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TEST REPORT

Test Report Reference: R62409FCC Edition 1

Designation of equipment under test:

Receiver Module 70RX-S1

FCC ID: PUX70RX-S1

Ser.- No.: -

Applicant: HM-Funktechnik GmbH

Manufacturer: HM-Funktechnik GmbH

Test Laboratory

(CAB)

accredited by

DATech GmbH

in compliance with DIN EN ISO/IEC 17025

under the

Reg. No. DAT-P-105/99-21,

FCC Test site registration number 90877

and

Industry Canada Test site registration IC3469

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1 IDENTIFICATION

1.1 APPLICANT

Name:	HM-Funktechnik GmbH
Address:	Zum Handenberg 3 D- 66620 Primstal
Country:	Germany
Name for contact purposes:	Mr. Stöhr
Phone:	+49-(0)6875 9105 0
Fax:	+49-(0)6875 9105 10
Mail address:	thomas@hmradio.de
Applicant represented during the test by the following person:	-

1.2 MANUFACTURER

Name:	HM-Funktechnik GmbH
Address:	Zum Handenberg 3 D- 66620 Primstal
Country:	Germany
Name for contact purposes:	Mr. Stöhr
Phone:	+49-(0)6875 9105 0
Fax:	+49-(0)6875 9105 10
Mail address:	thomas@hmradio.de
Applicant represented during the test by the following person:	-

1.3 DATES

Date of receipt of test sample:	10 November 2006
Start of test:	10 November 2006
End of test:	10 November 2006

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1.4 TEST LABORATORY

The tests were carried out at:

PHOENIX TESTLAB GmbH

Königswinkel 10

D-32825 Blomberg

Germany

Phone: +49 (0) 52 35 / 95 00-0

Fax: +49 (0) 52 35 / 95 00-10

Accredited by DATech GmbH. in compliance with DIN EN ISO/IEC 17025 under Reg. No. DAT-P-105/99-21, FCC Test site registration number 90877

Test engineer:	<p>Wilfried MEIER</p> <p>Name</p> 	23. October 2006
Test report checked by:	<p>Bernd STEINER</p> <p>Name</p> 	23. October 2006
<p>PHOENIX TESTLAB GmbH Königswinkel 10 32825 Blomberg Tel. 0 52 35 / 95 00-0 Fax 0 52 35 / 95 00-10</p>		
Stamp		

1.5 RESERVATION

This test report is only valid in its original form.

Any reproduction of its contents without written permission of the accredited test laboratory PHOENIX TEST-LAB GmbH is prohibited.

The test results herein refer only to the tested sample. PHOENIX TESTLAB GmbH is not responsible for any generalisations or conclusions drawn from these test results concerning further samples. Any modification of the tested samples is prohibited and leads to the invalidity of this test report. Each page necessarily contains the PHOENIX TESTLAB Logo and the TEST REPORT REFERENCE.

1.6 NORMATIVE REFERENCES

- [1] **ANSI C63.4-2003** American National Standard for Methods of Measuring of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.
- [2] **FCC 47 CFR PART –15 (February 2006) RADIO FREQUENCY DEVICES.**

1.7 TEST RESULTS

The requirements of this test document are fulfilled by the equipment under test. The complete test results are presented in the following.

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2 TECHNICAL DATA OF EQUIPMENT

2.1 DEVICE UNDER TEST

Type of equipment:	UHF-Receiver
Type designation:	70RX-S1
Serial No.:	-
Highest internal frequency:	-

* declared by the applicant

The following external I/O cables were used:

Cable	Length	Shielding	Connector
AC/DC-Adapter	1.5 m	no	Plug
AF- Output (Testboard)	1.5 m	no	BNC

2.2 PERIPHERY DEVICES

The following equipment was used as ancillary equipment:

