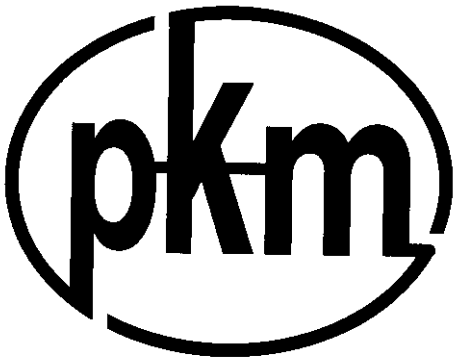


F C C -
TESTREPORT

REPORT NO.: FCC-98/04-1000 / FCC98/04-1001

PKM electronic GmbH
Ohmstraße 1
D-84160 Frontenhausen
Tel. : 08732 - 6381
Fax : 08732 - 2345

pkm electronic GmbH	**FCC - Testreport** **No. FCC-98/04-1000 / 98/04-1001**	Date: 06.04.1998 Page 2 (22)

FCC listed testlab
acc. to Section 2.948 of the FCC - Rules

in compliance with the requirements of
ANSI C63.4 - 1992

Product	:	Transmitter
Model	:	Midisender Digital 212 / Digital 214
Importer	:	Marantec America Corporation, USA
Manufacturer	:	ELDAT GmbH

TABLE OF CONTENTS

LABORATORY - REPORT

APPLICANT: Eldat GmbH

DATE OF SAMPLE RECEIVED: 01.04.1998

DATE OF TESTING: see attached data sheets

DESCRIPTION OF SAMPLE:

Product:	Transmitter
Manufacturer:	ELDAT GmbH
Model name:	Digital 212 / Digital 214
Brand name:	---
Band Combination:	----
Origin:	Made in Germany
Rating:	DC 12 V

INVESTIGATIONS REQUESTED: Measurements to the relevant clauses of F.C.C. rules and regulations part 15 subpart C - Intentional Radiators

RESULTS: See the attached test sheets

CONCLUSIONS: From the measurement data obtained, the tested sample was considered to have COMPLIED with the requirements for the relevant clauses of Federal Communications Commission Rules for Intentional Radiators.

pkm electronic GmbH
Ohmstraße 1
D-84160 Frontenhausen
Tel. 0 87 32 / 63 81

Authorized Signature

Summary of testresults

1. **Interference Radiation:**

Test result: o.k.
Test data: see attached data sheets

2. **Measurement of Emissions within Band Edges**

Test result: o.k.
Test data: see attached data sheets

General Test Notes:

1. One sample of each device was tested.

2. To achieve compliance with acceptable limits, no modifications were made to the EUT during testing. The measurements performed indicated the unit to be in compliance with the applicable requirements when test in the as-received condition.

3. No special accessories were used other than the manufacturer's transmitter.

4. The device was tested while placed in 3 orthogonal axis.

TEST EQUIPMENT LIST 1

Quantity	Equipment	Serial-number	Manufacturer
2	Receiver ESVS 30	#82852/006	Rohde & Schwarz
	Receiver ESVS 30	#833825/010	Rohde & Schwarz
3	Receiver ESHS 30	#839667/002	Rohde & Schwarz
	Receiver ESHS 30	#839667/008	Rohde & Schwarz
	Receiver ESHS 30	#839667/008	Rohde & Schwarz
2	Dipols VHA 9103	30 MHz - 300 MHz	Schwarzbeck
2	Dipols UHA 9105	300 MHz - 1000 MHz	Schwarzbeck
2	Broadband antenna CBL 6111	30 MHz - 1000 MHz	Chase
3	Shielded room DC... 10 GHz 3,5 m x 3,5 m		Siemens
2	LISN ESH2-Z5	#831079/018	Rohde & Schwarz
	LISN ESH2-Z5	#879675/028	Rohde & Schwarz
1	LISN NSLK 8127	#8127230	Schwarzbeck
2	Antenna mast system AM 9104		Schwarzbeck
3	Plotter HP7550A	#2936A43117	Hewlett Packard
	Plotter HP7550A	#2631A46736	Hewlett Packard
	Plotter HP7550B	#3026A03892	Hewlett Packard
1	Spectrum Analyzer 8562A	#3043A05643	Hewlett Packard
3	Controller 300		Hewlett Packard
	Controller 300		Hewlett Packard
	Controller 300		Hewlett Packard
3	Floppy-Disk-Drive 9122C	#2804A04362	Hewlett Packard
	Floppy-Disk-Drive 9122D	#2614A63990	Hewlett Packard
	Floppy-Disk-Drive 9122D	#2339A13495	Hewlett Packard
3	Monitor 35741B	#8838J26540	Hewlett Packard
	Monitor 35731B	#8627K33194	Hewlett Packard
	Monitor 35731B	#8619K25961	Hewlett Packard
3	Keyboard 46021AD	#2844S60217	Hewlett Packard
	Keyboard 46021AD	#2645S20154	Hewlett Packard
	Keyboard 46021AD	#2706S40044	Hewlett Packard

TEST EQUIPMENT LIST 2

Quantity	Equipment	Serial-number	Manufacturer
1	Spectrum Analyzer RF-Unit FSMS26	#839014/004	Rohde & Schwarz
	Analyzer Display Unit FSA-D	#838509/010	Rohde & Schwarz
1	Antenna RGA 50/60 1-18 GHz	#2753	Electro Metric
1	RF-Amplifier MWPAFB 003		PKM

Radiated Emission Testprocedure

TESTFACILITY

Equipment under test
(on turntable)

required test distance (3m, 10m, ..)

Testreceiver
ESVS 30 R&S

IEEE-Bus

Monitor
35731B
HP

Computer 300
HP

Keyboard 46021AD
HP

FDD 9122C
HP

Plotter 7550A
HP

Notes for Radiation Measurement

acc. to ANSI C63.4 - 1992

1. **Measurement facility:**
   Measurement facility located at Frontenhausen (Germany) on field with the FCC Pursuant to Section 2.948 of the FCC Rules.

