48.0	
2.015	30.3		30.3	48.0	
2.215	33.5		33.5	48.0	
2.440	21.8		21.8	48.0	
5.570	28.1		28.1	48.0	
6.265	32.6		32.6	48.0	
7.610	29.9		29.9	48.0	
9.220	35.2		35.2	48.0	
9.345	34.3		34.3	48.0	
11.750	25.0		25.0	48.0	
13.560	80.4		80.4	48.0	*
15.665	35.1		35.1	48.0	

Result: Limit kept	Project file: 51116-70522	Page 30 of 51 Pages
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Conducted Emission Test 450 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
BEDAS 9320 legic

Serial no.:
--

Applicant:
Kaba Benzing GmbH

Test site:
Shielded room, cabin no. 2

Tested on:
**Linecord Printer + RS232/485-Converter
Phase L1**

Date of test:
07/22/1997

Operator:
P. Zisterer

Test performed:
automatically

File name:

Mode:

- Reading of transponder

- EUT is connected with PC (NCR) by RS485/
232-Converter

- Software "Service V2.84"

Remark: Operating frequency of EUT:
13.56 MHz

Detector:

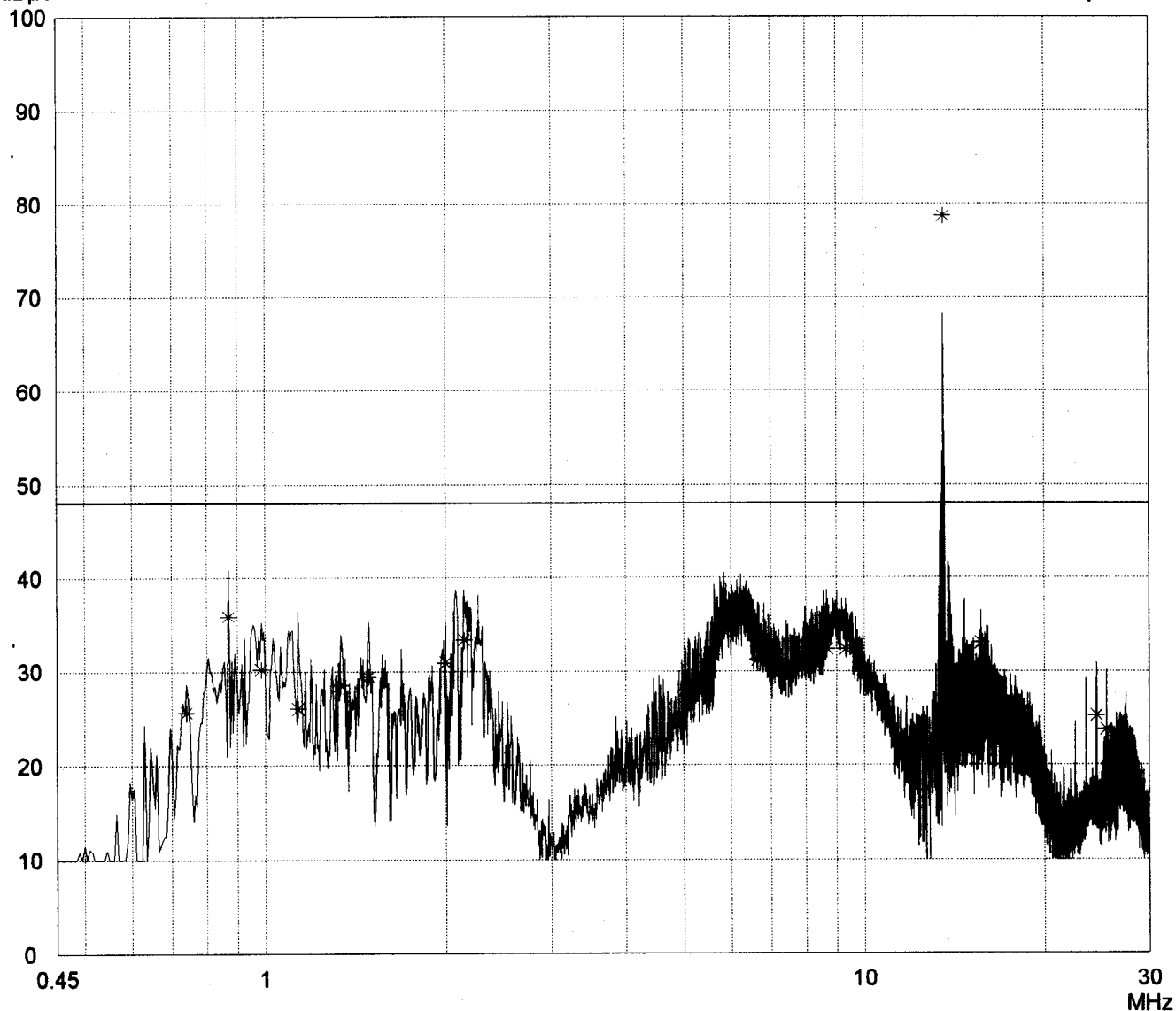
Peak / Final Results: QP

Final results:

Selected by hand

dBµV

Limit1: FCC Subpart C



Result:
Limit kept

Project file:
51116-70522

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Conducted Emission Test 450 kHz - 30 MHz according to FCC Part 15 Subpart C

Model: BEDAS 9320 legic	Mode: - Reading of transponder - EUT is connected with PC (NCR) by RS485/232-Converter - Software "Service V2.84"
Serial no.: --	Remark: Operating frequency of EUT: 13.56 MHz
Applicant: Kaba Benzing GmbH	
Test site: Shielded room, cabin no. 2	
Tested on: Linecord Printer + RS232/485-Converter Phase L1	
Date of test: 07/22/1997	
Operator: P. Zisterer	
Test performed: automatically	File name:

Detector: Peak / Final Results: QP	Final results: Selected by hand
--	---

Frequency MHz	Reading dBµV	Correction factor dB	Value dBµV	Limit dBµV	Limit exceeded
0.740	25.6		25.6	48.0	
0.870	35.9		35.9	48.0	
0.985	30.2		30.2	48.0	
1.135	26.0		26.0	48.0	
1.335	28.5		28.5	48.0	
1.485	29.4		29.4	48.0	
2.000	30.9		30.9	48.0	
2.150	33.3		33.3	48.0	
4.545	22.7		22.7	48.0	
5.575	31.7		31.7	48.0	
5.845	34.2		34.2	48.0	
6.655	31.2		31.2	48.0	
8.670	32.3		32.3	48.0	
9.315	32.3		32.3	48.0	
13.560	78.7		78.7	48.0	*
15.665	33.0		33.0	48.0	
24.490	25.3		25.3	48.0	
25.465	23.8		23.8	48.0	

Result: Limit kept	Project file: 51116-70522
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Radiated Emission Test 30 MHz - 300 MHz according to FCC Part 15 Subpart C

Model:
BEDAS 9320 legic

Serial no.:
--

Applicant:
Kaba Benzing GmbH

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Horizontal Polarization

Date of test: 07/22/1997 Operator: P. Zisterer

Test performed: automatically File name:

Mode:

