Remotefox

Wireless and completely automatic remote data transfer plus alarm notification via email and SMS

- Completely automatic and periodical transmission of readings via email
- Two complete data logger systems incl. universal sensors can be connected
- Two independent inputs for alarm notification via email and/or SMS
- Power-/telephone-independent thanks to battery operation and GPRS modem
- Asynchronous data retrieval feasible
- Up to ten email addresses and ten mobile phone numbers freely definable
- Antenna/accessories available

Operating instructions

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1. Introduction to the Remotefox system

Dear customer!

Thank you for deciding in favour of the flexible *Remotefox system* for alarm notification and independent remote data transfer (remote transmission) from Scanntronik Mugrauer GmbH.

The system was developed specifically for the completely automatic, wireless transmission of the collected readings from your data loggers. To accomplish that, the readings are simply sent to you as an email attachment. After having received it, you can import the readings using the SoftFOX analysis software and evaluate it just as if you were on site.

On top of that, with the Remotefox you also have the facility of processing two external alarm signals. They can either come from our data loggers or any other alarm source (e.g., a refrigerator, alarm system, …). If an alarm is triggered, the Remotefox immediately sends an alarm notification via email to up to ten recipients. In addition, alarm notification via SMS to up to ten mobile phone numbers is also feasible. An alarm delay of up to 12 hours can also be programmed if desired.

As the system is constantly put through a self-test, you will be immediately informed via email and/or SMS if the batteries in the Remotefox are starting to run low or any other malfunction occurs. If there is a power failure (with optional power using a power supply unit), you will naturally be promptly informed of that fact plus the associated switchover to battery operation.

If, along with the batteries, you have also connected a power supply unit to the Remotefox, you have the option to query the measurement data asynchronous to the programmed transmission rhythm, i.e. at any desired time. Just call the system using your normal telephone. The Remotefox then activates itself and sends the readings collected so far. This action does not influence the normal, periodic data transmission.

Thanks to the latest radio engineering, flexible GPRS modem and power supply from eight conventional 1.5V type "C" baby batteries (power supply unit optionally available), connection to the telephone or mains grid is not required.

In these operating instructions, we would like to impart a basic understanding of how to use the Remotefox. While doing so, we will delve into detail on the various connections, functions and system programming.

The core components used when operating the Remotefox are the Remotefox hardware (incl. power supply through batteries and possibly an additional power supply unit), a SIM card, the monitoring data logger systems (incl. expansion modules) and the PC software (incl. USB interface). Special antennas and additional connection lines are available any time on request.

To be able to make optimal use of the Remotefox, it is decisive that you get familiar with the system connections and correspondingly configure your defaults with the PC software.

For that reason, the following chapters deal extensively with the Remotefox hardware, the installation of the PC software and the system programming.

To accomplish that, you will be lead step by step through an exhaustive software tutorial with explanations given on the individual settings.

Please read these instructions thoroughly and completely up to the end. That is the only way to get to know the features and functions in your Remotefox system; the questions that arise will answer themselves.

2. Scope of delivery of the complete system

If you have decided in favour of a complete Remotefox system, you will find the components listed below in the packing:

1. *Remotefox* hardware incl. GPRS modem
2. Antenna, data and power link cable
3. Battery compartment for 8 x "C" baby batteries
4. Two data logger connection lines
5. Activation magnet for system tests
6. Data carrier (CD-ROM) with the PC software
7. PC interface cable (USB or serial)
8. Operating instructions for the Remotefox

3. Preparing the Remotefox hardware

The Remotefox hardware basically comprises two components. The control electronics to which, for instance, the data loggers are connected to along with the GPRS modem, mounted piggyback on the control electronics.
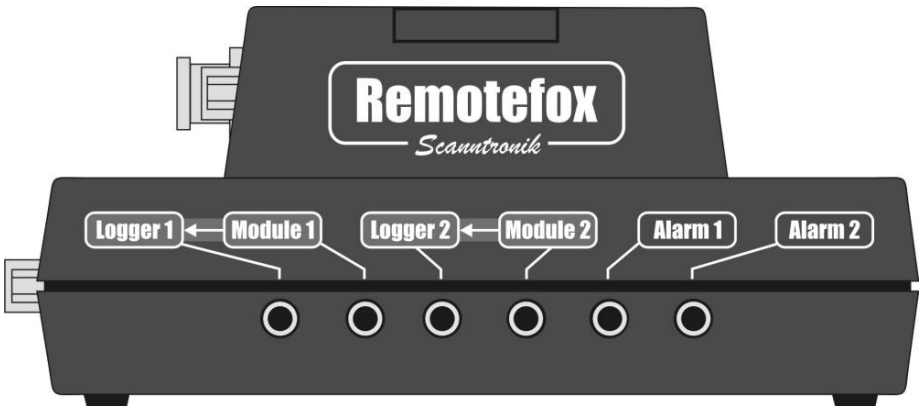
Figure 1: Remotefox front panel with GPRS modem (top) and control electronics including the data logger connections and related (bottom)

To prepare the Remotefox hardware for the upcoming measurement tasks, connect it on the right side of the control electronics to the GPRS modem using the power link cable.

The illustration below shows both black jacks needed for that. The additional silver connection on this side of the system is not used and remains unoccupied.
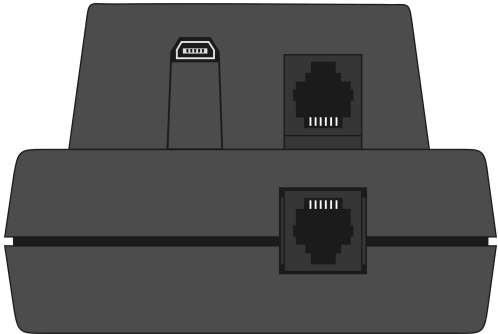

Figure 2: Right side view of the Remotefox hardware

Now connect the control electronics to the GPRS modem through the data link cable on the left side of the system.

The illustration below shows both rectangular jacks needed for that. To the left you can see the antenna output.
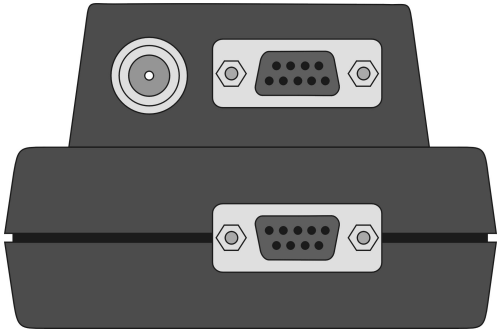

Figure 3: Left side view of the Remotefox hardware

Now connect the antenna to the left side of the system. Plug it into the intended connection and screw the antenna tight.

4. Configuring the SIM card

To enable the Remotefox system to send readings and messages at any time, it connects itself through the antenna with the mobile phone network and creates an internet connection. To be able to do that, the system needs a SIM card just like any mobile phone. In most cases, this is a data card, which can often be inexpensively added to an existing mobile phone contract. The SIM card should be independent and have its own telephone number if possible.

The following table will give you a feeling for the amounts of data that accrue for each data logger and transmission:

Data logger memory	Accruing data volume
4000 readings	approx. 20 KByte
16000 readings	approx. 70 KByte
64000 readings	approx. 260 KByte

Table 1: Accruing data volume per data logger and transmission

Example:

Let's assume that you have connected two data loggers with memory for 64,000 readings each to the Remotefox. If you have the data sent once per week, a data volume of approx. 2 data loggers x 4 times per month x 260 KByte = 2.1 MByte accrues monthly.

Before you insert the SIM card, you must set the **card PIN to "0000"**. You can use any mobile phone to change the PIN. You can find the option for changing the PIN in the mobile phone "Settings / Security" menu or a similar menu.

If you insert a SIM card with any number other than "0000", the Remotefox system will use a "false" PIN when it is first started up. That means, the PIN will be blocked by the SIM card after the third attempt. If that happens, you must assign a new PIN to your SIM card with the Super-PIN (PUK code) (then, of course, using "0000"). Please refer to your mobile phone user manual for the PIN settings or for resetting a blocked PIN using the PUK.

