


# FCC - TESTREPORT

REPORT NO.: FCC-98/03-1018

(2nd version)

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**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** : Microsender 433 MHz US,  
Sample 1  
**Importer** : MARANTEC AMERICA CORPORATION  
**Manufacturer** : ELDAT GmbH



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FCC ID: NRP0231

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## LABORATORY - REPORT

**APPLICANT:** ELDAT GmbH

**DATE OF SAMPLE RECEIVED:** 04.03.1998

**DATE OF TESTING:** see attached data sheets

**DESCRIPTION OF SAMPLE:**

**Product:** Transmitter

**Manufacturer:** ELDAT GmbH

**Model name:** Microsender 433 MHz US - ML-3431

**Brand name:** ---

**Band Combination:** ----

**Origin:** Made in Germany

**Rating:** 2 x 3 V battery, CR1025 (Lithium)


**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.


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**Authorized Signature**

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## 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

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## TEST EQUIPMENT LIST 1

Quantity	Equipment	Serial-number	Manufacturer
2	Receiver ESVS 30 Receiver ESVS 30	#82852/006 #833825/010	Rohde & Schwarz Rohde & Schwarz
3	Receiver ESHS 30 Receiver ESHS 30 Receiver ESHS 30	#839667/002 #839667/008 #839667/008	Rohde & Schwarz Rohde & Schwarz 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 LISN ESH2-Z5	#831079/018 #879675/028	Rohde & Schwarz Rohde & Schwarz
1	LISN NSLK 8127	#8127230	Schwarzbeck
2	Antenna mast system AM 9104		Schwarzbeck
3	Plotter HP7550A Plotter HP7550A Plotter HP7550B	#2936A43117 #2631A46736 #3026A03892	Hewlett Packard Hewlett Packard Hewlett Packard
1	Spectrum Analyzer 8562A	#3043A05643	Hewlett Packard
3	Controller 300 Controller 300 Controller 300		Hewlett Packard Hewlett Packard Hewlett Packard
3	Floppy-Disk-Drive 9122C Floppy-Disk-Drive 9122D Floppy-Disk-Drive 9122D	#2804A04362 #2614A63990 #2339A13495	Hewlett Packard Hewlett Packard Hewlett Packard
3	Monitor 35741B Monitor 35731B Monitor 35731B	#8838J26540 #8627K33194 #8619K25961	Hewlett Packard Hewlett Packard Hewlett Packard
3	Keyboard 46021AD Keyboard 46021AD Keyboard 46021AD	#2844S60217 #2645S20154 #2706S40044	Hewlett Packard Hewlett Packard Hewlett Packard

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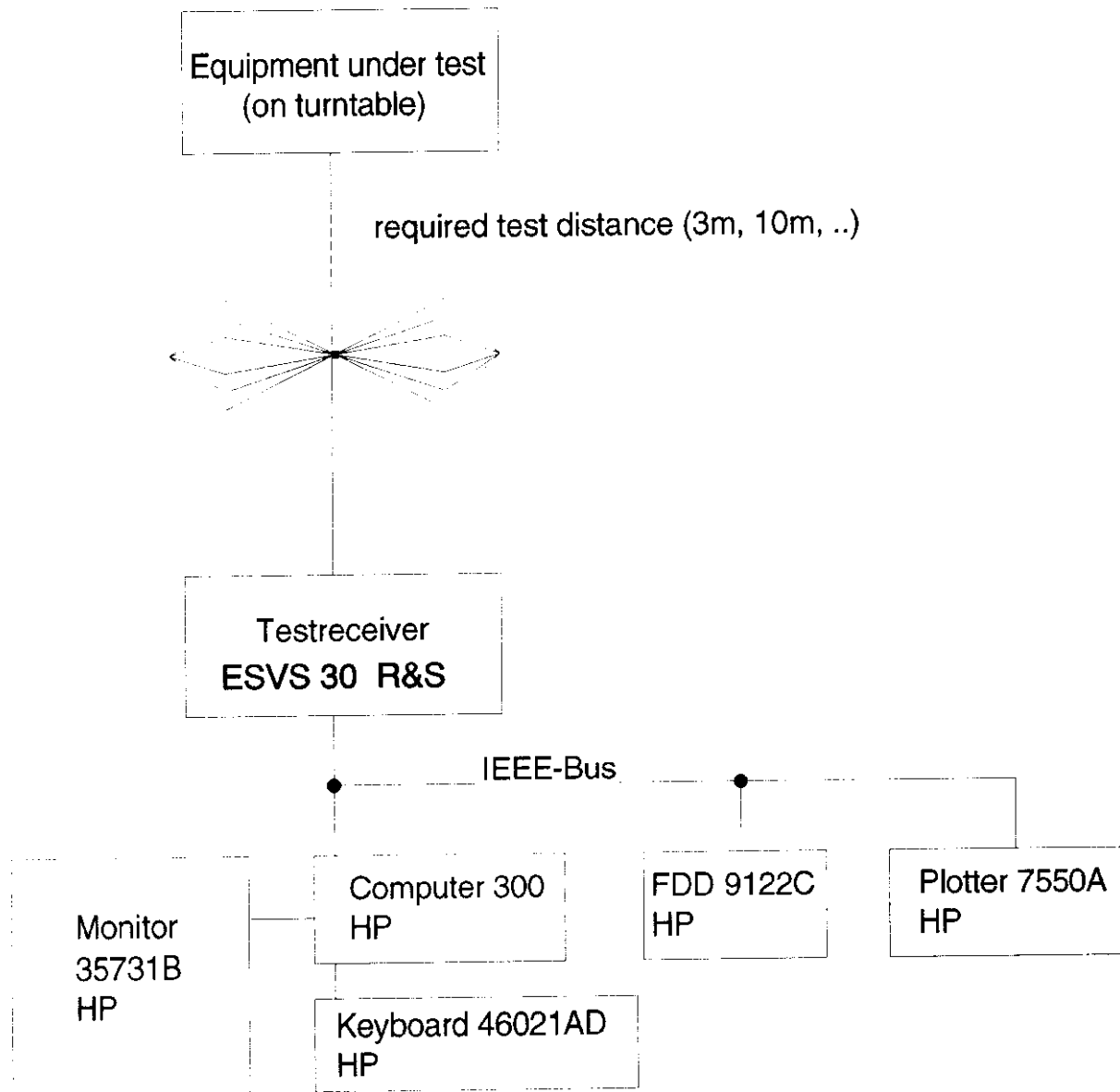
## TEST EQUIPMENT LIST 2

