

Straubing, April 2, 1998

TEST-REPORT

No. 51906-80065-6

for

MOBY F / SIM 80

Inductive Tag Reader

Applicant: Siemens AG, A & D SE V 1 E 1

Purpose of testing: To show compliance with
FCC Code of Federal Regulations,
Part 15 Subpart C,
Sections §15.205, §15.207
and §15.209

Note:

The test data of this report relate only to the individual item which has been tested.
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of the testing laboratory.

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1. Administrative Data

Equipment Under Test (EUT): MOBY F / SIM 80

Serial number: Prototype no. 1:
 Power / interface board: 1060525
 RF-boards: 12002011
 12006881

Type of equipment: RF-identification system

Parts/accessories: Base unit: MOBY F / SIM 80
 RF-antenna: MOBY F / ANT F5
 Tag: MOBY F / MDS F415

FCC-ID: NXWMOBYF-XXX80

Applicant: Siemens AG, A & D SE V 1 E 1
 (full address) Würzburger Str. 121
 D - 90766 Fürth
 Germany

Contract identification: Order no. R74A1-D-R741-287204

Contact person: Mr. Helmut Themel

Manufacturer: Siemens AG, A & D SE V 1 E 1

Receipt of EUT: February 24, 1998

Date of test: February 24 to 25, 1998

Note: Mr. Themel representing the applicant attended performing all tests.

Responsible for testing: Rainer Heller

Responsible for test report: Rainer Heller

2. Summary of Test Results

The tested sample (including accessories) complies with the requirements set forth in the Code of Regulations Part 15 Subpart C, Sections §15.205, §15.207 and §15.209 (intentional radiators) of the Federal Communication Commission (FCC).



Johann Roidt
Technical Manager



Rainer Heller
Test Engineer

3. Operation Mode of EUT

All tests were performed using the "MOBY-F Demo V1.0" test program to establish a continuous writing (and reading to check writing procedure).

Note:

Because of EUT is designed to work in the vicinity of metal parts antenna is matched in a way that maximum current is achieved with metal plate mounted in a distance of 10 cm. Therefore this setup was also used for performing all tests.

4. Configuration of EUT and Peripheral Devices

Configuration of cables of EUT and peripheral devices

- Unshielded DC power line, Siemens, 200 cm
- Shielded data cable connected to serial interface (RS 232) of EUT, Siemens, 500 cm
- Unshielded power line for AC-power supply of notebook, Kawasaki, 180 cm
- Shielded data cable connected to parallel interface of notebook, Inmac, 150 cm, Senton inv.-no. 1487

Configuration of peripheral devices connected to EUT

- Notebook AT & T Globalyst 200:
Serial no.: 017-28730433 FCC-ID: A3LS3945
with
AC power supply AT & T AC Adapter:
Product ID: 3150-K909-V001 Part no.: 5290000117
- PS/2-mouse HP C1413A:
Serial no.: 3227M01197 FCC-ID: B94C1413X
- Parallel printer HP ThinkJet 2225C+:
Serial no.: 3106S91193 FCC-ID: DSI6XU2225
with power supply Hayes 52-00008
Serial no.: 9028A

5. Photographs of EUT and Accessories

6. Measuring Methods

6.1. Conducted Emission 0.45 MHz - 30 MHz (§15.207)

Conducted emissions were measured in the frequency range 0.45 MHz to 30 MHz. The bandwidth of the EMI-Receiver was set to 9 kHz and the detector-function was set to CISPR quasi-peak.

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

Measurements were performed on phase and neutral lines of the power-cords of the tested system. Preliminary scans were taken with the detector-function of the EMI-receiver set to peak to determine the conducted EMI-profile of the EUT. At the final test the cables and equipment were placed and moved within the range of positions likely to find their maximum emissions.

See figure 1 for the measurement setup.

Test equipment used (see equipment list for details):

04, 22, 23, 60, 63

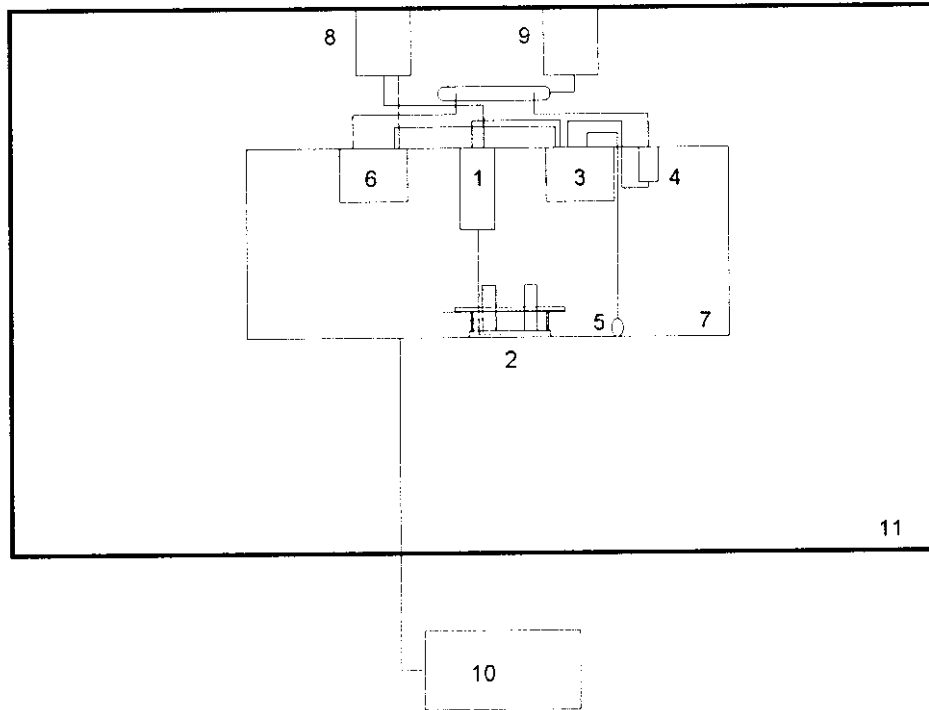


Figure 1: Measurement setup for conducted emission test

- | | |
|-------------------------------------|-------------------------------|
| 1 Base unit (EUT) | 8 LISN for EUT |
| 2 RF-antenna (EUT) with metal plate | 9 LISN for peripheral devices |
| 3 Notebook | 10 Test receiver |
| 4 Power supply for notebook | 11 Shielded room |
| 5 Mouse | |
| 6 Parallel printer | |
| 7 Wooden table | |

6.2. Radiated Emission 9 kHz - 30 MHz (§15.209, §15.205 a,b)

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 determine the radiated EMI-profile of the EUT. EUT was rotated all around and cables and equipment were placed and moved within the range of positions likely to find their maximum emissions. 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 will be extrapolated by using either an inverse linear distance extrapolation factor of 40 dB/decade or the extrapolation factor will be determined by making a second measurement at 10 meters distance. The provisions of §15.31 (d) and §15.31 (f) apply.

See figure 2 for the measurement setup.

Test equipment used (see equipment list for details):

03, 04, 37, 60, 63, 66

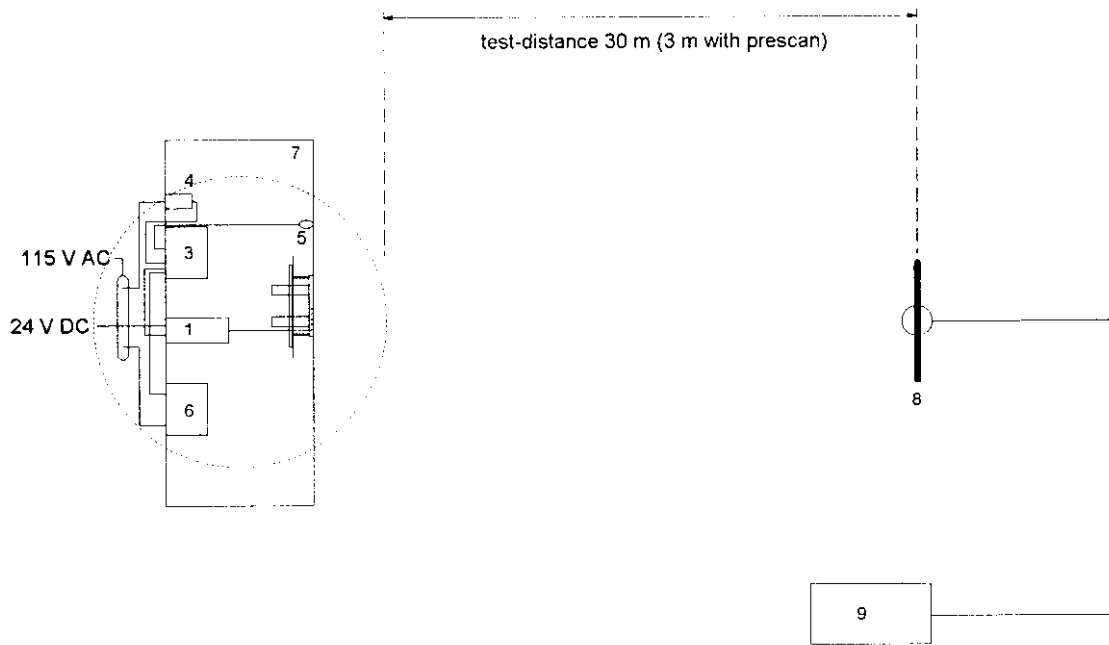


Figure 2: Measurement setup for radiated emission test below 30 MHz

- | | |
|-------------------------------------|-----------------------|
| 1 Base unit (EUT) | 8 Measurement antenna |
| 2 RF-antenna (EUT) with metal plate | 9 Test receiver |
| 3 Notebook | |
| 4 Power supply for notebook | |
| 5 Mouse | |
| 6 Parallel printer | |
| 7 Wooden table | |

6.3. Radiated Emission 30 MHz - 1 GHz (§15.209)

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

The test setup was made in accordance with ANSI C63.4-1992. Measurements were made in both the horizontal and vertical planes of polarization. Preliminary scans were taken in a semi-anechoic room using a spectrum analyzer with the detector function set to peak. All tests were performed at a test-distance of 3 meters. For final testing an open-area test-site was used. During the tests the EUT was rotated all around and the receiving-antenna was raised and lowered from 1 meter to 4 meters to find the maximum levels of emissions. The cables and equipment were placed and moved within the range of position likely to find their maximum emissions.

See figure 3 for the measurement setup.

Test equipment used (see equipment list for details):

01, 06, 12, 38, 39, 40, 41, 58, 61, 64, 66

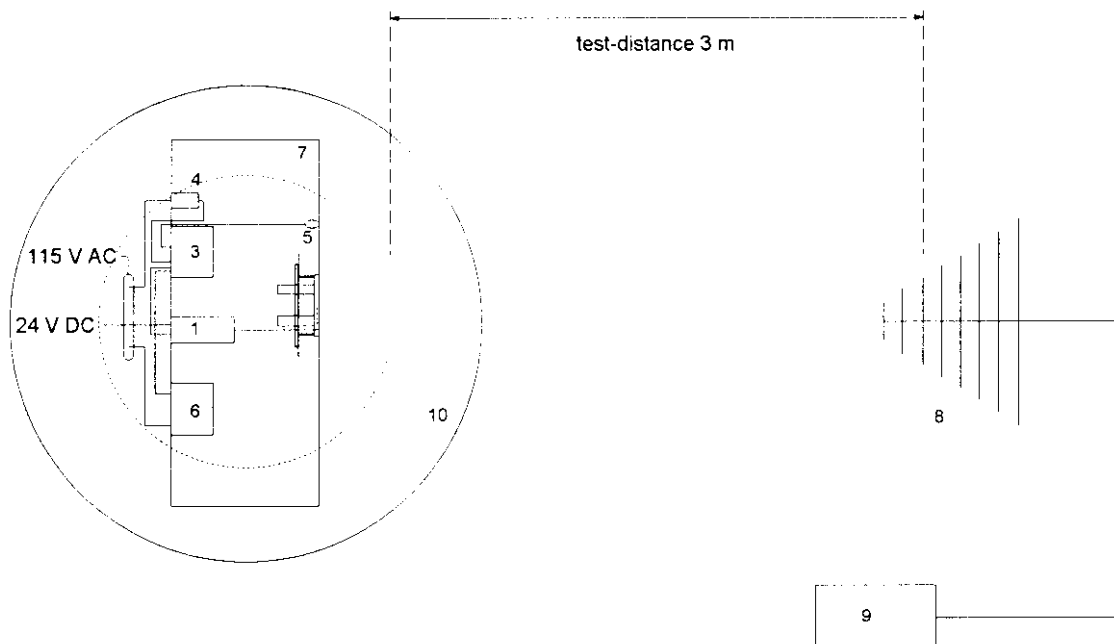


Figure 3: Measurement setup for radiated emission test above 30 MHz

- | | |
|--|------------------------------|
| 1 Base unit (EUT) | 8 Measurement antenna |
| 2 RF-antenna (EUT) with metal plate | 9 Test receiver |
| 3 Notebook | 10 Turn table |
| 4 Power supply for notebook | |
| 5 Mouse | |
| 6 Parallel printer | |
| 7 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	Cable for Antenna Connector			Lucent Technologies
68	DC Block 0.01-18GHz		8037	Inmet Corp.
69	High pass filter			Lucent Technologies

8. Photographs Taken During Testing

9. List of Measurements

FCC Part 15 Subpart C			
Section(s):	Test	Page	Result
§15.207	Conducted emission test 450 kHz - 30 MHz	41-48	Test passed
§15.31 d,f §15.209 §15.205.a,b	Radiated emission test 9 kHz - 30 MHz	49-56	Test passed
§15.209	Radiated emission test 30 MHz - 1 GHz	57-65	Test passed

10. Test Results

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

Model:
MOBY-F / SIM 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Linecord EUT (DC supply lines)
+24 V DC

Date of test:
02/25/1998

Operator:
R. Heller

Test performed:
automatically

File name:

Detector:
Peak / Final Results: QP

- Mode:
- FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SIM grounded
 - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - writing continuously (page)

Final results:
Selected by hand

dB μ V
100

Limit1: FCC Subpart C

90

80

70

60

50

40

30

20

10

0

0.45

1

10

30
MHz

Result:

Project file:

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

Model
MOBY-F / SIM 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Linecord EUT (DC supply lines)
+24 V DC

Date of test: 02/25/1998
Operator: R. Heller

Test performed: automatically
File name:

- Mode:
- FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SIM grounded
 - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - writing continuously (page)

Detector:
Peak / Final Results: QP

Final results:
Selected by hand

Frequency MHz	Reading dBµV	Correction factor dB	Value dBµV	Limit dBµV	Limit exceeded
0.490	41.4		41.4	48.0	
0.540	37.2		37.2	48.0	
0.715	33.2		33.2	48.0	
0.790	37.9		37.9	48.0	
0.905	32.8		32.8	48.0	
1.220	32.9		32.9	48.0	
1.240	32.2		32.2	48.0	
1.520	31.4		31.4	48.0	
1.940	31.3		31.3	48.0	
2.305	31.3		31.3	48.0	
2.660	32.5		32.5	48.0	
3.350	40.0		40.0	48.0	
3.500	39.2		39.2	48.0	
3.706	43.0		43.0	48.0	
3.880	41.7		41.7	48.0	
4.080	40.0		40.0	48.0	
4.235	41.4		41.4	48.0	
4.760	31.7		31.7	48.0	
6.375	24.5		24.5	48.0	
6.695	24.8		24.8	48.0	
8.475	24.3		24.3	48.0	
10.945	26.4		26.4	48.0	
12.890	27.4		27.4	48.0	
15.260	34.7		34.7	48.0	
16.046	40.4		40.4	48.0	
16.225	40.4		40.4	48.0	
16.410	38.8		38.8	48.0	
18.185	29.2		29.2	48.0	
29.985	23.5		23.5	48.0	

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

Model:
MOBY-F / SIM 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Linecord EUT (DC supply lines)
0 V DC

Date of test:
02/25/1998

Operator:
R. Heller

Test performed:
automatically

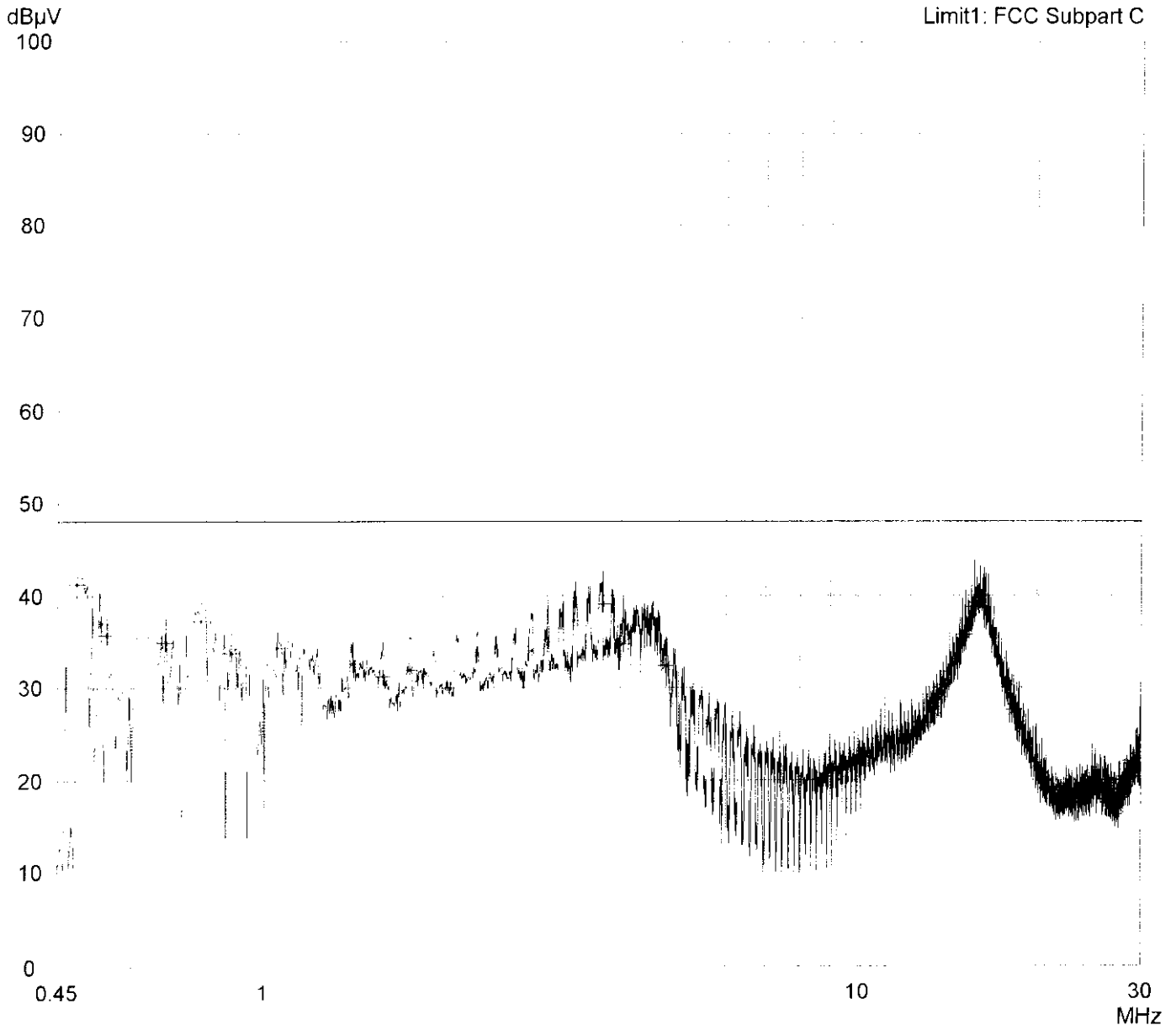
File name:

Mode:
- FCC test setup
- with metal plate mounted in a distance of
10 cm to antenna
- cabinet of SIM grounded
- with tag MDS F415 mounted in center of antenna
ANT F5 (distance = 0 cm)
- with ferrite core SFC-5 (Kitagawa) on antenna cable

- writing continuously (page)

Detector:
Peak / Final Results: QP

Final results:
Selected by hand



Result:

Project file:

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

Model
MOBY-F / SIM 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site
Shielded room, cabin no. 2

Tested on:
Linecord EUT (DC supply lines)
0 V DC

Date of test: 02/25/1998 Operator: R. Heller

Test performed: automatically File name:

Detector:
Peak / Final Results: QP

Mode:

- FCC test setup
- with metal plate mounted in a distance of 10 cm to antenna
- cabinet of SIM grounded
- with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
- with ferrite core SFC-5 (Kitagawa) on antenna cable
- writing continuously (page)

Final results:
Selected by hand

Frequency MHz	Reading dB μ V	Correction factor dB	Value dB μ V	Limit dB μ V	Limit exceeded
0.4850	41.3		41.3	48.0	
0.5337	37.0		37.0	48.0	
0.5450	35.7		35.7	48.0	
0.6850	34.9		34.9	48.0	
0.7850	37.2		37.2	48.0	
0.8850	33.8		33.8	48.0	
1.0550	34.3		34.3	48.0	
1.4150	32.6		32.6	48.0	
1.5900	31.2		31.2	48.0	
1.7600	31.9		31.9	48.0	
2.2890	33.6		33.6	48.0	
2.8250	34.0		34.0	48.0	
3.0100	34.7		34.7	48.0	
3.3250	37.3		37.3	48.0	
3.3450	38.8		38.8	48.0	
3.7200	39.1		39.1	48.0	
4.0350	34.7		34.7	48.0	
4.7550	32.4		32.4	48.0	
5.6350	26.1		26.1	48.0	
12.8650	26.2		26.2	48.0	
15.1600	35.7		35.7	48.0	
15.6900	38.8		38.8	48.0	
18.3300	27.6		27.6	48.0	

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

Model:
MOBY-F / SIM 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on
Linecord peripheral devices
Phase L1

