ESCORT REDi

ESCORT REDi Wireless Receiver

EA-RI-8 and EA-RI-9

User Manual

Thank you for purchasing an ESCORT dls product. Please read this user manual before using this unit.

www.escortdls.com

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1 - Introduction

1.1 – Safety Precautions

a. Please be sure to follow the instructions, warnings and notices specified within this document to avoid malfunction.

b. The REDi device's IP rating is 54 and therefore is protected against a limited amount of dust and vertically falling drops of water. Users should not use the device in any environments where moisture could enter the case of the device. If the REDi unit requires cleaning ESCORT Data Logging Systems recommends users wipe the device with a clean dry cloth and mild detergent.

c. ESCORT Data Logging Systems does not recommend the use of any AC adapter other than those specified. The use of an unspecified AC adapter could cause your REDi device to malfunction or result in personal injury.

d. If your REDi device is not to be used for prolonged periods of time, remove the batteries to prevent loss of battery life and possible battery leakages that may damage the device.

e. Force should never be applied to this device.

f. Your REDi device should only be operated within the parameters specified within this manual.

g. Never attempt to recharge non-rechargeable batteries.

h. Never attempt to repair this device. If you experience any problems with this device, please contact your local distributor to arrange repair.

i. Your REDi has a sensitive antenna and at no time should you attempt to tamper with, turn or remove the antenna. Interactions of this nature could result in communication failure between your REDi and other wireless devices.

j. Use of the protective rubber boot is recommended.

k. Variations of data transfer distance can occur due to interference.

1.2 – About REDi

The REDi is a portable, handheld device that facilitates radio communication with Wireless Mini loggers. The REDi enables a user to gather recorded data from selected loggers and to collect the log data from many remote sites before transferring this data to a PC. In addition, the REDi has the ability to display statistics about the data (including readings out of specification) and to restart loggers.

The unit is physically arranged in an easy to hold handheld plastic case which is battery powered and contains a large liquid crystal display (160 x 160 bitmap) and 7 key keyboard. A communications connector, which allows the REDi to be connected to a PC, is supplied with the unit and can be mounted at the top of the unit.

The REDi is menu based. To trigger actions and display data the user must select a menu item by using the up / down arrow keys to move a highlight bar over that option then select it using the Select key (OK button). The Select key is also used to toggle between states and to return to a higher level menu.

The REDi has a power down key (bottom left hand button) which will immediately put the unit into sleep mode, as well as an escape key which will return the screen to an earlier menu (generally Menu 1).

1.3 – Package Contents

Your REDi package contains the following items:

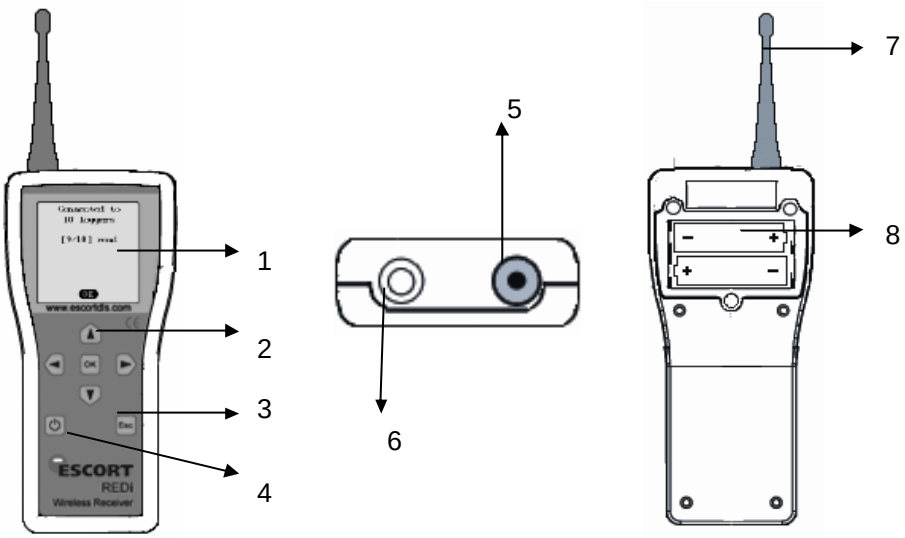
1x REDi Device

1x Serial port connector

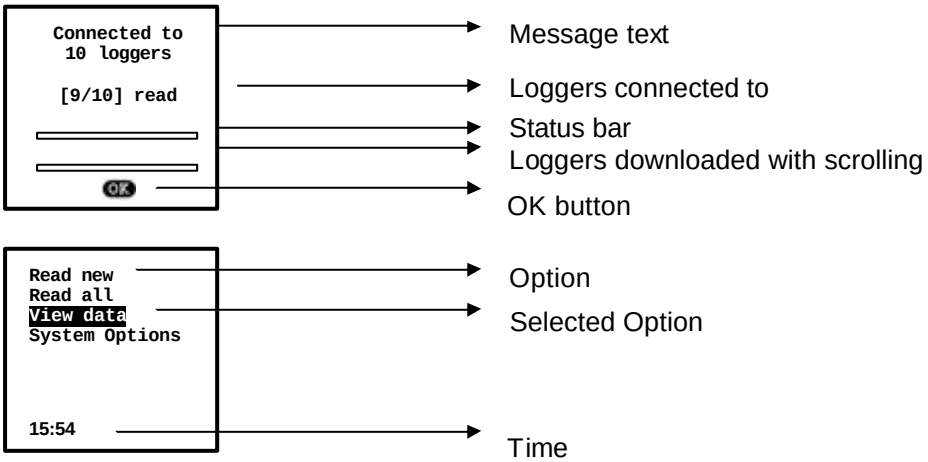
1x REDi user manual

2x AA batteries (re-chargeable)

1.4 – Part Descriptions



1. Liquid-Crystal-Display
2. Keypad and OK button
3. Escape button (Esc)
4. Power button
5. Antenna (top view)
6. Interface Connector
7. Antenna (side view)
8. Battery compartment



2 – Getting started

2.1 – Installing Batteries

Your REDi requires two AA batteries to operate. You can use either alkaline or re-chargeable (for example, NiCd or NiMH) batteries, however please remember that you must **never attempt to charge alkaline batteries**.

