

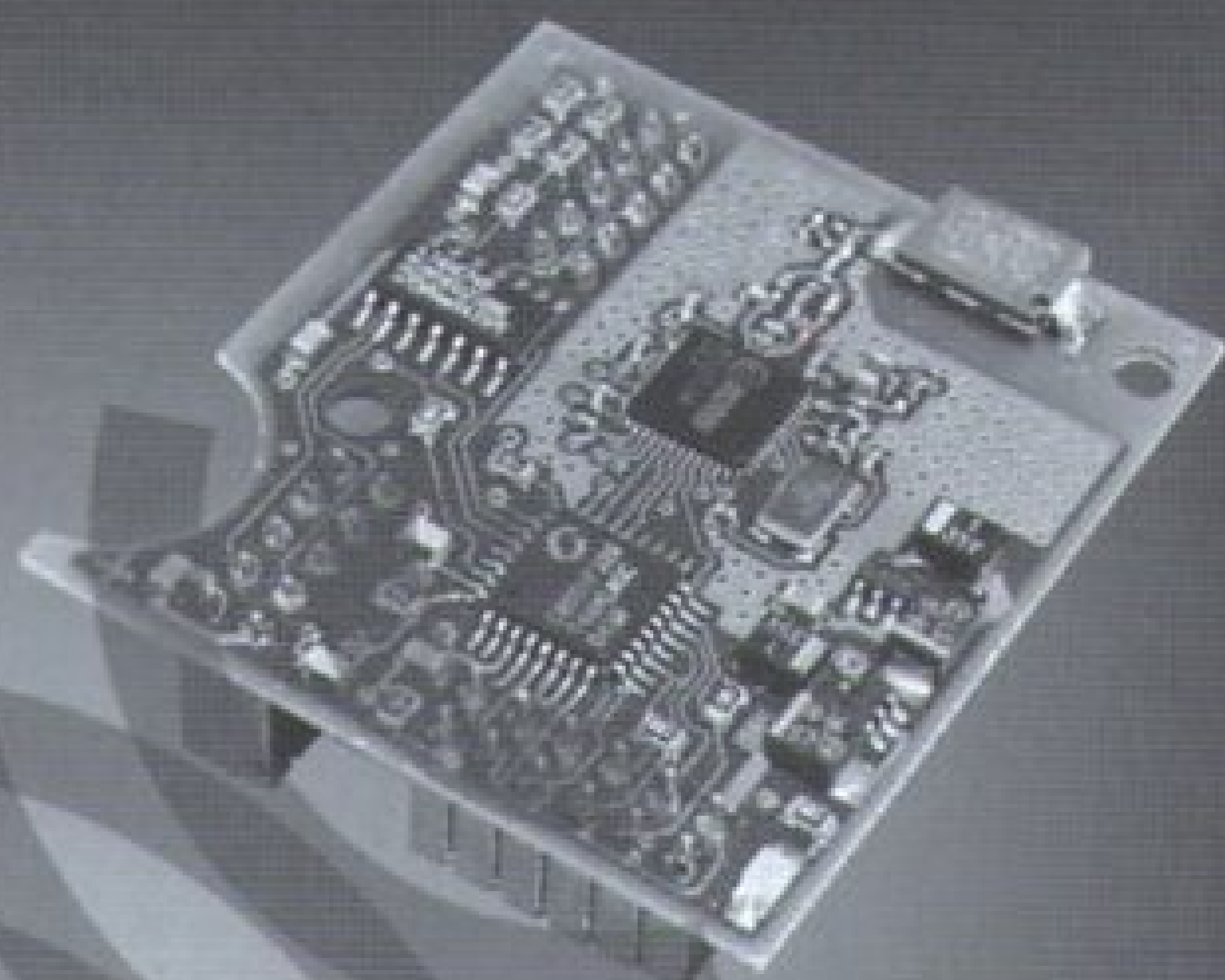
Wichtige Unterlagen, bitte sorgfältig aufbewahren!
This is an important document-please keep it in a safe place!
Documentation importante, veuillez la conserver soigneusement!
Belangrijke documenten s.v.p. zorgvuldig bewaren!
Importante documentación. Guardarla cuidadosamente!
Documentações importantes, favor guardar cuidadosamente!



fischertechnik ®

COMPUTING

Bedienungsanleitung
Operating Instructions
Manuel d'emploi
Bedieningshandleiding
Instrucciones de manejo
Instrução de serviço



ROBO RF DATA LINK

D S. 1-7, Inhalt

1 Funktionsweise	S. 1
2 Technische Daten	S. 1
3 Lieferumfang	S. 1
4 Anschluss an PC/ ROBO Interface	S. 1
5 Software	S. 2
6 Einstellungen in ROBO Pro	S. 3
7 Unabhängiger Betrieb mehrerer RF Data Links	S. 4
8 Kommunikation zwischen 2 ROBO Interfaces über RF Data Link	S. 5
9 Hinweise zur Reichweite	S. 5
10 Firmwareupdate der Funkmodule	S. 6
11 Port-Taster am ROBO Interface	S. 6
12 Wenn es nicht funktioniert...	S. 7
13 Gewährleistung/ Haftung	S. 7
14 Hinweise zum Umweltschutz	S. 7

GB+USA P. 8-14, Contents

1 Functioning	P. 8
2 Technical Data	P. 8
3 Scope of Delivery	P. 8
4 Connection to PC- ROBO Interface	P. 8
5 Software	P. 9
6 Settings in ROBO Pro	P. 10
7 Independent Operation of Several RF Data Links	P. 11
8 Communications between two ROBO Interfaces through an RF Data Link	P. 12
9 Information about the Range	P. 12
10 Firmware Update for the Radio Module	P. 13
11 Port Push Button on the ROBO Interface	P. 13
12 If it doesn't work!	P. 14
13 Warranty and Liability	P. 14
14 Instructions for Environmental Protection	P. 14

F P. 15-21, Sommaire

1 Fonctionnement	P. 15
2 Caractéristiques techniques	P. 15
3 Fourniture	P. 15
4 Raccordement microordinateur / ROBO Interface	P. 15
5 Logiciel	P. 16
6 Paramétrages dans ROBO Pro	P. 17
7 Service indépendant de plusieurs RF Data Link	P. 18
8 Communication entre 2 ROBO Interface par RF Data Link	P. 19
9 Avis quant à la portée	P. 19
10 Remise à jour des micro- programme des modules radiotélégraphiques	P. 20
11 Bouton du port sur ROBO Interface	P. 20
12 Si ça ne fonctionne pas...	P. 21
13 Garantie/ Responsabilités	P. 21
14 Avis de protection de l'environnement	P. 21