Date of test:
02/25/1998

Operator:
R. Heller

Test performed:
automatically

File name:

Detector:
Peak / Final Results: QP

- Mode:
- FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SIM grounded
 - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
- writing continuously (page)

Final results:
Selected by hand

dB μ V
100

Limit1: FCC Subpart C

90

80

70

60

50

40

30

20

10

0

0.45

1

10

30
MHz

Result:

Project file:

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

Model:
MOBY-F / SIM 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Linecord peripheral devices
Phase L1

Date of test: 02/25/1998
Operator: R. Heller

Test performed:
automatically
File name:

- Mode:
- FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SIM grounded
 - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - writing continuously (page)

Detector:
Peak / Final Results: QP

Final results:
Selected by hand

Frequency MHz	Reading dB μ V	Correction factor dB	Value dB μ V	Limit dB μ V	Limit exceeded
0.480	38.9		38.9	48.0	
0.620	35.8		35.8	48.0	
0.635	35.5		35.5	48.0	
0.775	32.4		32.4	48.0	
0.900	30.0		30.0	48.0	
1.045	27.0		27.0	48.0	
10.920	22.8		22.8	48.0	
12.895	30.4		30.4	48.0	
15.315	41.3		41.3	48.0	
15.946	43.3		43.3	48.0	
16.025	45.1		45.1	48.0	
16.200	44.5		44.5	48.0	
18.135	29.1		29.1	48.0	
23.940	33.4		33.4	48.0	
29.900	33.5		33.5	48.0	

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

Model:
MOBY-F / SIM 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Linecord peripheral devices
Phase N

Date of test:
02/25/1998

Operator:
R. Heller

Test performed:
automatically

File name:

Detector:
Peak / Final Results: QP

Mode:

- FCC test setup
- with metal plate mounted in a distance of 10 cm to antenna
- cabinet of SIM grounded
- with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
- with ferrite core SFC-5 (Kitagawa) on antenna cable
- writing continuously (page)

Final results:
Selected by hand

dB μ V
100

Limit1: FCC Subpart C

90

80

70

60

50

40

30

20

10

0

0.45

1

10

30
MHz

Result:

Project file:

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

Model:
MOBY-F / SIM 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Linecord peripheral devices
Phase N

Date of test: 02/25/1998
Operator: R. Heller

Test performed: automatically
File name:

- Mode:
- FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SIM grounded
 - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - writing continuously (page)

Detector:
Peak / Final Results: QP

Final results:
Selected by hand

Frequency MHz	Reading dB μ V	Correction factor dB	Value dB μ V	Limit dB μ V	Limit exceeded
0.500	38.3		38.3	48.0	
0.620	35.9		35.9	48.0	
0.655	33.8		33.8	48.0	
0.760	33.3		33.3	48.0	
0.895	31.4		31.4	48.0	
1.045	29.7		29.7	48.0	
1.235	25.7		25.7	48.0	
10.695	22.8		22.8	48.0	
12.735	31.7		31.7	48.0	
15.315	43.4		43.4	48.0	
15.670	45.9		45.9	48.0	
16.023	46.3		46.3	48.0	
16.197	45.5		45.5	48.0	
18.520	28.8		28.8	48.0	
23.940	32.5		32.5	48.0	
29.900	32.2		32.2	48.0	

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

Model:
MOBY-F / SIM 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

Date of test:
02/24/1998

Operator:
R. Heller

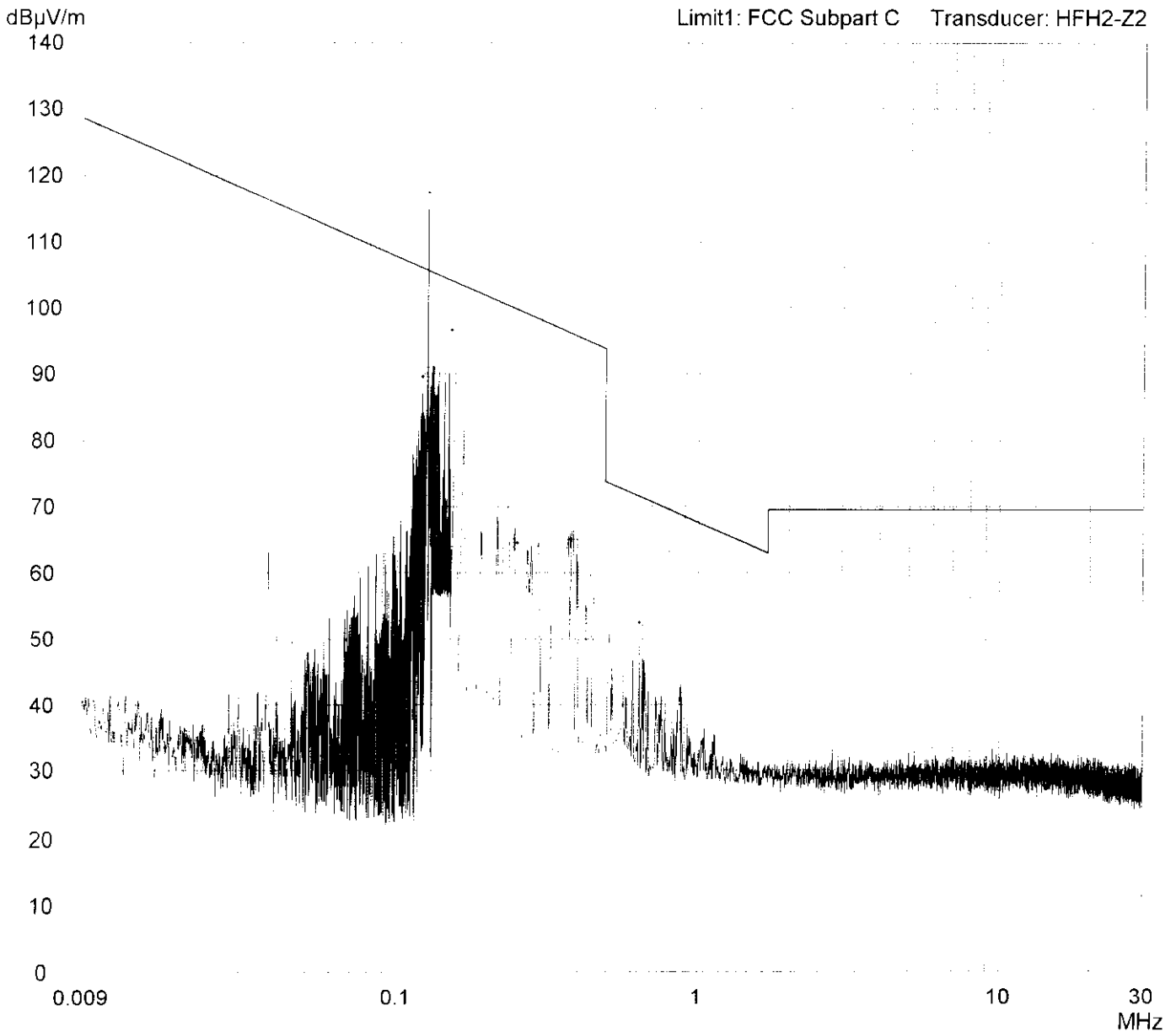
Test performed:
automatically

File name:

- Mode:
- FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SIM grounded
 - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
- writing continuously (page)

Detector:
Peak / Final Results: QP

Final results:
Selected by hand



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

Model:
MOBY-F / SIM 80

Serial no.
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

- Mode:
- FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SIM grounded
 - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - writing continuously (page)

Date of test:
02/24/1998

Operator:
R. Heller

Test performed:
automatically

File name:

Detector:
Peak / Final Results: QP

Final results:
Selected by hand

Frequency MHz	Reading dB μ V	Correction factor dB	Value dB μ V/m	Limit dB μ V/m	Limit exceeded
0.1203	69.6	20.0	89.6	106.0	
0.1250	97.4	20.0	117.4	105.7	*
0.1306	71.0	20.0	91.0	105.3	
0.1500	76.7	20.0	96.7	104.1	
0.2500	44.5	20.0	64.5	99.6	
0.3750	45.0	20.0	65.0	96.1	
0.6400	32.5	20.0	52.5	71.5	

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

Model:
MOBY-F / SIM 80

Serial no.
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

Date of test:
02/24/1998

Operator:
R. Heller

Test performed:
automatically

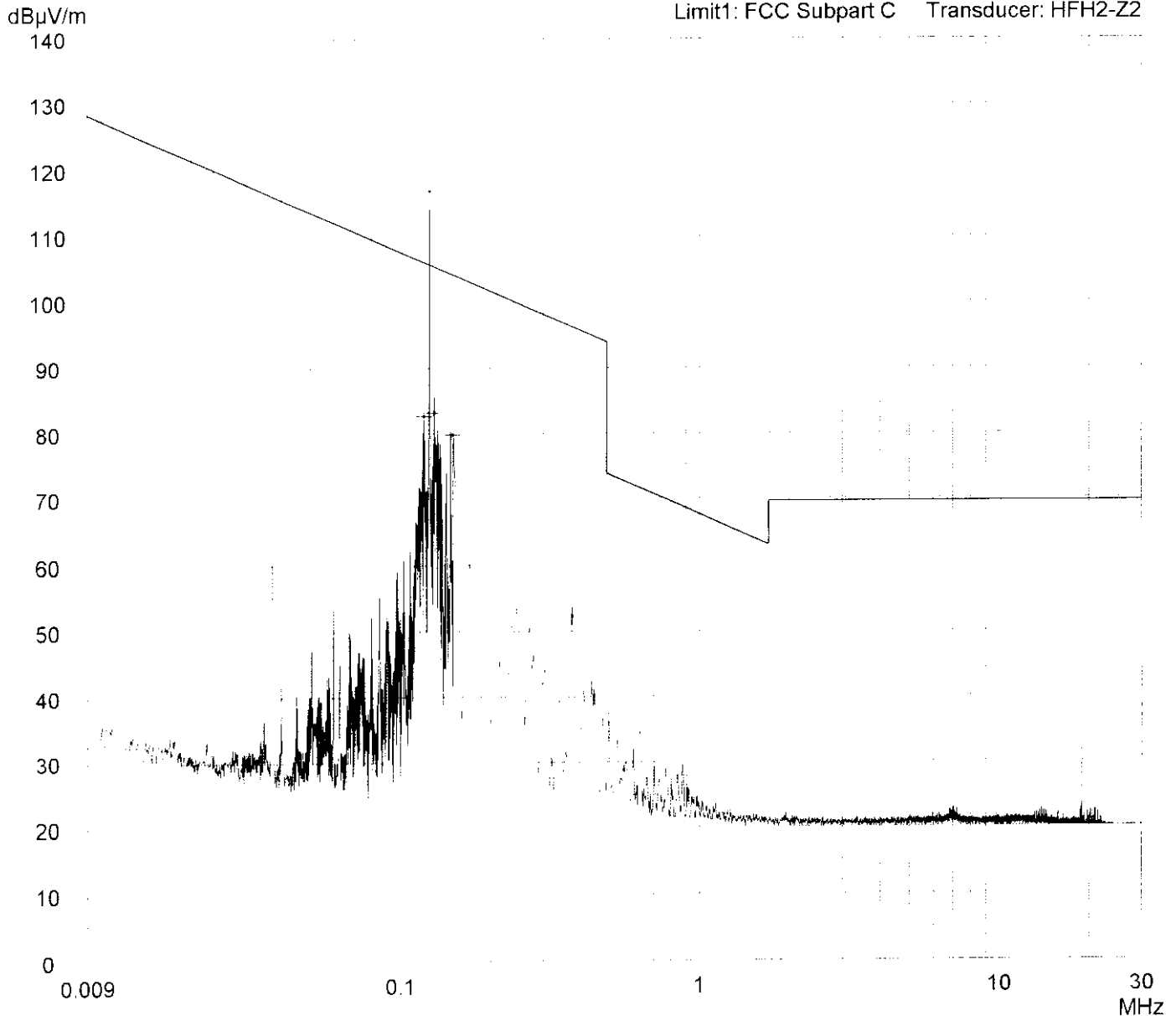
File name:

Detector:
Average / Final Results: AV

- Mode:
- FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SIM grounded
 - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
- writing continuously (page)

Final results:
Selected by hand

Limit1: FCC Subpart C Transducer: HFH2-Z2



Result:

Project file:
51006 80066 6

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

Model:
MOBY-F / SIM 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

- Mode:
- FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SIM grounded
 - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - writing continuously (page)

Date of test:
02/24/1998

Operator:
R. Heller

Test performed:
automatically

File name:

Detector:
Average / Final Results: AV

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>
0.1200	62.7	20.0	82.7	106.0	
0.1250	96.9	20.0	116.9	105.7	*
0.1303	63.2	20.0	83.2	105.3	
0.1500	59.8	20.0	79.8	104.1	
0.3750	32.2	20.0	52.2	96.1	

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

Model: MOBY F / SIM 80
 Type: RF-Identification system
 Serial No.: Prototype no. 1
 Applicant: Siemens AG Fürth, A&D SE V1E1
 Test-site: Open area test-site
 Test distances: 10 meters and 30 meters
 Date of test: 02/24/1998
 Operator: R. Heller

Mode: - FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SIM grounded
 - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - writing continuously (page)

Frequency [MHz]	Detector	Measuring Bandwidth [kHz]	Received Voltage		Correction [dB]	Fieldstrength		Limit [dBµV/m]
			10 m [dBµV]	30 m [dBµV]		10 m [dBµV/m]	30 m [dBµV/m]	
0.125	QP	0.2	63.6	39.5	20.0	83.6	59.5	9.0
0.125	AV	0.2	63.2	39.0	20.0	83.2	59.0	8.3

Note 1: Fieldstrength value in 300 meters distance is extrapolated according to §15.31 f(2) performing two measurements in 10 and 30 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:
MOBY-F / SIM 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

Date of test:
02/24/1998

Operator:
R. Heller

Test performed:
automatically

File name:

Mode:

- FCC test setup
- with metal plate mounted in a distance of 10 cm to antenna
- cabinet of SIM grounded
- without tag
- with ferrite core SFC-5 (Kitagawa) on antenna cable
- transmitting continuously

Final results with AV detector:

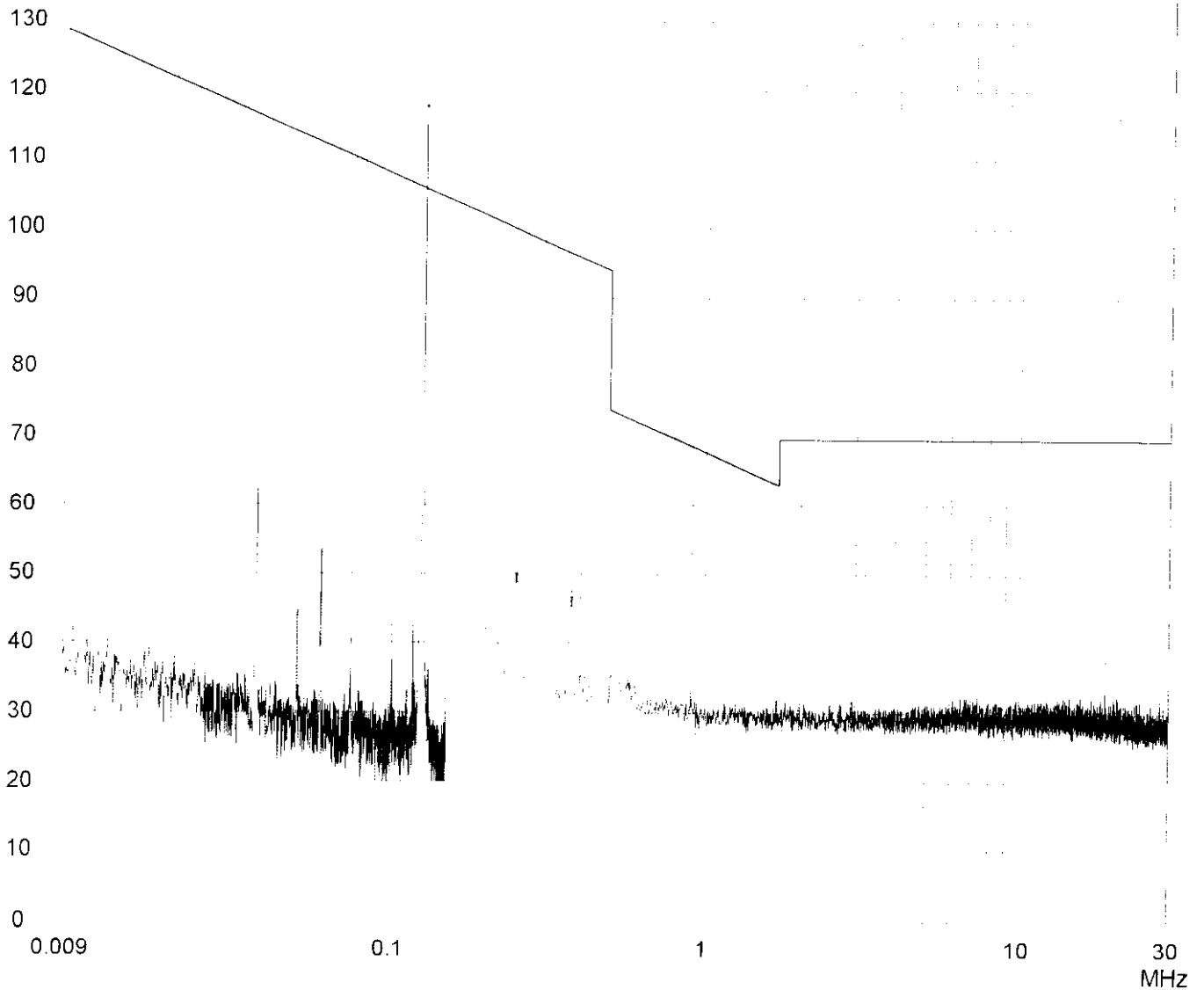
0.125 MHz: 117.7 dB μ V/m
0.250 MHz: 49.0 dB μ V/m
0.375 MHz: 46.0 dB μ V/m

Detector:
Peak / Final Results: QP

Final results:
Selected by hand

dB μ V/m
140

Limit1: FCC Subpart C Transducer: HFH2-Z2



Result:

Project file:

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

Model:
MOBY-F / SIM 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

Date of test:
02/24/1998

Operator:
R. Heller

Test performed:
automatically

File name:

- Mode:
- FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SIM grounded
 - without tag
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - transmitting continuously

Final results with AV detector:
0.125 MHz: 117.7 dB μ V/m
0.250 MHz: 49.0 dB μ V/m
0.375 MHz: 46.0 dB μ V/m

Detector:
Peak / Final Results: QP

Final results:
Selected by hand

Frequency MHz	Reading dB μ V	Correction factor dB	Value dB μ V/m	Limit dB μ V/m	Limit exceeded
0.125	97.6	20.0	117.6	105.7	*
0.250	30.0	20.0	50.0	99.6	
0.375	26.6	20.0	46.6	96.1	

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

Model: MOBY F / SIM 80
 Type: RF-identification system
 Serial No.: Prototype no. 1
 Applicant: Siemens AG Fürth, A&D SE V1E1
 Test-site: Open area test-site
 Test distances: 10 meters and 30 meters
 Date of test: 02/24/1998
 Operator: R. Heller

Mode:
 - FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SIM grounded
 - without tag
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - transmitting continuously

Frequency [MHz]	Detector	Measuring Bandwidth [kHz]	Received Voltage		Correction [dB]	Fieldstrength			Limit [dBµV/m]
			10 m [dBµV]	30 m [dBµV]		10 m [dBµV/m]	30 m [dBµV/m]	300 m [dBµV/m]	
0.125	QP	0.2	64.0	39.6	20.0	84.0	59.6	8.5	
0.125	AV	0.2	63.9	39.5	20.0	83.9	59.5	8.4	25.7

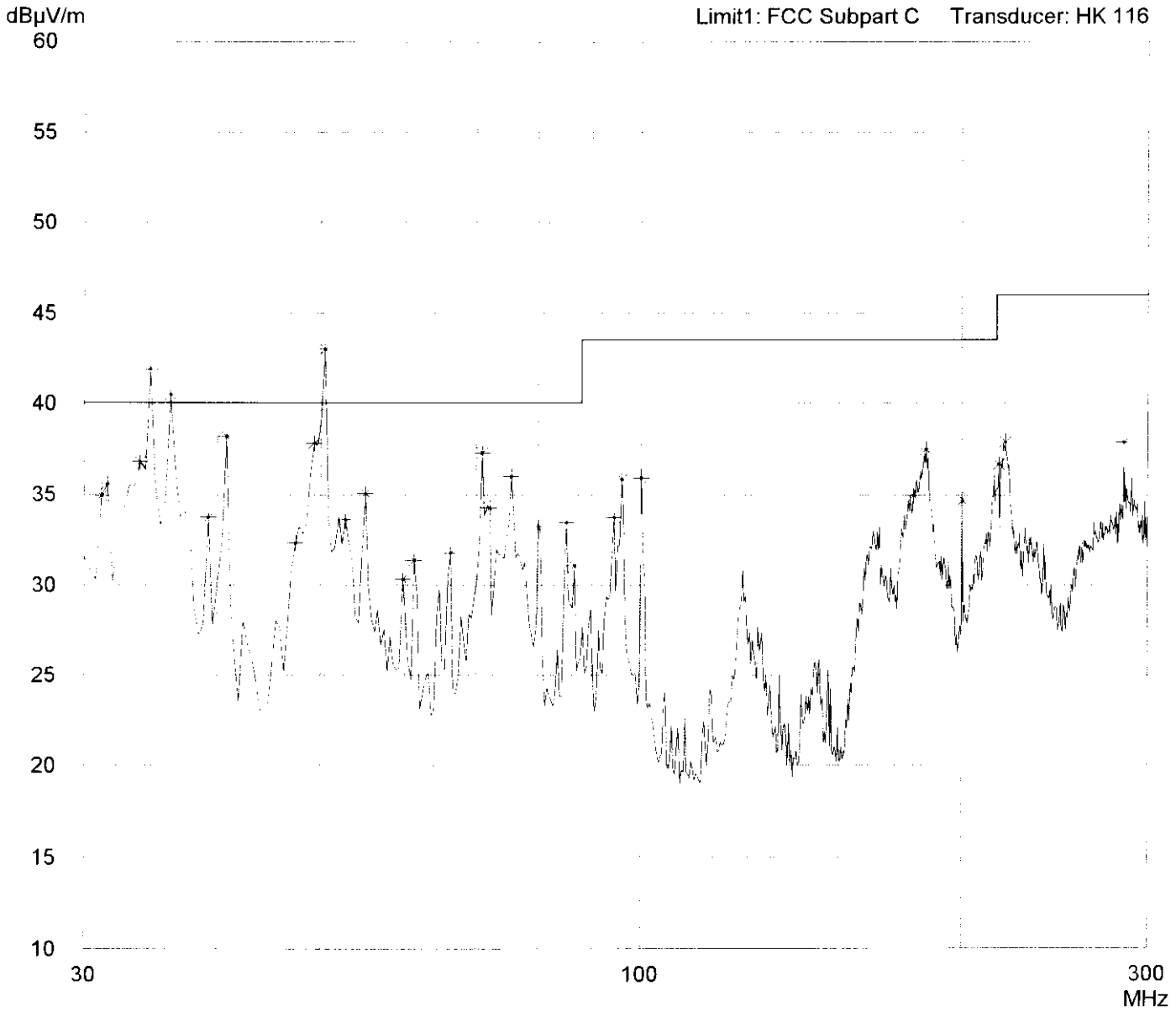
Note 1: Fieldstrength value in 300 meters distance is extrapolated according to §15.31 f(2) performing two measurements in 10 and 30 meters distance

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

Result: The limits are kept.