The two AA batteries delivered with your REDi are rechargeable. They have been installed for your convenience.

To install new batteries first remove the battery panel located at the top of back of your REDi device (see figure 2.0). The REDi battery panel is fastened with three small Philips head screws and you will require a Philips screwdriver to remove these.

Insert the two batteries with the correct polarity (as marked inside the compartment).

Before replacing the lid, ensure that the batteries are fully inserted. If the batteries are not inserted correctly, the lid will not fit properly, and could consequently damage the seal or the batteries.

Carefully place the cover of the battery compartment back on, and gently tighten the three screws.

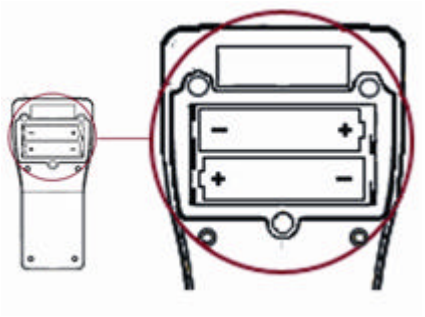


Figure 2.0 (REDi battery compartment)

If you switch to alkaline batteries, please remember to change the corresponding option in the System Options to “Rechargeable N”. See chapter 6.3 for more.

Important – To ensure that the REDi device functions to an optimum level for the duration required, it is vital that the REDi device is recharged regularly, preferably at the end of each assignment.

2.2 – Turning on/off your REDi

There are several ways in which you can switch your REDi device on and off. To turn the device on, simply press any one of the REDi keyboard keys. The Unit will briefly show ‘System Info’ (see chapter 4.7) and then display the ‘Main Menu’.

To switch your REDi device off you can either press the on/off button located at bottom left of the REDi interface (see figure 2.1). If you would prefer to shut your REDi device down via the menu screens you can do so by selecting ‘System Options’ and then ‘Shut Down’ (see figure 2.2).

For information regarding REDi’s ‘AutoOff’ function refer to chapter 4 ‘System Options’ of the REDi user manual.

Press the power button to turn on and/or off.

Figure 2.1 (REDi Power Button)

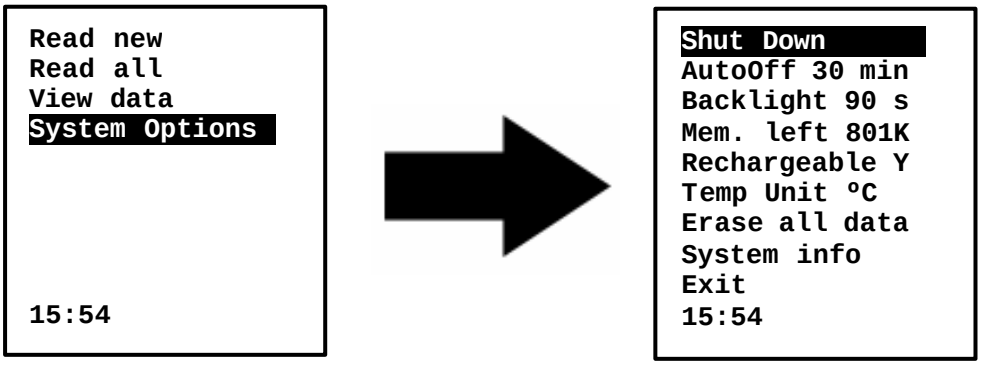


Figure 2.2 (REDi Shut Down Screenshots)

Your REDi will switch on automatically when it is connected to a serial port (COM port) of your PC, or to mains power (for recharging the batteries).

2.3 – Entering Password (Code)

Your REDi device has the ability to be Password protected. Each REDi device is capable of having one password allocated. The REDi device defines the password as a 'Code' (see figure 2.3). REDi password is setup using ESCORT Console software. To learn more about how to password protect your REDi device please refer to the Software chapter (chapt er 5) of this user manual.

If your REDi device has the password function enabled but you have not assigned a password using ESCORT Console the default password is '0000' (see figure 2.3).

Once a password has been assigned to your REDi device, a screen will be displayed upon start up that prompts users to enter their password (see figure 2.3).

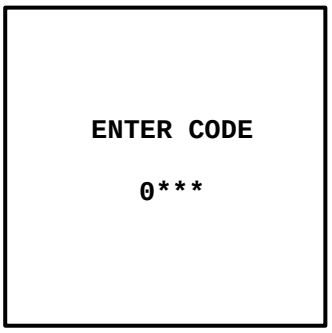


Figure 2.3 (Enter Password Screenshot)

To enter your password use the up and down arrow keys on the key pad to change the numbers (from 0 to 9) and the left and right arrow keys to move to the next. Once you have entered the correct password click the 'OK' key located in the middle of the arrow keys on the keypad (see figure 2.4).

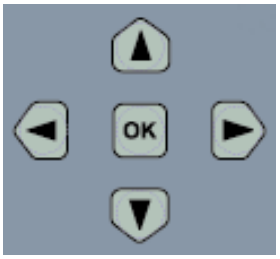


Figure 2.4 (REDi Keypad)

If an invalid password is entered, your REDi device will display the message '* INVALID *' (see figure 2.5) and shut down immediately. To make another attempt at entering a password, press any key to restart your REDi device and re-enter your four digit password as per the instructions above.

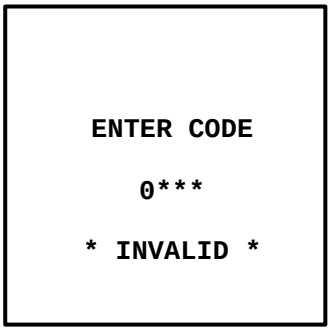


Figure 2.5 (Invalid Password screenshot)

Once the correct password has been entered, your REDi device will proceed to the 'System Info' (see chapter 4.7) and after that automatically to the 'Main Menu' (see figure 2.6). You will then be able to access all of the menus and functions that your REDi device offers.

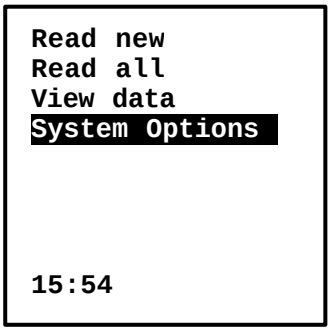


Figure 2.6 (REDi Main Screen)

2.4 – Setting REDi Date and Time

The REDi clock is located in the bottom left of the REDi display (see figure 2.5). For your convenience your REDi device has been designed to automatically configure its date and time to your PC's date and time. This takes place when using either the program and configure or the download function in ESCORT Console.

