MEASUREMENT/TECHNICAL REPORT

Hand-Held Computer Typ: HRF-35

FCC ID: NYF35HRF98XX

October 01, 1998

Equipment Under Test

Type: Hand-Held Computer HRF-35

Equipment Category: Transceiver

Relevant Standard: 47 CFR Part 15

This report concerns: ☒ Original grant ☐ Class II change

Request issue of grant:
☒ Immediately upon completion of review.
☐ Defer grant per 47 CFR 0.457(d)(ii) until ..... Company Name agrees to notify the Commission by .....of the intended date of announcement of the product so that the grant can be issued on that date.

Measurement Procedure used:

☒ ANSI C63.4-1992 ☐ FCC/OET MP-4 (1987) ☐ Other

If other describe .....

Application for Certification
prepared by:

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Dr. Werner G. Rašek
- President -

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1 GENERAL INFORMATION

1.1 Product Description

Equipment Under Test (EUT)

The following describes the function of the EUT and the general operation:

Product name: HRF-35

The HRF-35 is a portable hand-held computer specially designed for industrial and dirty environment. The HRF-35 is able to log data from contactles ID-Cards (transponder), key-pad entries and other actions. So this computer is a mobile, versatile equipment for documenting and monitoring of service- and maintenance-action or if you need a "guided tour" equipment for heavy-duty applications.

The general operation is to send a 125 kHz signal to a contactles ID-Cards (transponder), key-pad entries and other actions and receive data from this units.

1.2 Related Submittal(s)/Grant(s)

None.

1.3 Tested System Details

DEVICE	FCC ID
Infimum Supercomputers Had-Held Computer HRF-35 S/N none EUT submitted for grant	NYF35HRF98XX

1.4 Interface Cables

Function / Type	Shielded or Non Shielded	Length
no interface cables		

1.5 Test Methodology

Conducted emissions were not measured because there are no cables connected to the EUT.

Radiated emissions (0.009 MHz - 30 MHz) were measured to demonstrate compliance with the limits described in 47 CFR § 15.209. Radiated testing was performed at an antenna to EUT distance of 30 meters.

Radiated emissions (30 MHz - 1000 MHz) were measured to demonstrate compliance with the limits described in 47 CFR § 15.209. Radiated testing was performed at an antenna to EUT distance of 3 meters.

1.6 Test Facility

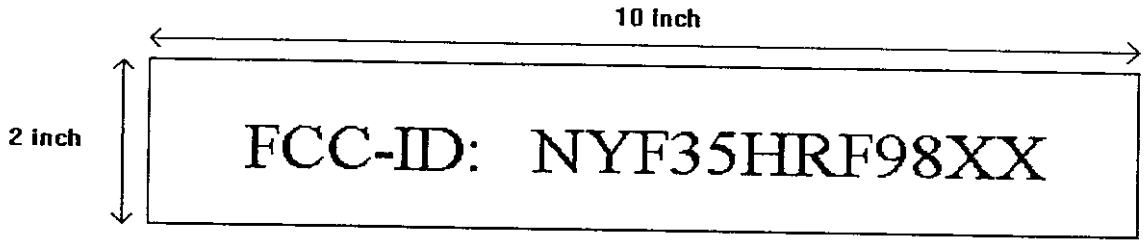
The open area test site and conducted measurement facility used to collect the conducted and radiated emission data are located in Moggast, D-91320 Ebermannstadt, Germany. This site has been fully described in a report submitted to the FCC, and accepted in the letter dated Jan. 15, 1997 (31040/SIT - 1300 F2).

2 PRODUCT LABELING

2.1 FCC ID Label

Dear Ladies and Gentlemen,

for our Hand-Held Computer HRF-35 and Infrared Adapter AD-35 we are going to print the FCC-ID directly onto the incasement of both equipments. We will use a tampon printing method which is used for printing on keypad etc. This prints are restistant against mechanical and chemical stress and will survive the operating life of the equipment.
Below we show you a draft of the FCC-ID