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

Model: MOBY-F / SIM 80	Mode: - FCC test setup - with metal plate mounted in a distance of 10 cm to antenna - cabinet of SIM grounded - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm) - writing continuously (page)
Serial no.: Prototype no. 1	
Applicant: Siemens AG Fürth, A&D SE V1E1	
Test site: Semi anechoic room, cabin no. 3	
Tested on: Test distance 3 meters Horizontal Polarization	
Date of test: 02/24/1998	Operator: R. Heller
Test performed: automatically	File name:
Detector: Peak	List of values: 10 dB Margin
	50 Subranges



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

Model:
MOBY-F / SIM 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Horizontal Polarization

Date of test:
02/24/1998

Operator:
R. Heller

Test performed:
automatically

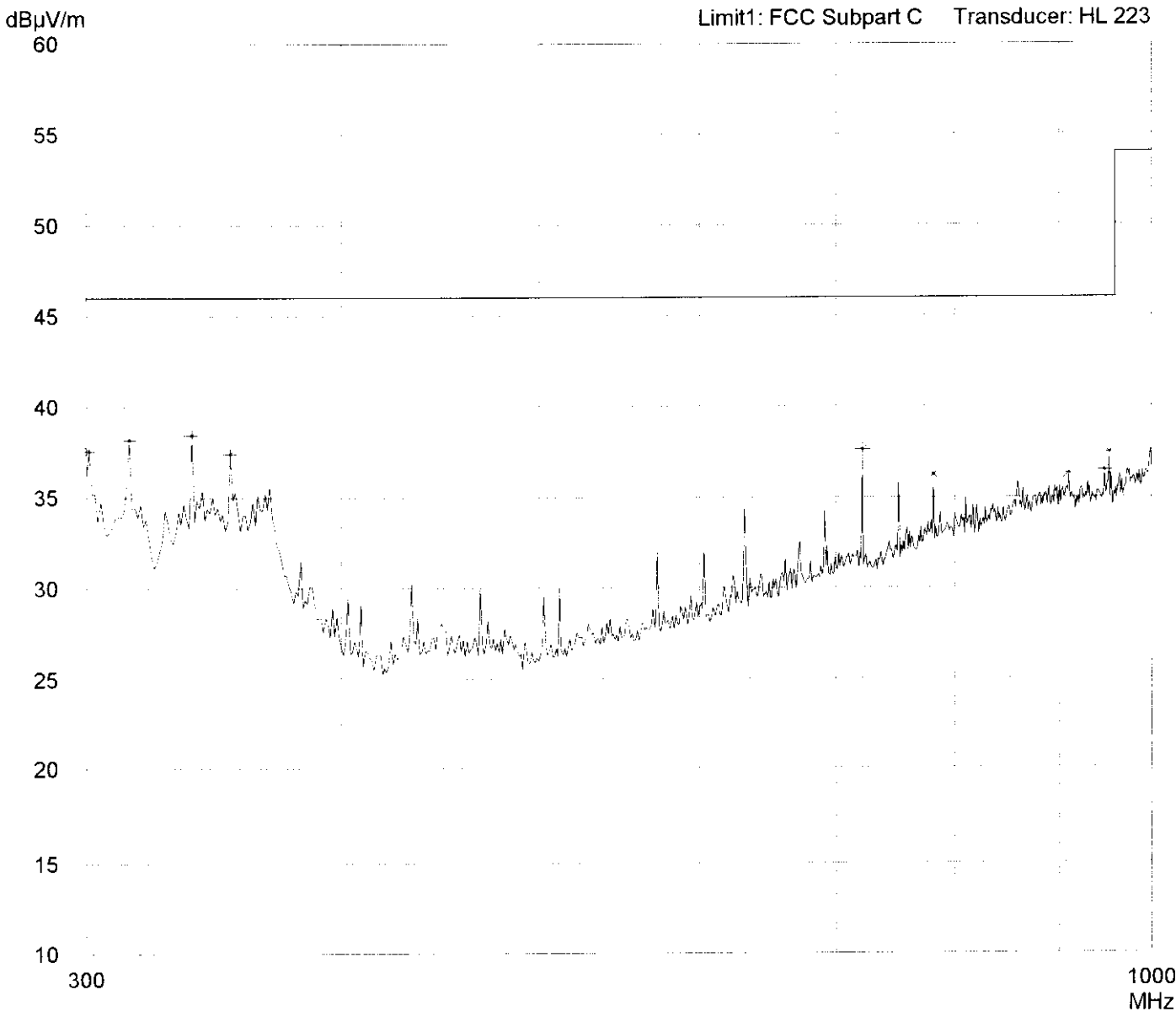
File name:

Mode:
- FCC test setup
- with metal plate mounted in a distance of 10 cm to antenna
- cabinet of SIM grounded
- with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)

- writing continuously (page)

Detector:
Peak

List of values:
10 dB Margin 50 Subranges

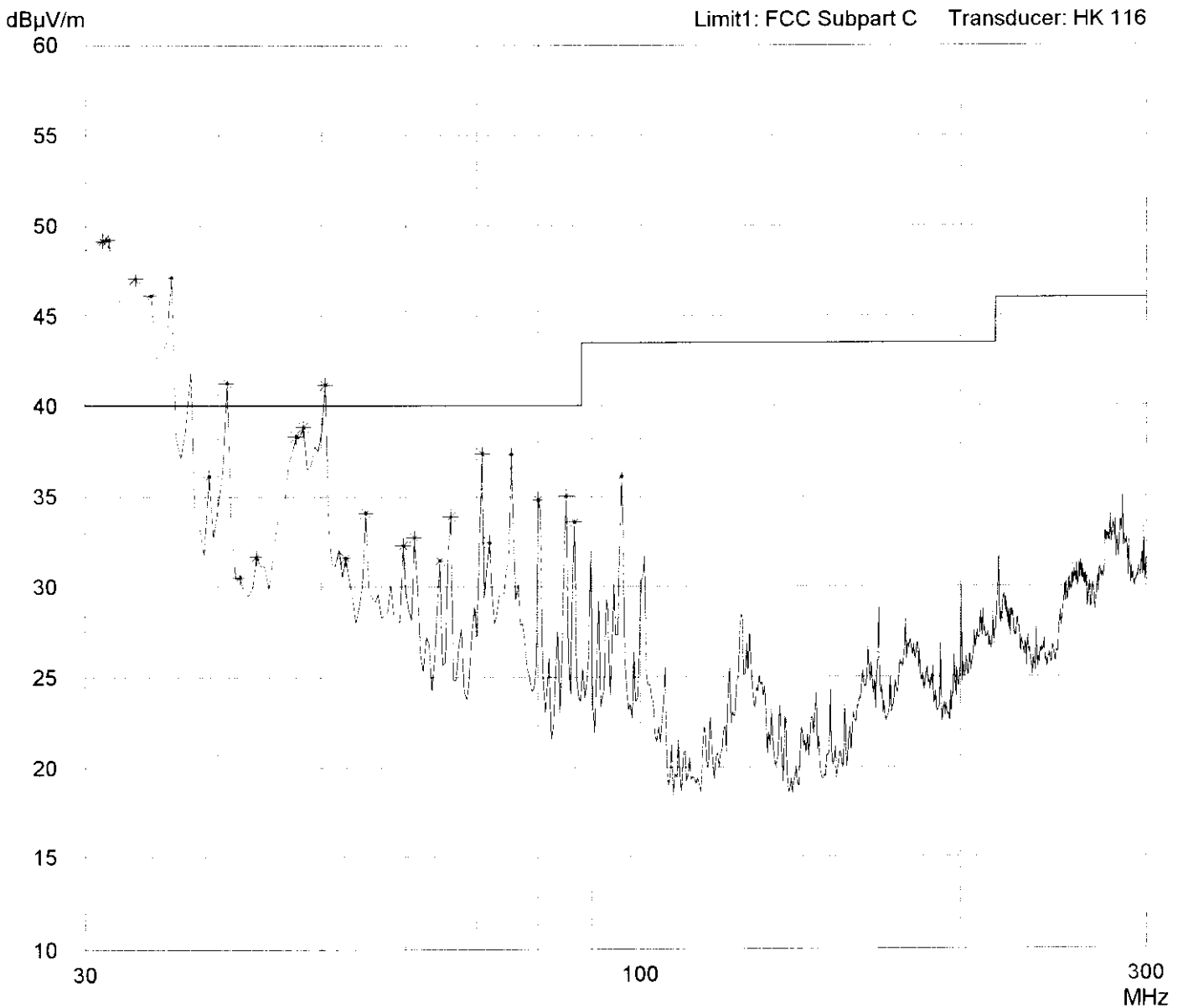


Result:

Project file:

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

<p>Model: MOBY-F / SIM 80</p> <p>Serial no.: Prototype no. 1</p> <p>Applicant: Siemens AG Fürth, A&D SE V1E1</p> <p>Test site: Semi anechoic room, cabin no. 3</p> <p>Tested on: Test distance 3 meters Vertical Polarization</p> <p>Date of test: 02/24/1998 Operator: R. Heller</p> <p>Test performed: automatically File name:</p> <p>Detector: Peak</p>	<p>Mode:</p> <ul style="list-style-type: none"> - FCC test setup - with metal plate mounted in a distance of 10 cm to antenna - cabinet of SIM grounded - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm) <p>- writing continuously (page)</p> <p>List of values: 10 dB Margin 50 Subranges</p>
---	--

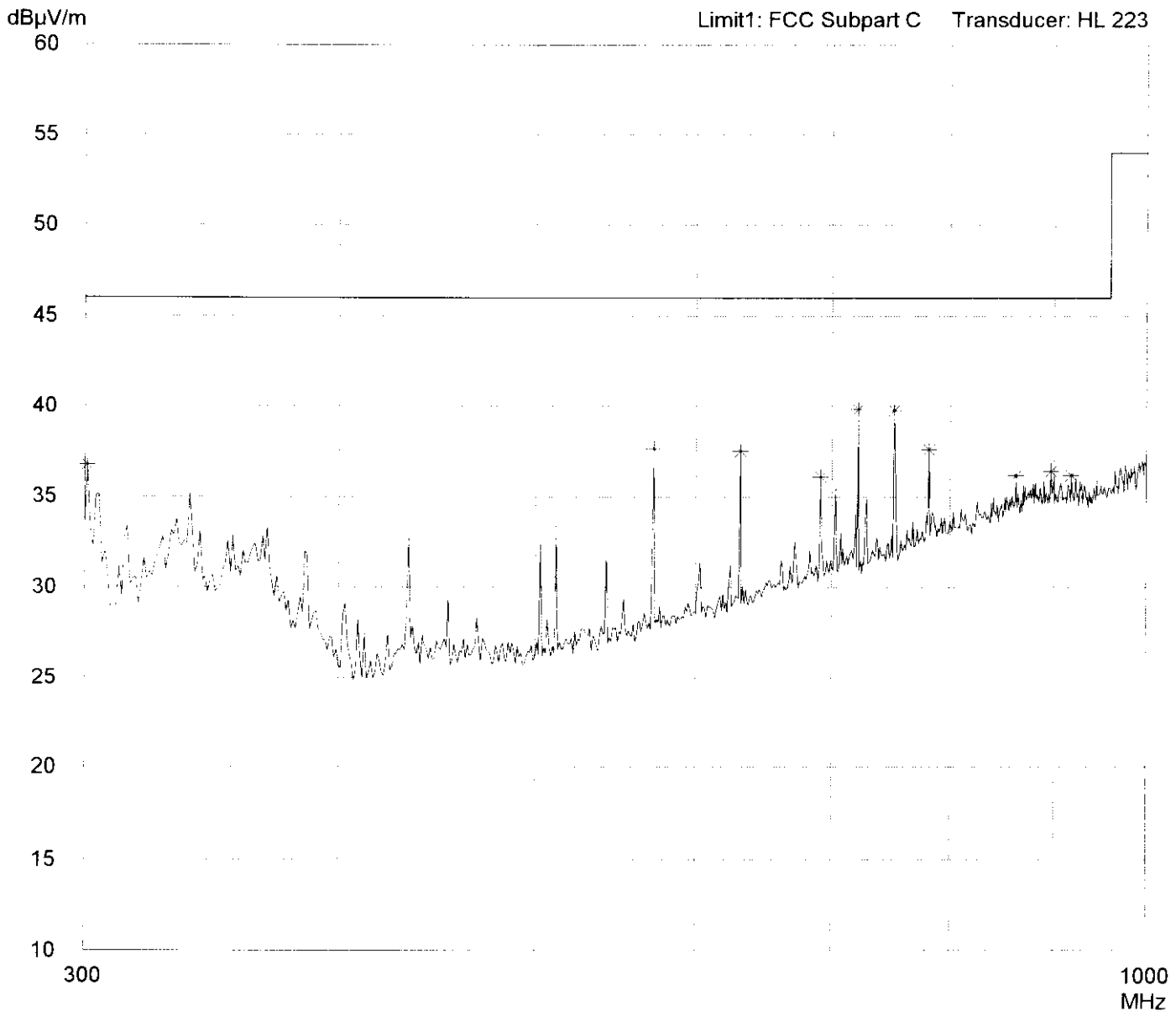


Result:

Project file:

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

<p>Model: MOBY-F / SIM 80</p> <p>Serial no.: Prototype no. 1</p> <p>Applicant: Siemens AG Fürth, A&D SE V1E1</p> <p>Test site: Semi anechoic room, cabin no. 3</p> <p>Tested on: Test distance 3 meters Vertical Polarization</p> <p>Date of test: 02/24/1998</p> <p>Operator: R. Heller</p> <p>Test performed: automatically</p> <p>File name:</p>	<p>Mode:</p> <ul style="list-style-type: none"> - FCC test setup - with metal plate mounted in a distance of 10 cm to antenna - cabinet of SIM grounded - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm) - writing continuously (page) <p>List of values: 10 dB Margin 50 Subranges</p>
<p>Detector: Peak</p>	



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

Model:
MOBY-F / SIM 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Open area test-site I

Tested on:
Test distance 3 meters
Horizontal Polarization

Date of test:
02/25/1998

Operator:
R. Heller

Test performed:
by hand

File name:

Mode:

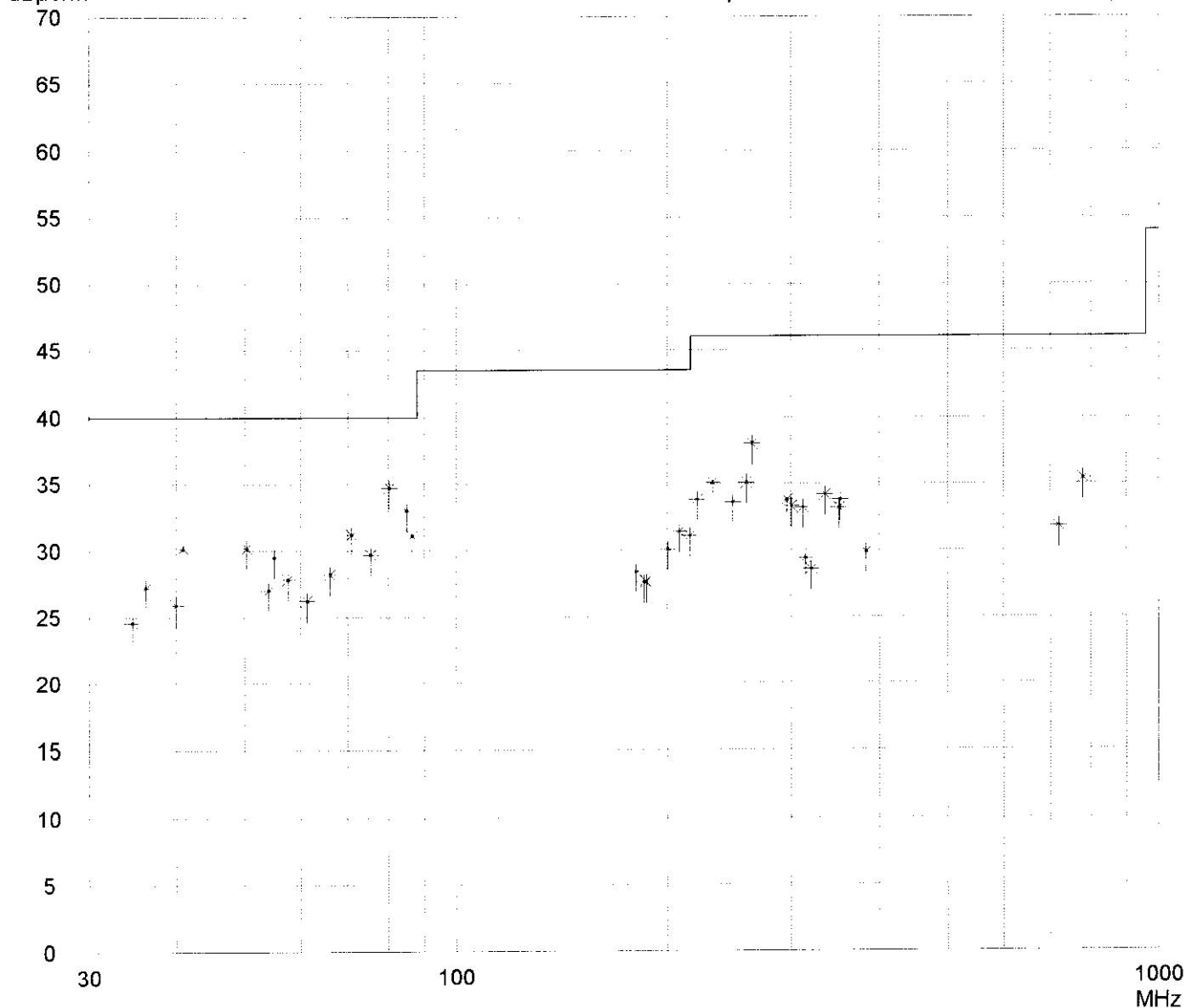
- FCC test setup
- with metal plate mounted in a distance of 10 cm to antenna
- cabinet of SIM grounded
- with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
- with ferrite core SFC-5 (Kitagawa) on antenna cable
- writing continuously (page)

Detector:
Quasi-Peak

List of values:
Selected by hand

dB μ V/m

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



Result:

Project file:

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

Model: MOBY-F / SIM 80	Mode: - FCC test setup - with metal plate mounted in a distance of 10 cm to antenna - cabinet of SIM grounded - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm) - with ferrite core SFC-5 (Kitagawa) on antenna cable - writing continuously (page)
Serial no.: Prototype no. 1	
Applicant: Siemens AG Fürth, A&D SE V1E1	
Test site: Open area test-site I	
Tested on: Test distance 3 meters Horizontal Polarization	
Date of test: 02/25/1998	Operator: R. Heller
Test performed: by hand	File name:

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

Frequency MHz	Reading dBµV	Correction factor dB	Value dBµV/m	Limit dBµV/m	Limit exceeded
34.6	11.0	13.6	24.6	40.0	
36.2	14.0	13.2	27.2	40.0	
40.0	13.5	12.4	25.9	40.0	
40.9	18.0	12.2	30.2	40.0	
50.4	19.5	10.7	30.2	40.0	
54.1	16.5	10.5	27.0	40.0	
55.1	19.0	10.5	29.5	40.0	
57.6	17.5	10.3	27.8	40.0	
61.4	16.0	10.2	26.2	40.0	
66.1	18.0	10.2	28.2	40.0	
70.9	21.0	10.2	31.2	40.0	
75.6	19.5	10.2	29.7	40.0	
80.3	24.5	10.2	34.7	40.0	
85.0	22.5	10.5	33.0	40.0	
86.6	20.5	10.6	31.1	40.0	
180.7	12.0	16.4	28.4	43.5	
185.6	11.0	16.6	27.6	43.5	
186.7	11.0	16.6	27.6	43.5	
200.5	13.0	17.1	30.1	43.5	
208.0	14.0	17.4	31.4	43.5	
215.5	13.5	17.6	31.1	43.5	
220.5	16.0	17.8	33.8	46.0	
232.0	17.0	18.1	35.1	46.0	
248.0	15.0	18.6	33.6	46.0	
259.3	15.5	19.6	35.1	46.0	
264.0	18.0	20.0	38.0	46.0	
296.0	11.0	22.8	33.8	46.0	
300.7	16.5	16.8	33.3	46.0	
312.0	16.0	17.2	33.2	46.0	
315.0	12.0	17.4	29.4	46.0	
320.7	11.0	17.6	28.6	46.0	
335.2	16.0	18.2	34.2	46.0	
350.9	14.5	18.7	33.2	46.0	
352.7	15.0	18.8	33.8	46.0	
383.1	10.0	19.9	29.9	46.0	
720.1	4.0	27.8	31.8	46.0	
780.1	7.0	28.4	35.4	46.0	