- AC/DC-Adapter, Astec ACP-12E
- Testboard, supplied by HM-Funktechnik

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3 OPERATIONAL STATES AND PHYSICAL BOUNDARIES

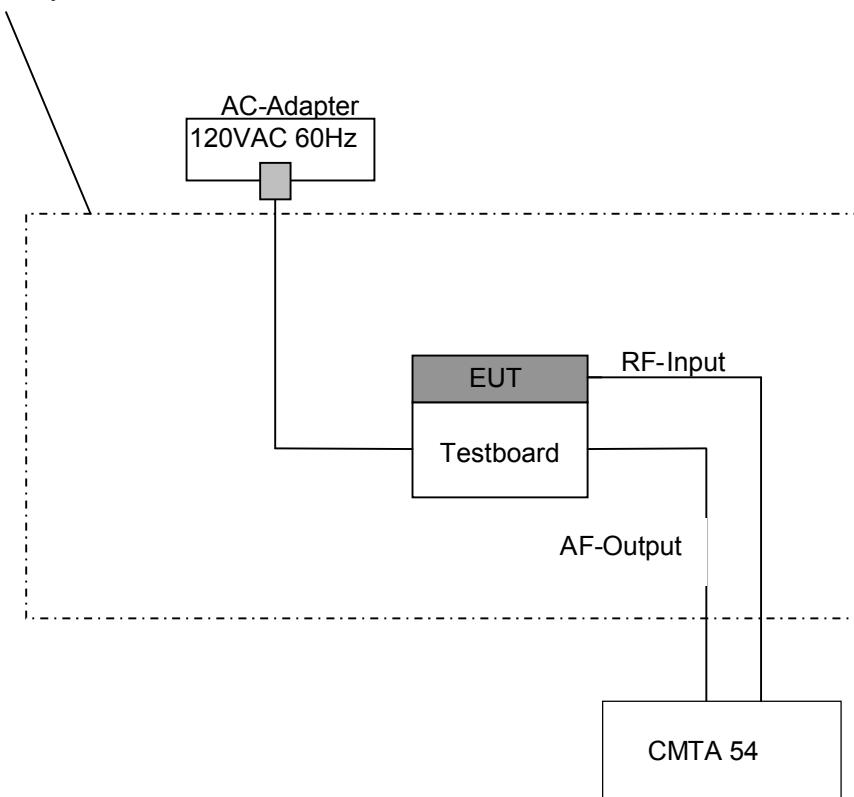
The normal operation mode of the equipment under test during the emission tests was defined as follows:

The EUT is a UHF FM-Receiver module, frequency range 420 MHz – 520 MHz, during the measurement the EUT operates in receive mode.

The EUT was provide with a input voltage of 5.7 V DC via the AC adapter.

The physical boundaries of the Equipment Under Test are shown below.

Physical boundary of the EUT



The following equipment was used as control unit and ancillary equipment:

The EUT was connected to a testboard which provide the DC-connector and the AF-output connector. The radio communication tester was used to monitoring of the AF-Output signal and generate of the RF-Input signal.

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4 LIST OF TEST MODULES

4.1 EMISSION

Conducted emissions FCC 47 CFR Part 15 section 15.207a [2]						
No.	Application	Frequency range	Limit QP	Limit AV	Remark	Status
2	Unintentional radiator	0.15 to 0.5 MHz 0.5 to 5 MHz 5 to 30 MHz	66 to 56 dB μ V* 56 dB μ V 60 dB μ V	56 to 46 dB μ V* 46 dB μ V 50 dB μ V	Class B	Passed