2. **Distance between the EUT and measuring antenna:**
   3 meters.

3. **Measuring instrumentations:**
   Rohde & Schwarz ESVS 30 Test Receiver (20 - 1000 MHz) with a CISPR weighting QP detector, 6 dB bandwidth set at 120 KHz.
   In the frequency range above 1000 MHz Spectrum Analyzer FMSM26 and Analyzer Display Unit FSA-D are used, bandwidth set at 100 kHz.

4. **Measuring antenna:**
   Broad-band antenna for the frequency range 30 - 1000 MHz, connected with 10 meters coaxial cable. Cable loss of the coaxial cable included in the Antenna Factor for measurement data. The antennas are capable of measuring both horizontal and vertical polarizations.
   In the frequnecy range above 1 GHz horn-antenna RGA 50/60 is used.

5. **Frequency range scanned:**
   The frequency range 30 - 5000 MHz has been scanned. Readings of the highest emissions relating to the limit were reported as above.

6. **Arrangement of EUT:**
   During the test, the sample was operated at rated supply voltage and arranged for maximum emissions.

7. **Measuring Procedure:**
   In accordance with the relevant sections of American National Standards Institute (ANSI) C63.4-1992 "Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 KHz to 40 GHz".

pkm electronic GmbH	FCC - Testreport No. FCC-98/04-1000 / 98/04-1001	Date: 06.04.1998 Page 10 (22)

Interference Radiation

pkm electronic GmbH
Ohmstraße 1
84160 Frontenhausen

acc. FCC Part 15 Subpart C Section 15.231 / Part 15 Subpart A Section 15.33

Model: Digital 212
Manuf./Imp.: Eldat
pkm/Ser.Nr.: 01
Remarks: Transmitting

Test Equipment:
Receiver ESVS 30 Rohde & Schwarz
Antenna Chase CBL 6111
Spectrum Analyzer FSMS26 R&S
Analyzer Display FSA-D R&S
Antenna RGA 50/60 Electro Metric
RF-Amplifier MWPAFB003

test freq. MHz	reading dBuV	corr. dB	meas.value dBuV/m	value uV/m	limit uV/m	test freq. MHz	reading dBuV	corr. dB	meas.value dBuV/m	value uV/m	limit uV/m
433.34	60	20	80	10000	10955						
867.888	18	27	45	178	1096						
1301				214	1096						
1734				548	1096						
2168				251	1096						
2602				399	1096						
3036				822	1096						
3470				617	1096						
3904				567	1096						
No more spurious emissions found											

Test result: ☒ o.k. Date: 01.04.98 (April 1 1998)

☐ not o.k. Operator: ff

pkm electronic GmbH	FCC - Testreport No. FCC-98/04-1000 / 98/04-1001	Date: 06.04.1998 Page 11 (22)

Interference Radiation

pkm electronic GmbH
Ohmstraße 1
84160 Frontenhausen

acc. FCC Part 15 Subpart C Section 15.231 / Part 15 Subpart A Section 15.33

Model: Digital 214
Manuf./Imp.: Eldat
pkm/Ser.Nr.: 01
Remarks: Transmitting

Test Equipment:
Receiver ESVS 30 Rohde & Schwarz
Antenna Chase CBL 6111
Spectrum Analyzer FSMS26 R&S
Analyzer Display FSA-D R&S
Antenna RGA 50/60 Electro Metric
RF-Amplifier MWPAFB003

test freq. MHz	reading dBuV	corr. dB	meas.value dBuV/m	value uV/m	limit uV/m
433.92	60	20	80	10000	10955
867.920	16	27	43	141	1096
1301				214	1096
1734				690	1096
2168				316	1096
2602				666	1096
3036				732	1096
3470				871	1096
3904				636	1096
No more spurious emission found					

test freq. MHz	reading dBuV	corr. dB	meas.value dBuV/m	value uV/m	limit uV/m

Test result: ☒ o.k. Date: 01.04.98 (April 1 1998)

☐ not o.k. Operator: AA

Notes for Measurement of Emissions within Band Edges

1. **Measurement facility:**
   Measurement facility located at Frontenhausen (Germany) on field with the FCC Pursuant to Section 2.948 of the FCC Rules.