Result:	Project file:
----------------	----------------------

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

Model:
MOBY-F / SIM 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Open area test-site I

Tested on:
Test distance 3 meters
Vertical Polarization

Date of test:
02/25/1998

Operator:
R. Heller

Test performed:
by hand

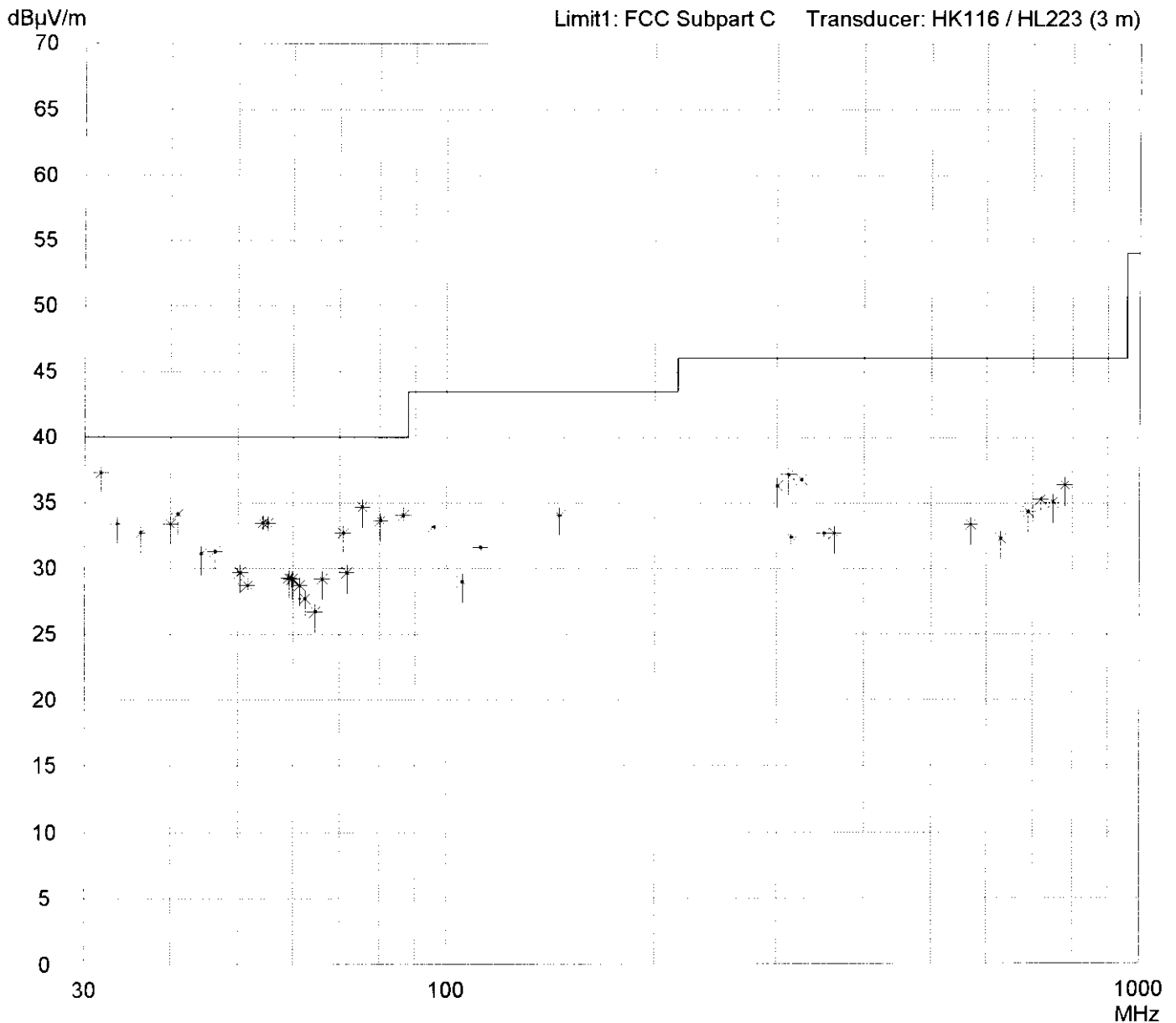
File name:

Mode:
- FCC test setup
- with metal plate mounted in a distance of 10 cm to antenna
- cabinet of SIM grounded
- with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
- with ferrite core SFC-5 (Kitagawa) on antenna cable

- writing continuously (page)

Detector:
Quasi-Peak

List of values:
Selected by hand



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

Model:
MOBY-F / SIM 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Open area test-site I

Mode:
 - FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SIM grounded
 - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - writing continuously (page)

Tested on:
Test distance 3 meters
Vertical Polarization

Date of test: **02/25/1998** Operator: **R. Heller**

Test performed: **by hand** File name:

Detector:
Quasi-Peak

List of values:
Selected by hand

Frequency MHz	Reading dBµV	Correction factor dB	Value dBµV/m	Limit dBµV/m	Limit exceeded
31.7	23.0	14.3	37.3	40.0	
33.5	19.5	13.9	33.4	40.0	
36.2	19.5	13.2	32.7	40.0	
40.0	21.0	12.4	33.4	40.0	
41.0	22.0	12.2	34.2	40.0	
44.3	19.5	11.6	31.1	40.0	
46.4	20.0	11.3	31.3	40.0	
50.4	19.0	10.7	29.7	40.0	
51.6	18.0	10.7	28.7	40.0	
54.3	23.0	10.5	33.5	40.0	
55.2	23.0	10.5	33.5	40.0	
59.2	19.0	10.3	29.3	40.0	
59.8	19.0	10.2	29.2	40.0	
61.4	18.5	10.2	28.7	40.0	
62.4	17.5	10.2	27.7	40.0	
64.6	16.5	10.2	26.7	40.0	
66.1	19.0	10.2	29.2	40.0	
70.9	22.5	10.2	32.7	40.0	
71.8	19.5	10.2	29.7	40.0	
75.6	24.5	10.2	34.7	40.0	
80.3	23.5	10.2	33.7	40.0	
86.6	23.5	10.6	34.1	40.0	
95.8	22.0	11.2	33.2	43.5	
105.4	17.0	12.0	29.0	43.5	
112.0	19.0	12.6	31.6	43.5	
145.7	19.5	14.6	34.1	43.5	
300.7	19.5	16.8	36.3	46.0	
312.0	20.0	17.2	37.2	46.0	
315.0	15.0	17.4	32.4	46.0	
325.5	19.0	17.8	36.8	46.0	
350.9	14.0	18.7	32.7	46.0	
363.1	13.5	19.2	32.7	46.0	
570.1	9.0	24.4	33.4	46.0	
630.1	6.5	25.8	32.3	46.0	
690.1	7.0	27.4	34.4	46.0	
720.1	7.5	27.8	35.3	46.0	
750.1	7.0	28.1	35.1	46.0	

Result:

Project file:

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

<p>Model: MOBY-F / SIM 80</p> <p>Serial no.:</p> <p>Prototype no. 1</p> <p>Applicant: Siemens AG Fürth, A&D SE V1E1</p> <p>Test site: Open area test-site I</p> <p>Tested on: Test distance 3 meters Vertical Polarization</p> <p>Date of test: 02/25/1998 Operator: R. Heller</p> <p>Test performed: File name: by hand</p>	<p>Mode: <ul style="list-style-type: none"> - FCC test setup - with metal plate mounted in a distance of 10 cm to antenna - cabinet of SIM grounded - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm) - with ferrite core SFC-5 (Kitagawa) on antenna cable </p> <p>- writing continuously (page)</p>
<p>Detector: Quasi-Peak</p>	<p>List of values: Selected by hand</p>

Frequency MHz	Reading dBµV	Correction factor dB	Value dBµV/m	Limit dBµV/m	Limit exceeded
780.1	8.0	28.4	36.4	46.0	

Result:

Project file:

65-100-

Straubing, April 2, 1998

TEST-REPORT

No. 51906-80065-7

for

MOBY F / SLG 80

Inductive Tag Reader

Applicant: Siemens AG, A & D SE V 1 E 1

Purpose of testing: To show compliance with
FCC Code of Federal Regulations,
Part 15 Subpart C,
Sections §15.205, §15.207
and §15.209

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): MOBY F / SLG 80
Serial number: Prototype no. 1:
Power / interface board: 1060524
RF-boards: 12002016
12006883
Type of equipment: RF-identification system
Parts/accessories: Base unit: MOBY F / SLG 80
RF-antenna: MOBY F / ANT F5
Tag: MOBY F / MDS F415
FCC-ID: NXWMOBYF-XXX80

Applicant: Siemens AG, A & D SE V 1 E 1
(full address) Würzburger Str.121
D - 90766 Fürth
Germany
Contract identification: Order no. R74A1-D-R741-287204
Contact person: Mr. Helmut Themel
Manufacturer: Siemens AG, A & D SE V 1 E 1

Receipt of EUT: February 24, 1998
Date of test: February 24 to 25, 1998
Note: Mr. Themel representing the applicant attended performing all tests.

Responsible for testing: Rainer Heller
Responsible for test report: Rainer Heller

2. Summary of Test Results

The tested sample (including accessories) complies with the requirements set forth in the Code of Regulations Part 15 Subpart C, Sections §15.205, §15.207 and §15.209 (intentional radiators) of the Federal Communication Commission (FCC).


Johann Roidt
Technical Manager


Rainer Heller
Test Engineer

3. Operation Mode of EUT

All tests were performed using the "MOBY-F Demo V1.0" test program to establish a continuous writing (and reading to check writing procedure).

Note:

Because of EUT is designed to work in the vicinity of metal parts antenna is matched in a way that maximum current is achieved with metal plate mounted in a distance of 10 cm. Therefore this setup was also used for performing all tests.

4. Configuration of EUT and Peripheral Devices

Configuration of cables of EUT and peripheral devices

- Unshielded DC power line, Siemens, 200 cm
- Shielded data cable connected to serial interface (RS 422) of EUT, Siemens, 315 cm
- Unshielded power lines for AC-power supply of personal computer and monitor, Kawasaki, 180 cm
- Shielded video cable 3138 118 73410 connected to video interface of personal computer, AWM, 170 cm, Senton inv.-no. 1455
- Shielded data cable connected to parallel interface of personal computer, Inmac, 150 cm, Senton inv.-no. 1487

Configuration of peripheral devices connected to EUT

- Personal computer AT & T Globalyst 550:
Serial no.: 17-26175733 FCC-ID: CTD3246
- PS/2-keyboard HP C1405A #ABD:
Serial no.: 3221S30020 FCC-ID¹: B94VECTRA386S-20
- PS/2-mouse HP C1413A:
Serial no.: 3227M01197 FCC-ID: B94C1413X
- Monitor Siemens S26361-K203-V311:
Serial no.: 17569281 FCC-ID: ASIC3X2
- Parallel printer HP ThinkJet 2225C+:
Serial no.: 3106S91193 FCC-ID: DSI6XU2225
with power supply Hayes 52-00008
Serial no.: 9028A

¹ FCC-ID of corresponding personal computer

5. Photographs of EUT and Accessories

6. Measuring Methods

6.1. Conducted Emission 0.45 MHz - 30 MHz (§15.207)

Conducted emissions were measured in the frequency range 0.45 MHz to 30 MHz. The bandwidth of the EMI-Receiver was set to 9 kHz and the detector-function was set to CISPR quasi-peak.

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

Measurements were performed on phase and neutral lines of the power-cords of the tested system. Preliminary scans were taken with the detector-function of the EMI-receiver set to peak to determine the conducted EMI-profile of the EUT. At the final test the cables and equipment were placed and moved within the range of positions likely to find their maximum emissions.

See figure 1 for the measurement setup.

Test equipment used (see equipment list for details):

04, 22, 23, 60, 63

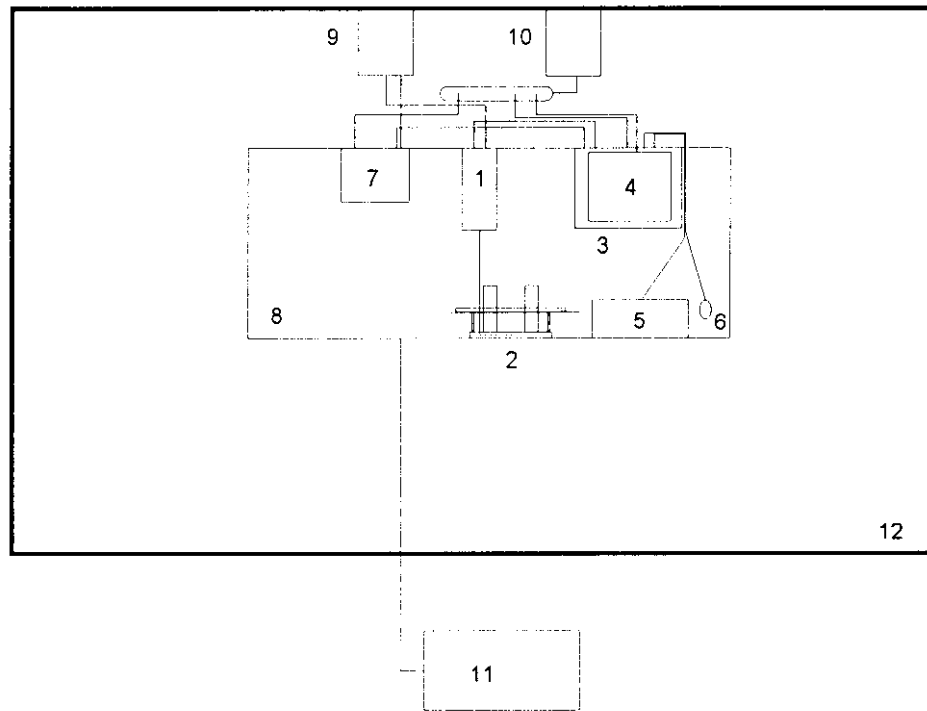


Figure 1: Measurement setup for conducted emission test

- | | |
|-------------------------------------|--------------------------------|
| 1 Base unit (EUT) | 9 LISN for EUT |
| 2 RF-antenna (EUT) with metal plate | 10 LISN for peripheral devices |
| 3 Personal computer | 11 Test receiver |
| 4 Monitor | 12 Shielded room |
| 5 Keyboard | |
| 6 Mouse | |
| 7 Parallel printer | |
| 8 Wooden table | |

6.2. Radiated Emission 9 kHz - 30 MHz (§15.209, §15.205 a,b)

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 determine the radiated EMI-profile of the EUT. EUT was rotated all around and cables and equipment were placed and moved within the range of positions likely to find their maximum emissions. 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 will be extrapolated by using either an inverse linear distance extrapolation factor of 40 dB/decade or the extrapolation factor will be determined by making a second measurement at 10 meters distance. The provisions of §15.31 (d) and §15.31 (f) apply.

See figure 2 for the measurement setup.

Test equipment used (see equipment list for details):

03, 04, 37, 60, 63, 66

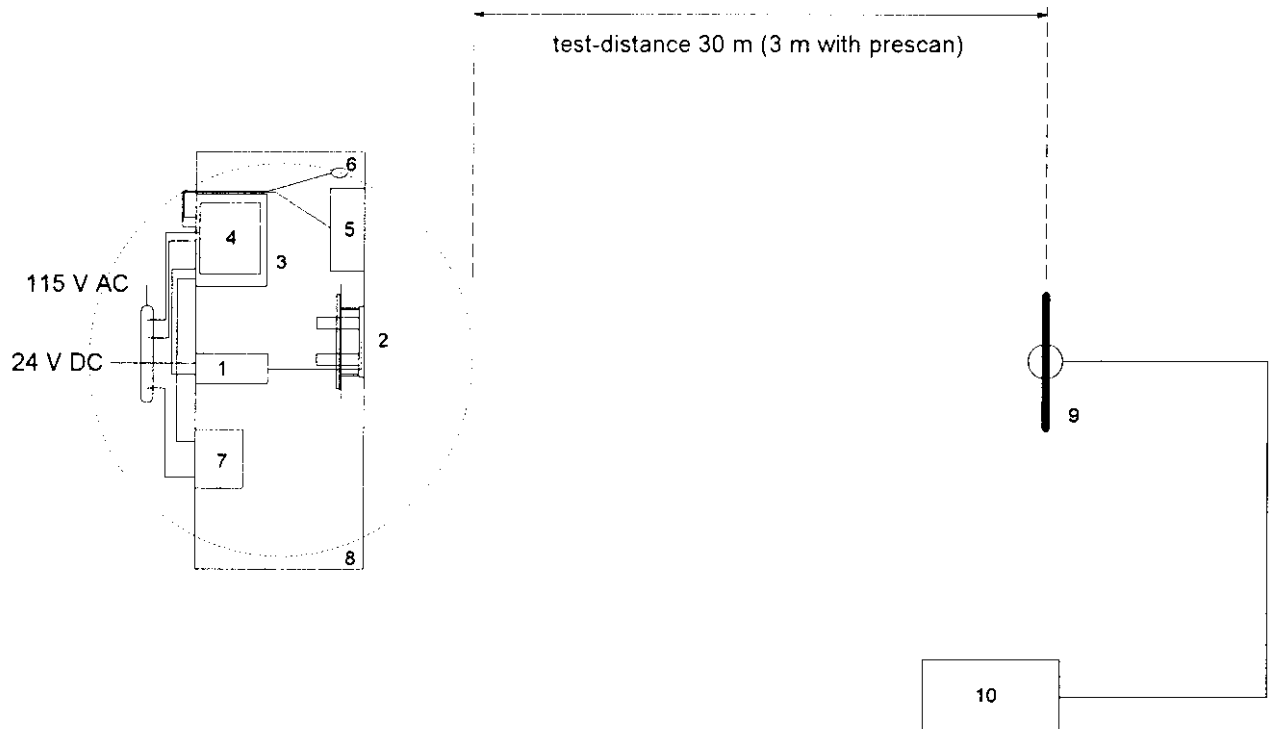


Figure 2: Measurement setup for radiated emission test below 30 MHz

- | | |
|-------------------------------------|-----------------------|
| 1 Base unit (EUT) | 9 Measurement antenna |
| 2 RF-antenna (EUT) with metal plate | 10 Test receiver |
| 3 Personal computer | |
| 4 Monitor | |
| 5 Keyboard | |
| 6 Mouse | |
| 7 Parallel printer | |
| 8 Wooden table | |

6.3. Radiated Emission 30 MHz - 1 GHz (§15.209)

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

The test setup was made in accordance with ANSI C63.4-1992. Measurements were made in both the horizontal and vertical planes of polarization. Preliminary scans were taken in a semi-anechoic room using a spectrum analyzer with the detector function set to peak. All tests were performed at a test-distance of 3 meters. For final testing an open-area test-site was used. During the tests the EUT was rotated all around and the receiving-antenna was raised and lowered from 1 meter to 4 meters to find the maximum levels of emissions. The cables and equipment were placed and moved within the range of position likely to find their maximum emissions.

See figure 3 for the measurement setup.