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


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## Radiated Emission Testprocedure

### TESTFACILITY





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## 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 frequency 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".



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## 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 of Radio Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz".



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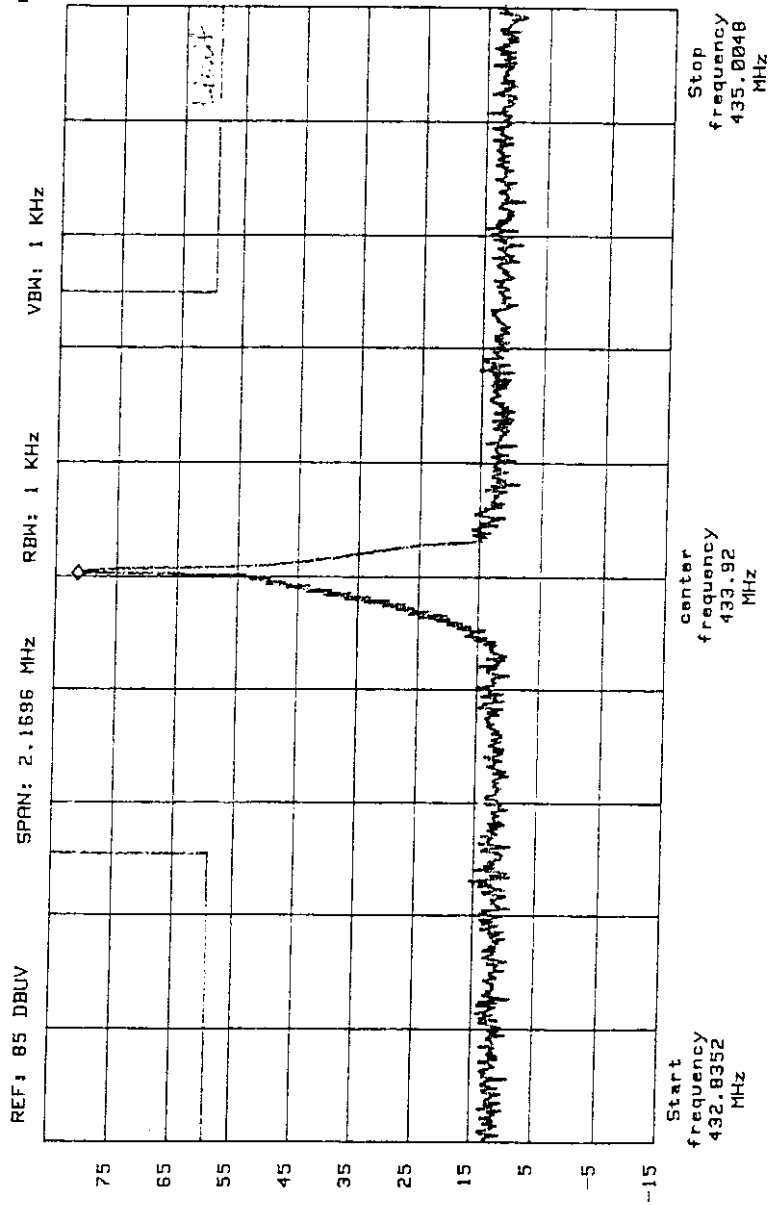
### Measurement of Emissions within band edges

acc. FCC Rules Part 15 Section 15.231

pkM electronic GmbH  
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Date: 4 Mar 1998  
Model: 433 MHz US  
pkM/Ser#: 01  
Man.:  
Imp.: ELDJAT  
set u. test: TRANSMITTE!  
Operator: AT  
result: *OK*.....

MKF: 433.923616 MHz  
MKA: 80.33 DBUV



Remarks: 98/03-1018