To insert the SIM card, remove the cover on the top of the GPRS modem, right next to the three LEDs. Then push the small SIM card bracket cover a bit and fold it up. Push the SIM card into the cover, fold it down and arrest it by pushing again. Please comply with the correct SIM card orientation, especially the position of the slanted edge. Close the SIM card compartment again by inserting the cover.

5. The Remotefox power supply

The Remotefox system is fundamentally **always** supplied with power via the supplied battery pack. Optionally, you have an **additional** facility to connect an external power supply unit to the system.

We recommend configuring the entire system without the power supply unit, with only the battery pack connected. After configuring and testing the system, connect the power supply unit as the last step.

The illustration below depicts all connections on the rear of the Remotefox hardware. After inserting eight standard 1.5V type "C" baby batteries in the battery pack, you can connect it directly to the system through the "Batteries" jack.

The "Status - LED" then illuminates for approx. 2 seconds, indicating a system start. The LED subsequently flashes every second. That is a sign that everything is okay and that the system is currently idling. If the LED ever does not flash, the cause could be that the system is working at the moment, e.g., the readings are being sent, or that no power is available.
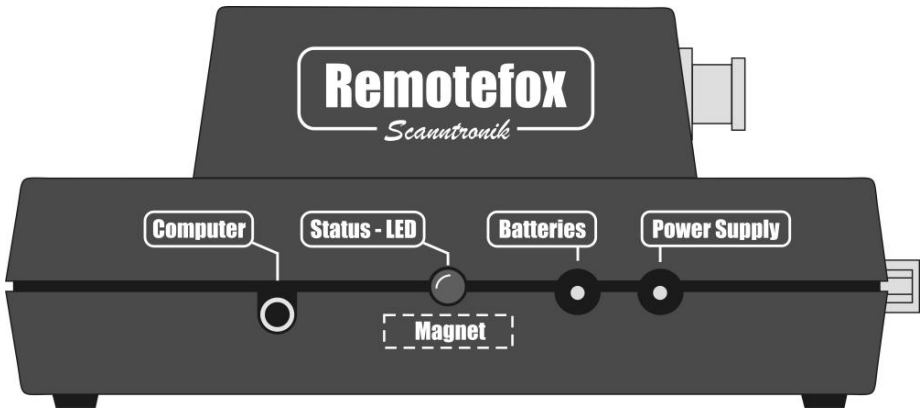
Figure 4: Rear of the Remotefox hardware

If the system is being operated without an external power supply unit, the entire power supply for the Remotefox is via the battery pack.

As the GPRS modem, when switched on, requires a comparatively high amount of power, it is always switched off during battery operation and activates only to transmit the readings or a message.

If the system is additionally connected to the mains through the "Power Supply" jack to an external power supply (optional), the GPRS modem is permanently switched on. That can be recognised with the middle LED on the GPRS modem, which briefly illuminates every 2 seconds. In this condition, the GPRS modem is continually ready to receive and enables asynchronous retrieval of the readings at any time. Simply call the telephone number of the system SIM card and the Remotefox will immediately send you the collected readings of your data loggers.

Please note that this function is only available when you have additionally connected a power supply unit to the Remotefox.

The batteries are not used when operating with a power supply unit, but serve as an emergency power supply in case of a malfunction. If a power failure happens to occur, the system is thus immediately supplied with energy by the battery pack. If desired, you can receive a corresponding message per email or an SMS on your mobile phone. As the GPRS modem is switched off during a power failure, you cannot reach the Remotefox by telephone during this time. When the power is reinstated, the system reverts to normal operation.

6. Connecting to the computer

Along with the connections for the battery pack and the additional power supply unit, on the rear of the Remotefox hardware you will also find a "Computer" jack for connecting a PC (see: Figure 4: Rear of the Remotefox hardware).

Before you can start operating the Remotefox system for the first time, you need to configure it via the PC. The connection is made either with a USB or a serial interface cable. Please follow the enclosed installation instructions when using the USB cable, because the related USB interface driver needs to be installed.

Connect one end of the cable to your PC (USB connection or serial COM port) and plug the other end into the "Computer" jack on the rear of the Remotefox hardware.

While the computer is connected to the Remotefox, the system is in the PC mode. During this time, the "Status - LED" does not flash and no readings are sent when a transmission time is reached.

During the software tutorial further on in these instructions, the installation of the analysis program and the different settings of the Remotefox system are delved into.

7. Connecting the data logger systems

With the Remotefox, you have a facility for receiving the collected readings from up to 2 complete data logger systems per email, i.e. via remote data transfer (remote transmission).

Independent of that, you can connect two more data loggers or other components (e.g. refrigerators, alarm systems, etc.) to the system for notification during alarms via SMS and/or email.

The illustration below once again shows the front of the Remotefox hardware with the six connections: "Logger 1" and "Module 1", "Logger 2" and Module 2" plus "Alarm 1" and "Alarm 2".
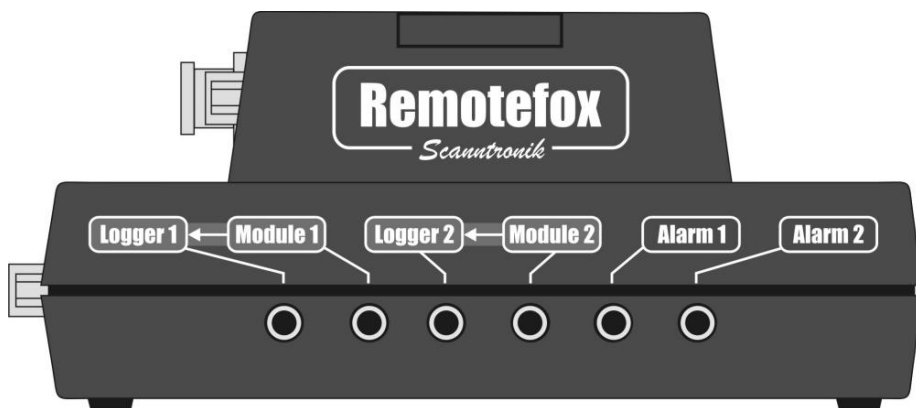
Figure 5: Front panel of the Remotefox hardware with the data logger connections and alarm inputs

„Logger 1":   You can connect the first data logger system from which you want to periodically receive the collected readings to this jack. Simply plug in the enclosed connection cable here and connect the other end to the computer connection of the related data logger system. The measurement system will be connected through the same connection with the

Remotefox that you would normally connect the PC interface cable to and would read out the readings.

„Module 1": The computer connection and thus also the connection for the *universal bus* along with the alarm output of the first data logger are now occupied with the connection line to the Remotefox.

To be able to nevertheless connect a universal bus sensor such as the "Temperature Multisensor Module", the "Material Moisture Multisensor Module", the "Thermo-Hygro-Sensor" etc. to the data logger, the Remotefox has an additional jack named "Module 1".

This jack is used quasi as a "new" connection to the first data logger and can be connected directly to the desired universal bus sensors.

If the universal bus of the first data logger is not being used, the "Module 1" jack serves as an alarm output for the first measuring system.

„Logger 2": The "Logger 2" input provides a facility for connecting a second data logger to the Remotefox. The behaviour is the same as for "Logger 1". The readings are sent in the same rhythm and together with those of the first data logger per email. The input operates otherwise completely independent of the "Logger 1" input.

„Module 2": As in "Module 1", this jack serves quasi as a "new" connection to the second data logger and can be connected directly to the desired universal bus sensors, etc.

„Alarm 1":   You can connect a data logger or any other desired components that can issue an alarm signal to this jack. Using the "Thermofox Universal" data logger for example, that can occur due to exceeding or falling below a defined temperature threshold. If you connect a "Rissfox Mini" data logger here, if desired you can receive an alarm email and/or SMS if the monitored crack moves too strongly.

If you want to connect another signal source (e.g. the alarm output of a refrigerator) to the Remotefox, please comply with the assignments below for the required 3.5 mm stereo plug.
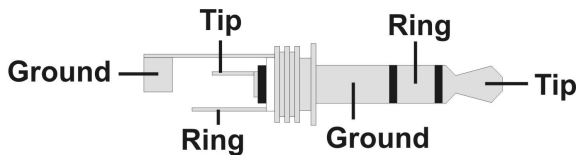
Figure 6: 3.5mm stereo plug

In the idle state, 0V against ground must be applied to the tip of the plug. An alarm is detected if the voltage on this contact switches to 3V (DC). Connect the ground of the alarm signal to the ground contact of the 3.5mm stereo plug and connect the corresponding (0V / 3V) alarm signal to the tip of the plug. The ring contact is not used for alarm notification.