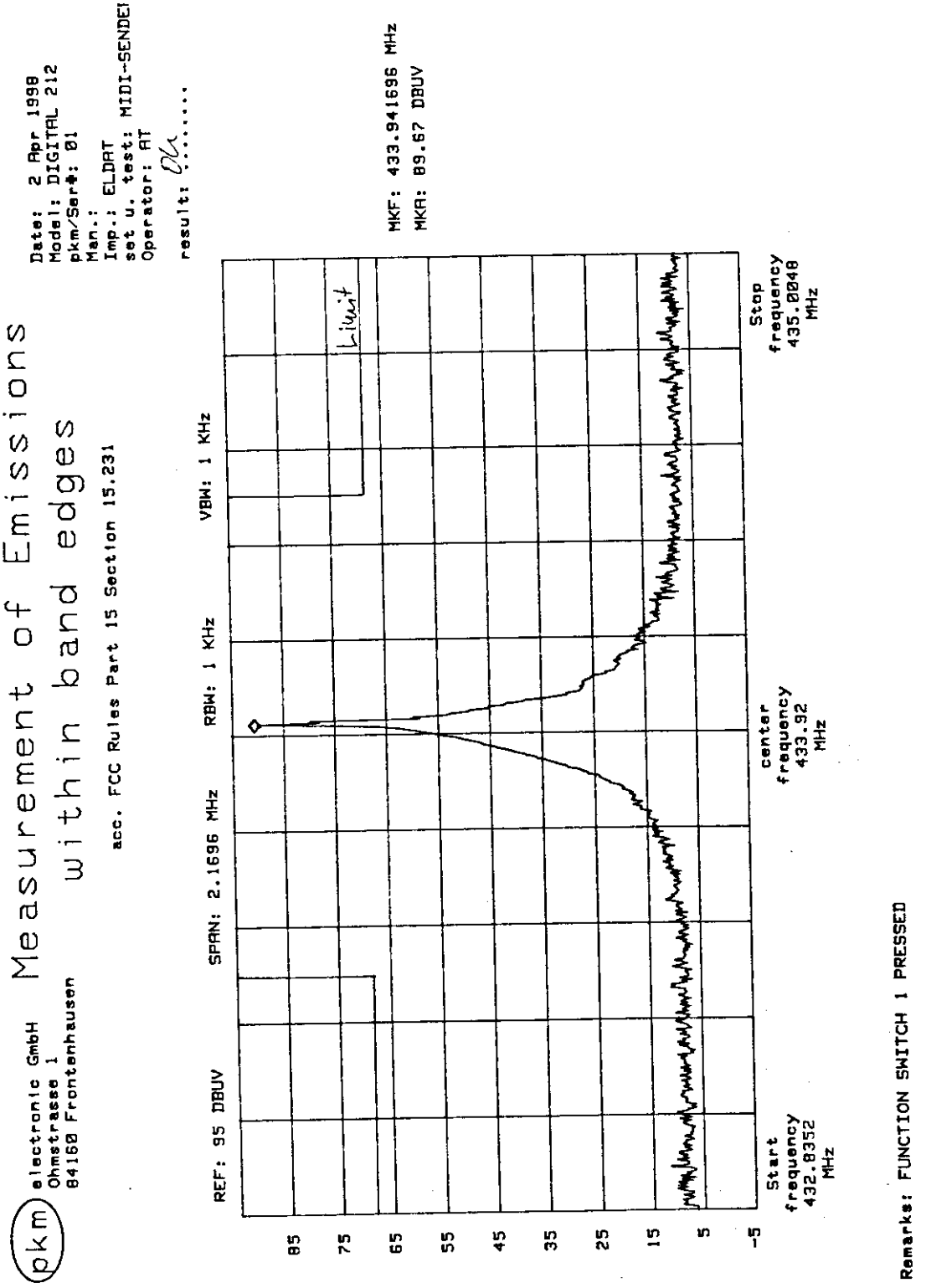
2. **Measuring instrumentations:**
   Spectrum Analyzer 8562A Hewlett Packard.

3. **Frequency range scanned:**
   The frequency range acc. to FCC rules and regulations part 15 subpart C - Intentional Radiators.

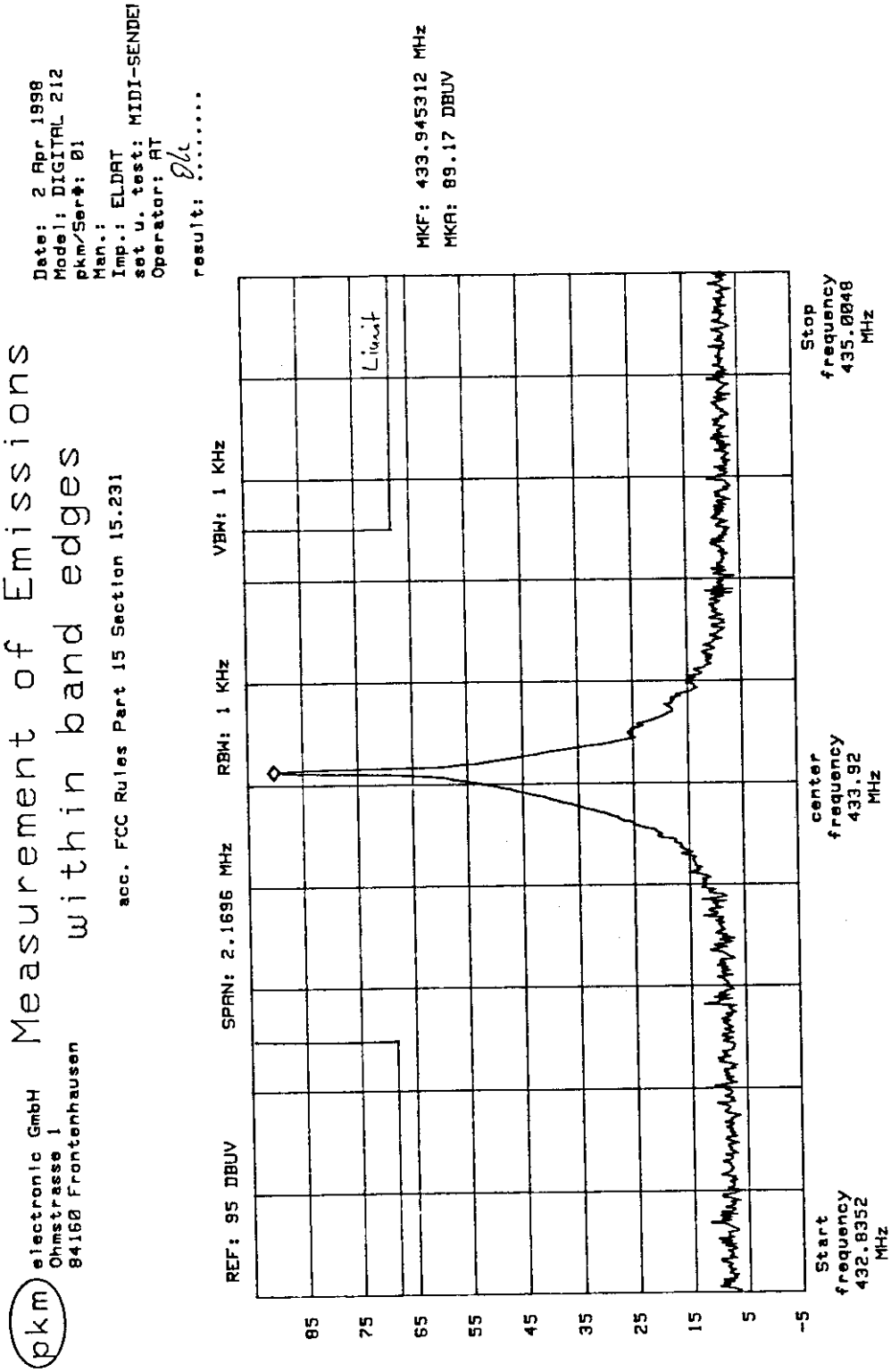
4. **Arrangement of EUT:**
   During the test, the sample was operated.