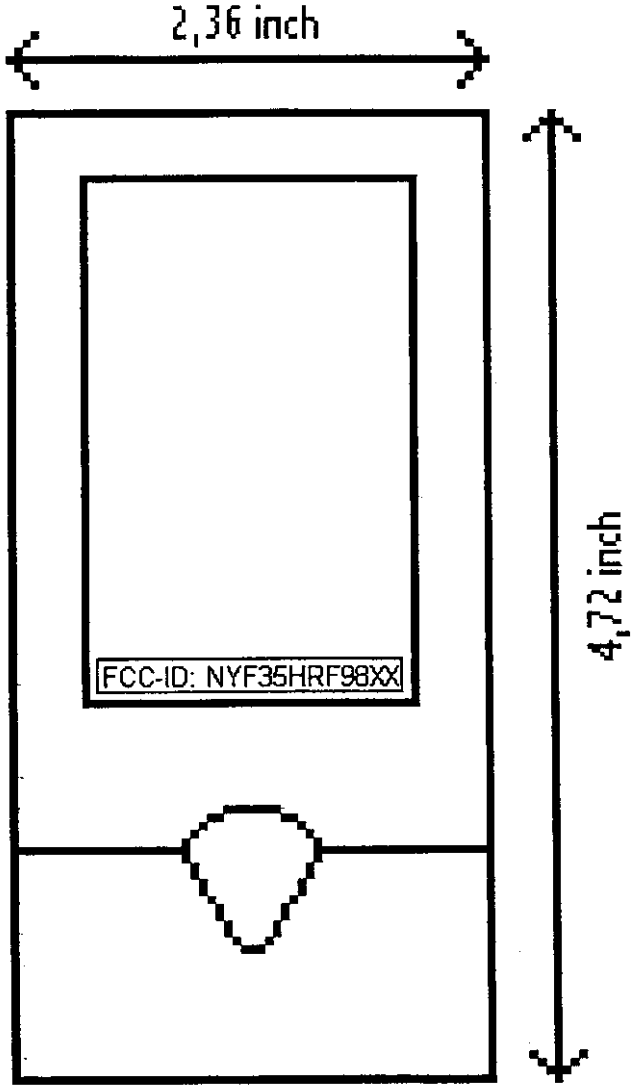


Sincerely

(Kückendahl)

2.2 Location of Label on EUT

Picture 2. shows you the HRF-35 with the FCC-ID printed on the bottom side.



Sincerely

(Kückendahl)

3 CONFIGURATION OF TESTED SYSTEM

3.1 Test Set-up

Radiated testing were performed according to the procedures in ANSI C 63.4 - 1992

DC power supply: Alcaline 9 V battery

Cable	Function	Length
There are no cables connetted to the EUT		

3.2 Justification

The system was configured for testing in a typical fashion.

3.3 Equipment Modifications

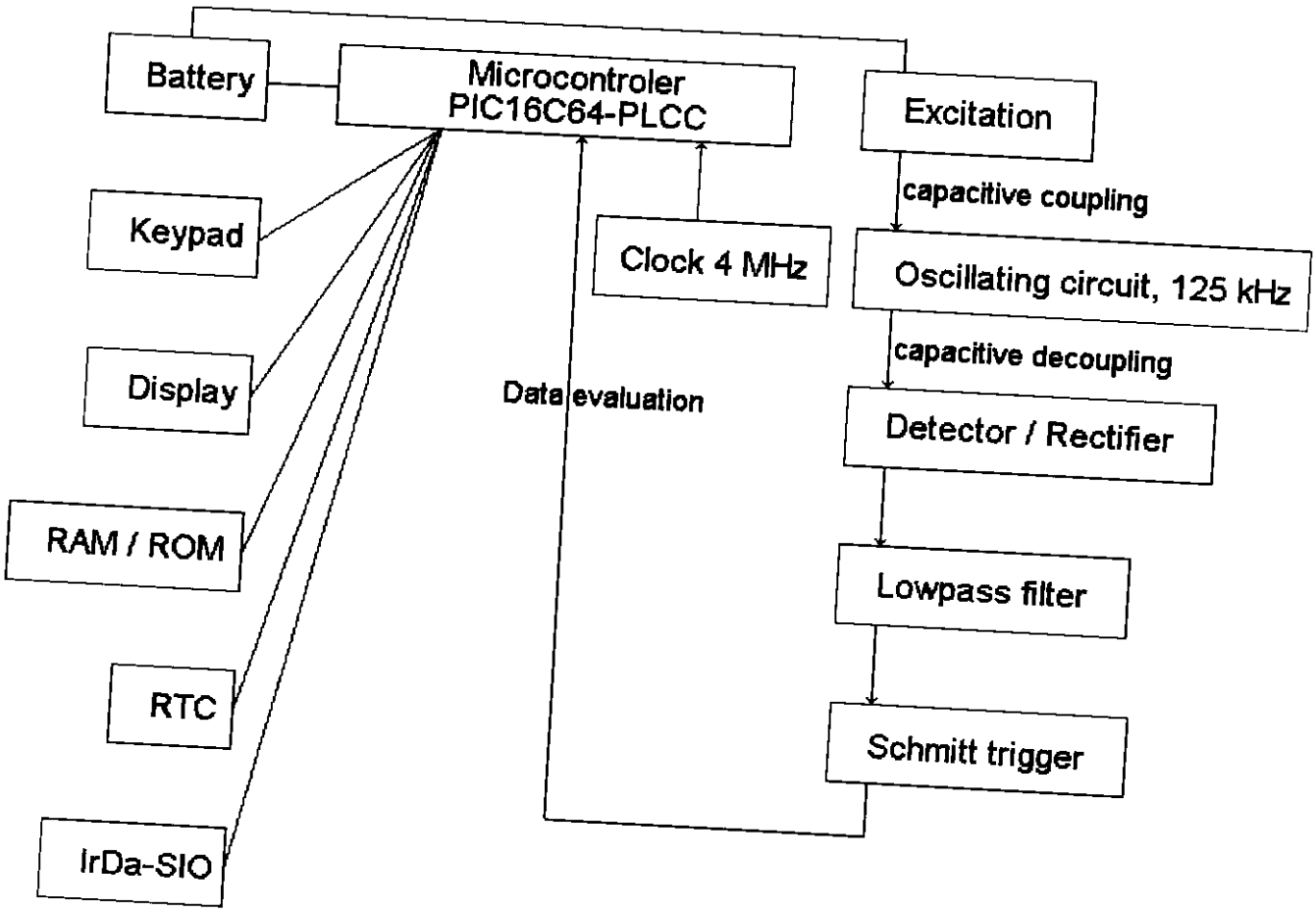
To achieve compliance to Class B levels no changes were made during compliance testing.