Test equipment used (see equipment list for details):

01, 06, 12, 38, 39, 40, 41, 58, 61, 64, 66

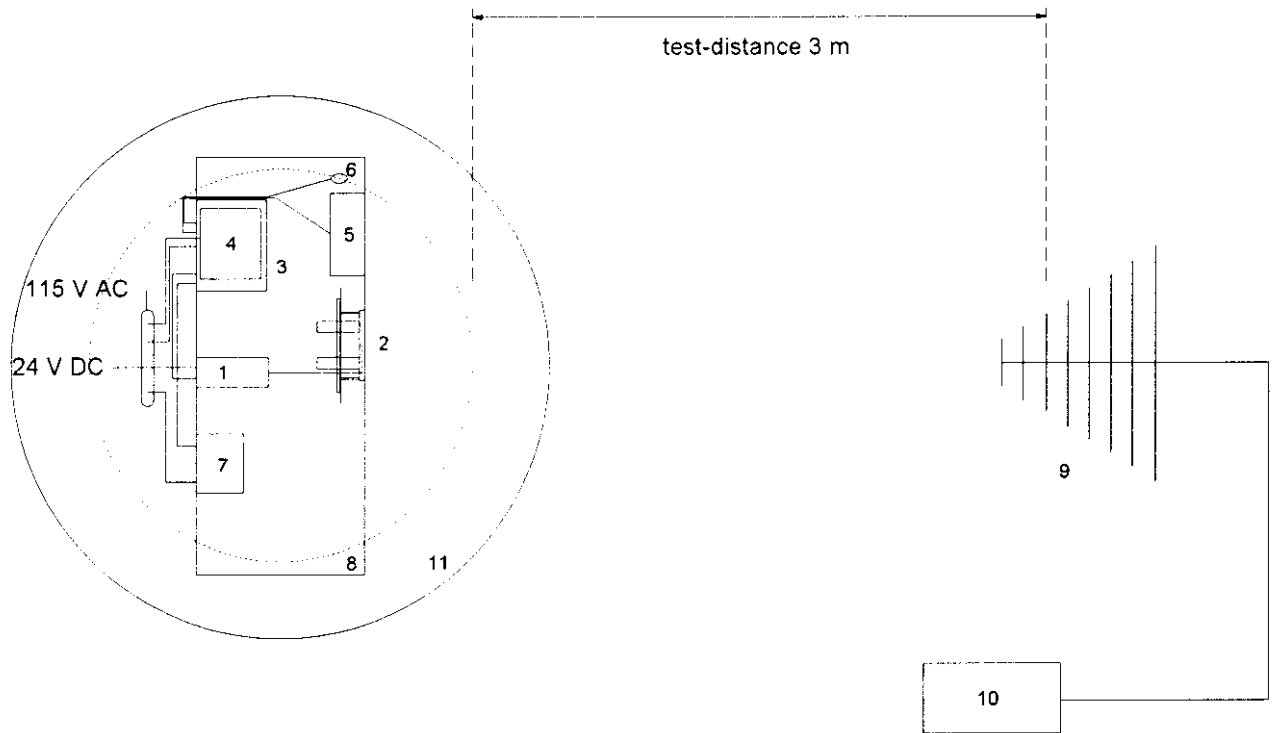


Figure 3: Measurement setup for radiated emission test above 30 MHz

- | | |
|-------------------------------------|-----------------------|
| 1 Base unit (EUT) | 9 Measurement antenna |
| 2 RF-antenna (EUT) with metal plate | 10 Test receiver |
| 3 Personal computer | 11 Turn table |
| 4 Monitor | |
| 5 Keyboard | |
| 6 Mouse | |
| 7 Parallel printer | |
| 8 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	Cable for Antenna Connector			Lucent Technologies
68	DC Block 0.01-18GHz		8037	Inmet Corp.
69	High pass filter			Lucent Technologies

8. Photographs Taken During Testing

9. List of Measurements

FCC Part 15 Subpart C			
Section(s):	Test	Page	Result
§15.207	Conducted emission test 450 kHz - 30 MHz	41-48	Test passed
§15.31 d,f §15.209 §15.205.a,b	Radiated emission test 9 kHz - 30 MHz	49-58	Test passed
§15.209	Radiated emission test 30 MHz - 1 GHz	59-67	Test passed

10. Test Results

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

Model
MOBY-F / SLG 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Linecord EUT
+24 V DC

Date of test:
02/25/1998

Operator:
R. Heller

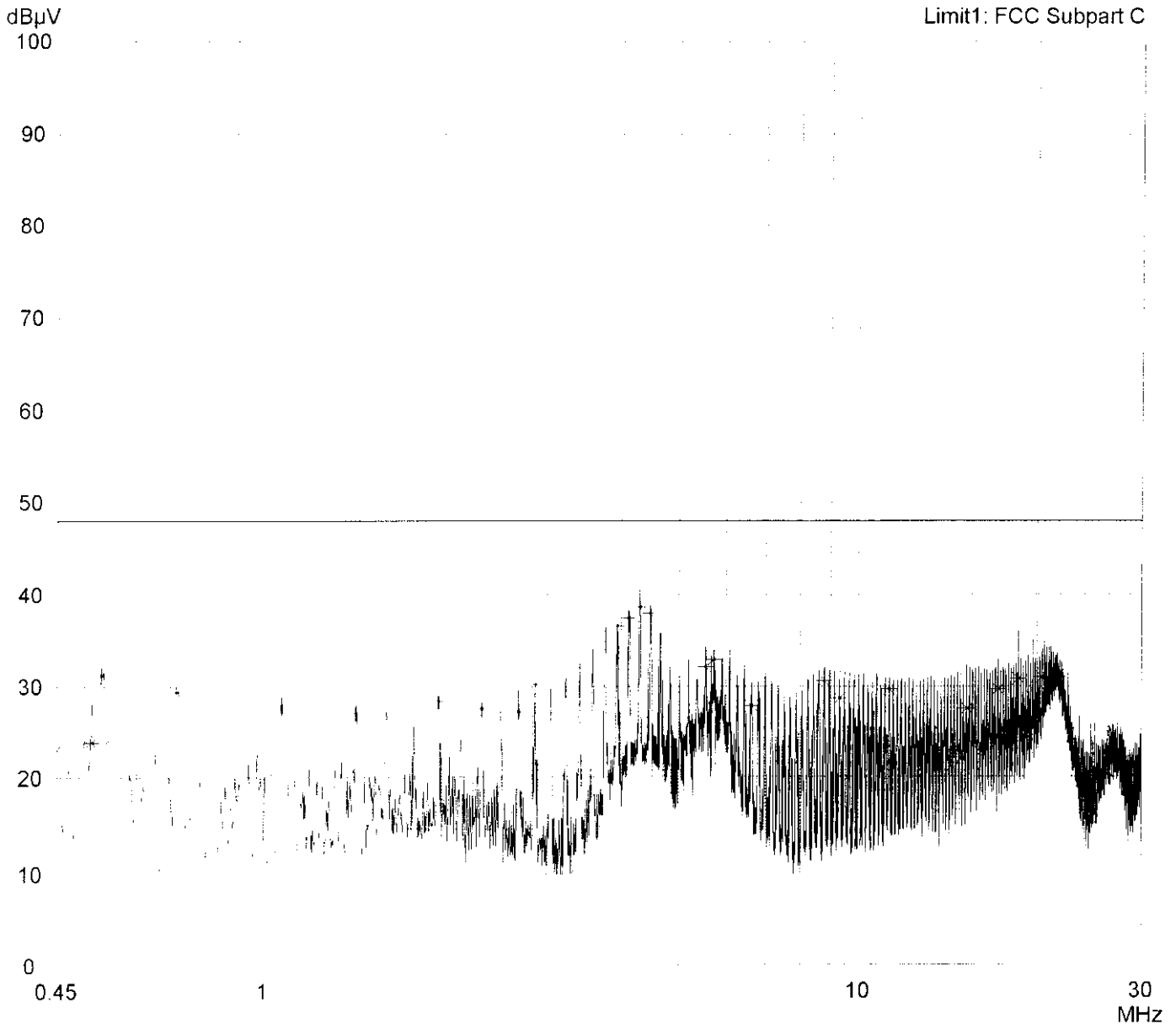
Test performed:
automatically

File name:

Detector:
Peak / Final Results: QP

- Mode:
- FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SLG grounded
 - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - writing continuously (page)

Final results:
Selected by hand



Result:

Project file:

114 67 2

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

Model:
MOBY-F / SLG 80

Serial no.:

Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Linecord EUT
+24 V DC

Mode:

- FCC test setup
- with metal plate mounted in a distance of 10 cm to antenna
- cabinet of SLG grounded
- with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
- with ferrite core SFC-5 (Kitagawa) on antenna cable

- writing continuously (page)

Date of test: 02/25/1998

Operator: R. Heller

Test performed: automatically

File name:

Detector:
Peak / Final Results: QP

Final results:
Selected by hand

Frequency MHz	Reading dB μ V	Correction factor dB	Value dB μ V	Limit dB μ V	Limit exceeded
0.515	23.9		23.9	48.0	
0.535	31.2		31.2	48.0	
0.715	29.4		29.4	48.0	
1.075	27.8		27.8	48.0	
1.435	27.1		27.1	48.0	
1.970	28.5		28.5	48.0	
2.330	27.6		27.6	48.0	
2.690	27.3		27.3	48.0	
2.865	30.2		30.2	48.0	
3.940	36.6		36.6	48.0	
4.115	37.4		37.4	48.0	
4.300	38.6		38.6	48.0	
4.474	37.9		37.9	48.0	
5.550	32.1		32.1	48.0	
5.730	32.9		32.9	48.0	
6.630	27.9		27.9	48.0	
8.775	30.6		30.6	48.0	
9.315	28.7		28.7	48.0	
11.280	29.7		29.7	48.0	
15.225	27.6		27.6	48.0	
17.190	29.7		29.7	48.0	
18.610	30.8		30.8	48.0	
20.390	31.0		31.0	48.0	
21.660	31.0		31.0	48.0	

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

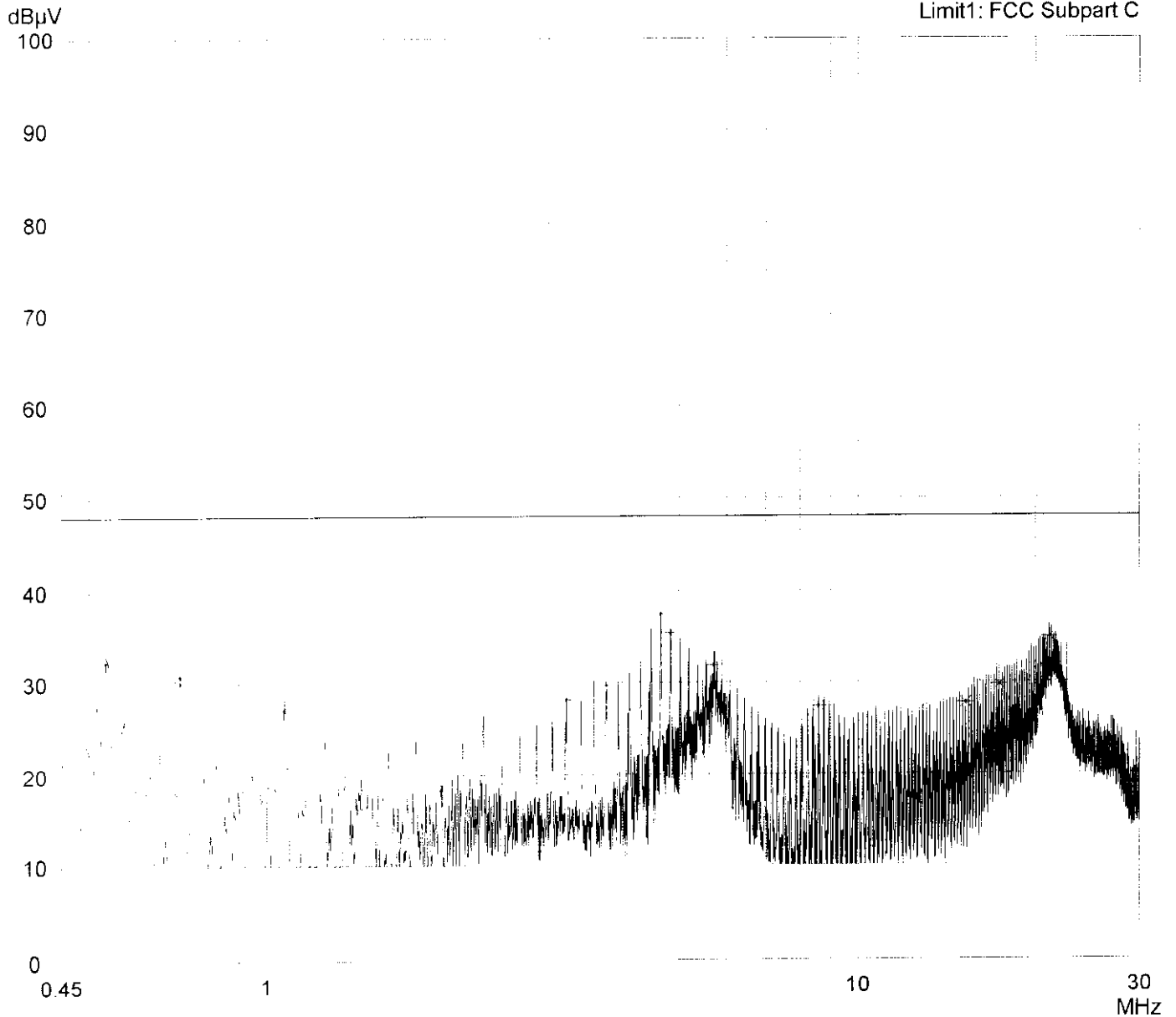
Model:
MOBY-F / SLG 80
Serial no.:
Prototype no. 1
Applicant:
Siemens AG Fürth, A&D SE V1E1
Test site:
Shielded room, cabin no. 2
Tested on:
Linecord EUT
0 V DC

Date of test: 02/25/1998
Operator: R. Heller
Test performed automatically
File name:

- Mode:
- FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SLG grounded
 - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - writing continuously (page)

Detector:
Peak / Final Results: QP

Final results:
20 dB Margin 25 Subranges



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

Model:
MOBY-F / SLG 80

Serial no.
Prototype no. 1

Applicant
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Linecord EUT
0 V DC

- Mode:
- FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SLG grounded
 - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - writing continuously (page)

Date of test: 02/25/1998

Operator: R. Heller

Test performed: automatically

File name:

Detector:
Peak / Final Results: QP

Final results:
20 dB Margin 25 Subranges

Frequency MHz	Reading dB μ V	Correction factor dB	Value dB μ V	Limit dB μ V	Limit exceeded
0.535	32.4		32.4	48.0	
0.715	30.8		30.8	48.0	
1.070	27.1		27.1	48.0	
3.220	28.1		28.1	48.0	
3.755	29.7		29.7	48.0	
4.650	37.5		37.5	48.0	
4.830	35.4		35.4	48.0	
5.725	31.9		31.9	48.0	
8.585	27.4		27.4	48.0	
15.200	27.7		27.7	48.0	
17.350	29.7		29.7	48.0	
21.126	34.9		34.9	48.0	
21.645	31.5		31.5	48.0	

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

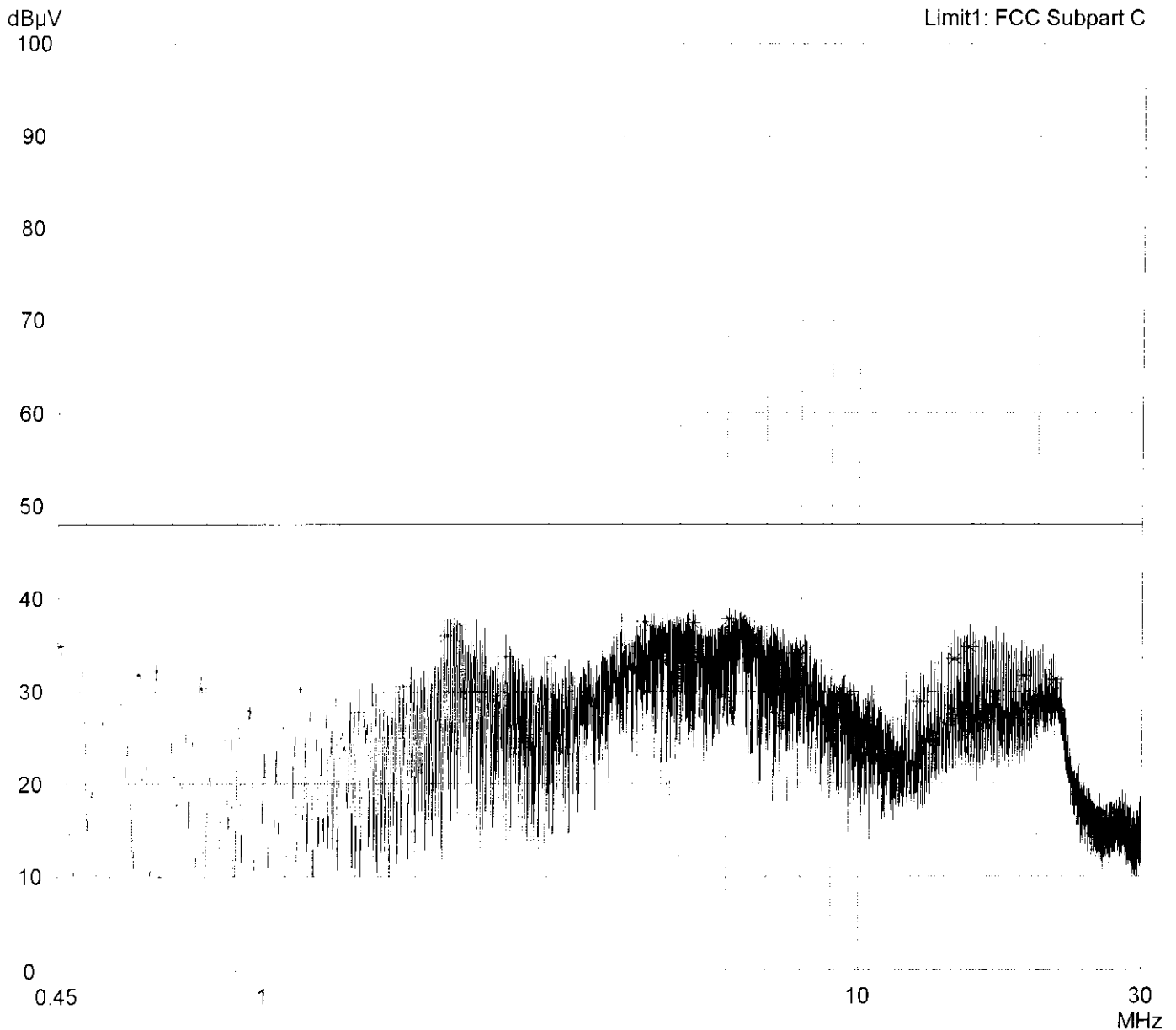
Model:
MOBY-F / SLG 80
Serial no.:
Prototype no. 1
Applicant:
Siemens AG Fürth, A&D SE V1E1
Test site:
Shielded room, cabin no. 2
Tested on:
Linecord peripheral devices
Phase L1

Date of test: 02/25/1998
Operator: R. Heller
Test performed: automatically
File name:

Detector:
Peak / Final Results: QP

Mode:
- FCC test setup
- with metal plate mounted in a distance of 10 cm to antenna
- cabinet of SLG grounded
- with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
- with ferrite core SFC-5 (Kitagawa) on antenna cable
- writing continuously (page)

Final results:
20 dB Margin 25 Subranges



Result:

Project file:

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

Model:
MOBY-F / SLG 80

Serial no.
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on
Linecord peripheral devices
Phase L1

Mode:
- FCC test setup
- with metal plate mounted in a distance of 10 cm to antenna
- cabinet of SLG grounded
- with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
- with ferrite core SFC-5 (Kitagawa) on antenna cable

- writing continuously (page)

Date of test: 02/25/1998
Operator: R. Heller

Test performed: automatically
File name:

Detector:
Peak / Final Results: QP

Final results:
20 dB Margin 25 Subranges

Frequency MHz	Reading dBµV	Correction factor dB	Value dBµV	Limit dBµV	Limit exceeded
0.455	34.9		34.9	48.0	
0.615	31.8		31.8	48.0	
0.660	32.2		32.2	48.0	
0.785	30.4		30.4	48.0	
0.945	27.9		27.9	48.0	
1.150	30.3		30.3	48.0	
1.445	27.7		27.7	48.0	
1.715	30.6		30.6	48.0	
2.030	36.0		36.0	48.0	
2.130	37.3		37.3	48.0	
2.550	33.7		33.7	48.0	
3.085	33.7		33.7	48.0	
3.990	35.0		35.0	48.0	
4.360	37.5		37.5	48.0	
5.265	37.4		37.4	48.0	
6.050	37.8		37.8	48.0	
6.665	35.7		35.7	48.0	
7.865	34.1		34.1	48.0	
9.480	29.6		29.6	48.0	
12.690	28.9		28.9	48.0	
14.475	33.5		33.5	48.0	
15.375	34.8		34.8	48.0	
18.955	31.7		31.7	48.0	
21.455	31.3		31.3	48.0	

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

Model:
MOBY-F / SLG 80
Serial no.:
Prototype no. 1
Applicant:
Siemens AG Fürth, A&D SE V1E1
Test site:
Shielded room, cabin no. 2
Tested on:
Linecord peripheral devices
Phase N

Mode:
- FCC test setup
- with metal plate mounted in a distance of 10 cm to antenna
- cabinet of SLG grounded
- with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
- with ferrite core SFC-5 (Kitagawa) on antenna cable

- writing continuously (page)

Date of test: 02/25/1998
Operator: R. Heller
Test performed: automatically
File name:

Detector:
Peak / Final Results: QP

Final results:
20 dB Margin 25 Subranges

dB μ V
100

Limit1: FCC Subpart C

90

80

70

60

50

40

30

20

10

0

0.45

1

10

30
MHz

Result:

Project file:

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

Model:
MOBY-F / SLG 80

Serial no.:

Prototype no. 1

Applicant
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Linecord peripheral devices
Phase N

Mode

- FCC test setup
- with metal plate mounted in a distance of 10 cm to antenna
- cabinet of SLG grounded
- with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
- with ferrite core SFC-5 (Kitagawa) on antenna cable

- writing continuously (page)

Date of test: 02/25/1998

Operator: R. Heller

Test performed: automatically

File name:

Detector:
Peak / Final Results: QP

Final results:
20 dB Margin 25 Subranges

Frequency MHz	Reading dB μ V	Correction factor dB	Value dB μ V	Limit dB μ V	Limit exceeded
0.615	31.4		31.4	48.0	
0.660	33.1		33.1	48.0	
0.785	32.3		32.3	48.0	
1.030	35.0		35.0	48.0	
1.195	34.5		34.5	48.0	
1.320	31.5		31.5	48.0	
1.520	34.7		34.7	48.0	
1.935	38.6		38.6	48.0	
2.057	38.7		38.7	48.0	
2.595	35.6		35.6	48.0	
3.085	35.7		35.7	48.0	
3.870	35.8		35.8	48.0	
4.360	38.3		38.3	48.0	
4.775	38.1		38.1	48.0	
6.050	38.2		38.2	48.0	
6.955	36.5		36.5	48.0	
7.960	33.7		33.7	48.0	
9.450	26.6		26.6	48.0	
12.000	31.7		31.7	48.0	
15.195	34.6		34.6	48.0	
15.550	34.8		34.8	48.0	
20.895	30.4		30.4	48.0	
21.445	31.5		31.5	48.0	