2.5 – Downloading Software

In order to access your REDi using your PC, you need to download ESCORT Console software from the Escort Data Logging Systems website (www.escortdls.com). The standard version of ESCORT Console software is free to download and use.

However, if you require advanced features (such as multi-graph) it is recommended that you purchase 'ESCORT Console Professional'. To learn more about ESCORT Console Professional, please contact your local distributor, or refer to the explanation on our website.

3 – REDi Functions

3.1 – Downloading Wireless Data Loggers

The REDi uses a short wave radio signal to communicate with Wireless Mini data loggers (MI-IN-D-2-LR8, MI-OE-D-2-LR8, MI-IN-D-LR9 and MI-OE-D-LR9). Radio communication depends on communication distance, interference by other objects and other radio waves. Metal and water (rain) especially can disturb the signal. Further, both the orientation of the REDi and the logger antenna strongly influence the quality of the communication. There should be at least 0.5m of clear space around the antenna. To improve communication, get closer to the logger, remove obstacles in the way or metal in the surrounding area, and hold the REDi at different angles for each attempt.

The first screen, referred to as the main menu screen, is the first visible menu (which follows the System Info, see 4.7) after initiating your REDi device and allows for two download options 'Read New' and Read All'.

3.1.1 - Read New

The 'Read New' option allows you to locate and download loggers that have not previously been downloaded by a specific REDi unit. The highlight bar automatically defaults to the first option (Read new) on the main menu.

If you select 'Read New' and press 'OK', the next screen displayed is the 'search' screen. REDi communicates with the loggers in range and checks their serial numbers against all records already in the REDi memory. Connection will only be established with loggers that cannot be found in the REDi memory already. The device then displays the 'Connected to loggers' screen (see figure 3.1). Once the REDi has downloaded all data of new loggers, you are given the option to either view the data just downloaded with 'View recent', or view all of the data stored in the REDi memory (see 3.2.1 and 3.2.2) using 'View all'. 'Exit' will take you back to the main menu.

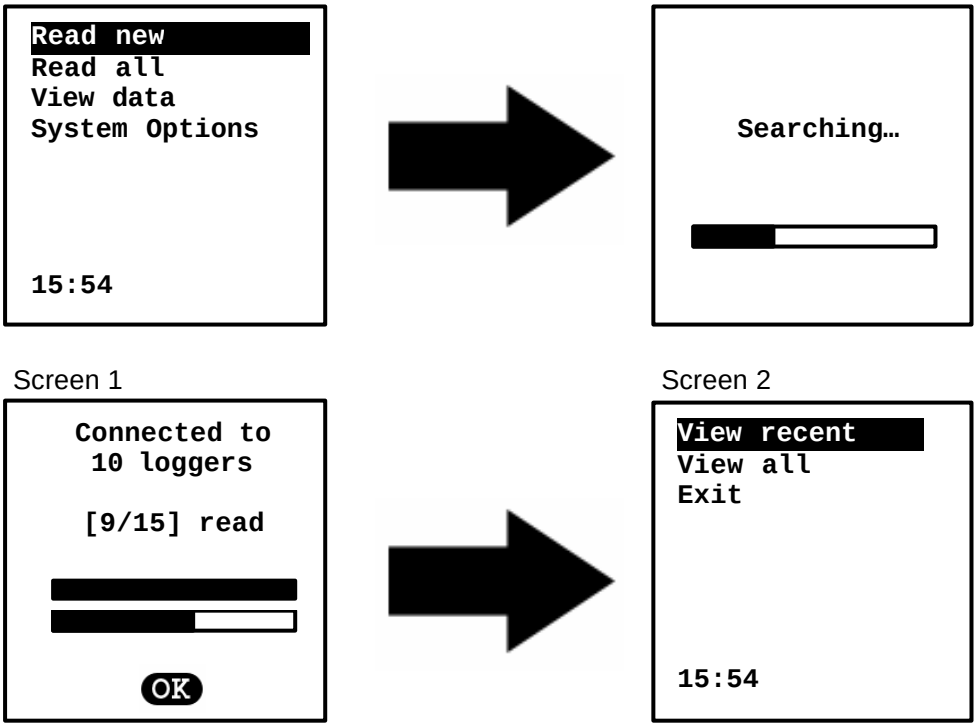


Figure 3.1 (Steps to download new logger data)

You will typically use the 'Read New' function when you have already downloaded some of the loggers you are searching for and want to find any loggers that the REDi could not connect to during your previous try.

3.1.2 - Read All

The 'Read All' option allows you to locate and download data from all of the loggers (both new and downloaded previously) that are within communicating distance. The 'Read All' option is located on the 'Main Menu' screen and is option number two.

To download all of the available logger data select 'Read All' and press 'OK', the next screen displayed is the 'search' screen followed by the 'connected to loggers screen (see figure 3.2). Once the REDi has downloaded all of the found logger information you're given the option to either view the recently downloaded data or view all of the data stored in the REDi memory (see 3.2.1 View Recent and 3.2.2 View All for more information).