NL P. 22-28, Inhoud

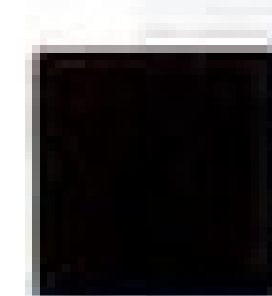
1 Werkingswijze	P. 22
2 Technische specificaties	P. 22
3 Leveringsomvang	P. 22
4 Aansluiting op pc/ ROBO Interface	P. 22
5 Software	P. 23
6 Instellingen in ROBO Pro	P. 24
7 Onafhankelijke werking van meerdere RF Data Links	P. 25
8 Communicatie tussen 2 ROBO Interfaces via RF Data Link	P. 26
9 Aanwijzingen ten aanzien van de reikwijdte	P. 26
10 Firmware-update van de radiografische module	P. 27
11 Port-knop op de ROBO Interface	P. 27
12 Wanneer dit niet werkt	P. 28
13 Garantie/ aansprakelijkheid	P. 28
14 Aanwijzingen ten aanzien van de milieubescherming	P. 28

E P. 29-35, Contenido

1 Modo de funcionamiento	P. 29
2 Datos técnicos	P. 29
3 Volumen de entrega	P. 29
4 Conexión al PC/ ROBO Interface	P. 29
5 Software	P. 30
6 Ajustes en ROBO Pro	P. 31
7 Servicio independiente de varias RF Data Links	P. 32
8 Comunicación entre 2 ROBO Interfaces por RF Data Link	P. 33
9 Notas sobre el alcance	P. 33
10 Actualización del Firmware de los radiomódulos	P. 34
11 Pulsador Port en ROBO Interface	P. 34
12 Si alguna vez no funciona...	P. 35
13 Prestación de garantía/ Responsabilidad	P. 35
14 Notas sobre la protección del medio ambiente	P. 35

P P. 36-42, Conteúdo

1 Modo de funcionamento	P. 36
2 Dados técnicos	P. 36
3 Âmbito do fornecimento	P. 36
4 Conexão no PC/ ROBO Interface	P. 36
5 Software	P. 37
6 Ajustes no ROBO Pro	P. 38
7 Funcionamento independente de vários RF Data Links	P. 39
8 Comunicação entre 2 ROBO Interfaces através do RF Data Link	P. 40
9 Avisos relacionados ao alcance	P. 40
10 Atualização do firmware dos módulos de rádio	P. 41
11 Botão de pressão do portal na ROBO Interface	P. 41
12 E se não funcionar...	P. 42
13 Prestação de garantia/ Responsabilidade	P. 42
14 Avisos quanto a proteção do meio ambiente	P. 42



1 Functioning

The ROBO RF data link replaces the USB cable connection between the PC and the interface with a wireless radio link. With this, the interface can be activated in the online mode, which means that the program runs on the PC and there is continual data exchange between the PC and the interface. Using the radio link, programs can also be downloaded to the interface and these programs can then be processed independently of the PC.

2 Technical Data

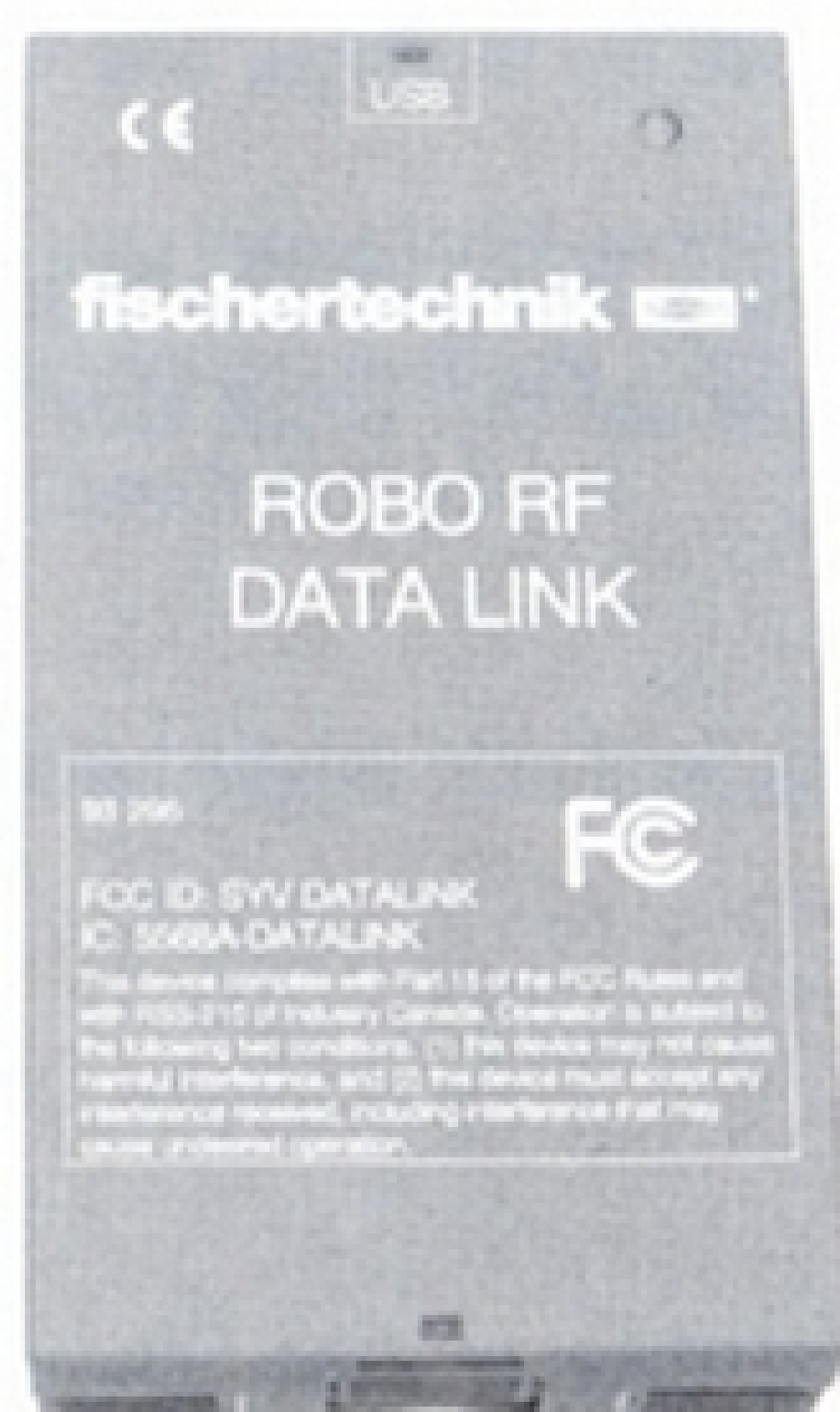
- Radio interface for ROBO interface
- Range about 10 m
- Frequency 2.4 GHz
- Seventy-nine frequencies can be set for independent operation of several ROBO interfaces at the same time.
- Communications between two ROBO interfaces with the same frequency is possible.
- Connections
 - To PC through USB interface, 1.1 and 2.0 compatible 12Mbits/s .
 - To interface through an integrated slot on the interface printed circuit board.
- No additional power supply is required.