If desired, you can also program an alarm delay with the software. More about that later.

Please note that the alarm input monitoring will be interrupted during a data transmission for its duration.

„Alarm 2": You can connect a second alarm signal to the Remotefox via the "Alarm 2" jack. The alarm monitoring here is completely independent of the alarm signal on the "Alarm 1" jack.
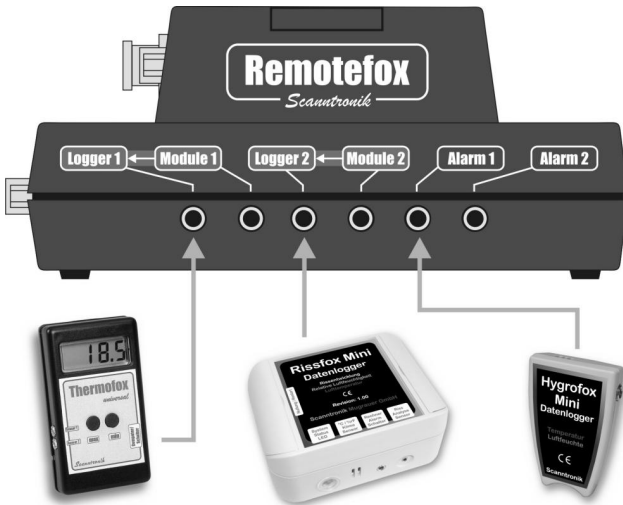
8. Connection examples for data loggers

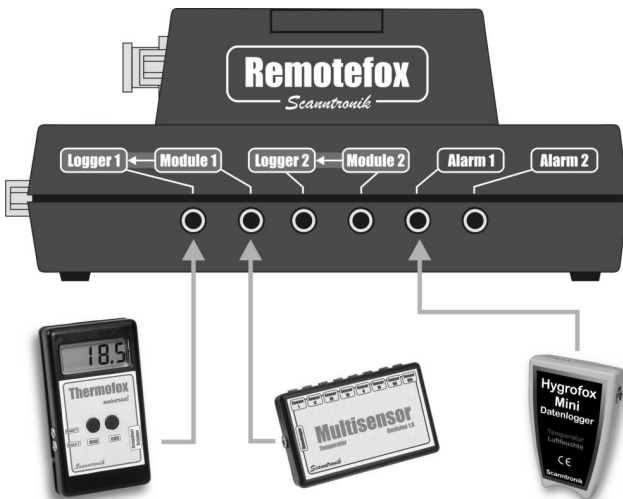Figure 7: Example 1 for connecting data loggers

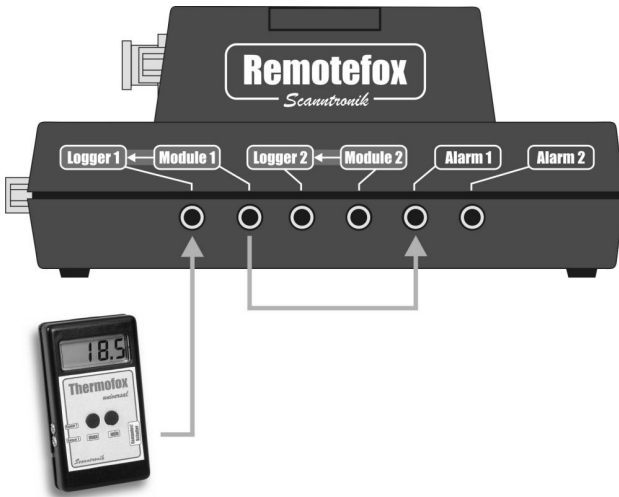Figure 8: Example 2 for connecting data loggers

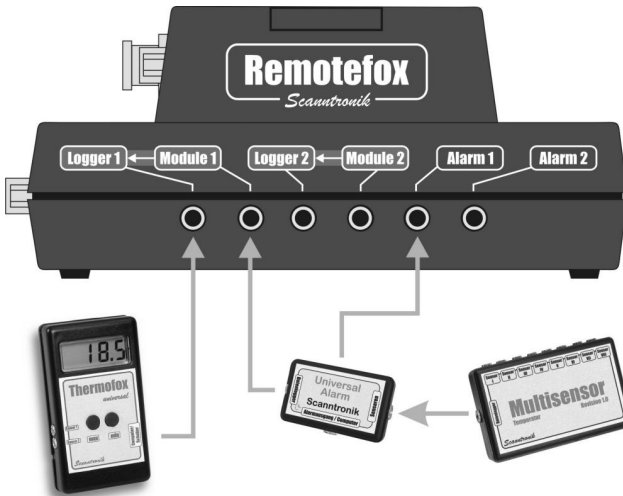Figure 9: Example 3 for connecting data loggers

Figure 10: Example 4 for connecting data loggers

9. Explanation of the connection examples

In connection **example 1** (see: Figure 7), a Thermofox Universal was connected to the "Logger 1" input and a Rissfox Mini to the "Logger 2" input of the Remotefox. The „Alarm 1" input of the system was connected to a Hygrofox Mini.

The Thermofox Universal records, e.g., the current temperature of two externally connected temperature sensors. Correspondent to the configuration of the Remotefox, the collected readings of the Thermofox Universal are sent at regular intervals per email.

The same applies to the Rissfox Mini on the "Logger 2" connection. Dependent on the current application, the data logger records, e.g., the exact movement of a building crack along with the related humidity and air temperature. If the next time point for the data transmission is reached, the Remotefox packs the collected Rissfox Mini data into an email and sends it to the stipulated email addresses.

The Hygrofox Mini connected to the "Alarm 1" input operates completely independent of the other two data loggers. In accordance with the alarm conditions specified in the Hygrofox Mini, the data logger triggers the Remotefox system to transmit an email and/or SMS during an alarm. Please note here that the collected Hygrofox Mini measurement data are not sent via email. *The "Alarm 1" input provides a pure alarm notification function.*

In connection **example 2** (see: Figure 8), a Thermofox Multisensor system is operated with the Remotefox. Without Remotefox, the Multi-sensor module would be connected directly to the Thermofox Universal. Make sure in this case that the universal bus of the Thermofox Universal has been activated for use with the Multisensor module.

As the Remotefox is to send the collected data of the Thermofox Universal in periodical intervals via email, the data logger must be

connected to the Remotefox through the "Logger 1" connection. The Multisensor module can now no longer be directly connected to the Thermofox Universal. For that reason, the Remotefox has the "Module 1" connection. The Multisensor module is simply connected to the "Module 1" jack, and is thus connected via the Remotefox with the Thermofox Universal.

Neither the "Logger 2" nor "Module 2" connections are used in connection example 2. A second Thermofox Multisensor system could be connected here, for example. The connection and function of the Hygrofox Mini corresponds to connection example 1.

In connection **example 3** (see: Figure 9: Example 3 for connecting data loggers), the Thermofox Universal on the "Logger 1" input is operated as a normal temperature data logger with an alarm output. Here, because of the alarm output, please make sure the universal bus of the Thermofox Universal has been deactivated. In this configuration, the alarm signal of the Thermofox Universal is available on the "Module 1" jack. If the "Module 1" jack is now connected with the "Alarm 1" input, the Remotefox will always send an alarm email and/or alarm SMS whenever the Thermofox Universal triggers an alarm.

The "Logger 2", "Module 2" and "Alarm 2" connections are not used in connection example 3.

The final connection **example 4** (see: Figure 10) depicts one of the most extensive Remotefox configurations. For one, the collected measurement data of a Thermofox Multisensor system will be periodically sent via email, for another, an alarm message will be generated if one of the up to eight temperature sensors of the Multisensor module infringes on a pre-defined alarm condition.