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

Model:
MOBY-F / SLG 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

Date of test:
02/24/1998

Operator:
R. Heller

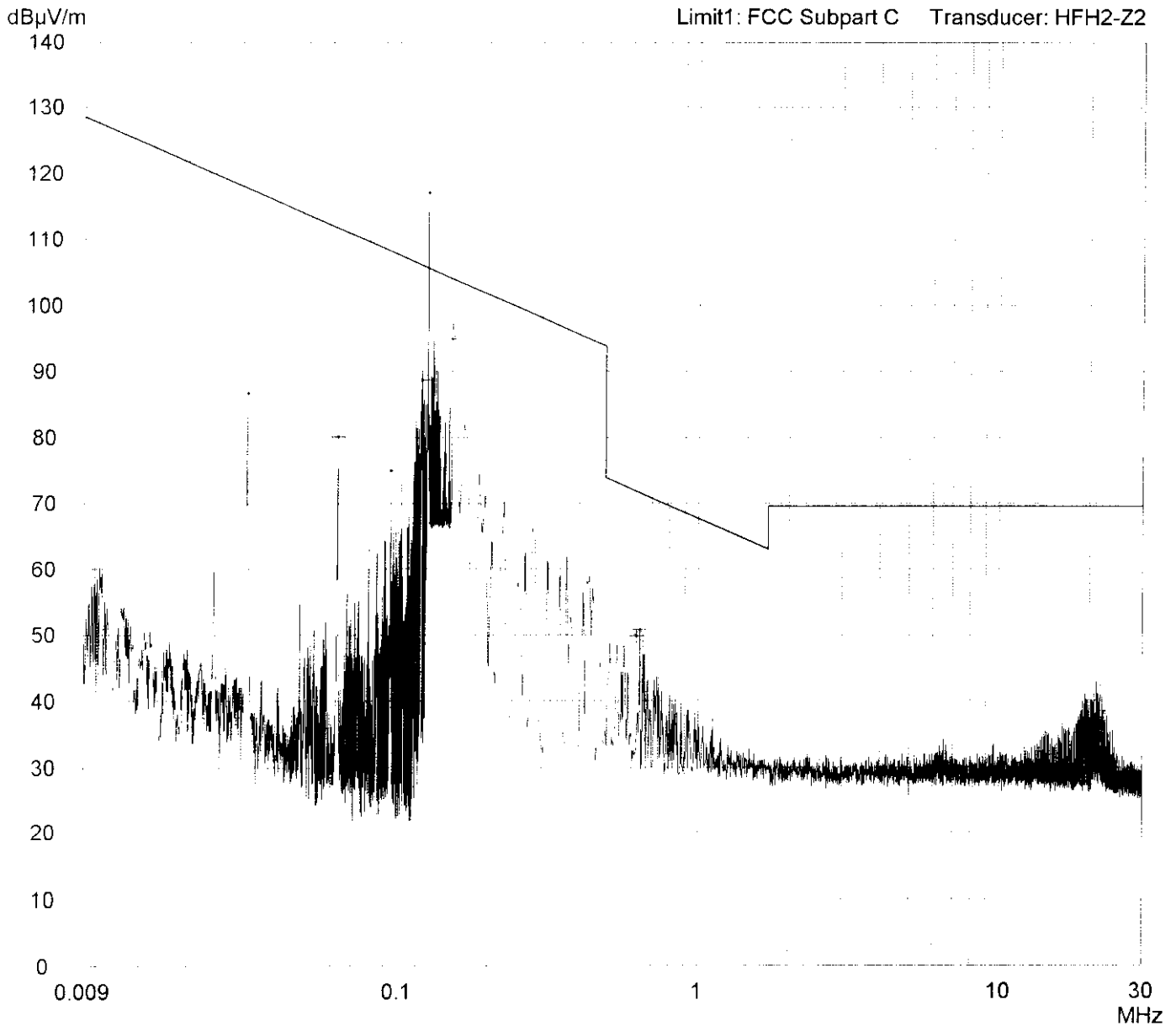
Test performed:
automatically

File name:

Detector:
Peak / Final Results: QP

- Mode:
- FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SLG grounded
 - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
- writing continuously (page)

Final results:
Selected by hand



Result:

Project file:

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

Model
MOBY-F / SLG 80

Serial no.
Prototype no. 1

Applicant
Siemens AG Fürth, A&D SE V1E1

Test site
Shielded room, cabin no. 2

Tested on
Test distance 3 metres

Mode:

- FCC test setup
- with metal plate mounted in a distance of 10 cm to antenna
- cabinet of SLG grounded
- with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
- with ferrite core SFC-5 (Kitagawa) on antenna cable

- writing continuously (page)

Date of test: 02/24/1998

Operator: R. Heller

Test performed: automatically

File name:

Detector:
Peak / Final Results: QP

Final results:
Selected by hand

Frequency MHz	Reading dBµV	Correction factor dB	Value dBµV/m	Limit dBµV/m	Limit exceeded
0.0315	66.7	20.0	86.7	117.6	
0.0630	60.1	20.0	80.1	111.6	
0.0944	55.0	20.0	75.0	108.1	
0.1196	68.7	20.0	88.7	106.0	
0.1250	97.0	20.0	117.0	105.7	*
0.1500	75.0	20.0	95.0	104.1	
0.6250	29.8	20.0	49.8	71.7	
0.6400	30.8	20.0	50.8	71.5	

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

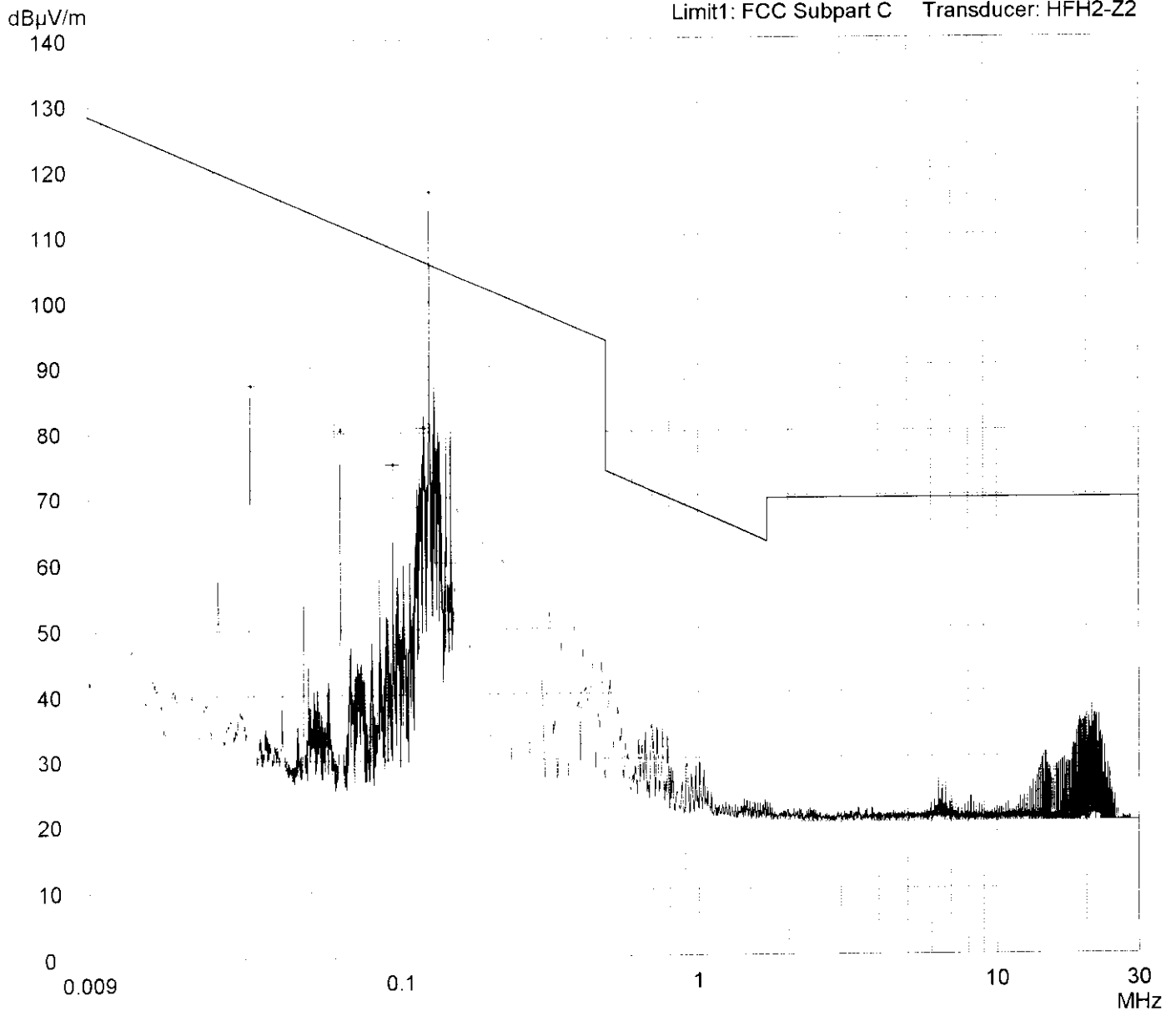
Model:
MOBY-F / SLG 80
Serial no.:
Prototype no. 1
Applicant:
Siemens AG Fürth, A&D SE V1E1
Test site:
Shielded room, cabin no. 2
Tested on
Test distance 3 metres

Mode:
- FCC test setup
- with metal plate mounted in a distance of
10 cm to antenna
- cabinet of SLG grounded
- with tag MDS F415 mounted in center of antenna
ANT F5 (distance = 0 cm)
- with ferrite core SFC-5 (Kitagawa) on antenna cable
- writing continuously (page)

Date of test: 02/24/1998
Operator: R. Heller
Test performed: automatically
File name:

Detector:
Average / Final Results: AV

Final results:
Selected by hand



Result:

Project file:

FA-170

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

Model:
MOBY-F / SLG 80

Serial no.:

Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:

Test distance 3 metres

Mode:

- FCC test setup
- with metal plate mounted in a distance of 10 cm to antenna
- cabinet of SLG grounded
- with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
- with ferrite core SFC-5 (Kitagawa) on antenna cable

- writing continuously (page)

Date of test: 02/24/1998

Operator: R. Heller

Test performed: automatically

File name:

Detector:
Average / Final Results: AV

Final results:
Selected by hand

Frequency MHz	Reading dBµV	Correction factor dB	Value dBµV/m	Limit dBµV/m	Limit exceeded
0.0315	67.3	20.0	87.3	117.6	
0.0630	60.4	20.0	80.4	111.6	
0.0944	55.0	20.0	75.0	108.1	
0.1202	60.7	20.0	80.7	106.0	
0.1250	96.7	20.0	116.7	105.7	*

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

Model: MOBY F / SLG 80
 Type: RF-identification system
 Serial No.: Prototype no. 1
 Applicant: Siemens AG Fürth, A&D SE V1E1
 Test-site: Open area test-site
 Test distances: 10 meters and 30 meters
 Date of test: 02/24/1998
 Operator: R. Heller

Mode:
 - FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SLG grounded
 - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - writing continuously (page)

Frequency [MHz]	Detector	Measuring Bandwidth [kHz]	Received Voltage		Correction [dB]	Fieldstrength			Limit [dBµV/m]
			10 m [dBµV]	30 m [dBµV]		10 m [dBµV/m]	30 m [dBµV/m]	300 m [dBµV/m]	
0.125	QP	0.2	63.6	39.4	20.0	83.6	59.4	8.7	
0.125	AV	0.2	63.3	38.9	20.0	83.3	58.9	7.8	25.7

Note 1: Fieldstrength value in 300 meters distance is extrapolated according to §15.31 f(2) performing two measurements in 10 and 30 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:
MOBY-F / SLG 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

Date of test:
02/24/1998

Operator:
R. Heller

Test performed:
automatically

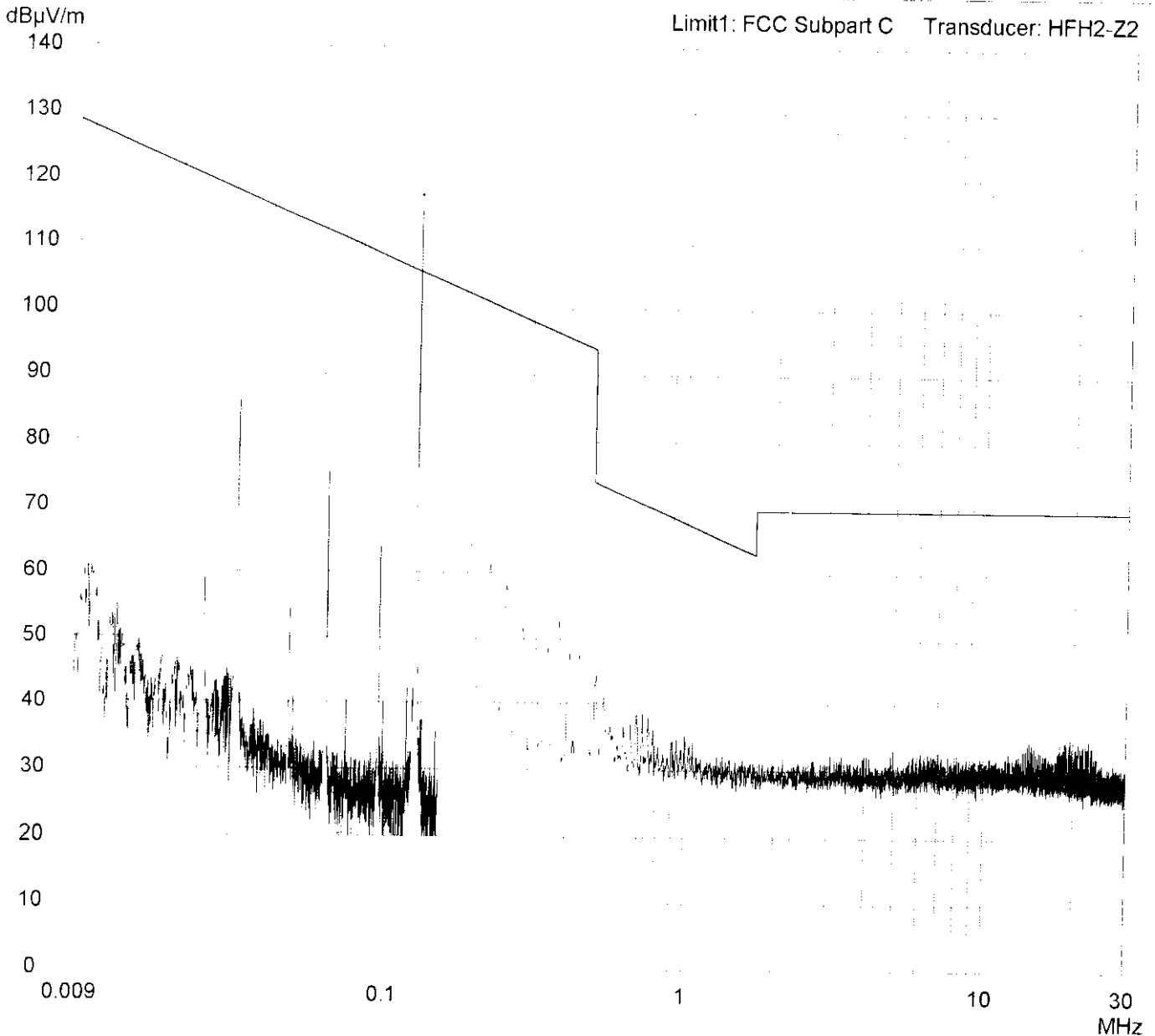
File name:

Detector:
Peak / Final Results: QP

- Mode:
- FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SLG grounded
 - without tag
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - transmitting continuously

Final results:
20 dB Margin 25 Subranges

Limit1: FCC Subpart C Transducer: HFH2-Z2



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

Model
 MOBY-F / SLG 80
 Serial no.
 Prototype no. 1
 Applicant
 Siemens AG Fürth, A&D SE V1E1
 Test site
 Shielded room, cabin no. 2
 Tested on
 Test distance 3 metres

Mode:
 - FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SLG grounded
 - without tag
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - transmitting continuously

Date of test: 02/24/1998
 Operator: R. Heller
 Test performed: automatically
 File name:

Detector:
 Peak / Final Results: QP

Final results:
 20 dB Margin 25 Subranges

Frequency MHz	Reading dB μ V	Correction factor dB	Value dB μ V/m	Limit dB μ V/m	Limit exceeded
0.125	97.4	20.0	117.4	105.7	*

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

Model:
MOBY-F / SLG 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Shielded room, cabin no. 2

Tested on:
Test distance 3 metres

Date of test:
02/24/1998

Operator:
R. Heller

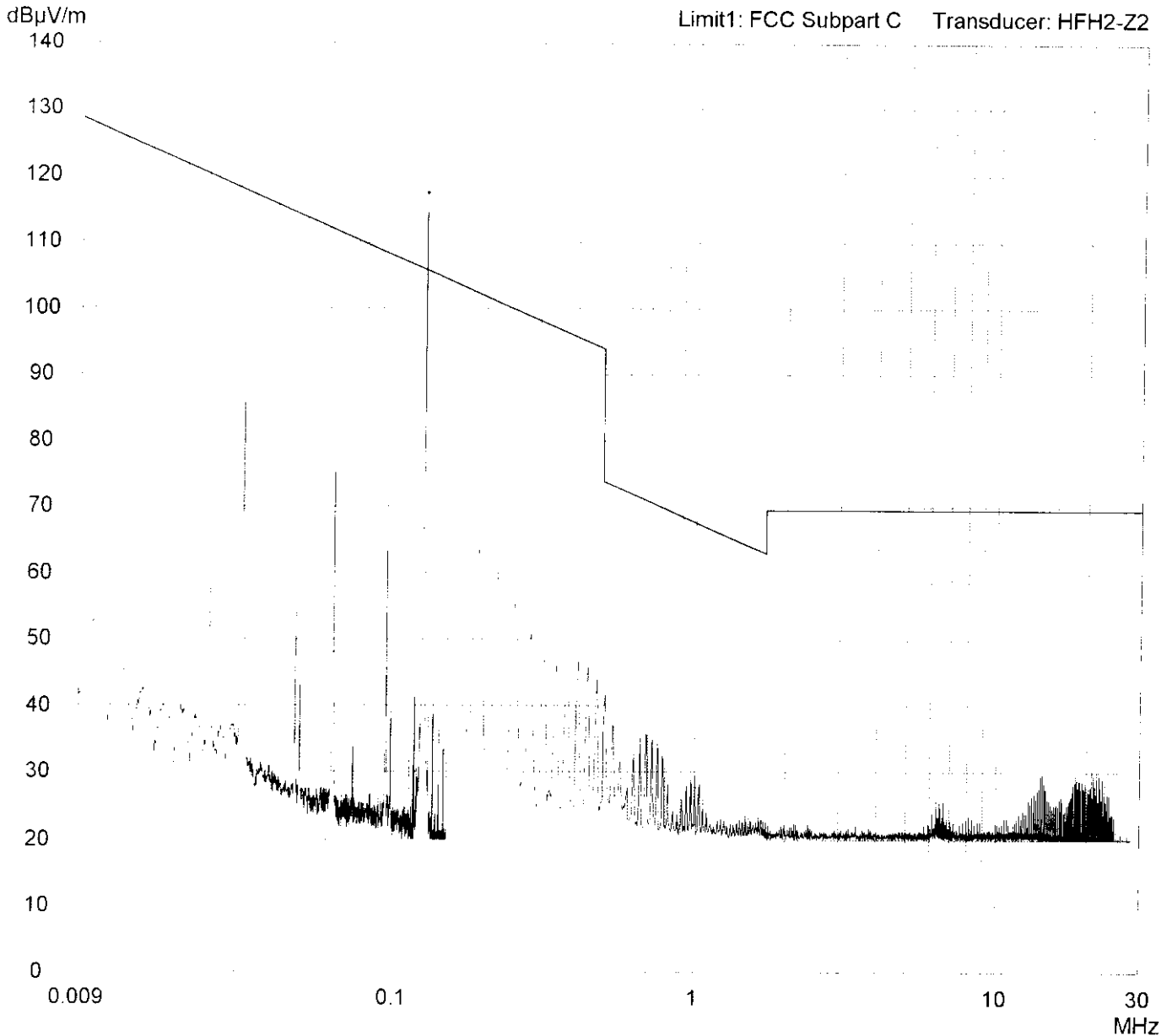
Test performed:
automatically

File name:

- Mode:
- FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SLG grounded
 - without tag
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - transmitting continuously

Detector:
Average / Final Results: AV

Final results:
20 dB Margin 25 Subranges



Result:

Project file:

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

Model:
 MOBY-F / SLG 80
 Serial no :
 Prototype no. 1
 Applicant
 Siemens AG Fürth. A&D SE V1E1
 Test site
 Shielded room, cabin no. 2
 Tested on
 Test distance 3 metres

Mode:
 - FCC test setup
 - with metal plate mounted in a distance of
 10 cm to antenna
 - cabinet of SLG grounded
 - without tag
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - transmitting continuously

Date of test: 02/24/1998
 Operator: R. Heller
 Test performed automatically
 File name:

Detector:
 Average / Final Results: AV

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>
0.125	97.4	20.0	117.4	105.7	*

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

Model: MOBY F / SLG 80
 Type: RF-Identification system
 Serial No.: Prototype no. 1
 Applicant: Siemens AG Fürth, A&D SE V1E1
 Test-site: Open area test-site
 Test distances: 10 meters and 30 meters
 Date of test: 02/24/1998
 Operator: R. Heller

Mode: - FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SLG grounded
 - without tag
 - with ferrite core SFC-5 (Kitagawa) on antenna cable
 - transmitting continuously

Frequency [MHz]	Detector	Measuring Bandwidth [kHz]	Received Voltage		Correction [dB]	Fieldstrength			Limit [dBµV/m]
			10 m [dBµV]	30 m [dBµV]		10 m [dBµV/m]	30 m [dBµV/m]	300 m [dBµV/m]	
0.125	QP	0.2	64.0	39.5	20.0	84.0	59.5	8.2	
0.125	AV	0.2	64.0	39.5	20.0	84.0	59.5	8.2	25.7