3 Scope of Delivery

The RF data link consists of two parts:

- PC radio module with red casing.
- Interface radio module (printed circuit board, supplied in black plastic sheathing).

4 Connection to PC-ROBO Interface



The PC radio module for the data link with red casing is connected through the USB interface to the PC (use the USB cable for the ROBO interface).

Interface Firmware

(Operating system for the ROBO interface)

For the correct operation of the RF data link, the interface firmware version 1.53 or higher is needed. The ROBO Pro version 1.1.2.41 recognizes the version of the firmware and updates it. To do this, the ROBO interface with the installed radio module is connected with the USB cable to the PC and the interface test is called up in ROBO Pro. If necessary, the software suggests the updating of the interface firmware. Please follow the instructions.

RF Data Link Firmware

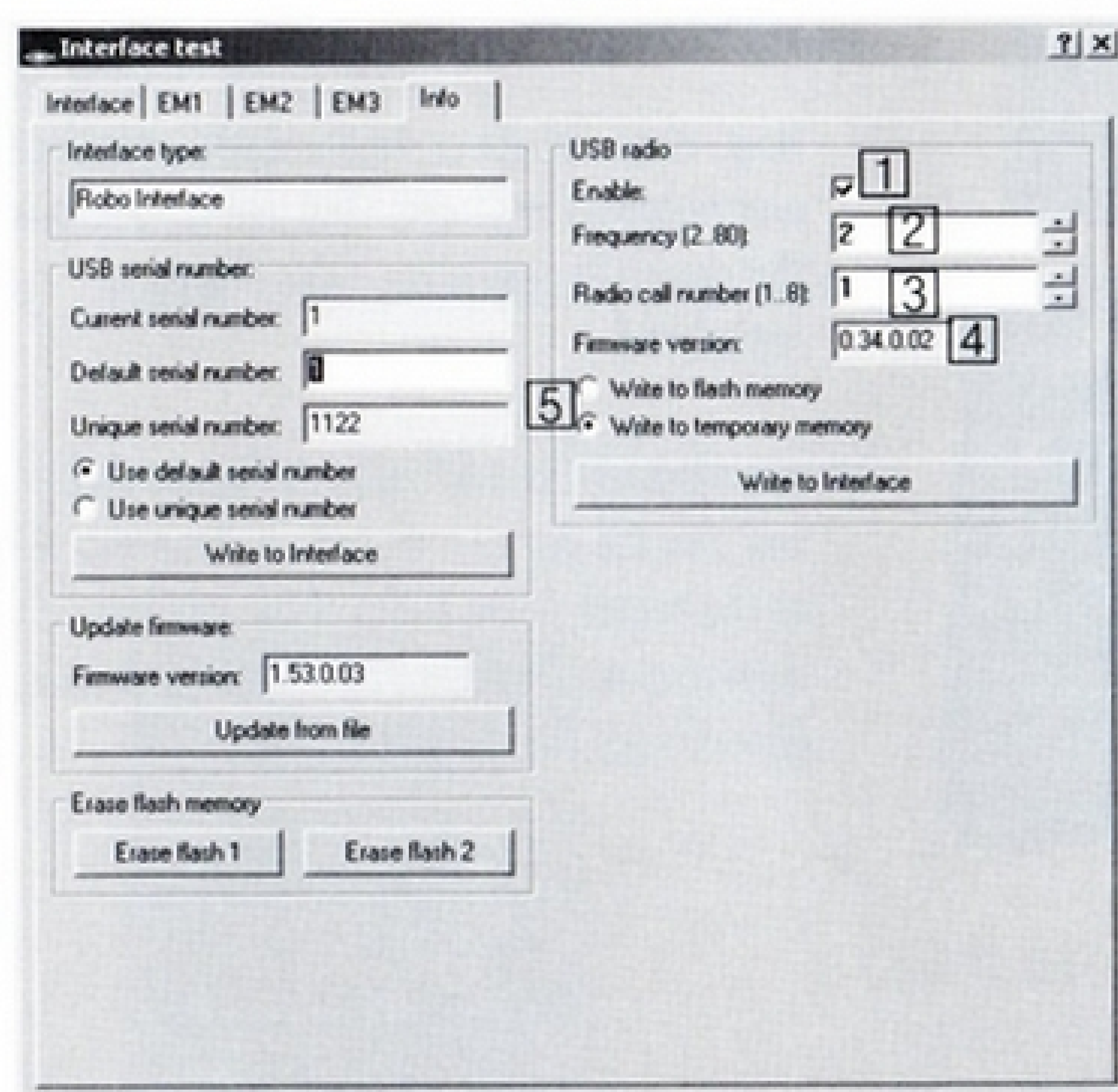
Both radio modules also have their own firmware. ROBO Pro can also identify the version of this firmware and suggest, if necessary, an update. For the procedures see the chapter 10 "Firmware Update for the Radio Module."

6 Settings in ROBO Pro

In the ROBO Pro software in the interface options, the interface must be set to USB.

In the interface test under the tab, **Info**, the various parameters for the radio link can be displayed and changed:

- 1 The interface-radio module can be activated or deactivated. Through the deactivation, you can prevent the radio reception of undesired data by the interface from somewhere. Deactivation is only possible if the ROBO interface with the installed radio module is connected through the USB cable with the PC. The PC radio module cannot be deactivated.