To accomplish that, the Thermofox Universal data logger is connected to the "Logger 1" input of the Remotefox as always. Similar to connection example 2, the Multisensor module is connected to the Remotefox

through the "Module 1" jack. That is not made directly, but rather through the Universal Alarm add-on module. It facilitates the continuous monitoring of all temperature sensors connected to the Multisensor module. If one of the temperature sensors infringes on a limit programmed into the Universal Alarm beforehand, the Universal Alarm generates an alarm signal that goes via the "Alarm 1" jack directly to the Remotefox. The Remotefox in turn then sends an alarm email and/or alarm SMS.

The "Logger 2", "Module 2" and "Alarm 2" connections are not used in connection example 4.

To be able to configure the Remotefox as desired for the next measurement task, the PC software needs to be installed on your computer. With the software, you can, for example, define the rhythm in which the Remotefox sends the measurement data of the connected data logger per email.

The next chapter deals with the installation of the PC software for that reason.

10. Installing the PC software

Start your computer and wait until the operating system (e.g. Microsoft Windows® XP) is completely loaded. This process can take some minutes. If your computer was already switched on, please close all other applications to prevent a possible conflict during installation. You can now see the operating desktop.

This can involve one of the following operating systems: Microsoft Windows® 98, NT, Me, 2000, XP or Vista. Later Microsoft operating systems will also be supported. Insert the CD with the SoftFOX software into your CD drive. Normally, the installation assistant then starts. It will guide you through the following installation.

Figure 11: Desktop

If it does not start, the automatic start feature in your CD drive has probably been deactivated. In that case double click on the "My Computer" symbol, which then opens. Now double click on the symbol of the CD drive containing the SoftFOX software. The installation assistant starts.

Figure 12: Assistant for installing the PC software

Follow the instructions on the monitor. First, you need to define a directory in which the software is to be installed. After that, assign a name for the folder which will be created in your start menu during the installation process. In the last installation step, you can decide if you want a direct shortcut on the desktop and in the start bar. Before the installation starts, you are once more provided a compilation of the installation options you have chosen.

After completing the installation, start the "SoftFOX" software using the new entry in the start menu. The program welcome screen opens. Press the "O.K." button to start working with the software.

In these operating instructions, how to proceed with working with the Remotefox is explained exactly and an overview of the main features of the software is presented.
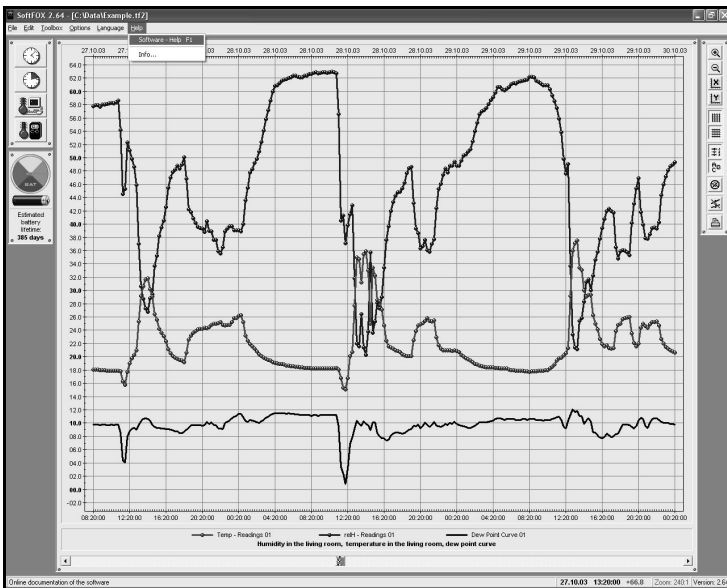

Figure 13: Starting the online help function

To get more information on all the software's features and capabilities, please open the program's online help section. To do that either press the

"F1" key on your keyboard or use the "Software – Help" menu item in the "Help" menu.

11. Configuring the PC software

Before the PC software can work together with your Remotefox, you need to connect the system to your computer. Make the connection through the PC interface cable, which is included in the scope of delivery of the SoftFOX software. This could be either a USB or an RS232 interface cable.

Please note that when using a USB interface cable, you must install it on your computer before the first use. To accomplish that, please follow the installation instructions accompanying the USB interface cable.

Plug the interface cable into a free USB port (for the USB interface cable) or RS232 port (for the RS232 interface cable) of your PC and connect the other end of the cable to your Remotefox.
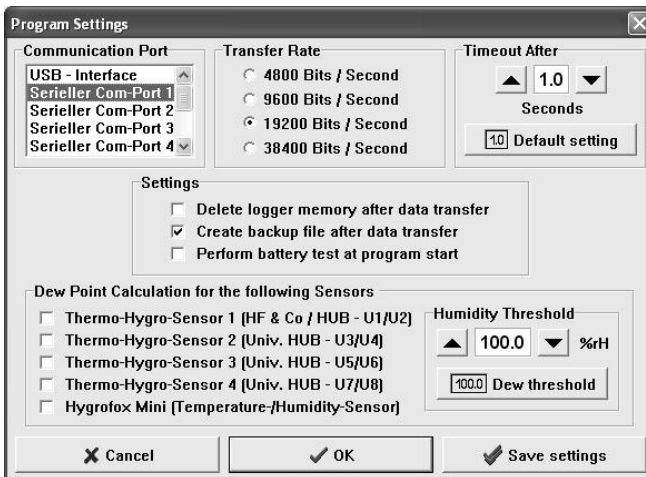

Figure 14: Configuration of the interface

Now, the PC software needs to be told which port is used to connect the Remotefox to the PC. That is done in the "Program Settings…" menu item in the "Options" menu. Select the corresponding port in the "Communication Port" box.

Then save the settings with the "Save settings" button. By doing so, you only have to assign the port one single time. The PC software is now ready to configure the Remotefox.

12.   Remotefox software tutorial

The Remotefox is configured with the "Configure Remotefox…" menu item in the "Options" menu. Please make sure, that the battery pack is connected to the Remotefox and that the system is connected properly to the computer.

After selecting the menu item, the entire configuration of the Remotefox is downloaded to the PC. During this process, a small information window appears to indicate the progress. When all the configuration data have been downloaded, the main screen for configuring the Remotefox hardware opens.

The configuration of the Remotefox is subdivided into several sections, which logically group the various functions and parameters of the system. Concretely, you have the following six tabs available: „**General**", "**Modem and SMTP**", "**eMail**", "**SMS**", "**Alarm**" and "**Error Memory**".

The individual tabs are handled on the following pages to provide you with the most detailed possible explanation of the various functions and parameters.

Please carefully read the explanations as they are decisive in enabling flawless and smooth work with the Remotefox.

13. The "General" section

The following illustration shows all the information and settings you will find on the "General" page.
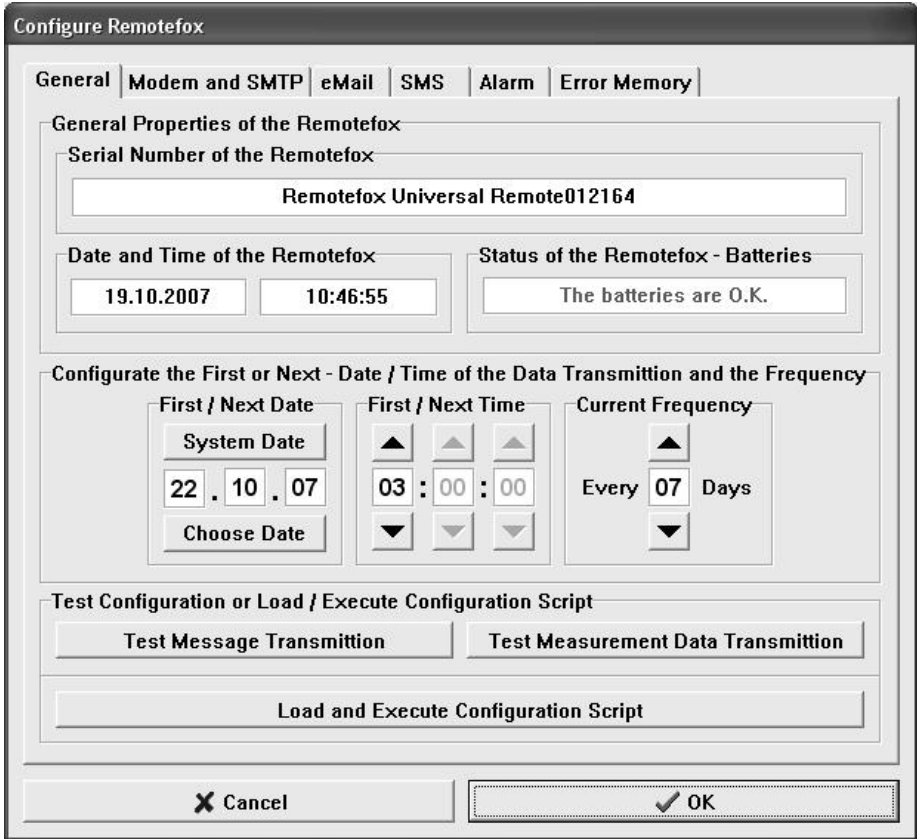

Figure 15: "General" tab in the Remotefox settings

"Serial Number of the Remotefox": The serial number of the Remotefox currently connected to the computer is shown in this box. The serial number provides information about the integrated firmware and the system production time.