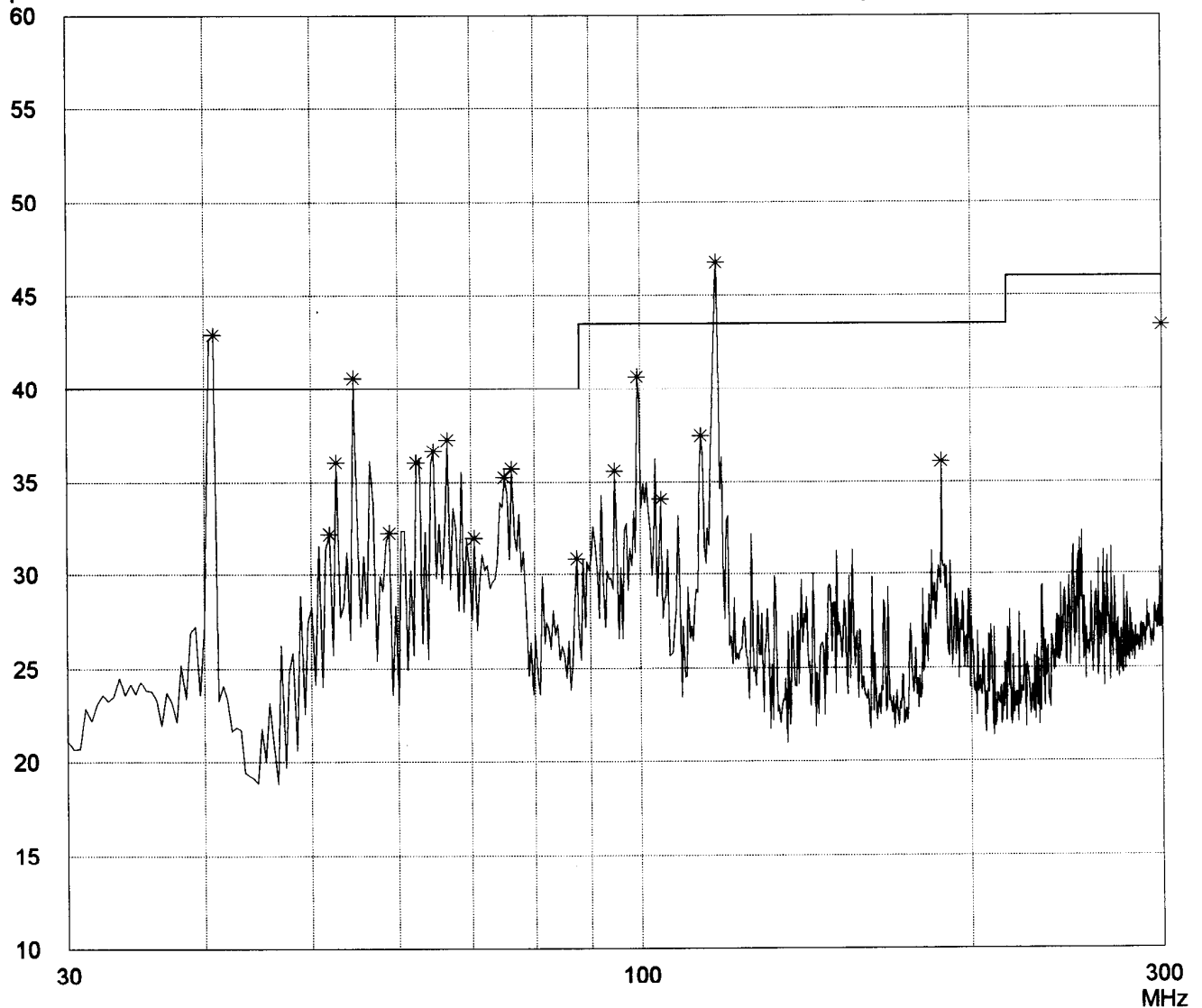
- Reading of transponder
- EUT is connected with PC (NCR) by RS485/232-Converter
- Software "Service V 2.84"

Detector:
Peak

List of values:
10 dB Margin 50 Subranges

dB μ V/m

Limit1: FCC Subpart C Transducer: HK 116



Result:
Prescan

Project file:
51116-70522

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

Model:
BEDAS 9320 legic

Serial no.:
—

Applicant:
Kaba Benzing GmbH

Test site:
Semi anechoic room, cabin no. 3

Tested on:
**Test distance 3 meters
Horizontal Polarization**

Date of test: **07/22/1997** Operator: **P. Zisterer**

Test performed: **automatically** File name:

Mode:

- Reading of transponder
- EUT is connected with PC (NCR) by RS485/
232-Converter
- Software "Service V 2.84"

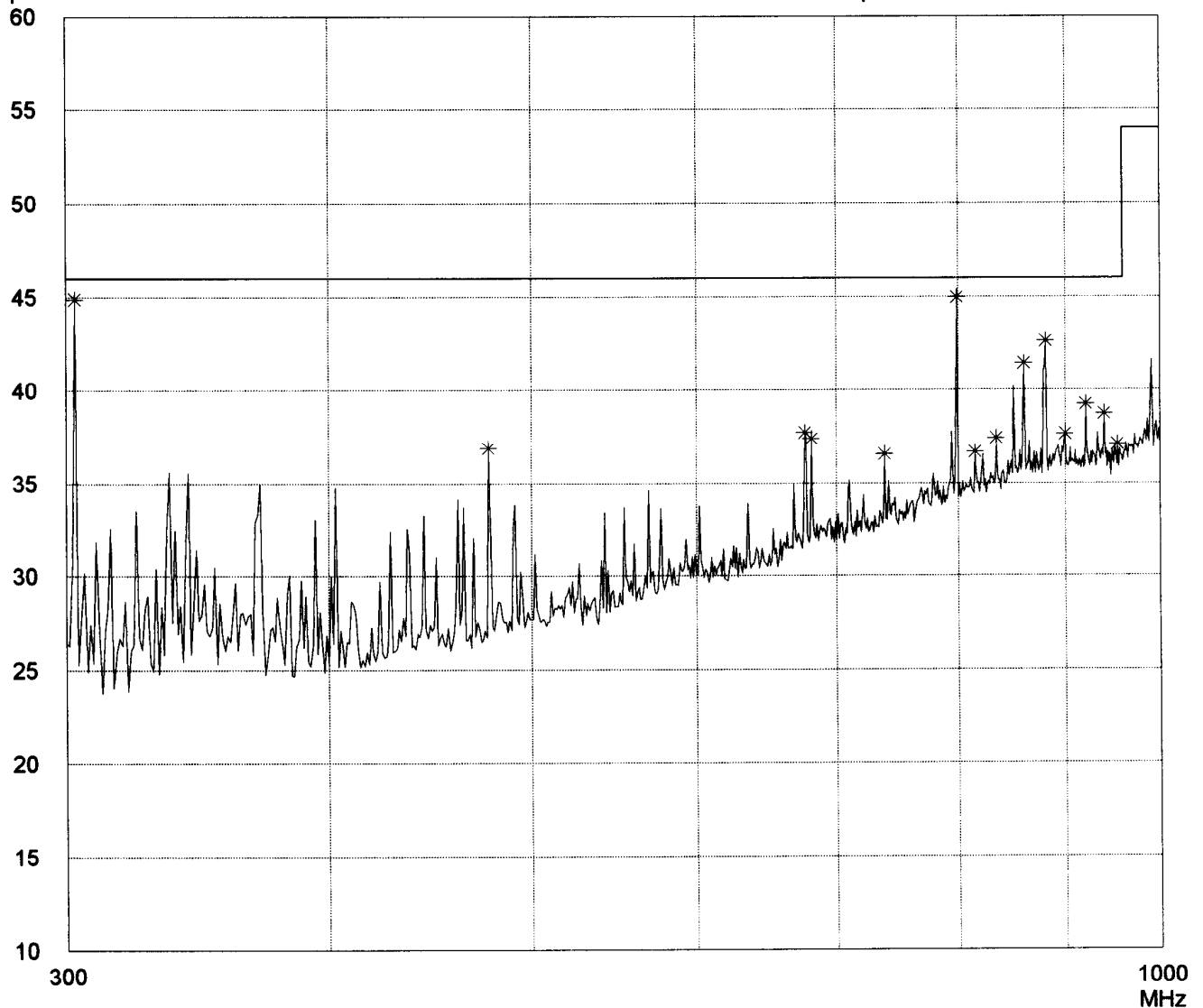
Detector:
Peak

List of values:
10 dB Margin

50 Subranges

dBμV/m

Limit1: FCC Subpart C Transducer: HL 223



Result:
Prescan

Project file:
51116-70522

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

Model:
BEDAS 9320 legic

Serial no.:
--

Applicant:
Kaba Benzing GmbH

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Vertical Polarization

Date of test: 07/22/1997
Operator: P. Zisterer

Test performed: automatically
File name:

Mode:
- Reading of transponder

- EUT is connected with PC (NCR) by RS485/
232-Converter

- Software "Service V 2.84"

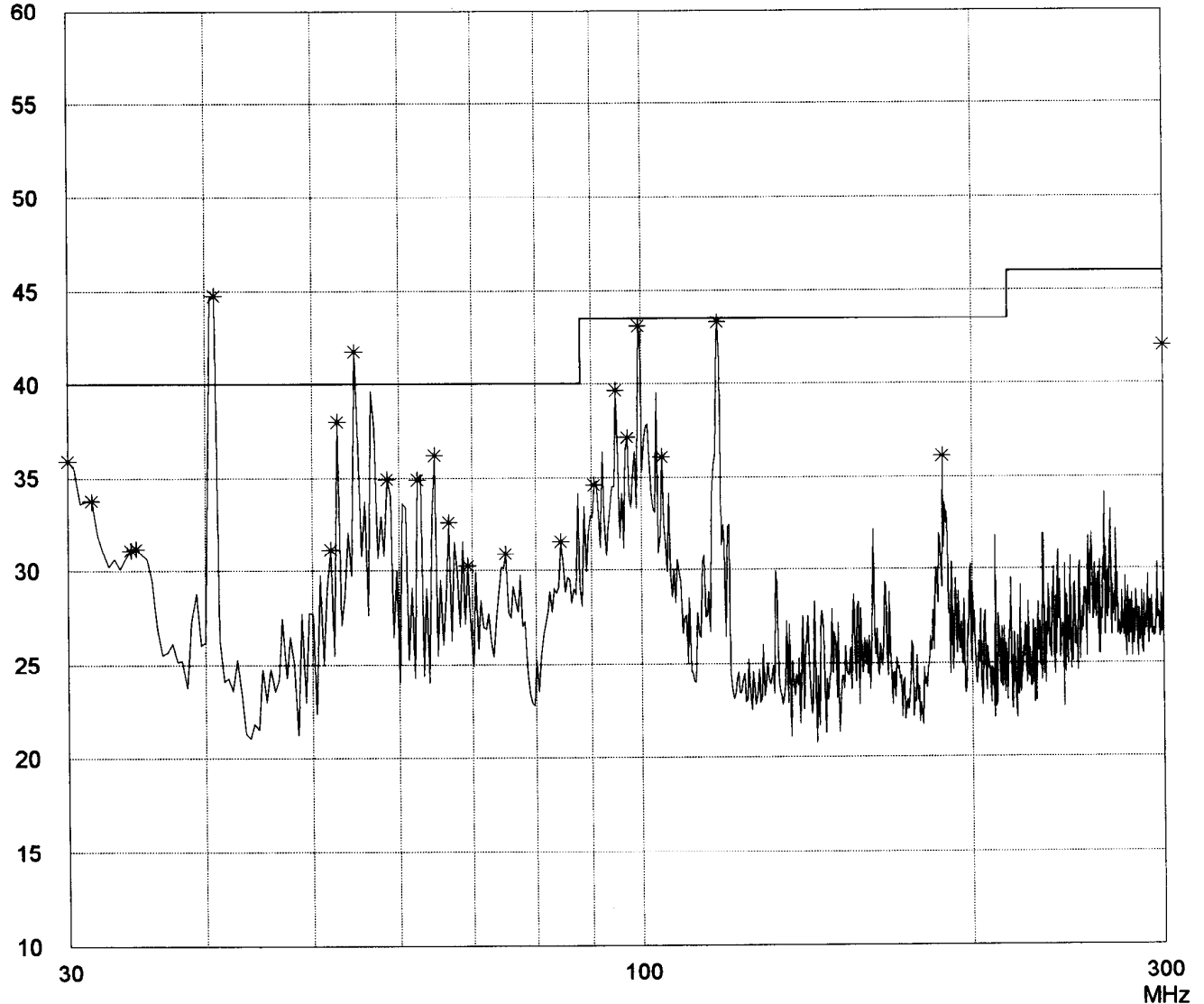
Detector:
Peak

List of values:
10 dB Margin

50 Subranges

dBμV/m
60

Limit1: FCC Subpart C Transducer: HK 116



Result:
Prescan

Project file:
51116-70522

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

Model:
BEDAS 9320 legic

Serial no.:
—

Applicant:
Kaba Benzing GmbH

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Vertical Polarization

Date of test: 07/22/1997
Operator: P. Zisterer

Test performed: automatically
File name:

Mode:

- Reading of transponder
- EUT is connected with PC (NCR) by RS485/232-Converter
- Software "Service V 2.84"

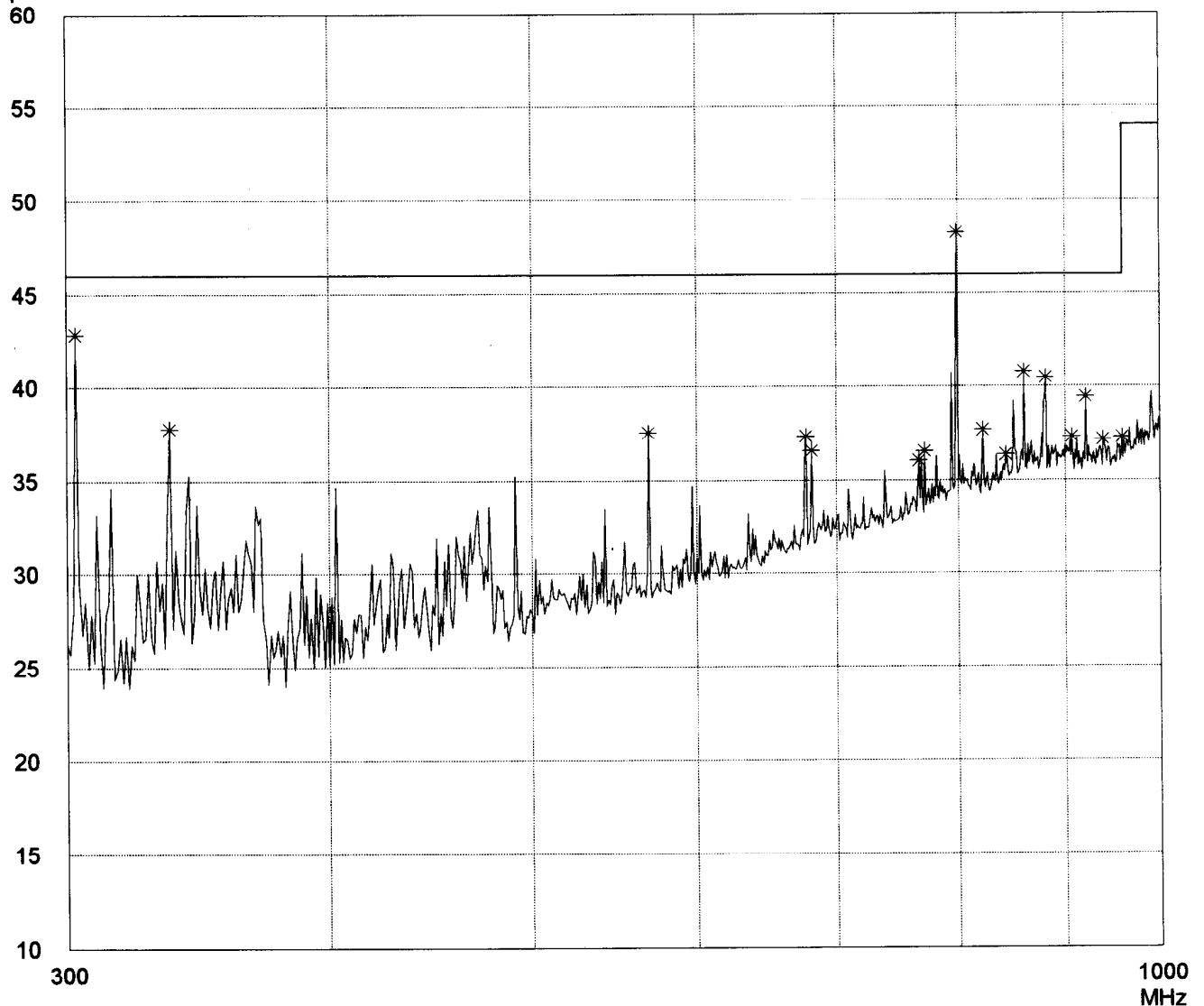
Detector:
Peak

List of values:
10 dB Margin

50 Subranges

dBμV/m
60

Limit1: FCC Subpart C Transducer: HL 223



Result:
Prescan

Project file:
51116-70522

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

Model:
BEDAS 9320 legic

Serial no.:
--

Applicant:
Kaba Benzing GmbH

Test site:
Open area test-site I

Tested on:
Test distance 3 meters
Horizontal Polarization

Date of test:
07/22/1997

Operator:
P. Zisterer

Test performed:
by hand

File name:

Mode:

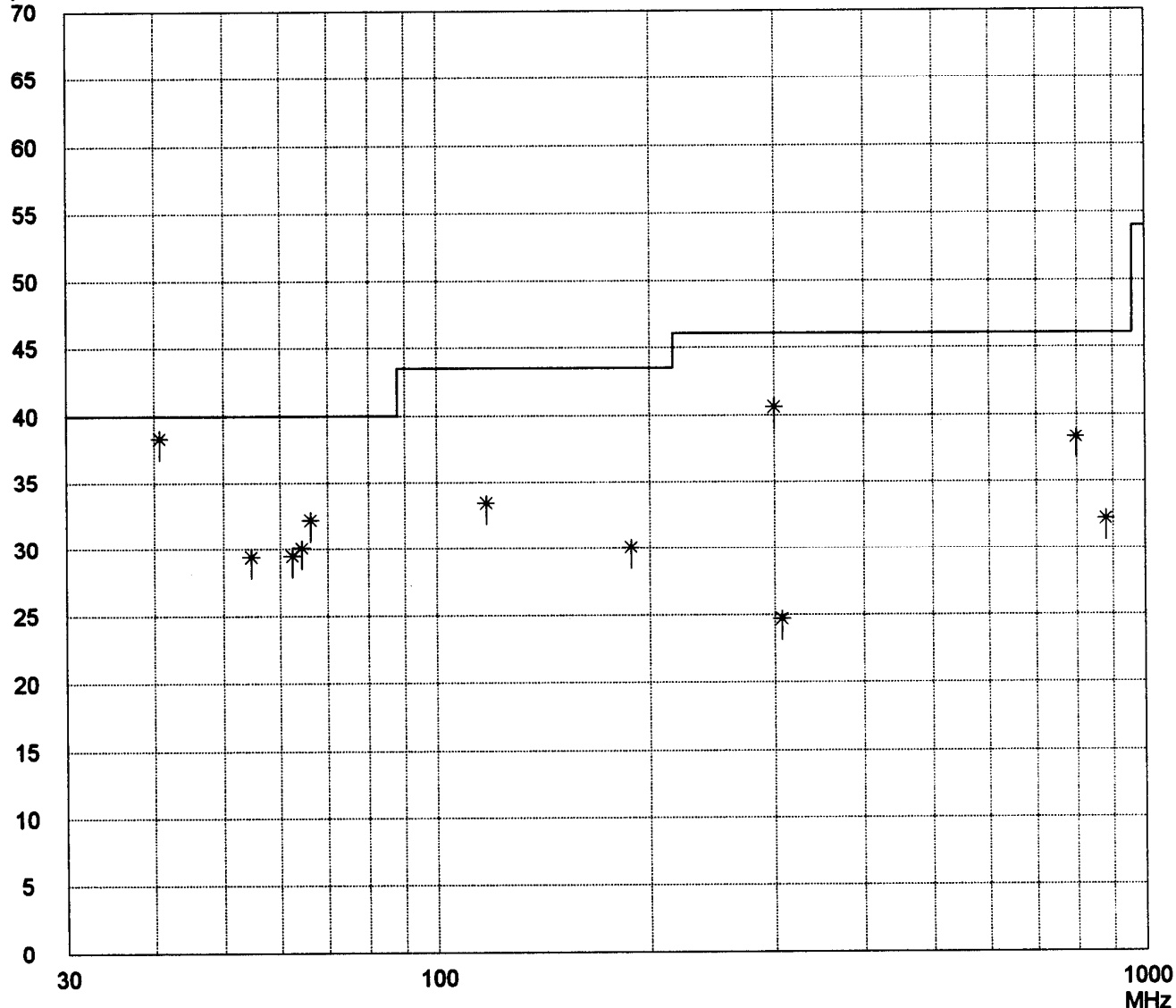
- Reading of transponder
- EUT is connected with PC (NCR) by RS 485/
232-Converter
- Software "Service V 2.84"

Detector:
Quasi-Peak

List of values:
Selected by hand

dBμV/m
70

Limit1: FCC Subpart C Transducer: HK116 / HL223 (3 m)



Result:
Limit kept

Project file:
51116-70522

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

Model: BEDAS 9320 legic	Mode: - Reading of transponder - EUT is connected with PC (NCR) by RS 485/ 232-Converter - Software "Service V 2.84"
Serial no.: ---	
Applicant: Kaba Benzing GmbH	
Test site: Open area test-site I	
Tested on: Test distance 3 meters Horizontal Polarization	
Date of test: 07/22/1997 Operator: P. Zisterer	
Test performed: by hand File name:	

Detector: Quasi-Peak	List of values: Selected by hand
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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>
40.7	26.0	12.3	38.3	40.0	
54.7	18.9	10.5	29.4	40.0	
62.4	19.3	10.2	29.5	40.0	
64.4	19.9	10.2	30.1	40.0	
66.3	22.0	10.2	32.2	40.0	
117.4	20.4	13.0	33.4	43.5	
188.0	13.5	16.6	30.1	43.5	
300.0	17.4	23.2	40.6	46.0	
306.9	7.7	17.0	24.7	46.0	
797.8	9.8	28.5	38.3	46.0	
880.0	2.0	30.2	32.2	46.0	

Result: Limit kept	Project file: 51116-70522	Page 38 of 51 Pages
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Radiated Emission Test 30 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
BEDAS 9320 legic

Serial no.:

Applicant:
Kaba Benzing GmbH

Test site:
Open area test-site I

Tested on:
Test distance 3 meters
Vertical Polarization

Date of test:
07/22/1997

Operator:
P. Zisterer

Test performed:
by hand

File name:

Mode:

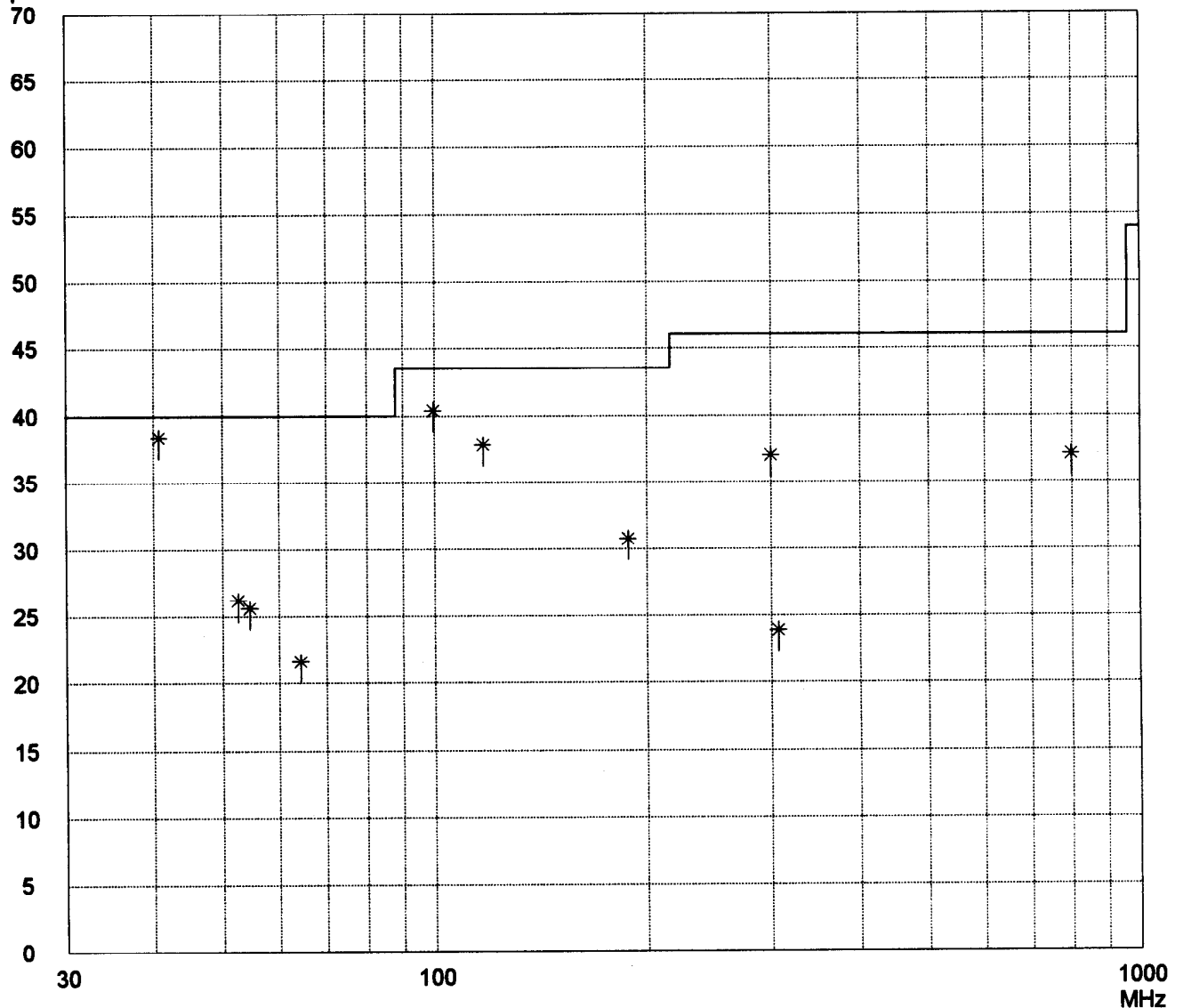
- Reading of transponder
- EUT is connected with PC (NCR) by RS 485/
232-Converter
- Software "Service V 2.84"

Detector:
Quasi-Peak

List of values:
Selected by hand

dBμV/m

Limit1: FCC Subpart C Transducer: HK116 / HL223 (3 m)



Result:
Limit kept

Project file:
51116-70522

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

Model: BEDAS 9320 legic	Mode: - Reading of transponder - EUT is connected with PC (NCR) by RS 485/232-Converter - Software "Service V 2.84"
Serial no.: —	
Applicant: Kaba Benzing GmbH	
Test site: Open area test-site I	
Tested on: Test distance 3 meters Vertical Polarization	
Date of test: 07/22/1997 Operator: P. Zisterer	
Test performed: by hand	File name:

Detector: Quasi-Peak	List of values: Selected by hand
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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>
40.7	26.1	12.3	38.4	40.0	
52.6	15.6	10.6	26.2	40.0	
54.6	15.1	10.5	25.6	40.0	
64.4	11.4	10.2	21.6	40.0	
99.5	28.9	11.5	40.4	43.5	
117.1	24.8	13.0	37.8	43.5	
188.0	14.2	16.6	30.8	43.5	
300.0	13.8	23.2	37.0	46.0	
306.9	6.9	17.0	23.9	46.0	
797.8	8.6	28.5	37.1	46.0	

Result: Limit kept	Project file: 51116-70522	Page 40 of 51 Pages
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Radiated Emission Test 9 kHz - 30 MHz according to FCC Part 15 Subpart C

Model:
BEDAS 9320 legic

Serial no.:
--

Applicant:
Kaba Benzing GmbH

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

Date of test: 07/22/1997 Operator: P. Zisterer

Test performed: automatically File name:

Mode:
- Reading of transponder

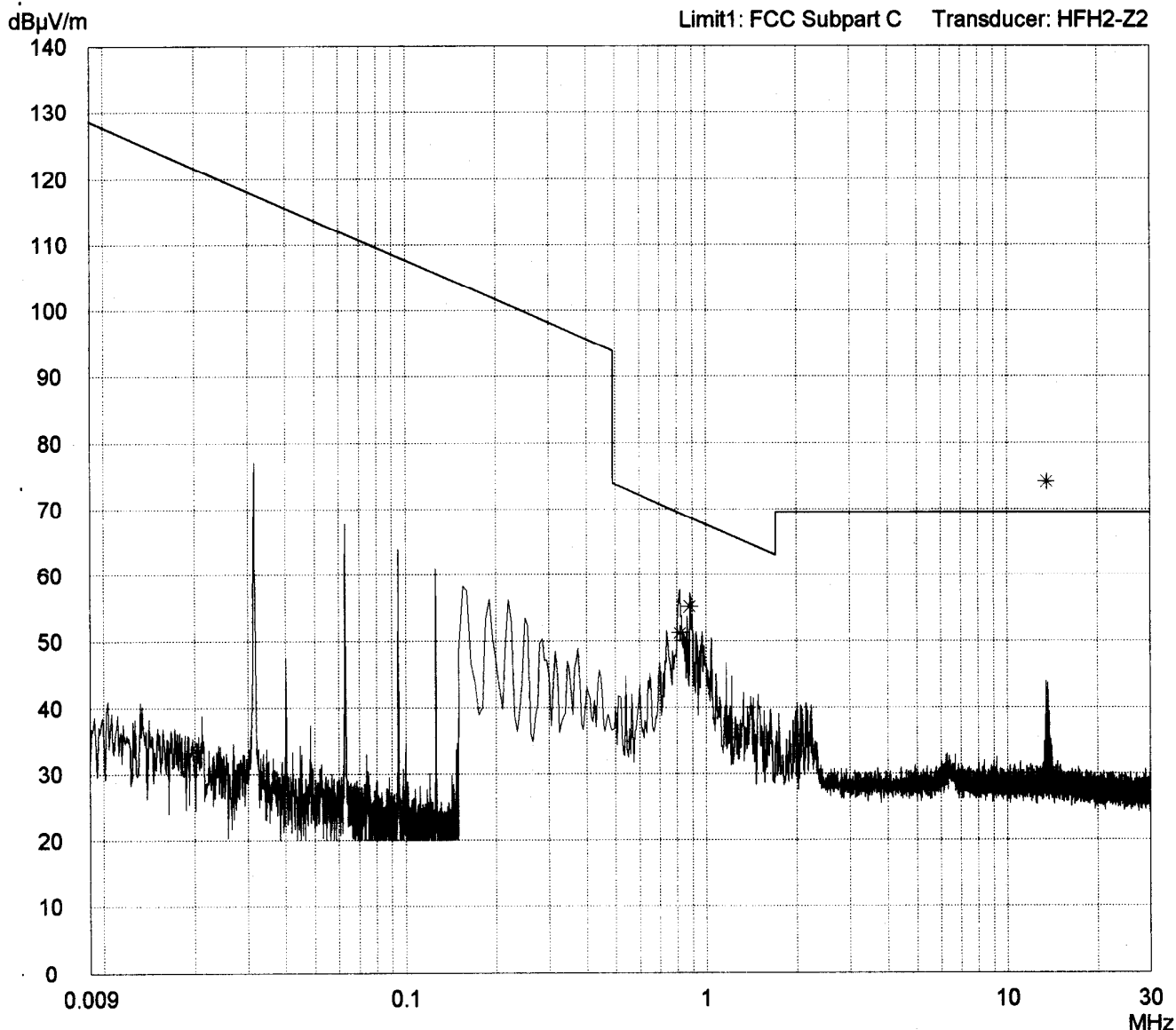
- EUT is connected with PC (NCR) by RS485/
232-Converter