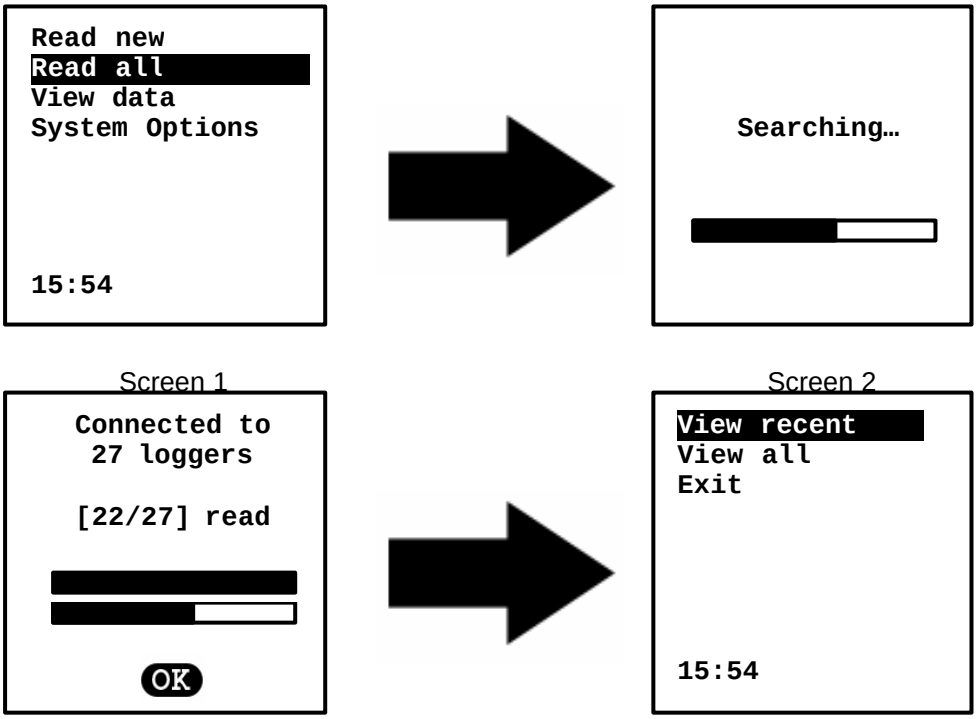


Figure 3.2 (Steps to download all logger data)

This function will typically be used if you need to repeat the download of some loggers because additional readings have been taken. The existing data will not be overwritten, but a new logger data block for the same logger will be added in the REDi.

The REDi can only connect to a maximum of 32 loggers at the same time. If you did not connect to all loggers you were expecting, try to get closer to those you are missing and repeat 'Read all'. If those missing loggers have not been downloaded before, use the 'Read new' function.

3.2 – Viewing and Interpreting Data

Your REDi device is designed to provide several different ways in which to view the logger data that has been downloaded into its memory.

There are two ways in which you can access logger data from the REDi's memory. Firstly, you can access data saved from previous download sessions by choosing the 'View Data' option from the main menu (see figure 3.3). Secondly, you are given the option to view logger data immediately after downloading has finished (see figure 3.4).

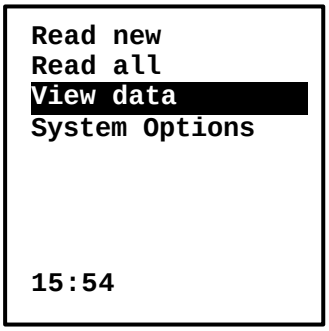


Figure 3.3 (Main Screen – View Data) 3.4 (Download Screen – Read Loggers)

Both the main screen and the download screen direct you to the 'View Screen', where you have two viewing options, "View recent' and 'View all' (see figure 3.5). For more information on the 'View Recent' and 'View All' options please read sections 3.2.1 and 3.2.2.

Figure 3.5 (View Screen)

For Wireless Mini loggers which have the downloaded data password protected, you can only view the Overview, not summary or out of specification information.

3.2.1 – View Recent

The 'View Recent' option will only display data which has been collected during the REDi's most recent scan (see figure 3.6). To scroll through the different loggers, first the 'Number of Loggers in Memory' window (see figure 3.8) must be highlighted. By pressing the left and right arrow keys on the key pad you can move through the logger list.

For information regarding the viewing of detailed logger information please refer to 3.2.3 'View Summary' and 3.2.4 'View out of Specification'.

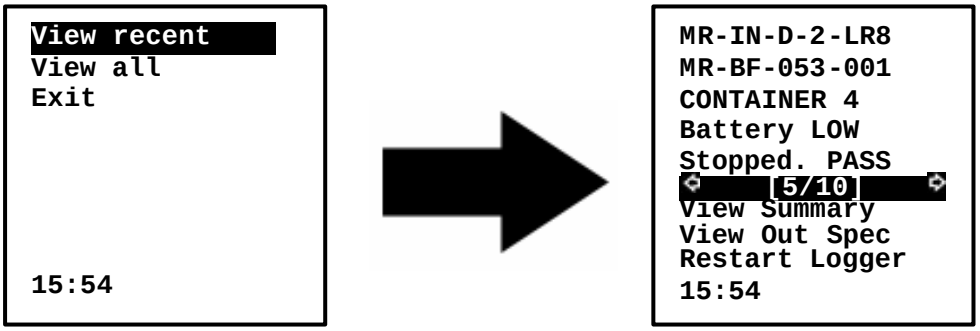


Figure 3.6 ('View recent' to 'Overview' Screenshots)

If there have been no recent downloads of data the REDi with display a screen with the message 'No Loggers' (see figure 3.7). To return to the 'View Screen' select the 'Exit' option (near the bottom of the screen) or press the 'Esc' button.

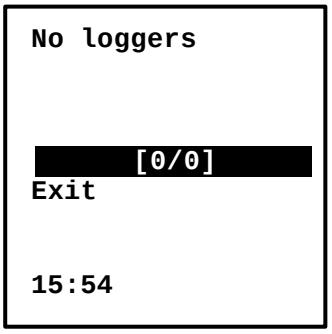


Figure 3.7 (No Loggers screen)

If your REDi registers recently downloaded data within its memory, your REDi screen will display the basic information relating to that logger data ('Overview'), Items such as; product code, serial number, battery status and whether the logger has logged readings out of specification (see figure 3.8).

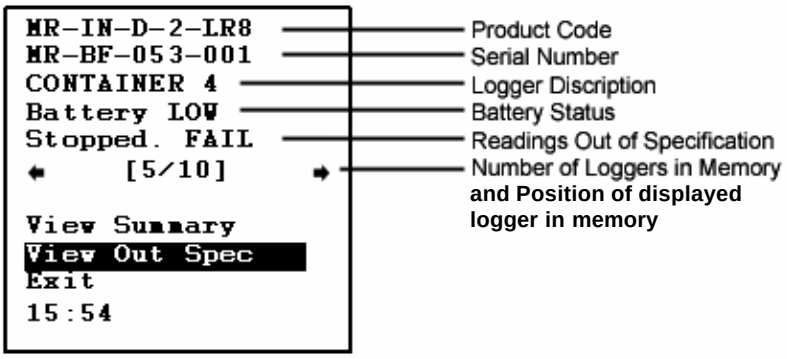


Figure 3.8 (Downloaded screen)

3.2.2 – View All

The 'View All' screen allows you to access and view all logger data currently in the REDi's memory. This includes data that has been downloaded before the REDi's most recent scan. Once you have selected the 'View All' function the REDi will precede to the 'Overview' menu (see figure 3.9). To scroll through the different loggers, first highlight the 'Number of Loggers in Memory' window. By pressing the left and right arrow keys on the key pad you will be able to move through the logger list.