* Decreases with the logarithm of the frequency

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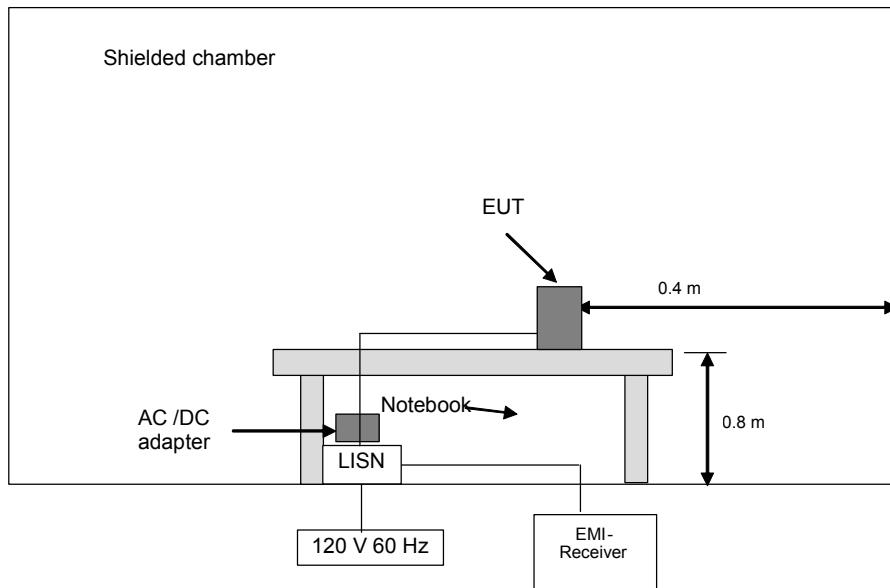
5 METHOD OF MEASUREMENT

5.1 CONDUCTED EMISSIONS ON AC MAINS (150 kHz to 30 MHz)

This test will be carried out in a shielded chamber. Tabletop devices will set up on a non-conducting support with a size of 1 m by 1.5 m and a height of 80 cm above the ground plane. Floor-standing devices will be placed directly on the ground plane. The set up of the Equipment under test will be in accordance to ANSI C63.4-2003 [1].

The frequency range 150 kHz to 30 MHz will be measured with an EMI Receiver set to MAX Hold mode with peak and average detector and a resolution bandwidth of 9 kHz. A scan will be carried out on the phase of the DC mains network. If levels detected 10 dB below the appropriate limit, this emission will be measured with the average and quasi-peak detector on all lines.

Frequency range	Resolution bandwidth
150 kHz to 30 MHz	9 kHz



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6 TEST RESULTS EMISSION TEST

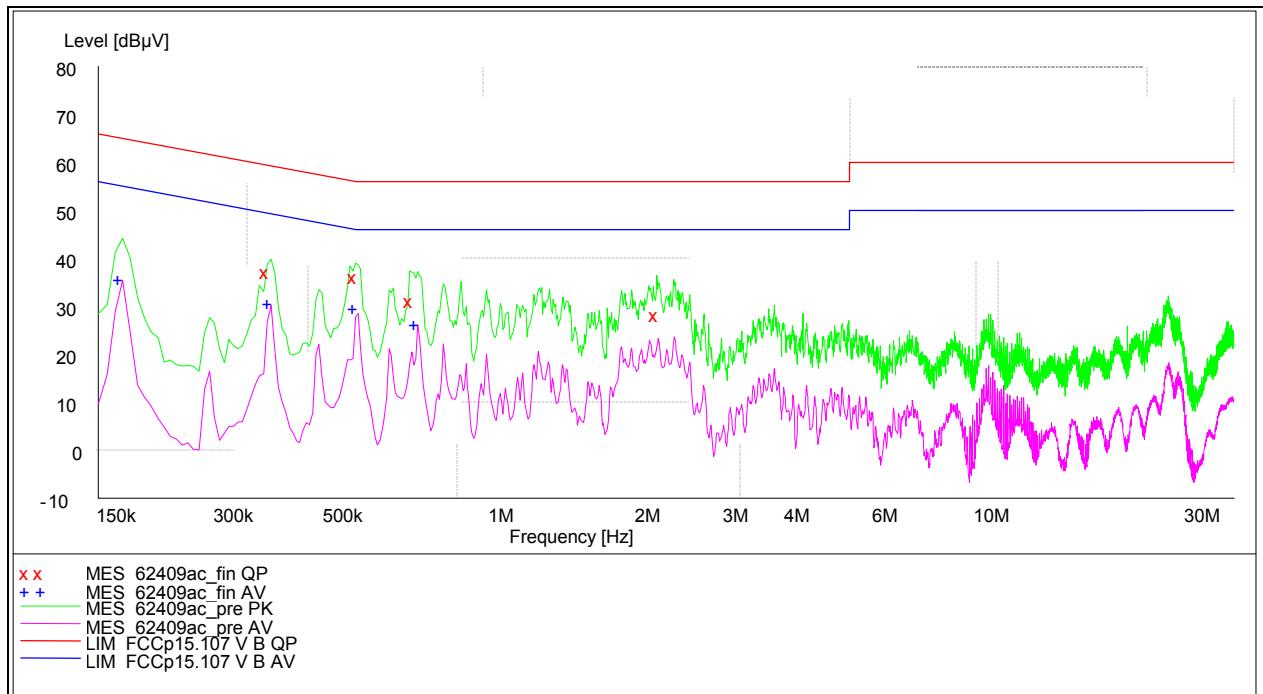
6.1 CONDUCTED EMISSION TEST (150 kHz to 30 MHz)