- Software "Service V2.84"

Remark: Operating frequency of EUT:
13.56 MHz

Detector:
Peak / Final Results: QP

Final results:
Selected by hand



Result:
Limit kept

Project file:
51116-70522

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

Model: BEDAS 9320 legic	Mode: - Reading of transponder
Serial no.: --	- EUT is connected with PC (NCR) by RS485/ 232-Converter
Applicant: Kaba Benzing GmbH	- Software "Service V2.84"
Test site: Shielded room, cabin no. 2	Remark: Operating frequency of EUT: 13.56 MHz
Tested on: Test distance 3 metres	
Date of test: 07/22/1997	
Operator: P. Zisterer	
Test performed: automatically	
File name:	
Detector: Peak / Final Results: QP	Final results: 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>
0.820	31.2	20.0	51.2	69.3	
0.885	35.2	20.0	55.2	68.7	
13.560	54.1	20.0	74.1	69.5	*

Result: Limit kept	Project file: 51116-70522	Page 42 of 51 Pages
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Radiated Field Strength at a test distance of 30 meters

Model: BEDAS 9320 legic
Applicant: Kaba Benzing GmbH
Test site: Open area test-site 1
Test distance: 30 meters
Date of test: 07/22/97
Operator: P. Zisterer

Mode: Reading of the transponder
Detector: QP

Frequency [MHz]	Reading [dB μ V]	Correction factor [dB]	Value [dB μ V/m]	Limit [dB μ V/m]
13.56	32.9	20.0	52.9	80.0

Result: The limit is kept.

Frequency tolerance acc. to FCC part 15 subp.C (§ 15.225)

Model:
BEDAS 9320 legic

Serial No.:
—

Applicant:
Kaba Benzing GmbH

Mode:
- Reading of transponder

- Voltage: 115 V AC

- Temp.: + 20 °C

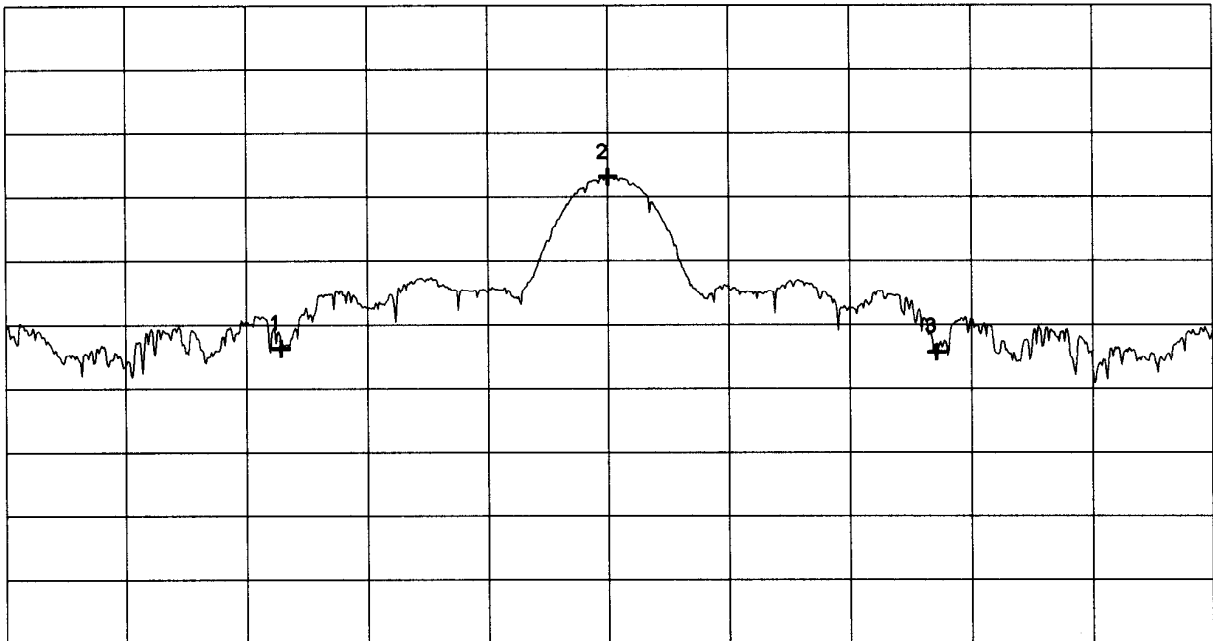
Operating frequency: 13.559844 MHz

Max. permissible tolerance: $\pm 0.01\%$
($\Rightarrow 13.558488$ MHz to 13.561200 MHz)

Ref. Level 80 dB μ V/m
10 dB dB/Div.

ATT 45 dB

Ref. Offset -37.3 dB



Start 13.557 MHz
RBW 100 Hz

VBW 10 kHz

Stop 13.562 MHz
SWP 1.50 s

*** Multi Marker ***

Nr.1	13.558488 MHz	26.37 dB μ V/m
Nr.2	13.559844 MHz	53.09 dB μ V/m
Nr.3	13.561200 MHz	25.74 dB μ V/m
Nr.4		
Nr.5		
Nr.6		
Nr.7		
Nr.8		

Tested by:
Peter Zisterer

Date:
07/22/1997

Project-No.:
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Frequency tolerance acc. to FCC part 15 subp.C (§ 15.225)

Model:
BEDAS 9320 legic

Serial No.:
—

Applicant:
Kaba Benzing GmbH

Mode:
- Reading of transponder

- Voltage: 97.75 V AC

- Temp.: + 20 °C

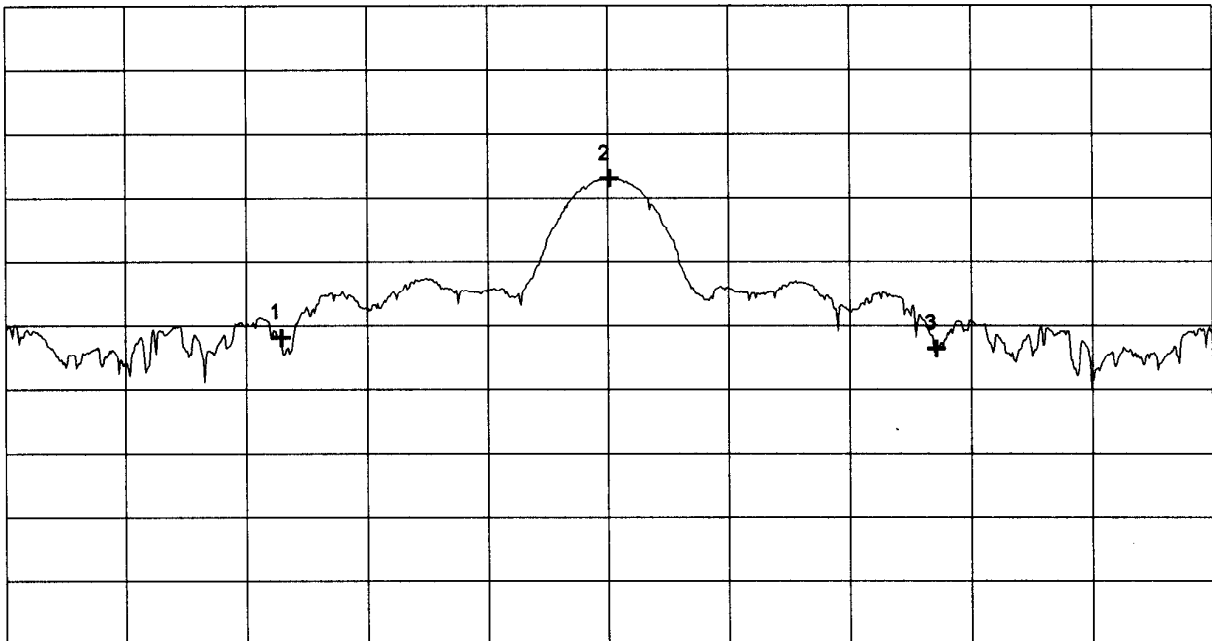
Operating frequency: 13.559844 MHz

Max. permissible tolerance: +- 0.01%
(=> 13.558488 MHz to 13.561200 MHz)

Ref.Level 80 dBµV/m
10 dB dB/Div.