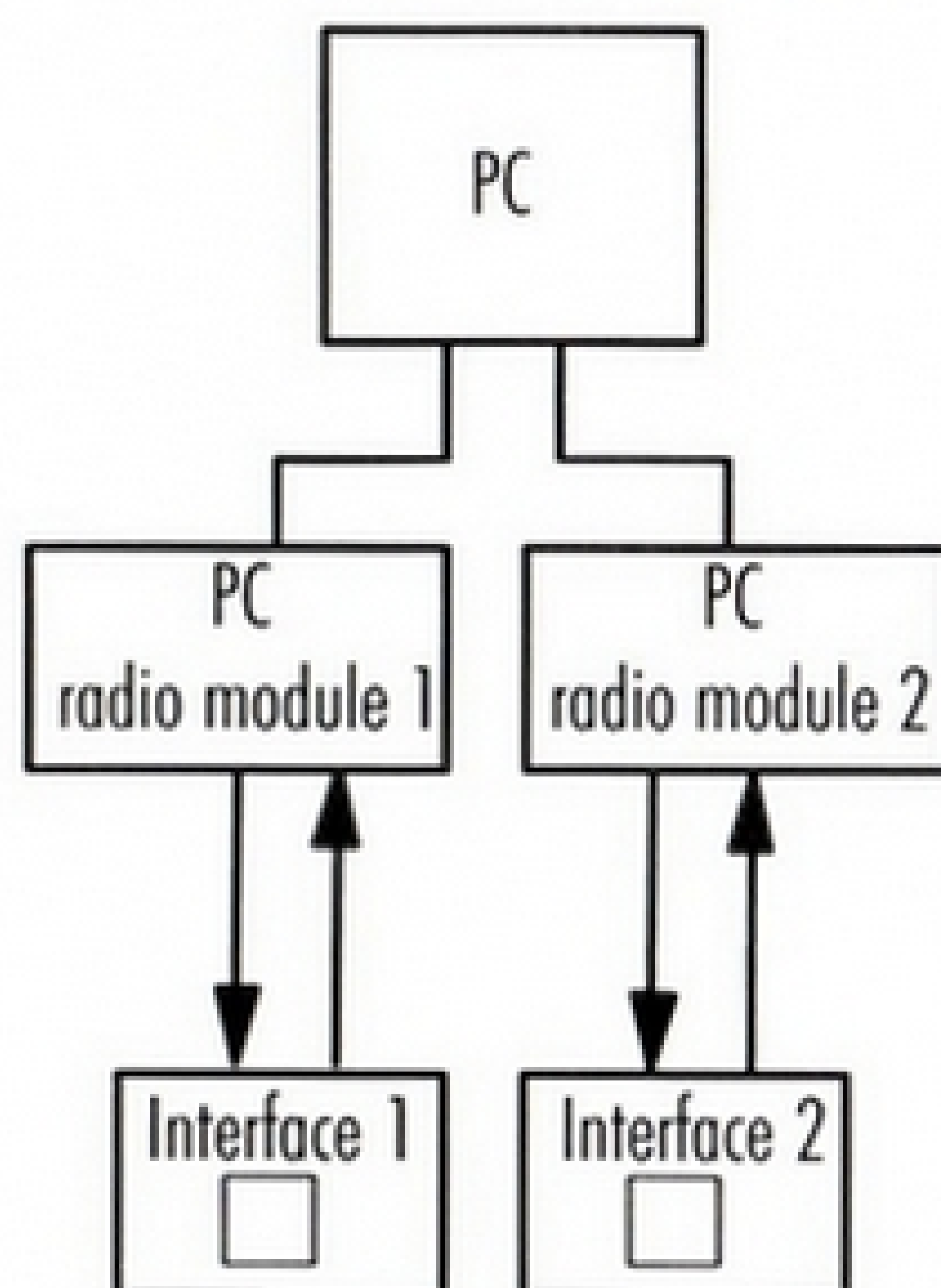


- 2 Frequency set
(see chapter 7 "Independent Operation of Several RF Data Links")
- 3 Call signal set
(see chapter 8 "Communications Between Two Interfaces")
- 4 Firmware version
 - of the PC radio module if this is connected to the USB cable;
 - of the interface-radio module if the interface is connected to the USB cable and there a radio module is installed and activated.
See chapter 10 "Firmware Update."

- 5 Write to flash memory: Changes made are transferred to the hardware using this button and remain valid until the next change is made.

Write to temporary memory: Changes are lost if the power supply to the hardware is interrupted.

7 Independent Operation of Several RF Data Links



Several ROBO interfaces, a maximum of three, can be activated on the USB through a RF data link on one PC.

So that both radio links do not interfere with each other, the frequency should be changed for one of the radio links. At total of 79 different frequencies are available:

Frequency 02 - 80 = 2,402 - 2,480 GHz.

Procedures for Changing the Frequency

First, the interface with the installed radio printed circuit board is connected to the PC using the USB cable. Then the interface test in ROBO Pro is activated - "Info" tab - change the frequency, for example, from 02 to 10 and write this change to the interface either permanent or temporary. Then remove the USB cable from the interface, connect the PC radio module to the USB cable, change the frequency there as well and write this to the module. Now, both modules can communicate with each other.

Important!!