"Date and Time of the Remotefox": For the Remotefox to be able to transmit the collected measurement data of the connected data loggers in periodic intervals it needs to have a sense of time. That is why the system has an integrated real-time clock and a real-time calendar. Both boxes show the date and time with which Remotefox is currently working. If the system has just started to be supplied with current, the values here are certainly incorrect.

The real-time clock and real-time calendar are completely automatically synchronized with your computer every time you transmit a new configuration to the Remotefox using the "OK" button in the bottom right corner. Therefore, you do not need to explicitly worry about the system clock.

"Status of the Remotefox - Batteries": In this box you can see whether the batteries connected to the Remotefox are still supplying sufficient power. If the batteries do get empty, please replace them as soon as possible to prevent a battery failure. The battery voltage is automatically checked every full hour.

If you have connected a power supply unit to the Remotefox, it takes care of supplying the system with energy. In this case, the power supply unit voltage rather than the voltage from the batteries is checked at regular intervals.

Under all circumstances please make sure that fresh batteries are <u>always</u> connected to the Remotefox.

"Next Date", "Next Time" and "Current Frequency": Use these three parameters to determine the next time along with the rhythm in which the measurement data of the connected data loggers are sent via email. Use the two buttons, "System Date" and "Choose Date" to define the day on which the next transmission is to take place. The precise time point is determined using the two arrows in the "Next Time" section. The data transmission is always at the full hour. It is recommended to choose a time early in the morning (e.g. 3 am). At that time, both the mobile phone network and the Internet are not very active. In the "Current Frequency"

section, you can set the daily rhythm in which the measurement data are to be transmitted. After a successful data transmission, the date for the next time ("Next Date") is automatically raised.

"Test Message Transmission": You can perform a test message transmission with this button. Messages are, for example, alarm notification from the Remotefox "Alarm 1" and "Alarm 2" inputs, a "Empty Battery" message or similar. During the test, a special test message is generated, which can be clearly recognised as such.

Please note that this function can only be used sensibly and flawlessly after the necessary settings have been made in the "Modem and SMTP", "eMail" and "SMS" sections.

After you have pressed the button, all settings are transmitted to the Remotefox and the GPRS modem attempts sending a message. This process can take several minutes, during which you cannot access the Remotefox with the PC. During this time, the GPRS modem indicates that a message is being sent with the intermittent flashing of the middle communication LED.

Dependent on the settings in the "eMail" and "SMS" sections, the test message is sent per email and/or SMS.

"Test Measurement Data Transmission": You can use this button to test the regular transmission of the collected data logger measurement data.

Please note that this function can likewise only be used sensibly and flawlessly after the necessary settings have been made in the "Modem and SMTP", "eMail" and "SMS" sections.

After you have pressed the button, all settings are transmitted to the Remotefox and the GPRS modem attempts sending the collected measurement data of the connected data logger systems per email to all recipients. This process can take up to 15 minutes (dependent on the data volume), during which you cannot access the Remotefox with the PC.

During this time, the GPRS modem indicates that an email is being sent with the intermittent flashing of the middle communication LED.

The measurement data to be transmitted from which data logger(s) (only "Logger 1", or "Logger 2" in addition) depend here on the settings in the "eMail" section.

"Load and Execute Configuration Script": With this button, you have access to flexible configuration scripts with which the Remotefox can be adjusted in more depth. Among other things, via a special script the error memory of the system can be deleted or the factory settings can be restored. Please use this function only after speaking with one of our service employees.

14.   The "Modem and SMTP" section

The following illustration shows all the information and settings you will find on the "Modem and SMTP" page.

"PIN for the used SIM Card": The PIN belonging to the SIM card inserted in the GPRS modem is entered into this box. As previously explained in the "Configuring the SIM Card" chapter, we recommend setting the SIM card PIN to "0000" before using it. As the Remotefox PIN is factory set to "0000", doing so means there will never be a false PIN transmission or even a SIM card lockout.

If the SIM card inserted still gets blocked anyway, you can reset it in any mobile phone with the help of the Super-PIN (PUK). To do that, please see also "Configuring the SIM Card".
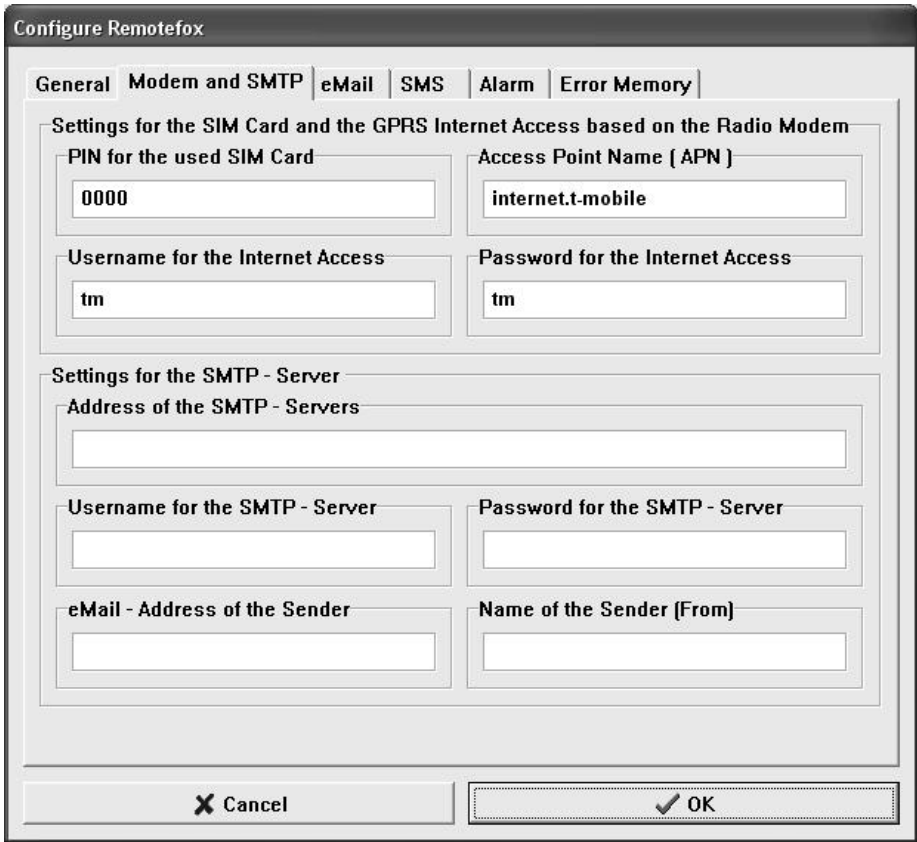
Figure 16: "Modem and SMTP" tab in the Remotefox settings

"Access Point Name (APN)": The APN is the most important parameter for successfully establishing a Internet connection through the mobile phone network. It more or less represents the "conversational partner" that the system needs to "call" to establish an Internet connection. The APN is different for every network provider and must be absolutely correctly entered into this box (including all special characters). In some cases, you also need a **username and password for the Internet access**. Please contact your provider for the exact APN, username and password. Please note that, if the APN, username or password is incorrect, the Remotefox cannot send any measurement data.

For the sake of simplicity, we have listed the APNs of recommended network providers in the table below. However, as they might someday change, it makes sense to get information from the corresponding provider in addition.