ATT 45 dB

Ref. Offset -37.3 dB



Start 13.557 MHz
RBW 100 Hz

VBW 10 kHz

Stop 13.562 MHz
SWP 1.50 s

*** Multi Marker ***

Nr.1	13.558488 MHz	28.13 dBµV/m
Nr.2	13.559850 MHz	53.06 dBµV/m
Nr.3	13.561200 MHz	26.42 dBµV/m
Nr.4		
Nr.5		
Nr.6		
Nr.7		
Nr.8		

Tested by:
Peter Zisterer

Date:
07/22/1997

Project-No.:
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Frequency tolerance acc. to FCC part 15 subp.C (§ 15.225)

Model:
BEDAS 9320 legic

Serial No.:
—

Applicant:
Kaba Benzing GmbH

Mode:
- Reading of transponder

- Voltage: 132.25 V AC

- Temp.: + 20 °C

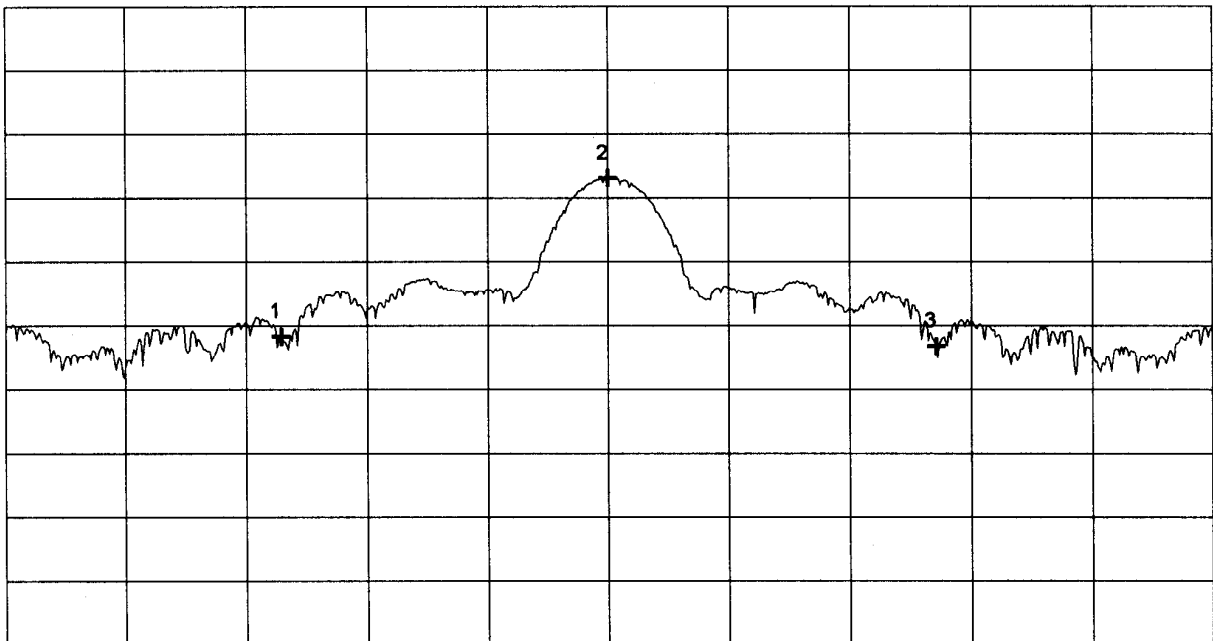
Operating frequency: 13.559844 MHz

Max. permissible tolerance: $\pm 0.01\%$
(=> 13.558488 MHz to 13.561200 MHz)

Ref.Level 80 dB μ V/m
10 dB dB/Div.

ATT 45 dB

Ref. Offset -37.3 dB



Start 13.557 MHz
RBW 100 Hz

VBW 10 kHz

Stop 13.562 MHz
SWP 1.50 s

*** Multi Marker ***

Nr.1	13.558488 MHz	28.33 dB μ V/m
Nr.2	13.559844 MHz	53.06 dB μ V/m
Nr.3	13.561200 MHz	26.81 dB μ V/m
Nr.4		
Nr.5		
Nr.6		
Nr.7		
Nr.8		

Tested by:
Peter Zisterer

Date:
07/22/1997

Project-No.:
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Frequency tolerance acc. to FCC part 15 subp.C (§ 15.225)

Model:
BEDAS 9320 legic

Serial No.:
--

Applicant:
Kaba Benzing GmbH

Mode:
- Reading of transponder

- Voltage: 115.0 V AC

- Temp.: - 20 °C

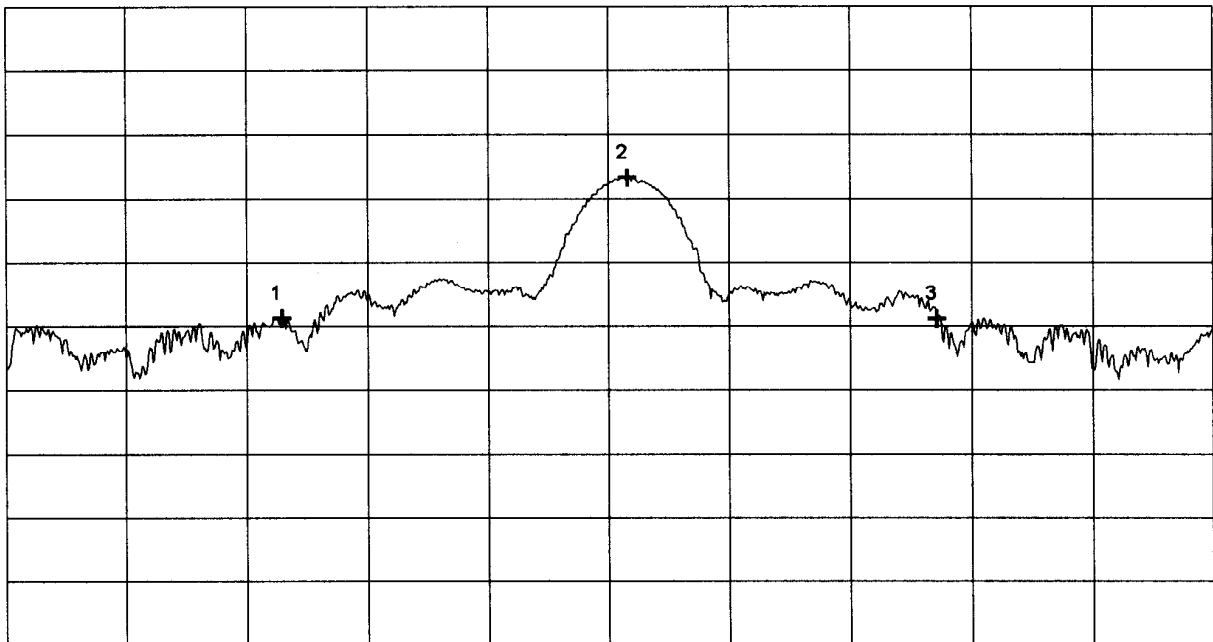
Operating frequency: 13.559844 MHz

Max. permissible tolerance: +- 0.01%
(=> 13.558488 MHz to 13.561200 MHz)

Ref.Level 80 dBµV/m
10 dB dB/Div.