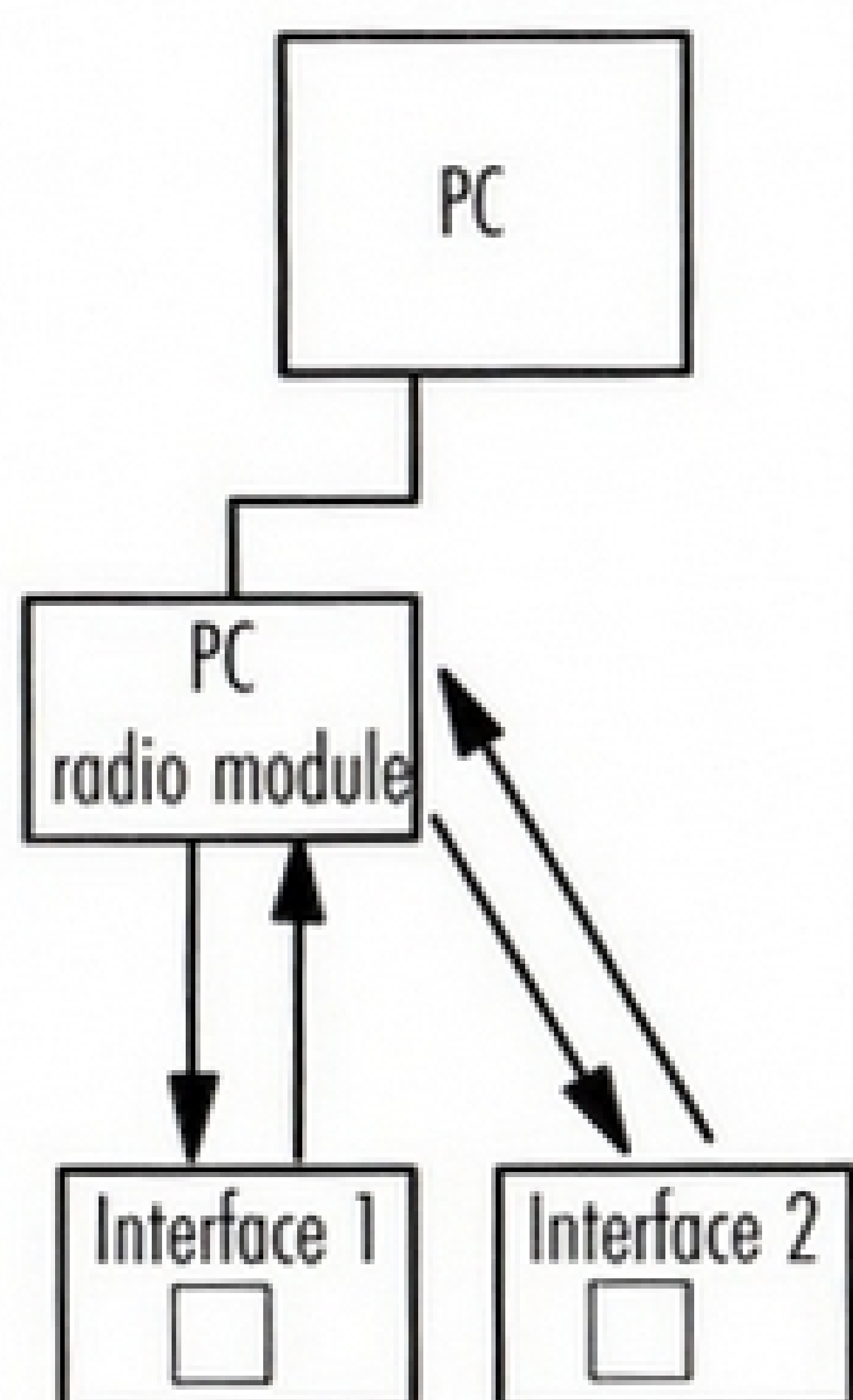
Both modules must always be set to the same frequency because otherwise no connection can be made.

If several PCs in one room work with a radio link, then the frequencies must be different otherwise interference occurs.

Changing the Serial Number

If several RF data links are to be operated on one PC then each device must be given a different serial number so that it can be clearly identified by the software. All devices are set with the same serial number at the factory. Changing of the serial number is done exactly as for the ROBO interface. The procedures are described in the ROBO Pro handbook in chapter 6.5.

8 Communications Between Two ROBO Interfaces through an RF Data Link



Using the RF data link, two interfaces can communicate with each other, on which one program for each is running in download operation. When this is done, one PC radio module serves as the "exchange" or "satellite" and organizes the communications between the two participants.

The PC radio module receives its power supply through the USB and therefore only has to be connected to the computer. Data exchange with the PC does not take place during the operation.

So that all participants are clearly defined and each participant knows if messages, which were sent, are meant for him, each receives a call signal. This is given in ROBO Pro in the interface test under the Info tab (see the chapter 6 "Settings in the Software"). The PC radio module, which is functioning as the satellite, always has the call signal 0. The call signal of the PC radio module cannot be changed. In ROBO Pro, there are transmission and receiving building blocks, through which the individual participants can send and receive messages.

9 Information about the Range

The range of the radio link is about 10 m for uninterrupted view. Hindrances such as walls or cabinets may impair the range and the same applies to electrical devices, which interfere with the radio link.

If two interfaces are communicating through a PC radio module with each other, then the distance between both interfaces may be extended to 2 x 10 m because the distance between one interface and the PC radio module may be up to 10 m.



10 Firmware Update for the Radio Module

The same firmware version must always be installed in both radio modules of the RF data link.

Display of the firmware version in ROBO Pro: Interface test - Info tab under "USB Radio" (see the chapter 6 "Settings in ROBO Pro").

Procedures for Firmware Update

1. Interface-Radio Module: Connect the interface with the installed radio module to the USB cable. Call up the interface test in ROBO Pro. If the firmware version for the interface itself is not up-to-date, ROBO Pro suggests to first update the interface firmware. Follow the instructions. After this update and rebooting of the interface, the interface test is called up again. Then, ROBO Pro suggests that the firmware for the interface-radio module be updated. Follow the instructions.

2. PC Radio Module: Connect the PC radio module to the USB. Call up the interface test in ROBO Pro. ROBO Pro automatically suggests the firmware update. Follow the instructions. After the update is complete, interrupt the power supply for a short time by pulling the USB plug.

If both radio modules have the same updates they can communicate with each other.

11 Port Push Button on the ROBO Interface

As soon as a radio module is mounted on the interface printed circuit board, the functionality of the port push button on the interface is expanded as follows (see instructions, Interface, Push Button (5)):

Automatic interface selection (auto-scan mode): The LEDs for COM, USB and radio (green LED on the interface module), blink alternately.

Fixed Setting of an Interface

Push the port button once. The radio module is turned off and only the COM and USB blink. No more data is received through the RF data link.

Press the port button again, several times if necessary. One of the interfaces, COM, USB, IR or radio, can be set so it is fixed. The LED for the selected interface lights up continuously. To return to the auto-scan mode, press button 5 until the LEDs blink alternately.

12 If it doesn't work!

Possible Errors

- No connection between the two radio modules
- Download of a program to the interface is not possible.

Possible Causes

- No radio module is installed in the interface.
- Interface is not connected to a power supply.
- Interface-radio module is deactivated (see chapter 6 "Settings in ROBO Pro).
- PC radio module set to a different frequency than the interface-radio module.
- Interference from other devices, which are transmitting on the same frequency, such as WLAN, video camera or other RF data link. Set frequency on both radio modules of the RF data link to another value between 02 and 80.