For explanations regarding the viewing of detailed logger information please refer to 3.2.3 'View Summary' and 3.2.4 View out of Specification.

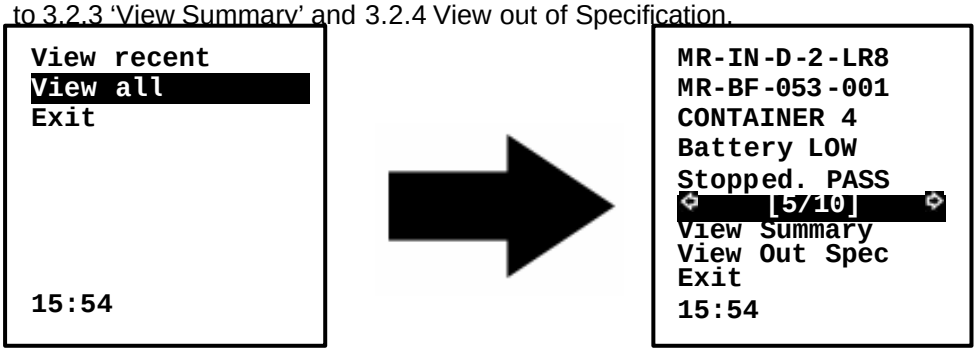


Figure 3.9 (View All and Overview)

3.2.3 – View Summary

The 'View Summary' option allows you to view in detail each logger's downloaded data apart from each individual reading. Individual readings can be viewed using ESCORT Console software (see Chapter 5).

Your REDi will display the following information within the summary screen (see figure 3.10).

RF Mini	Product type
MR-BF-053-001	Serial Number
CONTAINER 7	Logger description
Trip No: 0	Trip number
Battery: LOW	Battery status
Time Zone: GMT+13:00	Time zone
Sampling: 2 min	Sampling rate
Readings: 1868	Number of readings taken
Start Time:	Starting Time
11/04/05 11:20	
End Time:	Finishing time
14/04/05 01:34	
Active: -40~70ºC	Temperature where active
High Spec: 32.0ºC	High alarm temperature
Low Spec: -6.5ºC	Low alarm temperature
Max: 56.0 º C	Maximum temperature reached
Avg: 14.0 º C	Average temperature reached
Min: -20.5 º C	Minimum temperature reached
Alarm: None	Alarm On/Off
Time Over: 32.0ºC	Time over specification
17:32:00	
Time Under:-6.5ºC	Time under specification
23:12:00	
State: Stopped	Logger status

Figure 3.10 (View Summary screen)

Once you have reviewed the summary information of the logger that you have chosen you are given two options, which are 'View new logger' and 'Exit'. These are the last two fields of the 'View Summary' screen (see figure 3.11).

```
Min: -20.5ºC
Alarm: None
Time over: 32.0ºC
17:32:00
Time under:-6.5ºC
23:12:00
State: Stopped
View new logger
Exit
15:54
```

Figure 3.11 (View Summary Screen)

The 'View new logger' option allows you to return to the 'Overview' where you can choose to look at another logger's data file that is saved in your REDi memory (see figure 3.12). You also get there by pressing the 'Esc' button.

```
Min: -20.5ºC
Alarm: None
Time over: 32.0ºC
17:32:00
Time under:-6.5ºC
23:12:00
State: Stopped
View new logger
Exit
15:54
```

```
MR-IN-D-2-LR8
MR-BF-053-001
CONTAINER 4
Battery LOW
Stopped. FAIL
[5/10]
View Summary
View Out Spec
Restart Logger
Exit

15:54
```

Figure 3.12 (Return to 'Overview')

The ‘Exit’ option allows you to return to the ‘Main Menu’ (see figure 3.13).

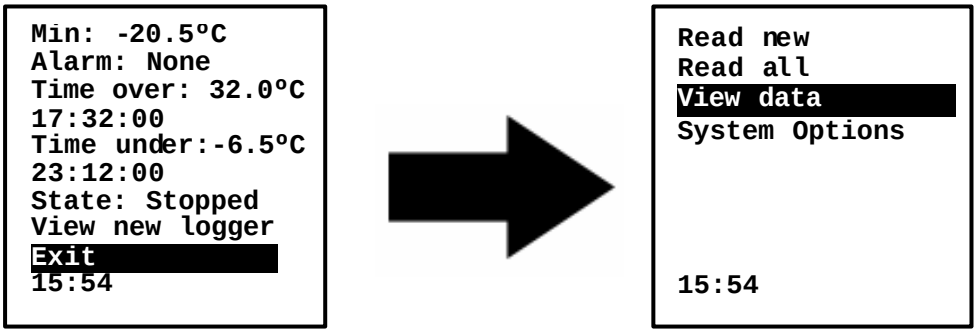


Figure 3.13 (Return to ‘Main Menu’)

If you accidentally exit the ‘View Summary’ screen you can return to the ‘View Summary’ screen by selecting the ‘View data’ option. From this screen you can return to the ‘View’ menu where you have the option to either choose ‘View recent’; or ‘View all’ (see 3.2.1 and 3.2.2).

3.2.4 – View out of Specification

Your REDi device allows you to view specific readings when an ‘Out of Specification’ event has occurred. You can access these readings by selecting the ‘View Out Spec’ option from the ‘Overview’ screen (see figure 3.14).