5. **Measuring Procedure:**
   In accordance with the relevant sections of American National Standards Institute (ANSI) C63.4 - 1992 "Methods of Measurement od Radio Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 Ghz".

pkm electronic GmbH	FCC - Testreport No. FCC-98/04-1000 / 98/04-1001	Date: 06.04.1998 Page 13 (22)

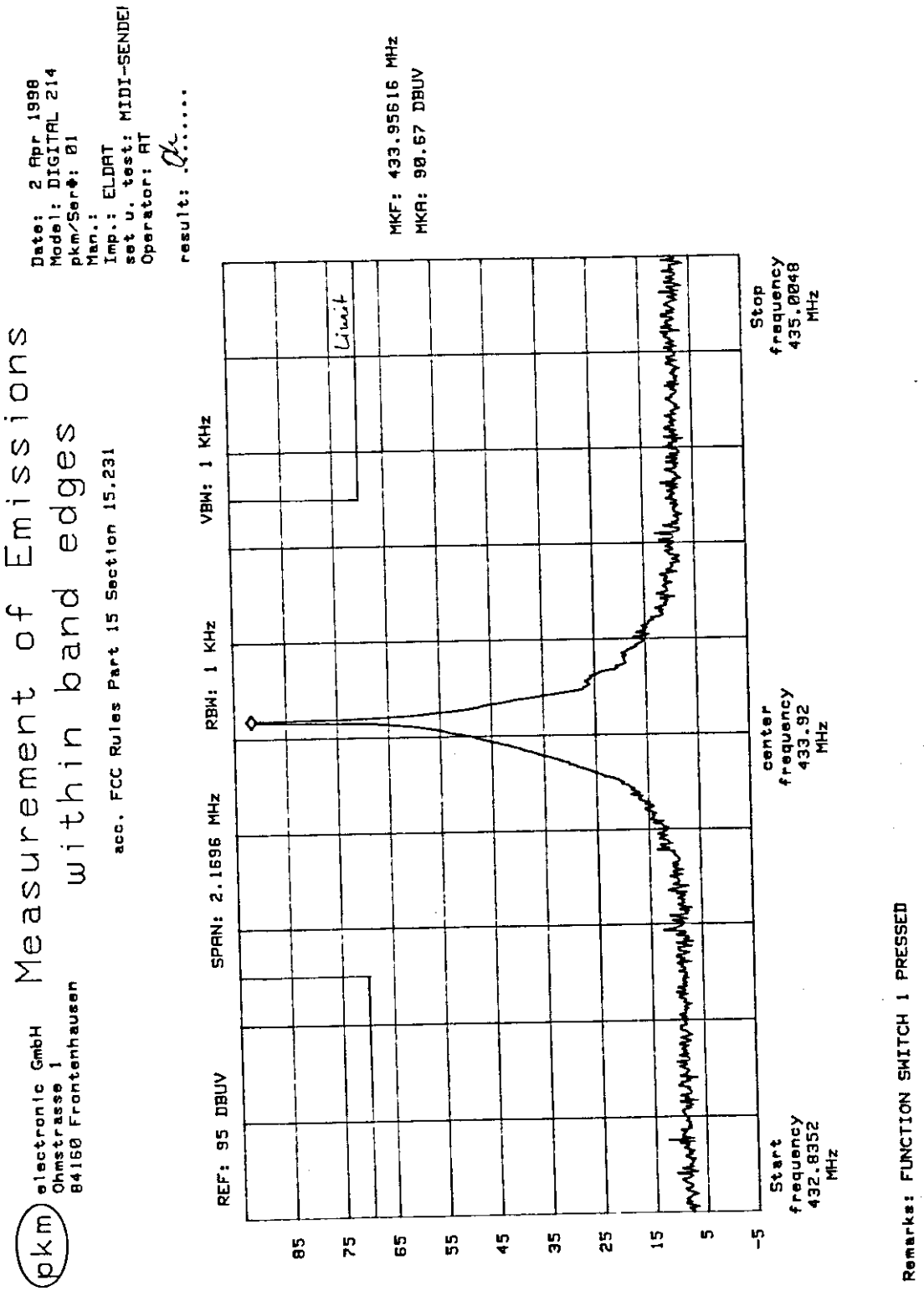


pkm electronic GmbH	FCC - Testreport No. FCC-98/04-1000 / 98/04-1001	Date: 06.04.1998 Page 14 (22)