13 Warranty and Liability

The fischertechnik GmbH provides a warranty for the freedom from defects of the device according to the current state of the technology. The right is reserved to make changes to the design or model, which neither impair the functioning or the value of the device, and shall not entitle the customer to make a complaint.

Obvious defects must be asserted in writing within 14 (fourteen) days after the delivery otherwise warranty claims due to obvious deficiencies are excluded.

No warranty claim may be asserted due to an insignificant deficiency of the device. In addition, the customer may only demand subsequent performance, which means subsequent improvement. The customer is entitled, according to his choice, to withdraw from the contract or to demand reduction of the purchase price if the subsequent performance fails or in particular it is impossible or we are not successful in doing this in a reasonable time frame or we reject such or it is delayed by us and we are culpable for such delay. The warranty period is 24 (twenty-four) months after delivery.

If defects of quality of the device exist, which occurred due to improper handling, normal wear or incorrect or negligent handling, then we are not responsible just as for the case of the result of improper changes and changes made without our permission or repair work made by the customer or a third party. The warranty is governed by German law.

Liability on the part of fischertechnik GmbH for damages, which result from the fact that the device was not used in accordance with instructions, is excluded.

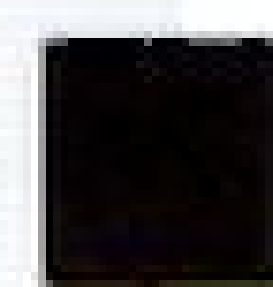
14 Instructions for Environmental Protection



Do not place this device in household refuse. At the end of its service life, it must be taken to a collection point for the recycling of electrical and electronic devices. The symbol on the product, packaging or the instructions shows this.



112833 • KW • 11/05 • Printed in Germany • Technische Änderungen vorbehalten • Subject to technical modifications