ATT 45 dB

Ref. Offset -37.3 dB



Start 13.557 MHz
RBW 100 Hz

VBW 10 kHz

Stop 13.562 MHz
SWP 1.50 s

*** Multi Marker ***

Nr.1	13.558488 MHz	31.2 dBµV/m
Nr.2	13.559844 MHz	53.27 dBµV/m
Nr.3	13.561200 MHz	31.1 dBµV/m
Nr.4		
Nr.5		
Nr.6		
Nr.7		
Nr.8		

Tested by:
Peter Zisterer

Date:
07/22/1997

Project-No.:
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Frequency tolerance acc. to FCC part 15 subp.C (§ 15.225)

Model:
BEDAS 9320 legic

Serial No.:
--

Applicant:
Kaba Benzing GmbH

Mode:
- Reading of transponder

- Voltage: 115.0 V AC

- Temp.: + 50 °C

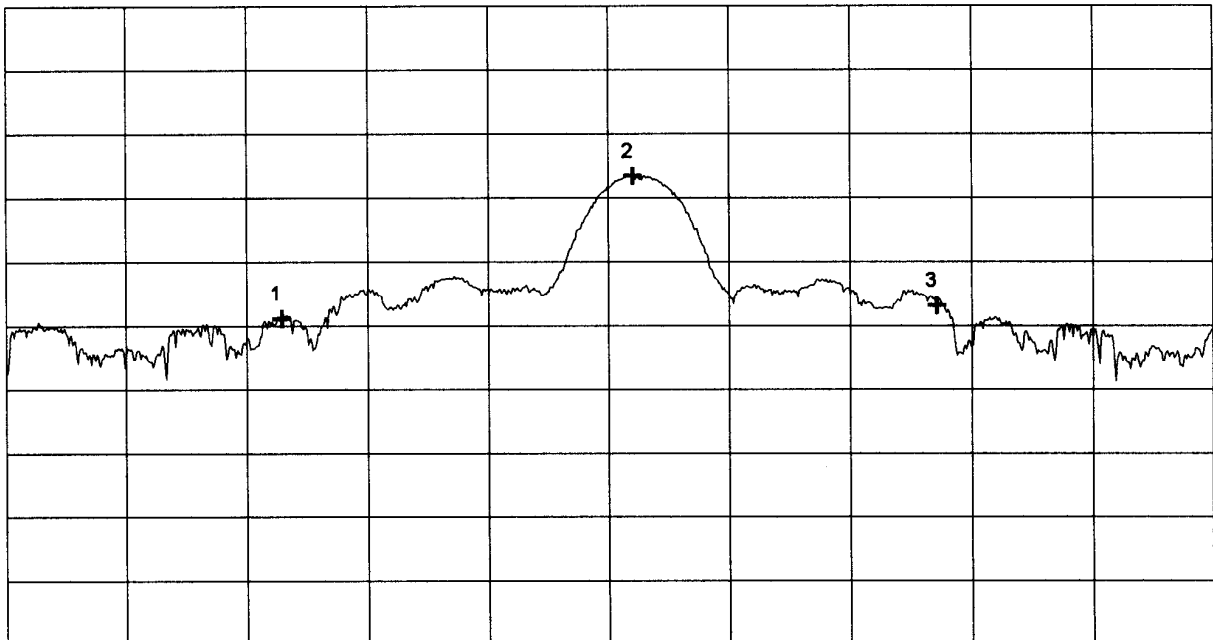
Operating frequency: 13.559844 MHz

Max. permissible tolerance: $\pm 0.01\%$
($\Rightarrow$ 13.558488 MHz to 13.561200 MHz)

Ref.Level 80 dB μ V/m
10 dB dB/Div.

ATT 45 dB

Ref. Offset -37.3 dB



Start 13.557 MHz
RBW 100 Hz

VBW 10 kHz

Stop 13.562 MHz
SWP 1.50 s

*** Multi Marker ****

Nr.1	13.558488 MHz	31.1 dB μ V/m
Nr.2	13.559844 MHz	53.39 dB μ V/m
Nr.3	13.561200 MHz	33.08 dB μ V/m
Nr.4		
Nr.5		
Nr.6		
Nr.7		
Nr.8		

Tested by:
Peter Zisterer

Date:
07/22/1997

Project-No.:
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10) Measurement Uncertainty Values

Measurement uncertainty values

1. Radio Interference Emission Testing

1.1 Conducted Emission 10 kHz - 30 MHz

Used measuring instrument	Maximum value
Test receiver ESHS 10 (CISPR-detector, S/N $\geq$ 16 dB)	$< \pm 1.5$ dB
Test receiver ESH 3 (CISPR-detector, S/N $\geq$ 16 dB)	$< \pm 1.5$ dB
Pulse Limiter ESH 3-Z2	$\leq \pm 0.3$ dB
T-Network ESH 3-Z4, ESH 3-Z5 or ESH 3-Z6	$\leq \pm 1.0$ dB
High impedance probe TK 9416	$\leq \pm 1.0$ dB
Cable attenuation (determined with power meter NRV)	$< \pm 0.2$ dB

1.2 Radiated Emission 10 kHz - 30 MHz

Used measuring instrument	Maximum value
Test receiver ESHS 10 (CISPR-detector, S/N $\geq$ 16 dB)	$< \pm 1.5$ dB
Test receiver ESH 3 (CISPR-detector, S/N $\geq$ 16 dB)	$< \pm 1.5$ dB
Loop Antenna HFH 2-Z2	$< \pm 1.0$ dB
Cable attenuation (determined with power meter NRV)	$< \pm 0.2$ dB

1.3 Radiated Emission 30 MHz - 1000 MHz

Used measuring instrument	Maximum value
Spectrum analyzer R3261A	$\leq \pm 1.5$ dB
Spectrum analyzer R3271	$\leq \pm 1.5$ dB
Test receiver ESVP (CISPR-detector, S/N $>$ 15 dB)	$< \pm 1.5$ dB
Test receiver ESV (CISPR-detector, S/N $\geq$ 10 dB)	$< \pm 1.5$ dB
Preamplifier ESV-Z3	max. +2.0 / -1.0 dB
Biconical antenna EMCO 3110	$\leq \pm 1.5$ dB
Biconical antenna HK 116	$\leq \pm 1.0$ dB
Log.-per. antenna EMCO 3147	$\leq \pm 1.5$ dB
Log.-per. antenna HL 223	$\leq \pm 1.0$ dB
Open area test site (related to theoretical site attenuation)	$< \pm 3.0$ dB
Cable attenuation (determined with power meter NRV)	$< \pm 0.2$ dB

1.4 Interference Power 30 MHz - 1000 MHz

Used measuring instrument	Maximum value
Spectrum analyzer R3261A	$\leq \pm 1.5$ dB
Spectrum analyzer R3271	$\leq \pm 1.5$ dB
Test receiver ESVP (CISPR-detector, S/N $>$ 15 dB)	$< \pm 1.5$ dB
Test receiver ESV (CISPR-detector, S/N $\geq$ 10 dB)	$< \pm 1.5$ dB
Preamplifier ESV-Z3	max. +2.0 / -1.0 dB
Absorbing clamp MDS 21	$\leq \pm 1.0$ dB
Cable attenuation (determined with power meter NRV)	$< \pm 0.2$ dB

2. Immunity Testing

2.1 Electrostatic Discharge

Used measuring instrument

Maximum value

ESD simulator NSG 435

$\leq \pm 5\%$ of selected discharge voltage

ESD simulator PSD 25

max. $+20\%$ / $- 0\%$ of selected discharge voltage

2.2 Electromagnetic Fields (RF-Fields)

Used measuring instrument

Maximum value

Field probe FP 2000 / field monitor FM 2004

Selected range up to 10 V/m

$\leq \pm 0.7$ V/m

Selected range up to 30 V/m

$\leq \pm 1.9$ V/m

Selected range up to 100 V/m

$\leq \pm 6.1$ V/m

Selected range up to 300 V/m

$\leq \pm 18.1$ V/m

2.3 Electrical Fast Transients (Burst)

Used measuring instrument

Maximum value

EFT generator NSG 1025

$\leq \pm 10\%$ of selected pulse amplitude

2.4 Surge Immunity

Used measuring instrument

Maximum value

Surge generator NSG 650

$\leq \pm 10\%$ of selected pulse amplitude