Ambient temperature	21 °C	Relative humidity	48 %
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Position of EUT: The EUT was set-up on a wooden table of a height of 0.8 m.

Cable guide: The cables of the EUT were fixed on the wooden table. For further information of the cable guide refer to the pictures in annex of this test report.

Test record: The test was carried out with continuous receive mode.
All results are shown in the following.



Data record name: 62409ACFCC

of 10.11.2006

TEST REPORT REFERENCE: R62409FCC Edition 1

Result measured with the quasipeak detector:
(These values are marked in the above diagram by x)

Frequency MHz	Level dB μ V	Transducer dB	Limit dB μ V	Margin dB	Line	PE
0.333330	37.70	0.9	59.4	21.7	N	FLO
0.499470	36.90	0.8	56.0	19.1	N	FLO
0.646170	31.90	0.8	56.0	24.1	L1	FLO
2.033160	28.90	0.8	56.0	27.1	L1	FLO

Data record name: 62409ACFCC_fin QP of 05.10.2006

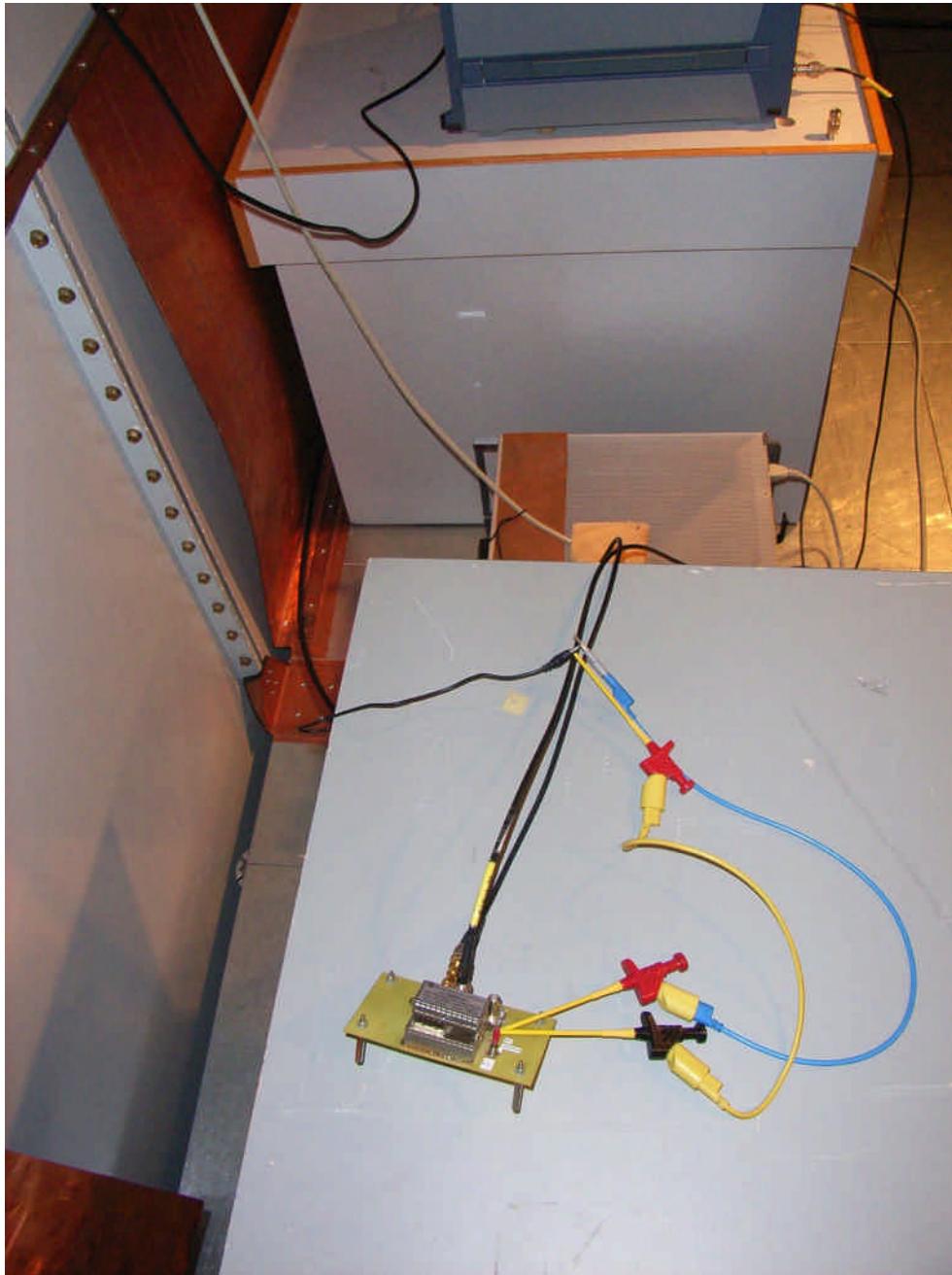
Result measured with the average detector:
(These values are marked in the above diagram by +)

Frequency MHz	Level dB μ V	Transducer dB	Limit dB μ V	Margin dB	Line	PE
0.166920	36.10	1.3	55.1	19.0	N	FLO
0.333600	31.20	0.9	49.4	18.2	N	FLO
0.500820	30.20	0.8	46.0	15.8	N	FLO
0.666240	26.70	0.8	46.0	19.3	L1	FLO