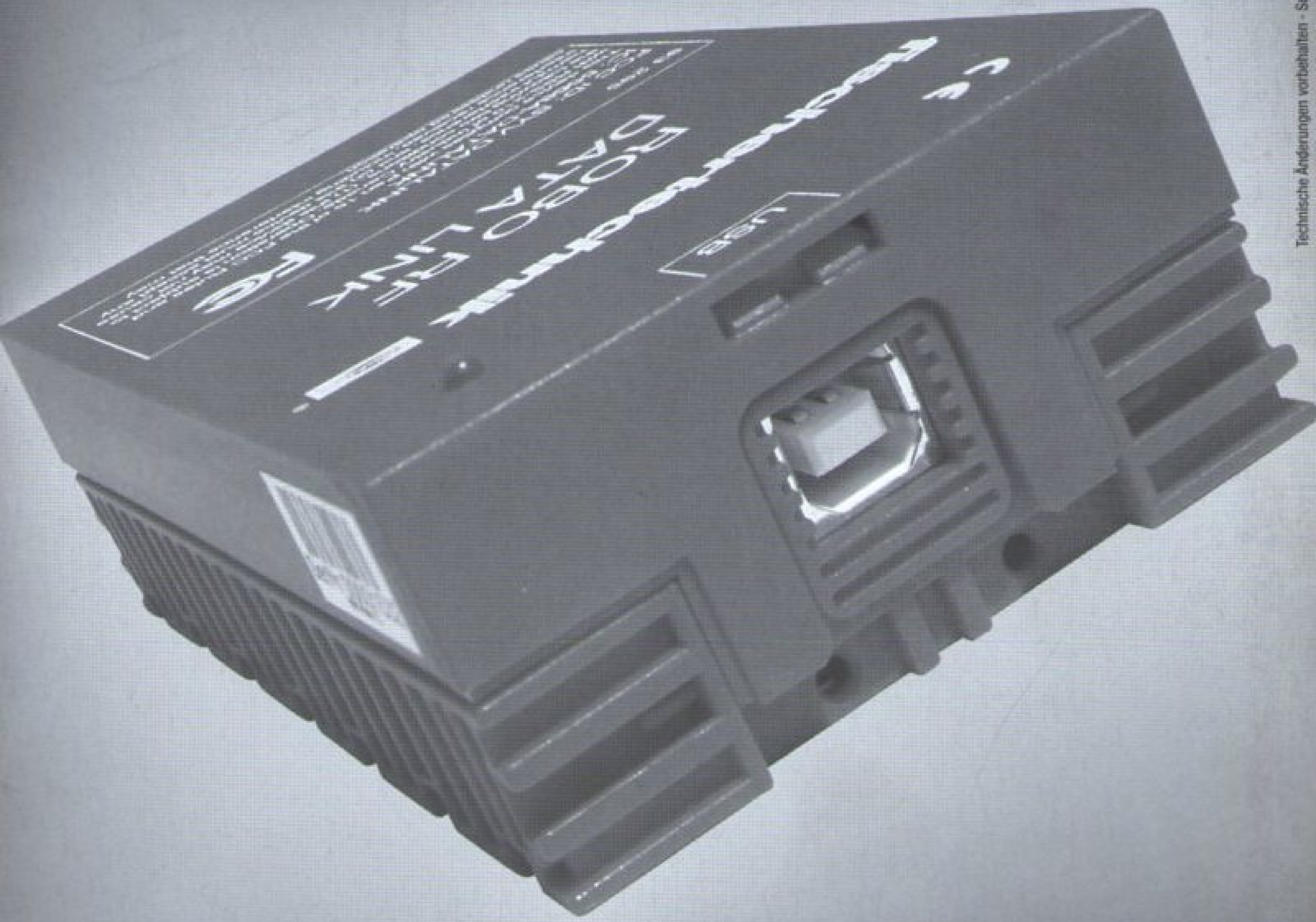
fischertechnik
 ROBO RF
 DATA LINK

FCC ID: T7V124704
 C: 2886A-D040404

CE

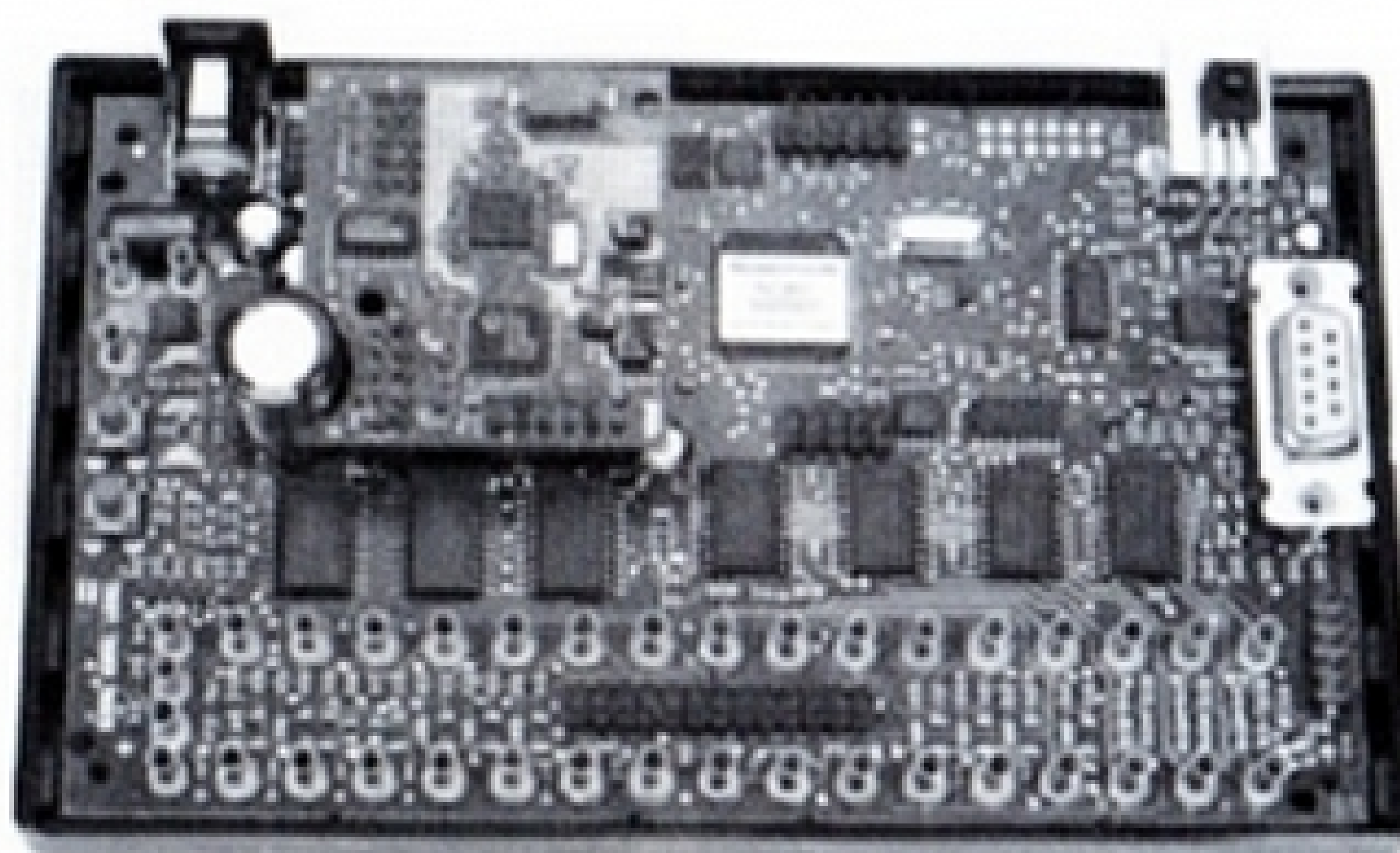
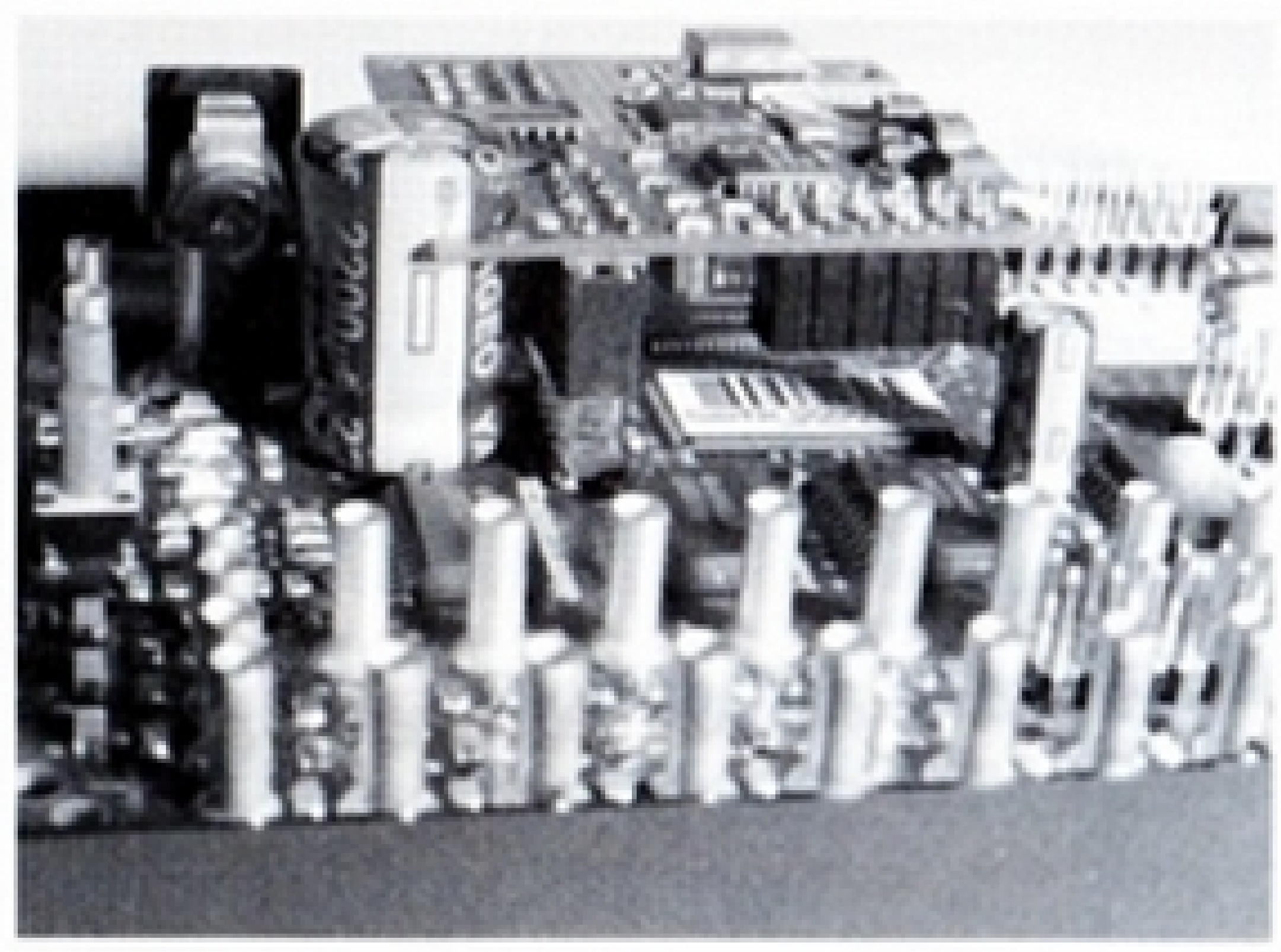
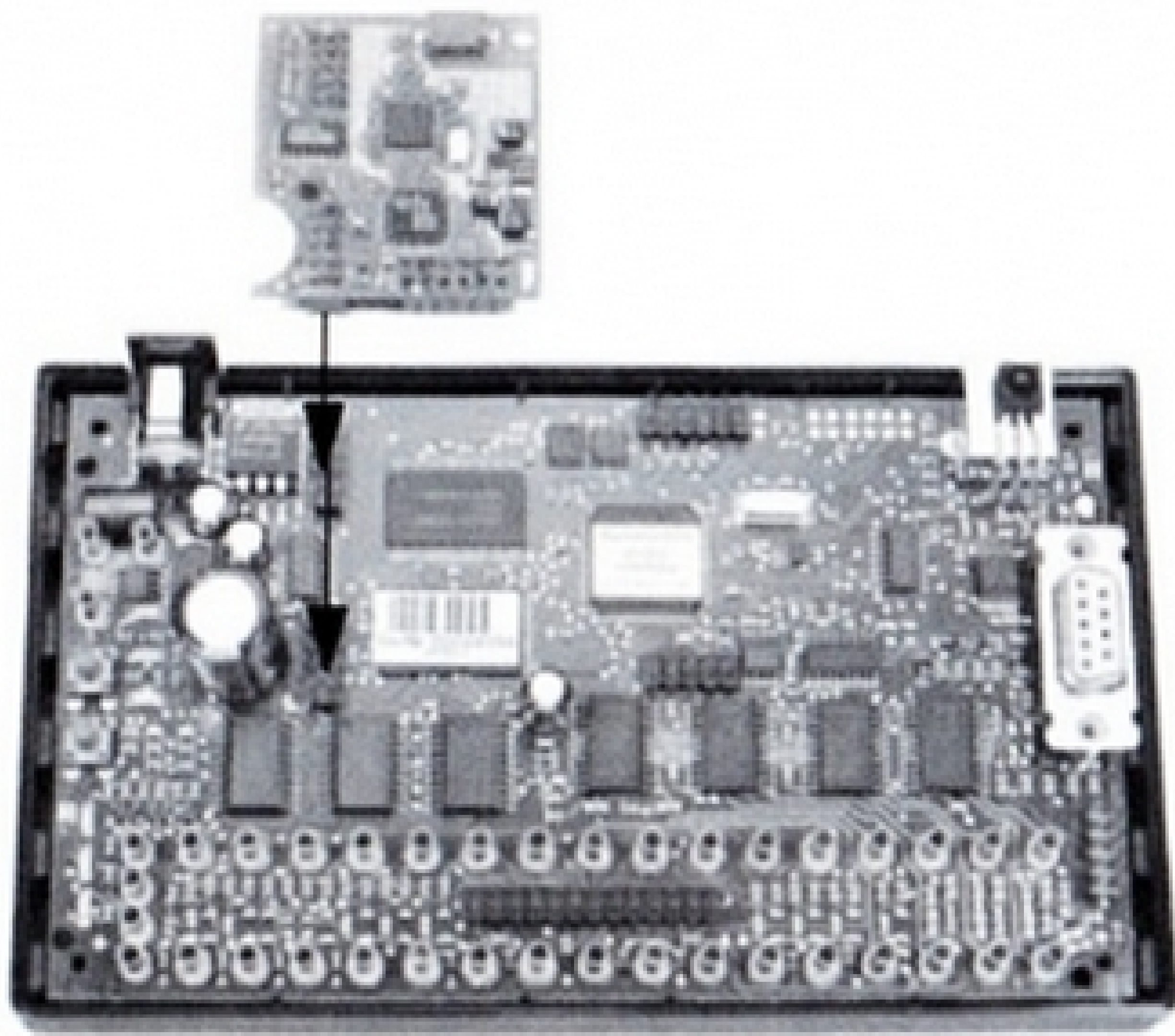
fischertechnik