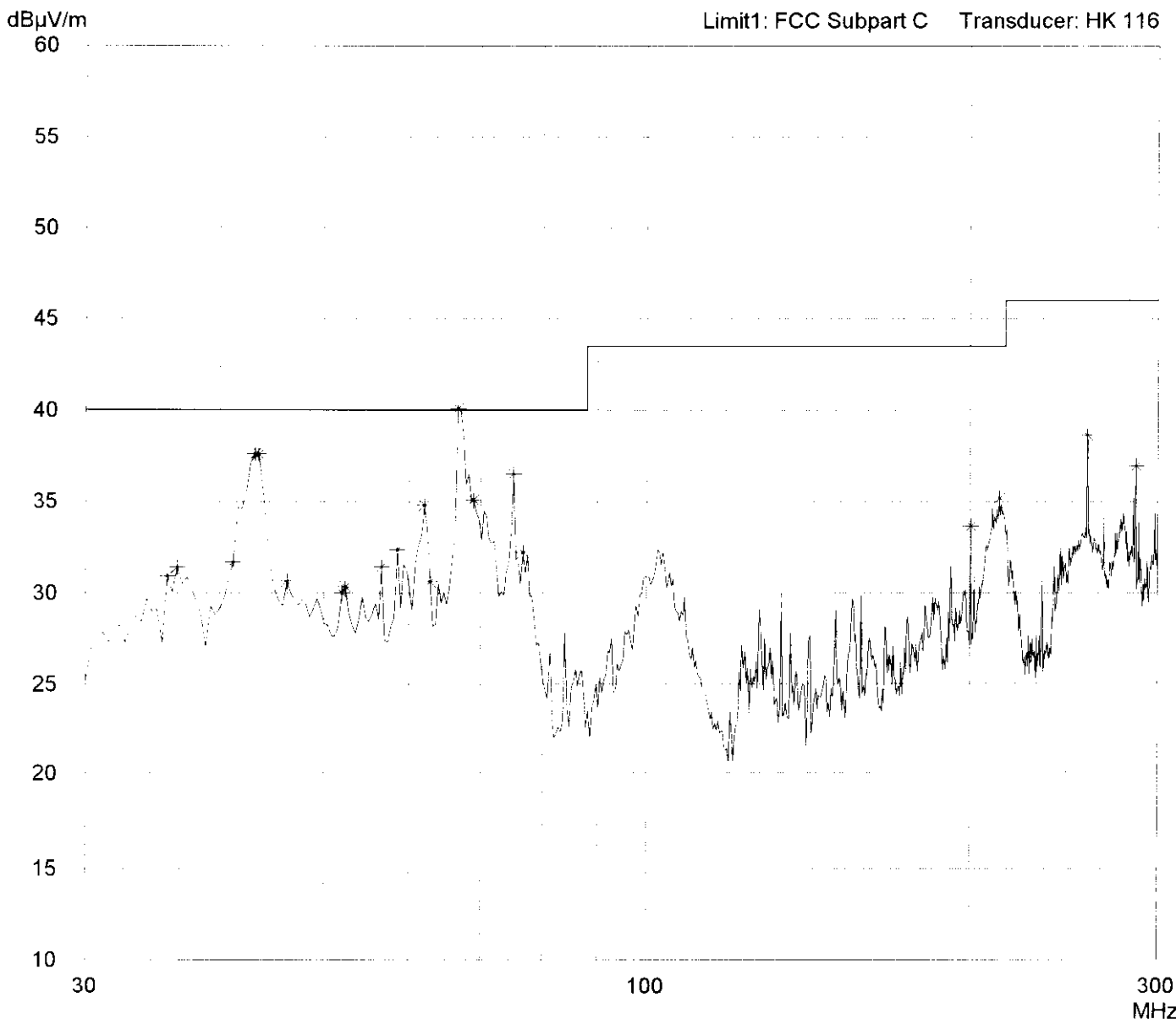
Note 1: Fieldstrength value in 300 meters distance is extrapolated according to §15.31 f(2) performing two measurements in 10 and 30 meters distance

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

Result: The limits are kept.

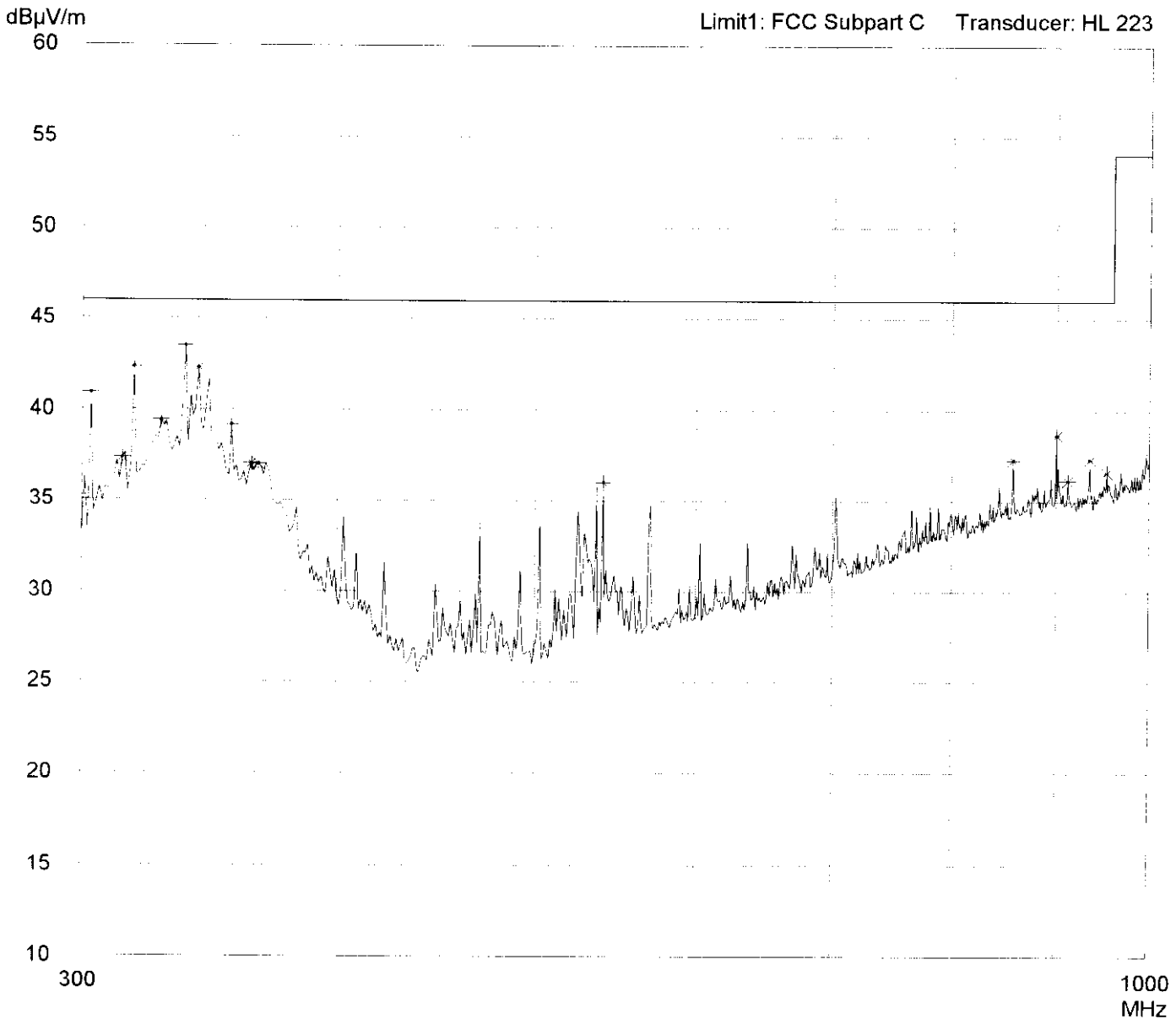
Radiated Emission Test 30 MHz - 300 MHz according to FCC Part 15 Subpart C

<p>Model: MOBY-F / SLG 80</p> <hr/> <p>Serial no.:</p> <p>Prototype no. 1</p> <hr/> <p>Applicant: Siemens AG Fürth, A&D SE V1E1</p> <hr/> <p>Test site: Semi anechoic room, cabin no. 3</p> <hr/> <p>Tested on: Test distance 3 meters Horizontal Polarization</p> <hr/> <p>Date of test: 02/24/1998 Operator: R. Heller</p> <hr/> <p>Test performed: automatically File name:</p> <hr/> <p>Detector: Peak</p>	<p>Mode:</p> <ul style="list-style-type: none"> - FCC test setup - with metal plate mounted in a distance of 10 cm to antenna - cabinet of SLG grounded - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm) - writing continuously (page) <hr/> <p>List of values: 10 dB Margin 50 Subranges</p>
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Radiated Emission Test 300 MHz - 1 GHz according to FCC Part 15 Subpart C

<p>Model: MOBY-F / SLG 80</p> <p>Serial no.: Prototype no. 1</p> <p>Applicant: Siemens AG Fürth, A&D SE V1E1</p> <p>Test site: Semi anechoic room, cabin no. 3</p> <p>Tested on: Test distance 3 meters Horizontal Polarization</p> <p>Date of test: 02/24/1998 Operator: R. Heller</p> <p>Test performed: automatically File name:</p> <p>Detector: Peak</p>	<p>Mode:</p> <ul style="list-style-type: none"> - FCC test setup - with metal plate mounted in a distance of 10 cm to antenna - cabinet of SLG grounded - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm) - writing continuously (page) <p>List of values: 10 dB Margin 50 Subranges</p>
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Radiated Emission Test 30 MHz - 300 MHz according to FCC Part 15 Subpart C

Model:
MOBY-F / SLG 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Semi anechoic room, cabin no. 3

Tested on:
Test distance 3 meters
Vertical Polarization

Date of test: 02/24/1998
Operator: R. Heller

Test performed: automatically
File name:

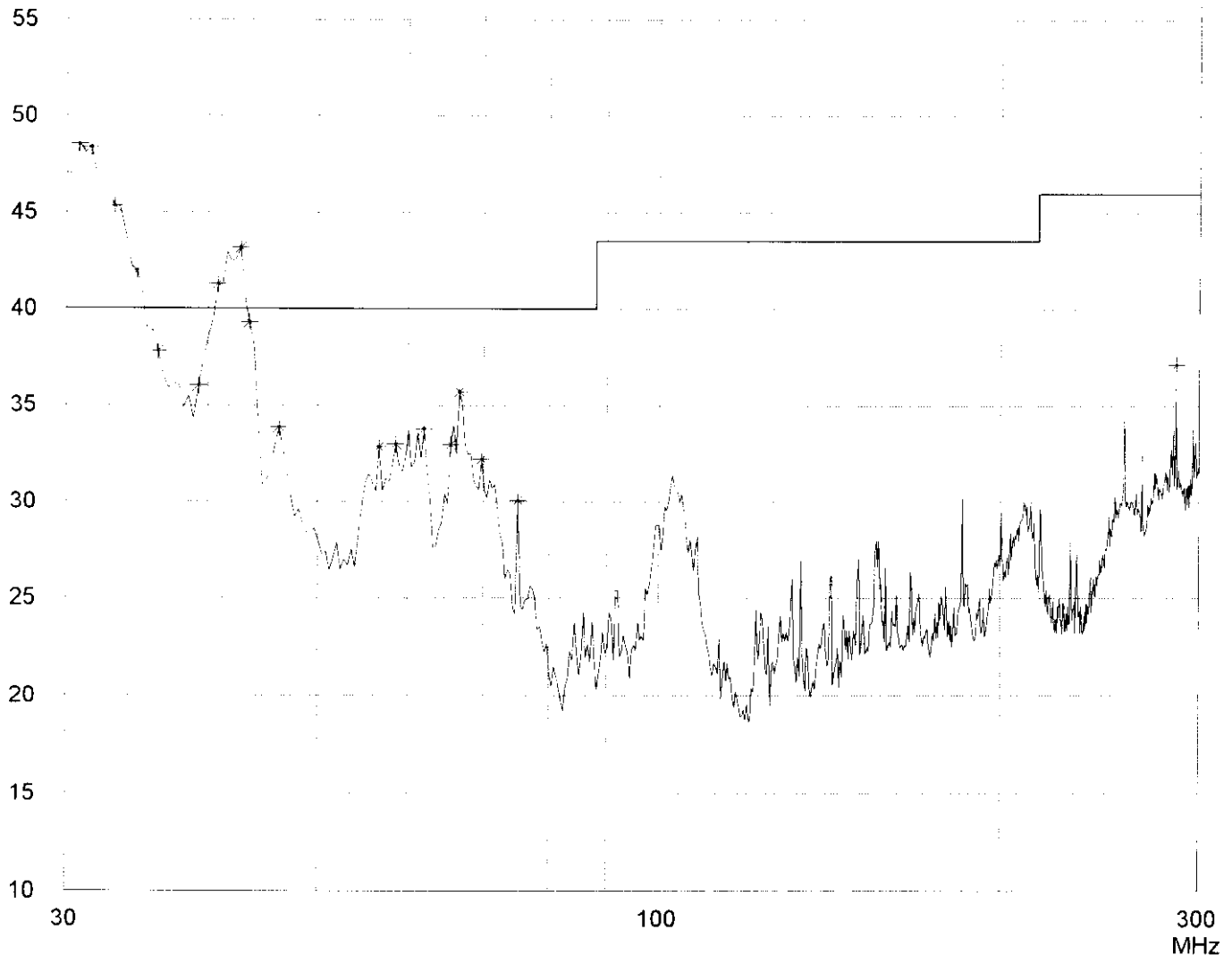
- Mode:
- FCC test setup
 - with metal plate mounted in a distance of 10 cm to antenna
 - cabinet of SLG grounded
 - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
 - writing continuously (page)

Detector:
Peak

List of values:
10 dB Margin 50 Subranges

dB μ V/m
60

Limit1: FCC Subpart C Transducer: HK 116



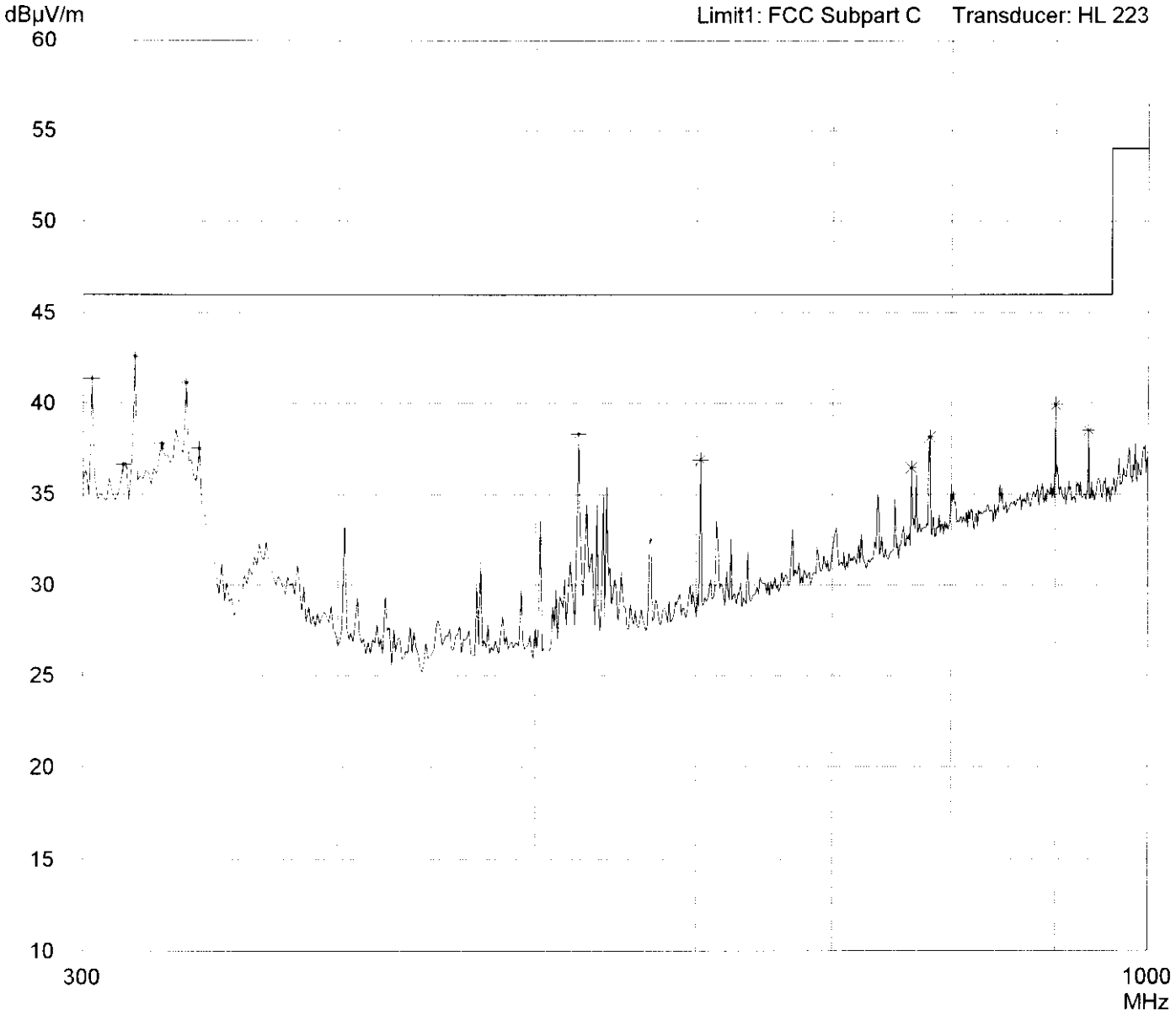
Result:

Project file:

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

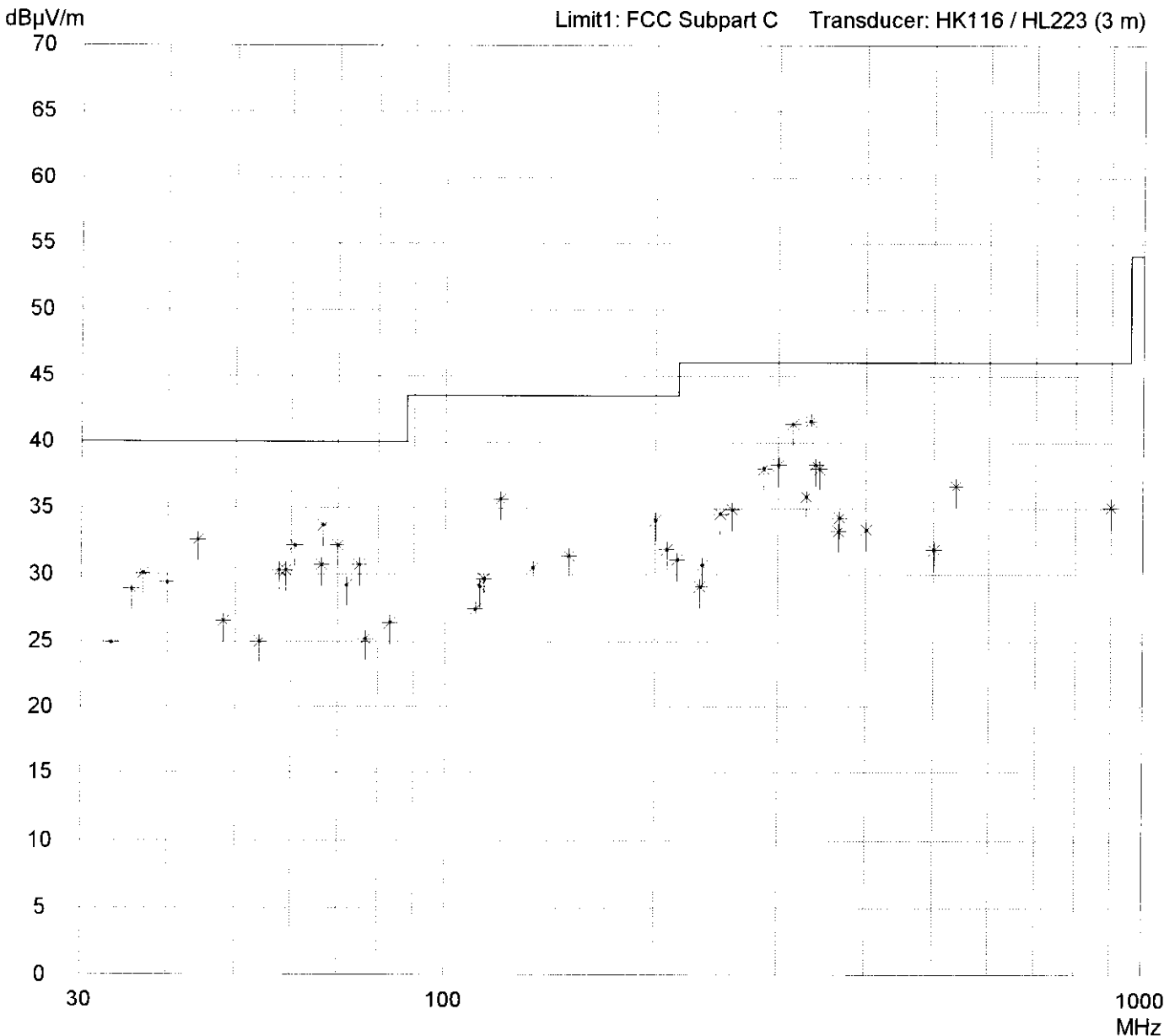
<p>Model: MOBY-F / SLG 80</p> <p>Serial no.: Prototype no. 1</p> <p>Applicant: Siemens AG Fürth, A&D SE V1E1</p> <p>Test site: Semi anechoic room, cabin no. 3</p> <p>Tested on: Test distance 3 meters Vertical Polarization</p> <p>Date of test: 02/24/1998 Operator: R. Heller</p> <p>Test performed: automatically File name:</p>	<p>Mode:</p> <ul style="list-style-type: none"> - FCC test setup - with metal plate mounted in a distance of 10 cm to antenna - cabinet of SLG grounded - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm) - writing continuously (page)
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<p>Detector: Peak</p>	<p>List of values: 10 dB Margin 50 Subranges</p>
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Radiated Emission Test 30 MHz - 1 GHz according to FCC Part 15 Subpart C