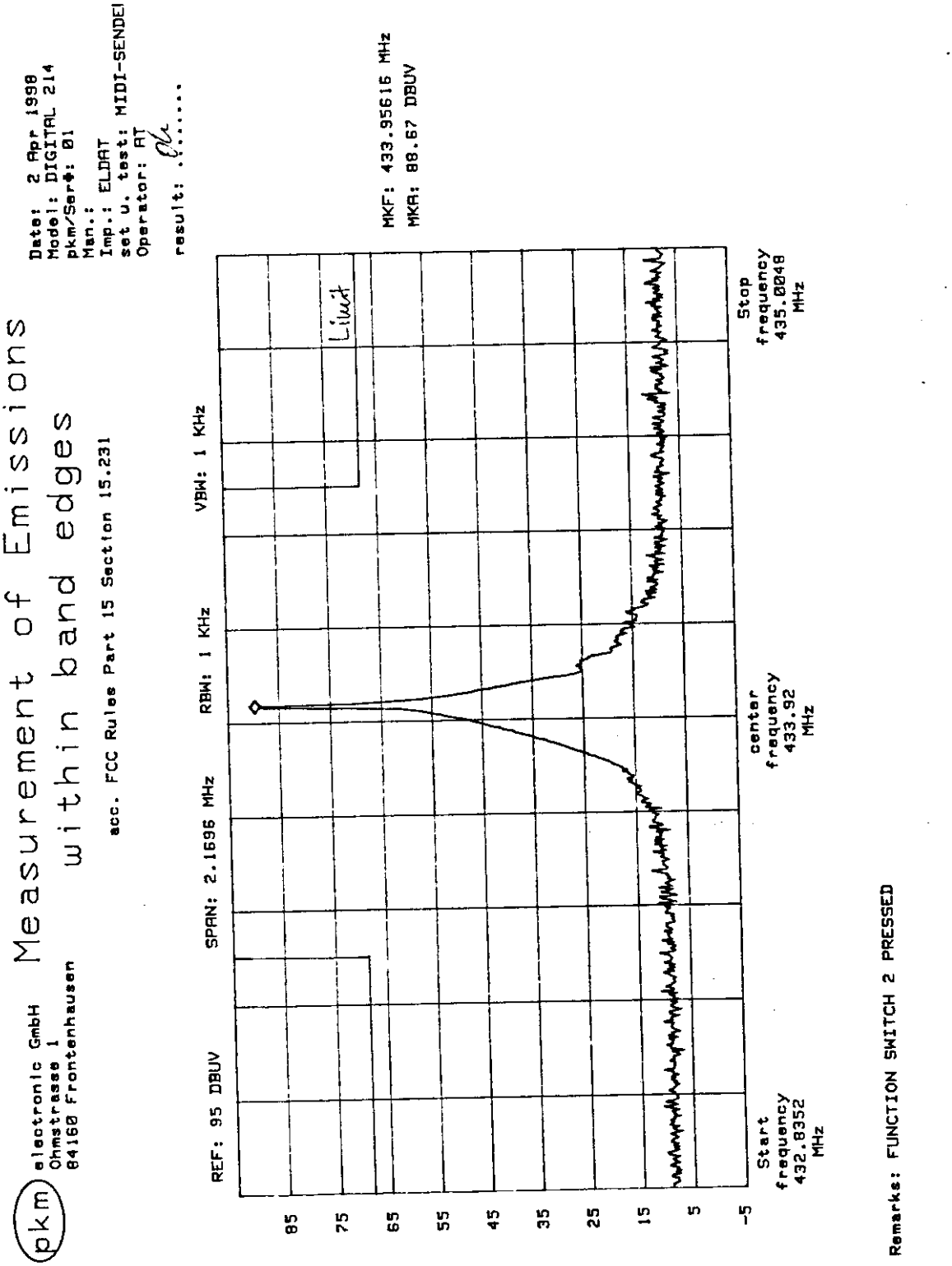


Remarks: FUNCTION SWITCH 2 PRESSED

pkm electronic GmbH	FCC - Testreport No. FCC-98/04-1000 / 98/04-1001	Date: 06.04.1998 Page 15 (22)