Data record name: 62409ACFCC_fin AV of 05.10.2006

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7 PHOTO OF THE TEST SET-UP



Pictures of the test set-up for
mains terminal disturbance voltage on the V-LISN:

62409_emic1

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8 TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

Emission measurement at AC mains and DC in / out ports at M4					
No.	Test equipment	Type	Manufacturer	Serial No.	PM-No
1	Shielded chamber M4	-	Siemens	B83117S1-X158	480088
2	Measuring receiver	ESAI	Rohde & Schwarz	831953/001 833181/018	480025 480026
3	LISN	NSLK8128	Schwarzbeck	8128155	480058
4	DC-filter	B84266-A21- E13	Siemens	940164525	480099
5	AC-filter	B84299-D87- E3	Siemens	930262292	480097
6	EMI-Software	ES-K1	Rohde & Schwarz	-	480111
32	Radio communication analyser	CMTA 54	Rohde & Schwarz	841904/011	480169

All measurement equipment in use was calibrated (if necessary). The calibration intervals and the calibration history will be given out on request.

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9 LIST OF ANNEXES

ANNEX A

The annex A consists of 3 pages and contains pictures of the EUT and test set-ups:

Pictures of the EUT 62409_EUT1

Pictures of the PCB 62409_PCB1
62409_PCB2