<p>Model: MOBY-F / SLG 80</p> <p>Serial no.: Prototype no. 1</p> <p>Applicant: Siemens AG Fürth, A&D SE V1E1</p> <p>Test site: Open area test-site I</p> <p>Tested on: Test distance 3 meters Horizontal Polarization</p> <p>Date of test: 02/24/1998 Operator: R. Heller</p> <p>Test performed: by hand File name:</p> <p>Detector: Quasi-Peak</p>	<p>Mode:</p> <ul style="list-style-type: none"> - FCC test setup - with metal plate mounted in a distance of 10 cm to antenna - cabinet of SLG grounded - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm) - with ferrite core SFC-5 (Kitagawa) on antenna cable - writing continuously (page) <p>List of values: Selected by hand</p>
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Radiated Emission Test 30 MHz - 1 GHz according to FCC Part 15 Subpart C

Model:
MOBY-F / SLG 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Open area test-site I

Tested on:
Test distance 3 meters
Horizontal Polarization

Date of test: 02/24/1998 Operator: R. Heller

Test performed: by hand File name:

Mode:
- FCC test setup
- with metal plate mounted in a distance of 10 cm to antenna
- cabinet of SLG grounded
- with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
- with ferrite core SFC-5 (Kitagawa) on antenna cable

- writing continuously (page)

Detector:
Quasi-Peak

List of values:
Selected by hand

Frequency MHz	Reading dBµV	Correction factor dB	Value dBµV/m	Limit dBµV/m	Limit exceeded
33.2	11.0	13.9	24.9	40.0	
35.5	15.5	13.4	28.9	40.0	
36.9	17.0	13.1	30.1	40.0	
40.0	17.0	12.4	29.4	40.0	
44.2	21.0	11.6	32.6	40.0	
48.1	15.5	11.0	26.5	40.0	
54.1	14.5	10.5	25.0	40.0	
57.7	20.0	10.3	30.3	40.0	
59.0	20.0	10.3	30.3	40.0	
60.8	22.0	10.2	32.2	40.0	
66.4	20.5	10.2	30.7	40.0	
66.8	23.5	10.2	33.7	40.0	
70.1	22.0	10.2	32.2	40.0	
72.1	19.0	10.2	29.2	40.0	
75.2	20.5	10.2	30.7	40.0	
76.8	15.0	10.2	25.2	40.0	
83.2	16.0	10.4	26.4	40.0	
110.5	15.0	12.4	27.4	43.5	
112.0	16.5	12.6	29.1	43.5	
113.6	17.0	12.7	29.7	43.5	
120.0	22.5	13.2	35.7	43.5	
133.7	16.5	14.0	30.5	43.5	
150.4	16.5	14.9	31.4	43.5	
200.5	17.0	17.1	34.1	43.5	
208.0	14.5	17.4	31.9	43.5	
215.4	13.5	17.6	31.1	43.5	
232.0	11.0	18.1	29.1	46.0	
233.9	12.5	18.2	30.7	46.0	
248.0	16.0	18.6	34.6	46.0	
257.8	15.5	19.4	34.9	46.0	
286.4	16.0	22.0	38.0	46.0	
300.7	21.5	16.8	38.3	46.0	
315.0	24.0	17.4	41.4	46.0	
329.4	18.0	17.9	35.9	46.0	
334.1	23.5	18.1	41.6	46.0	
339.1	20.0	18.3	38.3	46.0	
343.7	19.5	18.5	38.0	46.0	

Result:

Project file:

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

Model:
MOBY-F / SLG 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Open area test-site I

Tested on:
Test distance 3 meters
Horizontal Polarization

Date of test: 02/24/1998 Operator: R. Heller

Test performed: by hand File name:

Mode:

- FCC test setup
- with metal plate mounted in a distance of 10 cm to antenna
- cabinet of SLG grounded
- with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
- with ferrite core SFC-5 (Kitagawa) on antenna cable
- writing continuously (page)

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>
366.2	14.0	19.3	33.3	46.0	
367.5	15.0	19.3	34.3	46.0	
400.9	13.0	20.4	33.4	46.0	
501.2	9.0	22.9	31.9	46.0	
538.2	13.0	23.7	36.7	46.0	
900.0	4.5	30.6	35.1	46.0	

Result:

Project file:

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

Model:
MOBY-F / SLG 80

Serial no.:
Prototype no. 1

Applicant:
Siemens AG Fürth, A&D SE V1E1

Test site:
Open area test-site I

Tested on:
Test distance 3 meters
Vertical Polarization

Date of test: 02/24/1998
Operator: R. Heller

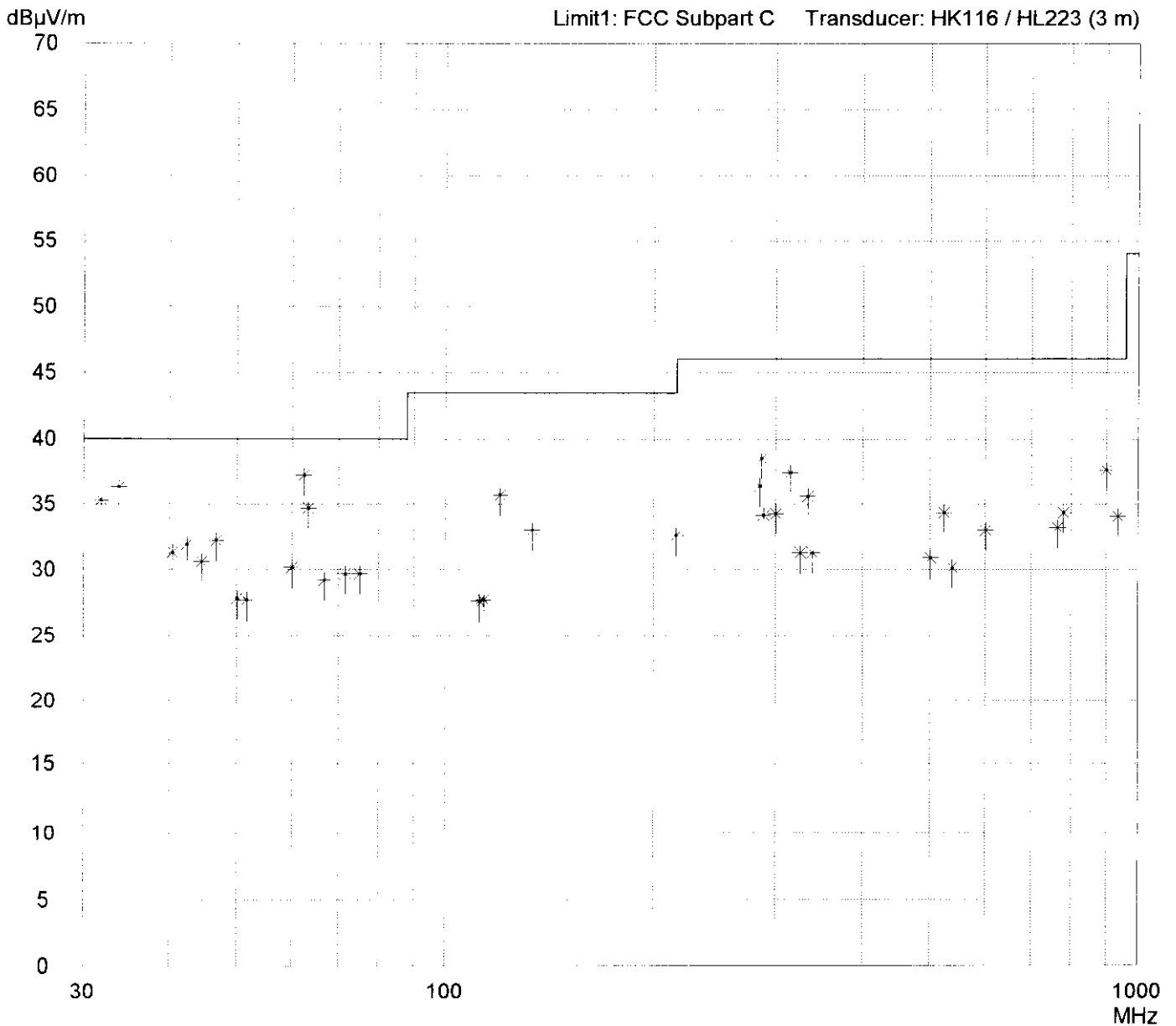
Test performed:
by hand
File name:

Detector:
Quasi-Peak

Mode:
- FCC test setup
- with metal plate mounted in a distance of 10 cm to antenna
- cabinet of SLG grounded
- with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm)
- with ferrite core SFC-5 (Kitagawa) on antenna cable

- writing continuously (page)

List of values:
Selected by hand



Result:

Project file:

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

<p>Model: MOBY-F / SLG 80</p> <p>Serial no.:</p> <p>Prototype no. 1</p> <p>Applicant: Siemens AG Fürth, A&D SE V1E1</p> <p>Test site: Open area test-site I</p> <p>Tested on: Test distance 3 meters Vertical Polarization</p> <p>Date of test: 02/24/1998 Operator: R. Heller</p> <p>Test performed: by hand File name:</p>	<p>Mode:</p> <ul style="list-style-type: none"> - FCC test setup - with metal plate mounted in a distance of 10 cm to antenna - cabinet of SLG grounded - with tag MDS F415 mounted in center of antenna ANT F5 (distance = 0 cm) - with ferrite core SFC-5 (Kitagawa) on antenna cable <p>- writing continuously (page)</p>
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<p>Detector: Quasi-Peak</p>	<p>List of values: Selected by hand</p>
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Frequency MHz	Reading dB μ V	Correction factor dB	Value dB μ V/m	Limit dB μ V/m	Limit exceeded
31.8	21.0	14.3	35.3	40.0	
33.8	22.5	13.8	36.3	40.0	
40.4	19.0	12.3	31.3	40.0	
42.4	20.0	11.9	31.9	40.0	
44.5	19.0	11.6	30.6	40.0	
46.7	21.0	11.2	32.2	40.0	
50.1	17.0	10.8	27.8	40.0	
51.7	17.0	10.7	27.7	40.0	
60.1	20.0	10.2	30.2	40.0	
62.4	27.0	10.2	37.2	40.0	
63.4	24.5	10.2	34.7	40.0	
66.9	19.0	10.2	29.2	40.0	
71.7	19.5	10.2	29.7	40.0	
75.2	19.5	10.2	29.7	40.0	
112.0	15.0	12.6	27.6	43.5	
113.6	15.0	12.7	27.7	43.5	
120.0	22.5	13.2	35.7	43.5	
133.6	19.0	14.0	33.0	43.5	
215.8	15.0	17.6	32.6	43.5	
284.8	14.5	21.9	36.4	46.0	
286.4	16.5	22.0	38.5	46.0	
288.1	12.0	22.2	34.2	46.0	
300.7	17.5	16.8	34.3	46.0	
315.0	20.0	17.4	37.4	46.0	
325.5	13.5	17.8	31.3	46.0	
334.1	17.5	18.1	35.6	46.0	
339.1	13.0	18.3	31.3	46.0	
501.2	8.0	22.9	30.9	46.0	
523.7	11.0	23.4	34.4	46.0	
538.2	6.5	23.7	30.2	46.0	
601.4	8.0	25.0	33.0	46.0	
764.8	5.0	28.2	33.2	46.0	
780.1	6.0	28.4	34.4	46.0	
900.0	7.0	30.6	37.6	46.0	
935.5	3.0	31.1	34.1	46.0	

Radio Taubmann

GKZ	Art.Nr.	Text 1	Text 2	Text 3	Text 4
C 1	113717	Kondensator, Elko			470 uF
C 2	101800	Kondensator, Kunststoff- (MKT)			2.2 nF
C 3	118157	Kondensator, Kunststoff- (MKT)			1 uF
C 4	114259	Kondensator, Elko			220 uF
C 5	101798	Kondensator, Kunststoff- (MKT)			1 nF
C 6	113717	Kondensator, Elko			470 uF
C 7	125033	Kondensator, Elko			47 uF
C 8	114262	Kondensator, Elko			1000 uF
C 9	101798	Kondensator, Kunststoff- (MKT)			1 nF
C 10	113821	Kondensator, Elko			10 uF
C 11	125033	Kondensator, Elko			47 uF
C 12	113719	Kondensator, Elko			100 uF
C 13	124284	Kondensator, Keramik- (X7R)			100 nF
C 14	124284	Kondensator, Keramik- (X7R)			100 nF
C 15	124872	Kondensator, Keramik- (COG)			100 pF
C 16	124872	Kondensator, Keramik- (COG)			100 pF
C 17	124469	Kondensator, Keramik- (X7R)			10 nF
C 18	124466	Kondensator, Keramik- (COG)			1 nF
C 19	118157	Kondensator, Kunststoff- (MKT)			1 uF
C 20	101804	Kondensator, Kunststoff- (MKT)			10 nF
C 21	117856	Kondensator, Entstör - X1	Keramikkondensator		10 nF
C 22	117856	Kondensator, Entstör - X1	Keramikkondensator		10 nF
C 23	124284	Kondensator, Keramik- (X7R)			100 nF
C 24	113428	nicht bestückt			
C 100	124284	Kondensator, Keramik- (X7R)			100 nF
C 101	124284	Kondensator, Keramik- (X7R)			100 nF
C 102	124284	Kondensator, Keramik- (X7R)			100 nF
C 103	124284	Kondensator, Keramik- (X7R)			100 nF
C 104	124284	Kondensator, Keramik- (X7R)			100 nF
C 105	113821	Kondensator, Elko			10 uF
C 106	124284	Kondensator, Keramik- (X7R)			100 nF
C 107	124284	Kondensator, Keramik- (X7R)			100 nF
C 108	125033	Kondensator, Elko			47 uF
C 109	124284	Kondensator, Keramik- (X7R)			100 nF
C 110	124871	Kondensator, Keramik- (COG)			470 pF
C 111	125033	Kondensator, Elko			47 uF
C 112	124284	Kondensator, Keramik- (X7R)			100 nF
C 113	124871	Kondensator, Keramik- (COG)			470 pF
C 114	124284	Kondensator, Keramik- (X7R)			100 nF
C 115	124284	Kondensator, Keramik- (X7R)			100 nF
C 116	124284	Kondensator, Keramik- (X7R)			100 nF
C 117	124284	Kondensator, Keramik- (X7R)			100 nF
C 118	124284	Kondensator, Keramik- (X7R)			100 nF
JP 1	114522	Steckverbinder	Stiftleiste		3 polig
JP 2	114522	Steckverbinder	Stiftleiste		3 polig
L 1	124136	Transformator	Drossel	RM 6	
L 2	124137	Transformator	Drossel	RM 6	
L 3	117029	Transformator	Drossel	Garnkern	
L 4	117029	Transformator	Drossel	Garnkern	
L 5	103467	Drossel	Ringkern-Zweifachdrossel	250.0 V AC	140 mR; 2.2 mH
L 100	124149	Drossel	HF-Drossel		47 uH
L 101	124149	Drossel	HF-Drossel		47 uH
N 1	126029	Integrierte Schaltung	2843		
N 2	126049	Integrierte Schaltung	78M15	Spannungsregler, positiv	15 V
N 3	126051	Integrierte Schaltung	78L05		
N 4	125940	Integrierte Schaltung		1 Inverter	Single-Gatter SMD-IC
N 5	126048	Integrierte Schaltung	1334		
N 6	124458	Integrierte Schaltung	74 HC 02		
PL 1	124846	Printplatte	DC-DC-Wandler	zweiseitig, dk, FR4	35/35µm Cu-Endstärke
R 1	122026	Widerstand, Metallschicht-			27 R 0 1%
R 2	124866	Widerstand, Metallschicht-			1 K 0 1%
R 3	124860	Widerstand, Metallschicht-			47 R 0 1%
R 4	124275	Widerstand, Metallschicht-			470 R 0 1%
R 5	124275	Widerstand, Metallschicht-			470 R 0 1%
R 6	124861	Widerstand, Metallschicht-			100 K 0 1%

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GKZ	Art.Nr.	Text 1	Text 2	Text 3	Text 4
R 7	122028	Widerstand, Metallschicht-			56 R 0 1%
R 8	124862	Widerstand, Metallschicht-			68 R 0 1%
R 9	124863	Widerstand, Metallschicht-			220 R 0 1%
R 10	124861	Widerstand, Metallschicht-			100 K 0 1%
R 11	124861	Widerstand, Metallschicht-			100 K 0 1%
R 12	122030	Widerstand, Metallschicht-			56 K 0 1%
R 13	124279	Widerstand, Metallschicht-			47 K 0 1%
R 14	124861	Widerstand, Metallschicht-			100 K 0 1%
R 15	124268	Widerstand, Metallschicht-			10 K 0 1%
R 16	124866	Widerstand, Metallschicht-			1 K 0 1%
R 17	122027	Widerstand, Metallschicht-			8 K 2 1%
R 18	126672	Widerstand, Metallschicht-			12 K 0 0,1%
R 19	124869	Widerstand, Metallschicht-			2 K 4 1%
R 20	124860	Widerstand, Metallschicht-			47 R 0 1%
R 21	124275	Widerstand, Metallschicht-			470 R 0 1%
R 22	124275	Widerstand, Metallschicht-			470 R 0 1%
R 23	122028	Widerstand, Metallschicht-			56 R 0 1%
R 24	124862	Widerstand, Metallschicht-			68 R 0 1%
R 25	113367	nicht bestückt			
R 100	124860	Widerstand, Metallschicht-			47 R 0 1%
R 101	124860	Widerstand, Metallschicht-			47 R 0 1%
R 102	124860	Widerstand, Metallschicht-			47 R 0 1%
R 103	124860	Widerstand, Metallschicht-			47 R 0 1%
R 104	124859	Widerstand, Metallschicht-			3 K 3 1%
R 105	122019	Widerstand, Metallschicht-			4 K 7 1%
R 106	122019	Widerstand, Metallschicht-			4 K 7 1%
R 107	122019	Widerstand, Metallschicht-			4 K 7 1%
R 108	124275	Widerstand, Metallschicht-			470 R 0 1%
R 109	122019	Widerstand, Metallschicht-			4 K 7 1%
R 110	124268	Widerstand, Metallschicht-			10 K 0 1%
R 111	124861	Widerstand, Metallschicht-			100 K 0 1%
R 112	124861	Widerstand, Metallschicht-			100 K 0 1%
T 1	124138	Transformator	Stromwandler	EF 12,6	
V 1	124876	Diode	SS 36	Schottky	
V 2	114051	Transistor, Fet	BUZ 22		
V 3	105245	Diode	1N 4148		100 V / 150 mA
V 4	105245	Diode	1N 4148		100 V / 150 mA
V 5	124854	Diode	SS 26	Schottky	
V 6	124854	Diode	SS 26	Schottky	
V 7	124855	Transistor, Kleinsignal-	BC 807-25		
V 8	124855	Transistor, Kleinsignal-	BC 807-25		
V 9	124873	Diode, Z-	15 V		BZX 84 C15
V 10	124855	Transistor, Kleinsignal-	BC 807-25		
V 11	105245	Diode	1N 4148		100 V / 150 mA
V 12	105245	Diode	1N 4148		100 V / 150 mA
V 100	124856	Diode	LL103	Schottky	
V 101	124856	Diode	LL103	Schottky	
V 102	124856	Diode	LL103	Schottky	
V 103	124856	Diode	LL103	Schottky	
V 104	124856	Diode	LL103	Schottky	
V 105	124856	Diode	LL103	Schottky	
V 106	124856	Diode	LL103	Schottky	
V 107	124856	Diode	LL103	Schottky	
V 108	124856	Diode	LL103	Schottky	
V 109	124856	Diode	LL103	Schottky	
V 110	124151	Transistor, FET	BSP 450		
V 111	124875	Diode	BAW 78 B		
V 112	124877	Diode, Z- (Transient Suppressor)	SM6T 18 CA		18 V bidirektional
V 113	124877	Diode, Z- (Transient Suppressor)	SM6T 18 CA		18 V bidirektional
V 114	124857	Diode	BAS 16		
V 115	124857	Diode	BAS 16		
V 116	124870	Diode, Z-	ZMM 18V0		
V 117	124870	Diode, Z-	ZMM 18V0		
V 118	124878	Diode, Z- (Transient Suppressor)	SM6T 30 CA		30 V bidirektional
V 119	124878	Diode, Z- (Transient Suppressor)	SM6T 30 CA		30 V bidirektional

Radio Taubmann

GKZ	Art.Nr.	Text 1	Text 2	Text 3	Text 4
X 1	126075	Klemme, Print-	MKDS 1/3	3,5 mm (Rastermaß)	3 polig
X 4	125514	Steckverbinder	Messerleiste	Kompaktbauform	10 polig
X 5	125519	Steckverbinder	Messerleiste	Kompaktbauform	20 polig
ZM 1	124929	Kühlkörper, Blech	DC-DC Wandler	Spannungsregler/ FET	Durchschlagf. 10 kV/mm
ZM 2	118941	Isolierscheibe,AOS	AOS 220 - 4		
ZM 3	113267	Isolierbuchse	IB 6		
ZM 4	110558	Schraube, Kreuzschlitz-	Linsenschraube		M 3
ZM 5	110559	Schraube, Kreuzschlitz-	Linsenschraube		M 3
ZM 6	112883	Wellscheibe			M 3
ZM 7	113381	Kodierstecker	Kurzschlußstecker	schwarz	2 polig
ZM 8	121789	Schild, blanco auf Rolle	13 x 26 mm	Nutzen: 3-bahnig	Kleber: stark haftend
ZM 9	125521	Steckverbinder	Verriegelungshaken, kurz	links	für Kompaktbauform
ZM 10	125520	Steckverbinder	Verriegelungshaken, kurz	rechts	für Kompaktbauform
ZV 1	119975	Verpackung	EGB-Etikett	ET 1001	deutsche Ausführung
ZV 2	119974	Verpackung	EGB-Verpackung	Shielding-Beutel	XT 6000