3.4 Operation Mode of the EUT

During radiated emission testing the EUT was operated in its transceiving modus.

4 BLOCKDIAGRAM OF EQUIPMENT

4.1 Blockdiagram of HRF-35



5 CONDUCTED AND RADIATED MEASUREMENT PHOTOS

5.1 Conducted Measurement Photos

Conducted measurements are not applicable to the EUT.

6 CONDUCTED EMISSION DATA

Conducted measurements are not applicable to the EUT.

7 RADIATED EMISSION DATA

7.1 Test Procedure

The following data lists the significant emission frequencies, measured levels, correction factor (includes cable and antenna corrections), the corrected reading, plus the limit. Explanation of the Correction Factor is given in paragraph 7.3.

The frequency range investigated was 0.009 MHz to 1000 MHz.

7.2 Measured Data

Radiated Emission Data (0.009 MHz- 30 MHz)

Judgement: Passed by 1.17 dB, measured at 30 m distance.

Frequency	Receiver Reading NOTE 1	Correction Factor	Corrected Reading	300 m Limit
(MHz)	(dBµV)	(dB / m)	(dBµV / m)	(dBµV / m)
0.125	22.0	+2.5	24.5	25.67

No further emissions found above noise flor

Radiated Emission Data (30 MHz- 1000 MHz)
Judgement: No emissions found above noise flor.

Radiated Emission Data (1GHz- 2GHz)
Judgement: No emissions found above noise flor.

Test Personnel:

Tester Signature: 
Typed/Printed Name: Uwe Keller

Date: July 10, 1998

NOTE 1 The measured field strength shown in above tables are based on measurements employing a CISPR quasi-peak detector exept for the bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emissions in these three bands are based on measurements employing an average detector.

7.3 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor. The basic equation with a sample calculation is as follows:

FS = RA + AF + CF

where

FS = Field Strength (dBμV/m)

RA = Receiver Amplitude (dBμV)

AF = Antenna Factor (dB/m)

CF = Cable Attenuation Factor (dB)

Assume a receiver reading of 23.5 dBμV is obtained. The Antenna Factor of 7.4 dB/m and a Cable Factor of 1.1 dB is added, giving a field strength of 32 dBμV/m. The 32 dBμV/m value can be mathematically converted to its corresponding level in μV/m.

FS = 23.5 dBμV + 7.4 dB/m + 1.1 dB = 32 dBμV/m

Level in μV/m = Common Antilogarithm [(32 dBμV/m)/20]=39.8 μV/m

7.4 Test Instrumentation Used, Radiated Measurement

Radiated Measurement (0.009 MHz- 30 MHz)

Type	Manufacturer/ Model No.	Serial No.	Last Calibration	Cal. Interval
Receiver	Rohde & Schwarz ESS	825132/015	March 27, 1998	12 months
Antenna	Schwarzbeck FMZL 1514	1514 165	May 12, 1998	12 months

Radiated Measurement (30 MHz- 1000 MHz)

Type	Manufacturer/ Model No.	Serial No.	Last Calibration	Cal. Interval
Receiver	Rohde & Schwarz ESS	825132/015	March 27, 1998	12 months
Antenna	EMCO 3143	9604-1269	Feb. 20, 1998	12 months