Network Provider	Access Point Name (APN)
T – Mobile	internet.t-mobile
Vodafone	web.vodafone.de
O$_2$ – Contract Clients	surfo2
O$_2$ – Prepaid Customers	pinternet.interkom.de

Table 2: APNs of various network providers (November 2013)

"Address of the SMTP - Server": For the Remotefox to be able to send messages and measurement data of the data loggers, the system needs an Internet mailbox provider (SMTP server), to which it can transfer the emails that are to be sent. One of many Internet mailbox providers is e.g. DomainFactory (www.df.eu) which has been intensively tested with the Remotefox system. Please note, that the Remotefox sends all emails unencrypted and that the system does not support SSL-/TLS-encryption.

To preclude timeout and login problems, we recommend that you open a mailbox account at the above-mentioned provider. That is uncomplicated and can be taken care of with a couple of mouse clicks on the respective provider's Internet site. In any case, you should check your mailbox provider: first let both connected data logger memories completely fill up (up to 64,000 readings each) and then test the transmission of the measurement data by initiating a data transfer.

Internet Mailbox Provider	SMTP – Server – Address
DomainFactory	smtp.*YourDomain*

Table 3: Example of a SMTP server address (November 2013)

When opening a mailbox account with a mailbox provider (e.g. DomainFactory), you will need to decide on an *email address*, a u*ser*

name and a p*assword*. The email address must be used later as the sender address in order to send the collected measurement data of the connected data logger systems. The user name usually results from the email address chosen (e.g., user name = email address). The password can usually be freely chosen.

"User name for the SMTP - Server": Enter the user name into this box for the Internet mailbox you want to use.

"Password for the SMTP - Server": Enter the password into this box for the Internet mailbox you want to use.

"eMail – Address of the Sender": Enter the email address into this box for the Internet mailbox you want to use. This address is used later as the sender address in the emails that will be sent. Please note that many mailbox providers suppress sending emails with a sender address that does not belong to the provider.

"Name of the Sender": As sender addresses (such as "wh@abc.de") are often not especially meaningful, you can stipulate a plaintext name for the sender in this box (e.g. "Wilhelm Huber <wh@abc.de>"). This name will appear later in the recipients email program in the "Sender" column or in the "From" column next to the email address. Please also add the sender email address after the plaintext name using angle brackets ("< … >"). By this means, a clear correlation between the plaintext name and the email address of the sender is given.

So that you don't need to deal with registering with an Internet mailbox provider right from the start, you can find the access data to a special public mailbox in the following table. We specifically setup this mailbox for test purposes, so please feel free to use it for a *short time*.

To avoid problems caused by blocking one another, we urgently request that you set up your own mailbox with the mentioned provider after performing the first tests.

Address of the SMTP - Server:
Please contact us!

User name for the SMTP - Server:
Please contact us!

Password for the SMTP - Server:
Please contact us!

eMail – Address of the Sender:
Please contact us!

Name of the Sender:
Please contact us!

Table 4: Access data for the test mailbox (November 2013)

15. The "eMail" section

The following illustration shows all the information and settings you will find on the "eMail" page.

„The Following eMails will be Transmitted": In this section, you can stipulate which events of the Remotefox you want to be informed about *via email*.

"Readings (periodically)": To be exact, this checkbox does not really represent an event, but rather the periodic transmission of the collected data logger measurements.

You must activate this checkbox if you want to receive the measurement data of the connected data logger systems via email in the programmed rhythm.

"Alarm on Input 1": If you activate this checkbox, you will always receive a message via email if the Remotefox hardware detects an alarm signal at the "Alarm 1" input.

Figure 17: "eMail" tab in the Remotefox settings

"Alarm on Input 2": If you activate this checkbox, you will always receive a message via email if the Remotefox hardware detects an alarm signal at the "Alarm 2" input.
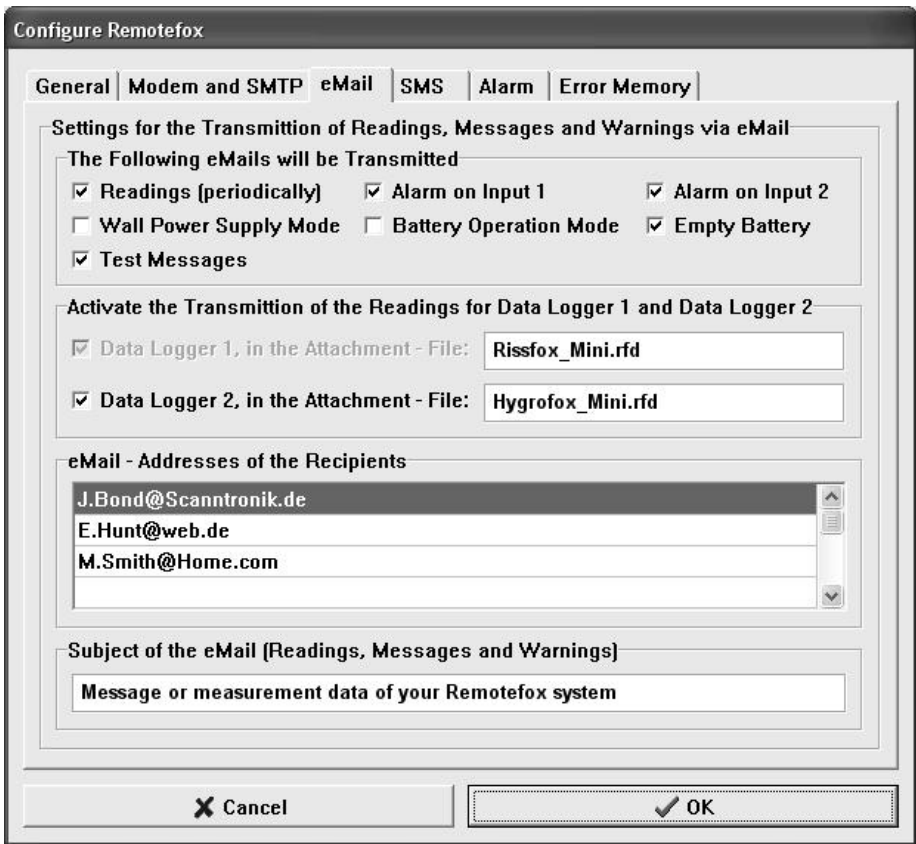
"Wall Power Supply Mode": This checkbox is only interesting to you if you are running the Remotefox with a power supply unit in addition to the battery pack. If the checkbox is active, you will be informed at the end of a power failure that the Remotefox is no longer receiving power from the battery pack, but rather has switched back to the external power supply unit.

"Battery Operation Mode": This checkbox is only interesting to you if you are running the Remotefox with a power supply unit in addition to the battery pack. If the checkbox is active, you will be informed at the start of a power failure that the Remotefox is no longer receiving power from the external power supply unit, but rather has switched over to the battery pack.

"Empty Battery": If this checkbox is active, you will receive a warning message if the voltage of the connected batteries has fallen below a defined minimum value. If that happens, please replace the batteries as soon as possible to avoid a system failure.

"Test Messages": And finally, you can stipulate with activating this checkbox as to whether a test message should be sent via email when requested.

"Data Logger 1, in the Attachment - File: …": If this checkbox is active, the measurement data of the first data logger ("Logger 1") will be sent via email attachment to the defined recipients whenever a transmission point is reached. The name of the attachment can be specified in the text box to the right of the function. Name the file in a manner that you can immediately recognise the corresponding data logger later. Please make sure that the file name ends with the ".rfd" ending. That allows the SoftFOX software to automatically detect and list the measurement files later.

"Data Logger 2, in the Attachment - File: …": If this checkbox is active, the measurement data of the second data logger ("Logger 2") will be sent via email attachment to the defined recipients whenever a transmission point is reached. The name of the attachment can be specified in the text box to the right of the function. Name the file in a manner that you can immediately recognise the data logger later. Please make sure that the file name ends with the ".rfd" ending. That allows the SoftFOX software to automatically detect and list the measurement files later.

"eMail - Addresses of the Recipients": In this list, up to ten email addresses of recipients can be stated who will receive both the measurement data and warnings from the Remotefox system. Please note that these must be valid email addresses and that you fill in the boxes box-by-box without any gaps.