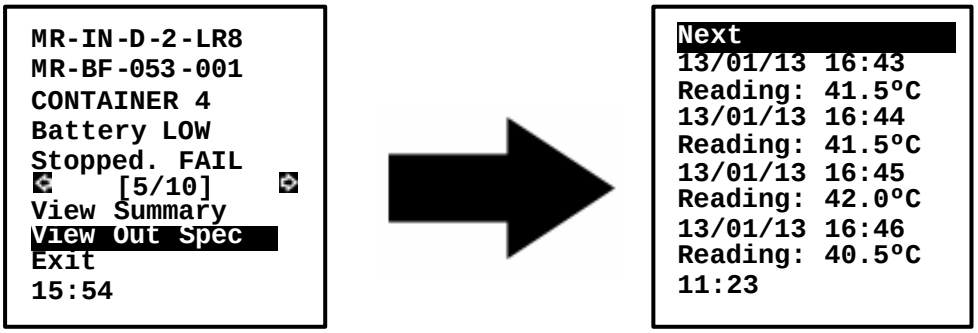


Figure 3.14 (Viewing ‘out of specification’ readings)

Once you have chosen the ‘View Out Spec’ option a list of readings does appear on your REDi screen. You can view all of the readings by selecting the ‘Next’ option located at the top and bottom of the ‘Out of Specification’ screen. If you would like to exit this screen simply press the escape key (‘Esc’) located at the bottom right of your REDi keypad, after which, you will be returned to the ‘Overview’ screen (see figure 3.15).

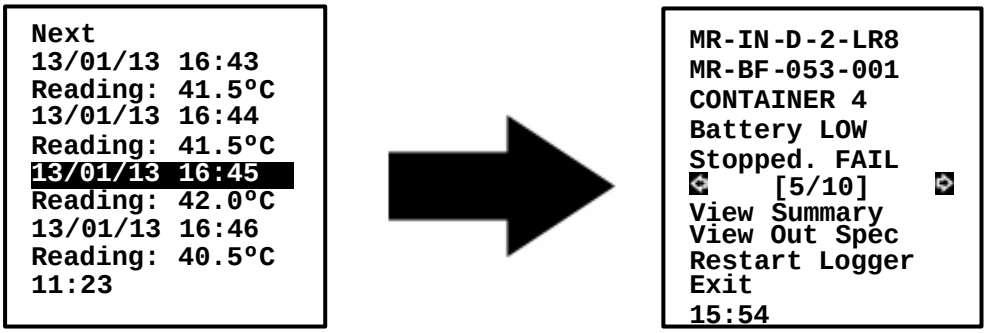


Figure 3.15 (Returning to "Overview' screen)

3.2.5 Restart the logger

Through the 'Overview' menu you have the ability to restart loggers (3.16).

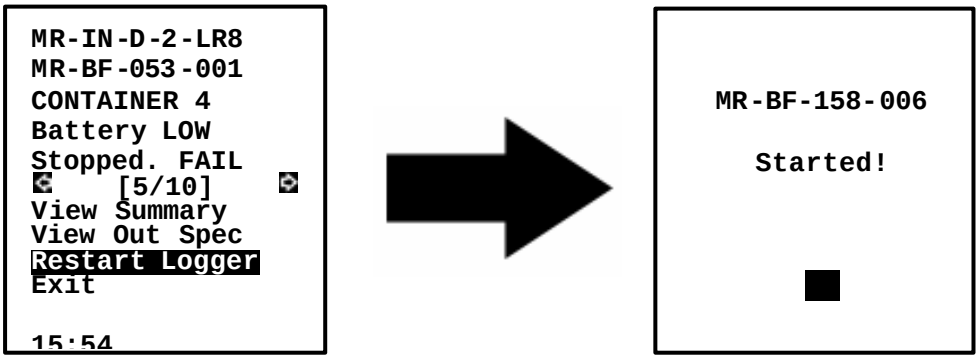


Figure 3.16 (Restart Function)

When you have successfully started the logger, it will run exactly the same programme again that it had been running for the last trip. This includes any start delays, as well as the specification limits and recording frequency. Please note that you do not need to push the button to start your Wireless Mini; the 'Restart' function starts the programme immediately (The logger will show 'd' for start delay or the latest reading if no delay was specified).

This function is not available if the program of the logger has been password protected, or the available trips of the logger have been used up.

In case the logger program had been password protected, you need to connect the logger to ESCORT Console for re-arming and supply the correct password. If the password has been lost, the logger has to be returned to your ESCORT distributor for password reset.

3.3 – Transferring Data to your PC

To be able to load a configuration to and read data from the REDi device, you need to install ESCORT Console software from the Internet or from CD on your PC and follow the instructions regarding the use of the software (see chapter 5).

To ensure the REDi device can successfully communicate with the software, connect the interface cable (see figure 3.17) to a serial communication port (COM port, DB9) on your PC.

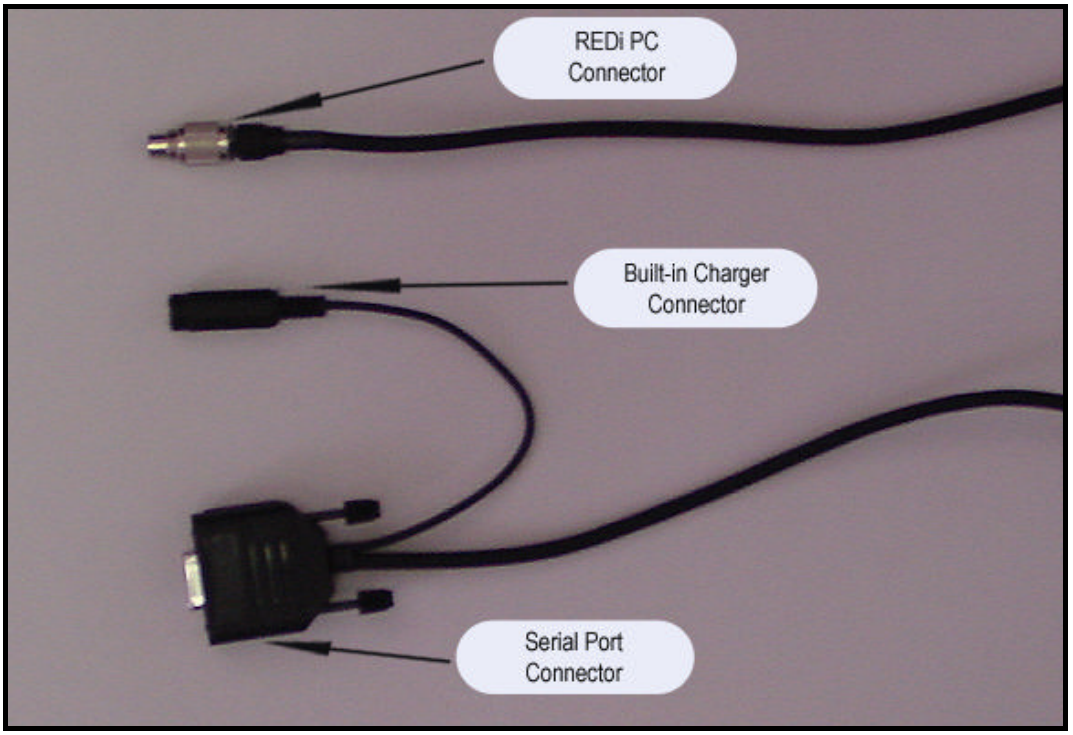


Figure 3.17 (Serial port connector)