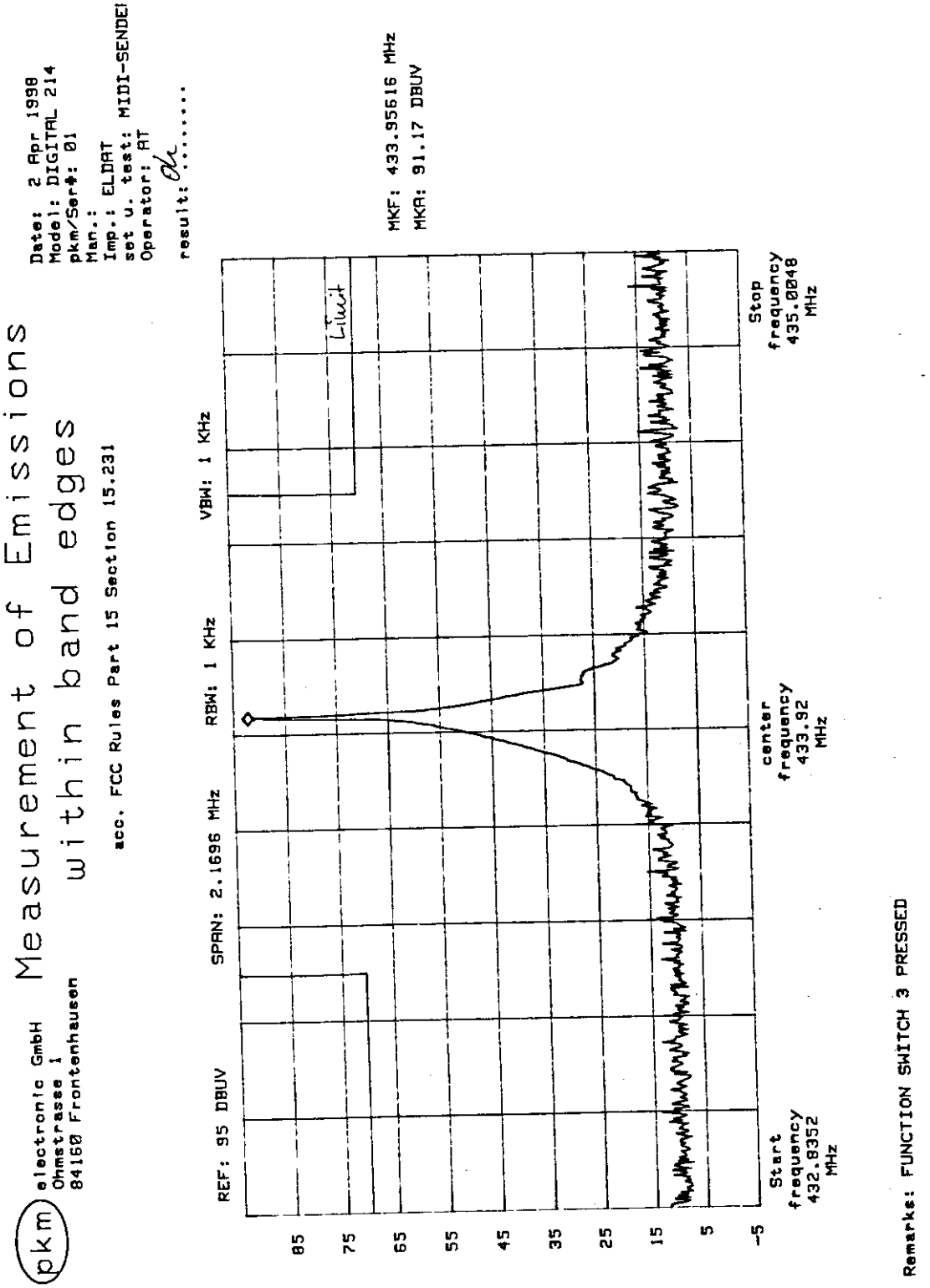


pkm electronic GmbH	FCC - Testreport No. FCC-98/04-1000 / 98/04-1001	Date: 06.04.1998 Page 16 (22)

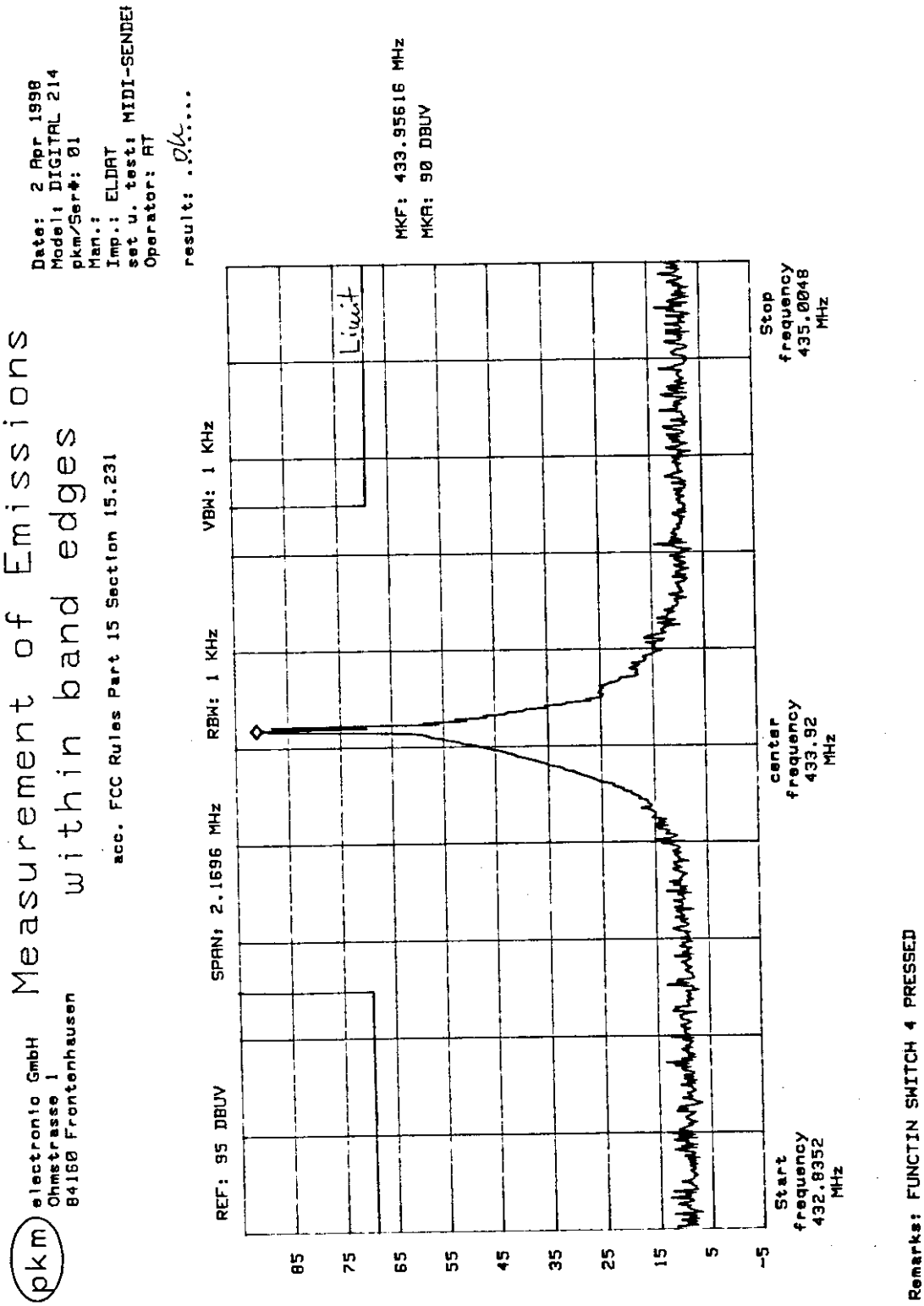


Remarks: FUNCTION SWITCH 2 PRESSED

pkm electronic GmbH	FCC - Testreport No. FCC-98/04-1000 / 98/04-1001	Date: 06.04.1998 Page 17 (22)



pkm electronic GmbH	FCC - Testreport No. FCC-98/04-1000 / 98/04-1001	Date: 06.04.1998 Page 18 (22)



FCC ID: NKPD211

F C C -
TESTREPORT

REPORT NO.: FCC-98/03-1089

pkm electronic GmbH
Ohmstraße 1
D-84160 Frontenhausen
Tel. : 08732 - 6381
Fax : 08732 - 2345

FCC listed testlab
acc. to Section 2.948 of the FCC - Rules

in compliance with the requirements of
ANSI C63.4 - 1992

Product : Transmitter

Model : Midisender 433 MHz US Digital 211

Importer : Marantec America Corporation

Manufacturer : ELDAT GmbH

TABLE OF CONTENTS

LABORATORY - REPORT

APPLICANT: ELDAT GmbH

DATE OF SAMPLE RECEIVED: 12.03.1998

DATE OF TESTING: see attchd data sheets

DESCRIPTION OF SAMPLE:

Product:	Transmitter
Manufacturer:	ELDAT GmbH
Model name:	Midisender 433 MHz US Digital 211
Brand name:	---
Band Combination:	----
Origin:	Made in Germany
Rating:	DC 12V

INVESTIGATIONS REQUESTED: Measurements to the relevant clauses of F.C.C. rules and regulations part 15 subpart C - Intentional Radiators

RESULTS: See the attached test sheets

CONCLUSIONS: From the measurement data obtained, the tested sample was considered to have COMPLIED with the requirements for the relevant clauses of Federal Communications Commission Rules for Intentional Radiators.

pkm electronic GmbH
Ohmstraße 1
D-84160 Frontenhausen
Tel. 08732 - 8381
Fax. 08732 - 2345

Authorized Signature

Summary of testresults

1. **Interference Radiation:**

Test result: o.k.
Test data: see attached data sheets

2. **Measurement of Emissions within Band Edges**

Test result: o.k.
Test data: see attached data sheets

General Test Notes:

1. One sample of each device was tested.

2. To achieve compliance with acceptable limits, no modifications were made to the EUT during testing. The measurements performed indicated the unit to be in compliance with the applicable requirements when test in the as-received condition.

3. No special accessories were used other than the manufacturer's transmitter.

4. The device was tested while placed in 3 orthogonal axis.

TEST EQUIPMENT LIST 1

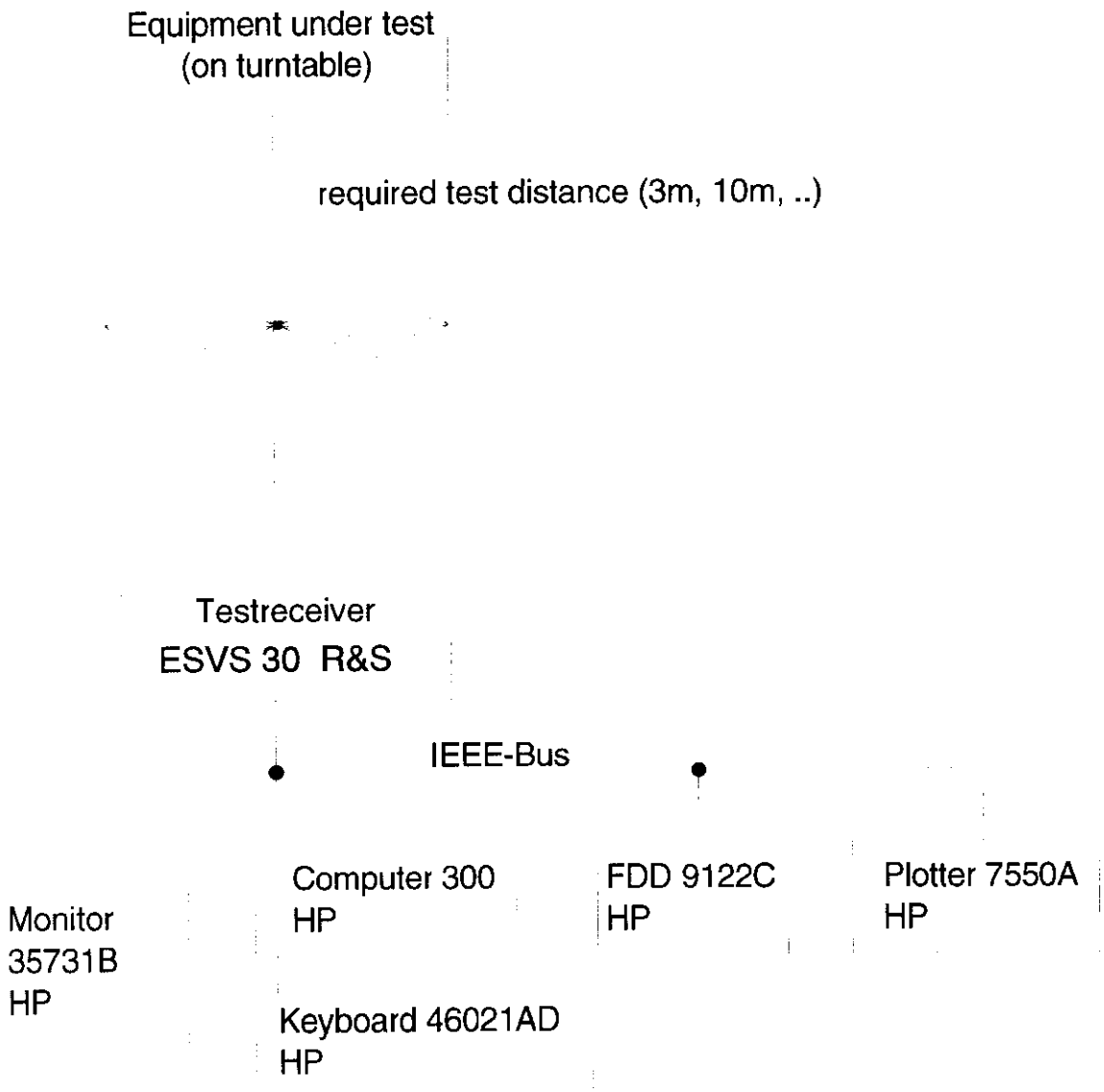
Quantity	Equipment	Serial-number	Manufacturer
2	Receiver ESVS 30	#82852/006	Rohde & Schwarz
	Receiver ESVS 30	#833825/010	Rohde & Schwarz
3	Receiver ESHS 30	#839667/002	Rohde & Schwarz
	Receiver ESHS 30	#839667/008	Rohde & Schwarz
	Receiver ESHS 30	#839667/008	Rohde & Schwarz
2	Dipols VHA 9103	30 MHz - 300 MHz	Schwarzbeck
2	Dipols UHA 9105	300 MHz - 1000 MHz	Schwarzbeck
2	Broadband antenna CBL 6111	30 MHz - 1000 MHz	Chase
3	Shielded room DC... 10 GHz 3,5 m x 3,5 m		Siemens
2	LISN ESH2-Z5	#831079/018	Rohde & Schwarz
	LISN ESH2-Z5	#879675/028	Rohde & Schwarz
1	LISN NSLK 8127	#8127230	Schwarzbeck
2	Antenna mast system AM 9104		Schwarzbeck
3	Plotter HP7550A	#2936A43117	Hewlett Packard
	Plotter HP7550A	#2631A46736	Hewlett Packard
	Plotter HP7550B	#3026A03892	Hewlett Packard
1	Spectrum Analyzer 8562A	#3043A05643	Hewlett Packard
3	Controller 300		Hewlett Packard
	Controller 300		Hewlett Packard
	Controller 300		Hewlett Packard
3	Floppy-Disk-Drive 9122C	#2804A04362	Hewlett Packard
	Floppy-Disk-Drive 9122D	#2614A63990	Hewlett Packard
	Floppy-Disk-Drive 9122D	#2339A13495	Hewlett Packard
3	Monitor 35741B	#8838J26540	Hewlett Packard
	Monitor 35731B	#8627K33194	Hewlett Packard
	Monitor 35731B	#8619K25961	Hewlett Packard
3	Keyboard 46021AD	#2844S60217	Hewlett Packard
	Keyboard 46021AD	#2645S20154	Hewlett Packard
	Keyboard 46021AD	#2706S40044	Hewlett Packard