"Subject of the eMail (Readings, Messages and Warnings)": All emails that you receive from your Remotefox system have a subject, which will be displayed in your email program. To facilitate immediate recognition that the email has come from your Remotefox, you can define the subject in this text box freely.

16.   The "SMS" section

The following illustration shows all the information and settings you will find on the "SMS" page.

"The Following SMS - Notifications will be Transmitted": In this section, you can stipulate which events of the Remotefox you want to be informed about *via SMS*.

"Test Messages", „Alarm on Input 1", … : The checkboxes you can find in this section are corresponding one to one to those in the "eMail" tab. Opposed to the "eMail" tab, the related messages are not sent to the recipients via email, however, but rather per SMS. That facilitates reacting considerably faster to special alarm situations, failures, empty batteries and similar.

"Cellular Phone Numbers of the Recipients": In this list you can specify up to ten cellular phone numbers that will receive the Remotefox warning messages by SMS. Please note that these must be valid cellular phone numbers and that you fill in the boxes box-by-box without any gaps.
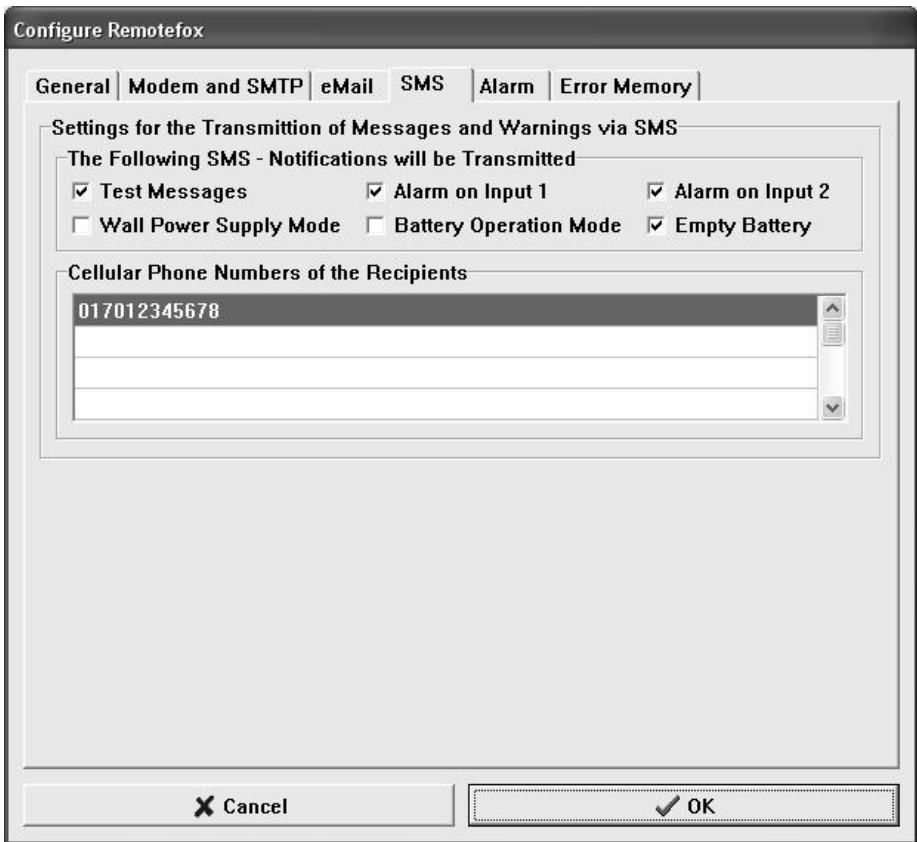
Figure 18: "SMS" tab in the Remotefox settings

17. The "Alarm" section

The following illustration shows all the information and settings you will find on the "Alarm" page.

"Message for the "Alarm on Input 1" – Event": Enter a text message into this box which will be sent via email and/or SMS when an alarm signal is detected at the "Alarm 1" input of the Remotefox hardware (see also "eMail" and "SMS" tabs).

Figure 19: "Alarm" tab in the Remotefox settings

"Message for the "Alarm on Input 2" – Event": Enter a text message into this box which will be sent via email and/or SMS when an alarm signal is detected at the "Alarm 2" input of the Remotefox hardware (see also "eMail" and "SMS" tabs).

"Alarm Delay": Use these three boxes (hours : minutes : seconds) to set the duration an alarm signal must be applied before the Remotefox sends a warning message. Alarm signals that are applied for a time shorter than this (e.g., short temperature fluctuations in a refrigerator when opening the door) will be ignored.

18. The "Error Memory" section

The following illustration shows all the information and settings you will find on the "Error Memory" page.
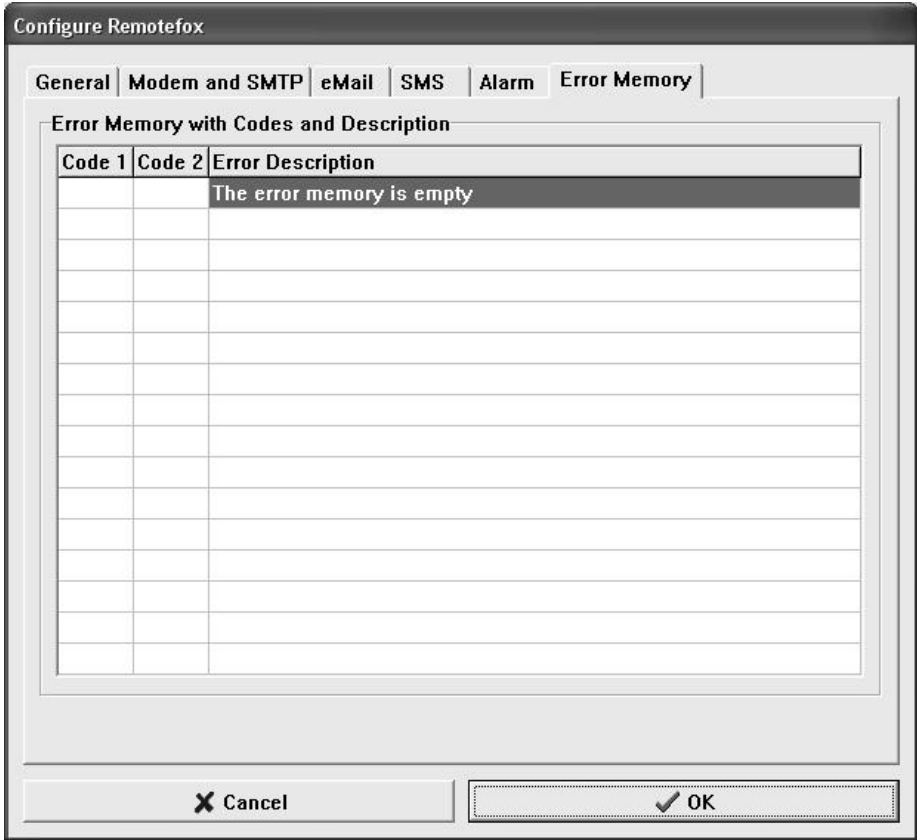

Figure 20: "Error Memory" tab in the Remotefox settings

On the "Error Memory" page, the most recent 16 errors, problems or malfunctions are listed that the Remotefox hardware detected during operation. An entry in the error memory always consists of two error codes (Code 1 and Code 2) plus a short error description.

In most cases, the problems listed here are due to incorrect settings in the "Modem and SMTP", "eMail" or "SMS" tabs. However sometimes, these could also point to malfunctions in the cellular phone connection or the Internet access.

19. Finishing the configuration

After you have made all necessary settings on the six tabs, the configuration data are transmitted to the Remotefox hardware by clicking on the "OK" button on the bottom right of the screen.

During this process, a small information window appears to indicate the programming progress. When all configuration data have been transmitted, the Remotefox system is ready for operation and you can unplug the computer.

20. Testing the Remotefox system

Before each deployment, the Remotefox should be tested directly at the application site. Make sure all data loggers are connected correctly to the system and that the Remotefox has been configured according to your needs. Check the batteries and the optional, external power supply unit.

For the system to be able to function reliably, it must be set up in a location with good cellular phone reception. Test the reception by using a cellular phone. If necessary, special antennas and extension lines can be supplied. The company "Scanntronik Mugrauer GmbH" disclaims any liability for damages arising from non-transmitted emails or SMSs.