4 – System options

The ‘System Options’ option provides you with useful information related to your REDi device and allows you to configure several different features to better suit your requirements. The ‘System Options’ menu provides information on your REDi’s available memory and other menu options (see figure 4.1);

```
Shut Down
AutoOff 30 min
Backlight 10 s
Mem left 801K
Rechargeable Y
Temp Unit ºC
Erase all data
System info
Exit
15:54
```

Figure 4.1 (‘System options’ menu)

4.1 – Shut Down

The ‘Shut Down’ option in the ‘System Options’ menu simply allows you to shut down your REDi device down. This option is automatically highlighted as it is the first option on the ‘System Options’ menu. To initiate the shutting down of the device press the ‘OK’ button when the option is highlighted (see figure 4.1).

You can also shut your REDi device down by pressing the power key located at the bottom left of your REDi keypad at any time.

4.2 – Auto off

The ‘Auto Off’ option is the second option your REDi device displays in the ‘System Options’ screen (see figure 4.2). This option allows you to set an automatic shut down time if no key has been pressed for a certain amount of time. You have an ability to select a time frame from 2 to 30 minutes. To alter the auto off time use the left and right arrow keys located on the REDi keypad. Alternatively, you can set your required auto off time using ESCORT Console software, for more information regarding this refer to chapter 5 of this user manual.

```
Shut Down
AutoOff 30 min
Backlight 10 s
Mem left 988k
Rechargeable Y
Temp Unit ºC
Erase all data
System info
Exit
15:54
```

Figure 4.2 (‘Auto Off’ Option)

4 3 – Backlight

The ‘Backlight’ option is the third option your REDi device displays in the ‘System Options’ screen (see figure 4.3). This option allows you to set the length of time the display will remain illuminated after each key press on your REDi. You have the ability to select a time frame from 0 to 180 seconds (3 minutes) by using the left and right arrow keys on the key pad. Alternatively, you can set your required backlight time frame using ESCORT Console software, for more information regarding this refer to chapter 5 of this user manual.

```
Shut Down
AutoOff 30 min
Backlight 10 s
Mem left 988k
Rechargeable Y
Temp Unit ºC
Erase all data
System info
Exit
15:54
```

Figure 4.1 (‘Backlight’ Option)

4.4 – Available Memory

The ‘Mem left’ option is the fourth option in the ‘System Options’ screen (see figure 4.4). This is a read only option and displays your REDi’s available memory space in kilobytes.

```
Shut Down
AutoOff 30 min
Backlight 10 s
Mem left 988k
Rechargeable Y
Temp Unit ºC
Erase all data
System info
Exit
15:54
```

Figure 4.4 (‘Memory Left’ Option)

4.5 – Rechargeable Batteries

With Rechargeable Y/N you can specify if the REDi is equipped with rechargeable batteries. You can change the value from ‘Y’ (rechargeable batteries fitted) to ‘N’ (normal batteries used) by using the left and right arrow keys on your keypad.

For more information regarding re-chargeable batteries see chapters 2.1 and 6.3.

4.6 – Temperature Unit Conversion

The ‘Temp Unit’ option is the fifth option your REDi device displays in the ‘System Options’ screen (see figure 4.5). This option allows you to set the temperature unit to either ºC or ºF. You change between the two temperature units by using the left and right arrow keys on the REDi keypad. Alternatively, you can set your required temperature unit using ESCORT Console software, for more information regarding this refer to Chapter 5 of this user manual.

```
Shut Down
AutoOff 30 min
Backlight 10 s
Mem left 988k
Rechargeable Y
Temp Unit ºC
Erase all data
System info
Exit
15:54
```

Figure 4.5 (‘Temperature Unit Conversion’ Option)

4.7 – Erase All Data

The 'Erase All' option is the sixth option on the 'System Options' menu (see figure 4.7). This option erases all of the saved logger data from your REDi's memory. Once you have erased the data it is impossible to retrieve and it is strongly advisable that you transfer the data to a PC before deleting. Alternatively, you can erase all of the data blocks saved from your REDi memory using ESCORT Console software. For more information regarding this refer to Chapter 5 of this user manual.

If your REDi does not have the ability to delete all data blocks manually, your REDi will display the following message notifying you of this by showing 'Current REDi configuration will not allow this' (see figure 4.7). This blockade was implemented as a safety lock to prevent users from accidentally erasing important data.

In these instances you can only delete data blocks from the REDi via ESCORT Console software.

Figure 4.6 ('Erase all data')

4.8 – System Information

The 'System info' option is the eighth option your REDi device displays in the 'System Options' screen (see figure 4.8). This screen displays general information relating to your REDi device. The system information screen includes (from top to bottom) Description (as configured in ESCORT Console), Firmware version, Battery voltage (full batteries have about 3.0V, below 2.0V the unit will not work), Part number (identifying the communication frequency; see specification sheet), Serial number (identifying your unit).