fischertechnik GmbH
 Weinhalde 14-18
 D-72178 Waldachtal
 Telefon: 074 43/12-43 69
 Fax: 074 43/12-45 91
 email: info@fischertechnik.de
<http://www.fischertechnik.de>



ROBO RF DATA LINK

Technische Änderungen vorbehalten - Subject to technical modifications
 112833 - Printed in Germany



Installation of Interface-Radio Module

Loosen the four screws on the cover of the ROBO interface and remove the cover.

Caution!

In order to avoid damage due to electrostatic charging to the printed circuit boards, we recommend that you ground yourself before touching the printed circuit boards, for example, by grasping the metal PC casing or a water faucet.

Remove the interface-radio module from the black plastic sheathing and place it on the two 10-pin pin strips of the ROBO interface printed circuit board (see figure).

The round recess in the printed circuit board of the data link precisely encloses the large vertical condenser.

Now, close the cover of the ROBO interface and tighten the screws. You can only place the device in operation after this is completed.

Now connect the interface to the power supply and after the device is turned on, the green LED on the printed circuit board of the interface-radio module blinks alternately with both LEDs, COM and USB on the interface.

5 Software

USB Driver

When the PC radio module is connected to the PC for the first time, the associated USB driver must be installed. This works just like for the ROBO interface and is described in the handbook for the ROBO Pro software in chapter 1.2.

ROBO Pro

Important!!

To operate the ROBO RF data link, the ROBO Pro software version 1.1.2.41 or higher is required. For owners of an older ROBO Pro version, there is a no-charge update either using the help menu in ROBO PRO, download the new version, or at www.fischertechnik.de/robopro/update.html. In order to download the update, the computer must be connected with the Internet.