The Remotefox hardware can quickly and simply be tested via two different ways:

- When the computer is connected and the SoftFOX software is running, you can use the two buttons "**Test Message Transmission**" and **"Test Measurement Data Transmission"**

on the **"General"** tab in the **"Options/Configure Remotefox…"** menu item. Please refer to the chapter 13 for more detailed information on these two functions.

- When the computer has been unplugged, you can use the enclosed **activation magnet** to test the Remotefox hardware. To do so, hold the magnet for approx. 5 seconds parallel to the housing wall on the control electronics status LED (see marking in Figure 4). The LED will illuminate for approx. 1 second. When you remove the magnet now, a **test message** is sent. If the magnet is not removed, but held for another approx. 3 seconds on the status LED, the LED illuminates a second time for approx. 1 second. If you remove the magnet now, the **collected measurement data** of the connected data loggers are transmitted.

Please note that a function test of the Remotefox system can take up to 15 minutes (depending on the volume of data to be sent). During this time, you cannot access the system with the PC. The GPRS modem indicates the data transmission with the intermittent flashing of the middle LED at the top of the housing.

If you have problems while testing the Remotefox hardware, you can subsequently view the most recent system error messages on the **"Error Memory"** tab in the **"Options / Configure Remotefox…"** menu item using the PC software. That allows most problems to be quickly localised and solved.

21. Asynchronous data querying via call

If you supply the Remotefox with power <u>in addition</u> to the normal batteries with an external power supply unit, the GPRS modem does not switch off between two data transmissions. That means you are always able to reach the system by telephone. But why should you want to call your Remotefox?

Simple to explain: Whenever you urgently require your measurement data, you can request the Remotefox to start a data transmission with a simple phone call at any time. To do that, just call the telephone number of the system, let it ring twice, and hang up again. If you hear a busy (occupied) signal or a special operator tone/message, everything is fine. The call wakes up the Remotefox so to speak and immediately starts transmitting your measurement data. That does not influence the regular data transmission.

Please note that this feature is only available with an additionally connected external power supply unit. Furthermore, you should allow the Remotefox sufficient time (at least 15 minutes) to transmit your measurement data. Do not get impatient and interrupt the system with additional calls.

Please refer to the chapter 5 in these instructions for more information on asynchronous data querying.

22. Importing the received data

After the Remotefox system has sent you the measurement data, you can retrieve them with any type of mail program you like. The following Figure 21 shows an example for received measurement data using the Microsoft Outlook ™ program.

Save the received attachment (here: „Hygrofox_Mini.rfd") in a folder on your hard drive and memorize the directory for later.

Open the SoftFOX software and confirm the welcome screen with "OK". Click in the **"File"** menu on the **"Import Remotefox – Data…"** menu item. Switch to the directory with the attachment and import the file (here: „Hygrofox_Mini.rfd").
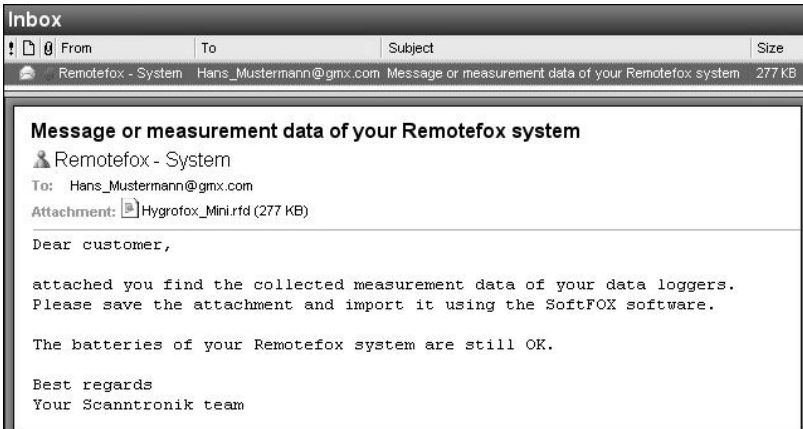
Figure 21: Received measurement data in Microsoft Outlook ™

The SoftFOX software now imports the measurement data exactly as if the corresponding data logger would be connected directly to your computer. The following illustration shows the attachment file import process for the collected measurement data.
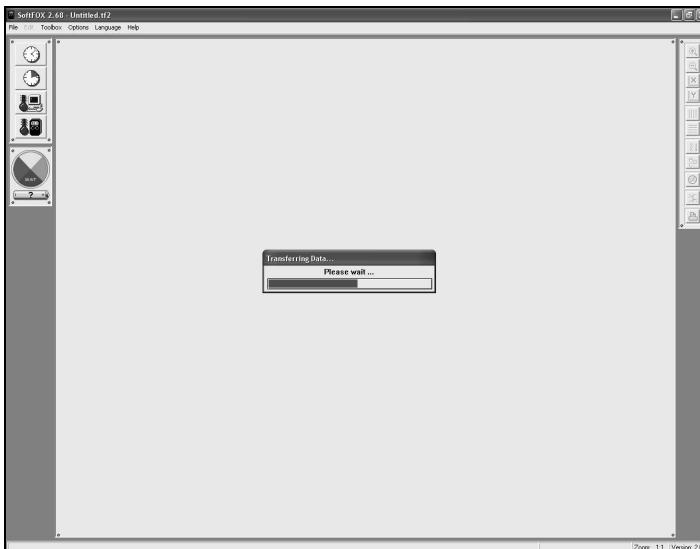

Figure 22: Importing the attachment file containing the readings

Immediately after the import process, the readings are presented in a diagram. With the help of the diagram tools at the right of the diagram window, you can change the appearance of the readings. To save the imported data, use the menu item "Save Project As" in the "File" menu.
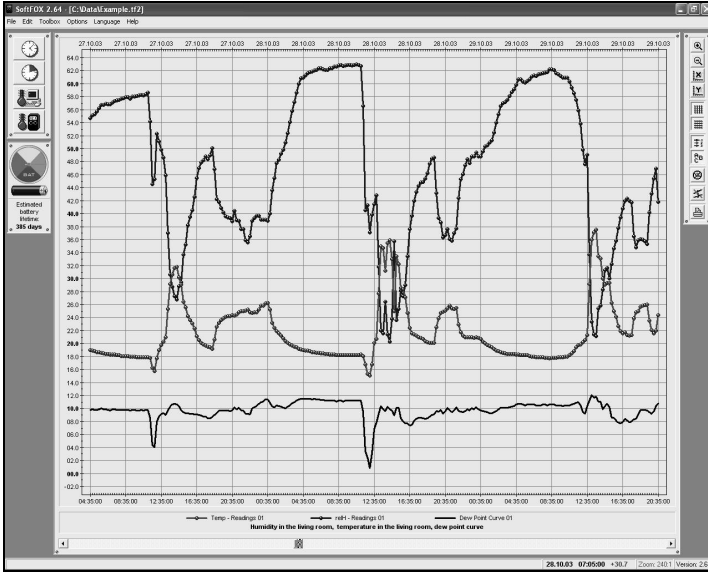

Figure 23: Imported measurement data

For more information on operating the software and adapting the diagram, please refer to the online help function.

23. Remotefox and event data loggers

If you have connected one or more event data loggers (such as the Eventfox Mini or Eventfox Maxi) to the Remotefox, the related event sensors are connected to the system's "Module 1" and "Module 2" inputs. Importing the measurement data is just as easy as the process described in chapter 22. However, do not open the SoftFOX software to import the attachment; rather, use the EventFOX software. You can find the corresponding menu item for importing data likewise in the **"File"** menu.

24. Information, guarantee and liability

While the system is operating, data and GSM short message service (SMS) messages are sent, which incurs costs.

When using a prepaid SIM card, please ensure enough credit is available to be able to send the emails and SMSs.

The company "Scanntronik Mugrauer GmbH" grants a 24 months guarantee on all systems.

Recalibration and battery replacement are not included in the scope of the guarantee.

The company "Scanntronik Mugrauer GmbH" disclaims any liability for:

- Damages arising from non-transmitted emails and/or SMSs

- Direct and/or indirect damages caused by using the systems

- Damages caused by improper application or use of the systems

Notes on the Remotefox

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