TEST EQUIPMENT LIST 2

Quantity	Equipment	Serial-number	Manufacturer
1	Spectrum Analyzer RF-Unit FSMS26	#839014/004	Rohde & Schwarz
	Analyzer Display Unit FSA-D	#838509/010	Rohde & Schwarz
1	Antenna RGA 50/60 1-18 GHz	#2753	Electro Metric
1	RF-Amplifier MWPAFB 003		PKM

Radiated Emission Testprocedure

TESTFACILITY



Notes for Radiation Measurement

acc. to ANSI C63.4 - 1992

1. **Measurement facility:**
   Measurement facility located at Frontenhausen (Germany) on field with the FCC Pursuant to Section 2.948 of the FCC Rules.

2. **Distance between the EUT and measuring antenna:**
   3 meters.

3. **Measuring instrumentations:**
   Rohde & Schwarz ESVS 30 Test Receiver (20 - 1000 MHz) with a CISPR weighting QP detector, 6 dB bandwidth set at 120 KHz.
   In the frequency range above 1000 MHz Spectrum Analyzer FMSM26 and Analyzer Display Unit FSA-D are used, bandwidth set at 100 kHz.

4. **Measuring antenna:**
   Broad-band antenna for the frequency range 30 - 1000 MHz, connected with 10 meters coaxial cable. Cable loss of the coaxial cable included in the Antenna Factor for measurement data. The antennas are capable of measuring both horizontal and vertical polarizations.
   In the frequnecy range above 1 GHz horn-antenna RGA 50/60 is used.

5. **Frequency range scanned:**
   The frequency range 30 - 5000 MHz has been scanned. Readings of the highest emissions relating to the limit were reported as above.
   There was no duty cycle correction factor applied to the CISPR quasi peak emission levels for comparison to the limits in section 15.231(b) of the FCC rules.

6. **Arrangement of EUT:**
   During the test, the sample was operated at rated supply voltage and arranged for maximum emissions.
   The handheld transmitter was tested while placed in three orthogonal axes (acc. to Section 13.1.4.1. of ANSI C63.4-1992)

7. **Measuring Procedure:**
   In accordance with the relevant sections of American National Standards Institute (ANSI) C63.4-1992 "Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 KHz to 40 GHz".

pkm electronic GmbH	FCC - Testreport No. FCC-98/03-1089	Date: 18.03.1998 Page 10 (15)

Interference Radiation

pkm electronic GmbH
Ohmstraße 1
84160 Frontenhausen

acc. FCC Part 15 Subpart C Section 15.231 / Part 15 Subpart A Section 15.33

Model: Midispeaker 433MHz US (Digital 211)
Manuf./Imp.: Eldat
pkm/Ser.Nr.: 01 (sample 01)
Remarks: Transmitting

Test Equipment:
Receiver ESVS 30 Rohde & Schwarz
Antenna Chase CBL 6111
Spectrum Analyzer FSMS26 R&S
Analyzer Display FSA-D R&S
Antenna RGA 50/60 Electro Metric
RF-Amplifier MWPAFB003

test freq. MHz	reading dBuV	corr. dB	meas.value dBuV/m	value uV/m	limit uV/m	test freq. MHz	reading dBuV	corr. dB	meas.value dBuV/m	value uV/m	limit uV/m
433.975	60	20	80	10000	10955						
867.950	23	27	50	316	1096						
1301			38dBµV	355	1096						
1741			46dBµV	891	1096						
2178			36dBµV	281	1096						
2615			47dBµV	1000	1096						
3038			46dBµV	891	1096						
3474			47dBµV	1000	1096						
3910			46dBµV	891	1096						
No more spurious emissions found!											

Test result: ☒ o.k. Date: 12.03.98 (March 12 1998)

☐ not o.k. Operator: AF

Notes for Measurement of Emissions within Band Edges

1. **Measurement facility:**
   Measurement facility located at Frontenhausen (Germany) on field with the FCC Pursuant to Section 2.948 of the FCC Rules.

2. **Measuring instrumentations:**
   Spectrum Analyzer 8562A Hewlett Packard.

3. **Frequency range scanned:**
   The frequency range acc. to FCC rules and regulations part 15 subpart C - Intentional Radiators.

4. **Arrangement of EUT:**
   During the test, the sample was operated.

5. **Measuring Procedure:**
   In accordance with the relevant sections of American National Standards Institute (ANSI) C63.4 - 1992 "Methods of Measurement od Radio Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 Ghz".

pkm electronic GmbH	FCC - Testreport No. FCC-98/03-1089	Date: 18.03.1998 Page 12 (15)