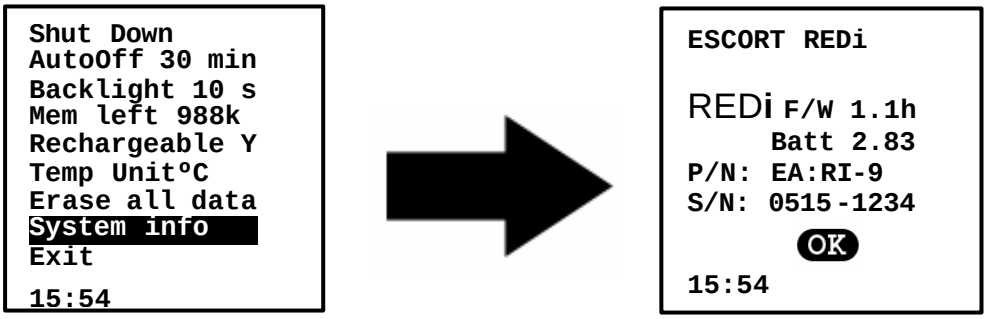


Figure 4.8 (System Information screen)

4.9 – Exit

The 'Exit' option is the seventh option your REDi device displays in the 'System Options' screen and simply allows you to return to the 'Main Menu' (see figure 4.9).

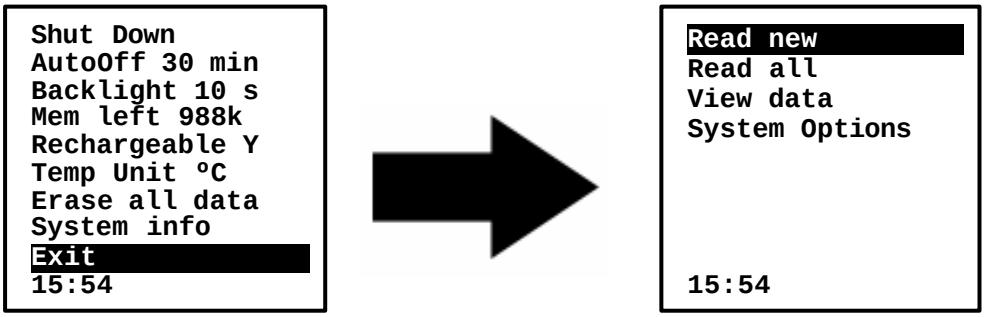


Figure 4.9 (Exit to 'Main Menu' from 'System Options')

5 - Software

For help regarding the use of ESCORT Console software, please refer to the Help file in ESCORT Console. This help file is accessible through the command 'Help Topics' in the 'Help' menu and contains the full manual for ESCORT products.

5.1 - Installation

In order to configure your REDi or download logger data stored in the REDi to your PC, you need to install ESCORT Console software on your PC. Further, your PC requires a serial port (COM port, DB9). If your PC has a USB port but no COM port, you can use a USB to serial port adapter (available from your local electronics store) to create a COM port. Please follow the installation instructions supplied with the adapter

You can download ESCORT Console from the ESCORT DLS website on the Internet http://www.escortdls.com/software/software.htm. Alternatively, you can purchase the ESCORT Console software CD (Product code JA-SWP-WIN) through your local distributor. Please follow the instructions provided on the website or the CD insert respectively.

5.2 - Connecting your REDi

Please use the REDi serial port connector, supplied with your REDi unit (see chapter 1.3 and 3.3) to connect your REDi with a DB9 COM port on your PC.

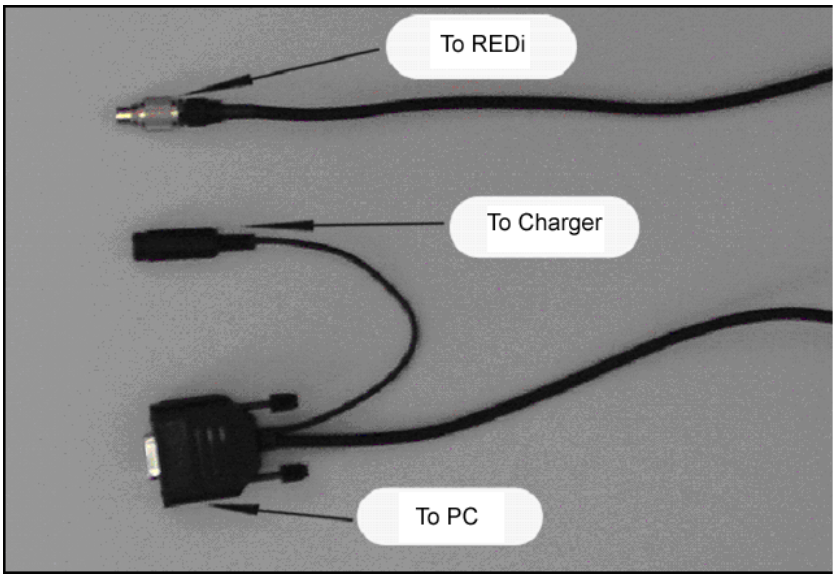


Figure 5.1: (Connecting the REDi)

When connecting your REDi to your PC's COM port, the unit will automatically turn on. However, your REDi will switch off after the time defined by the Auto Off settings saved within your REDi. When trying to communicate with your REDi, make sure the unit is switched on and the auto off feature is set to a time that allows for the completion of REDi to PC interaction.

5.3 - Software Setup

Once the ESCORT Console is installed, you can open the software by clicking on the ESCORT icon on your desktop, or selecting ESCORT Console from All Programs in the Start menu.

Formatted: Centered

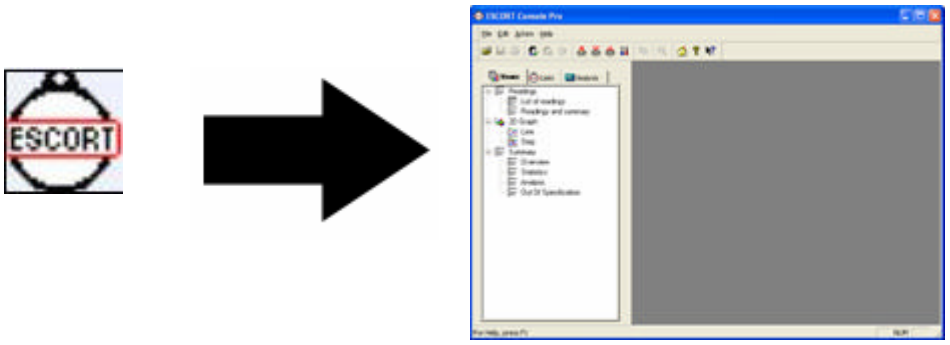


Figure 5.2: Opening ESCORT Console software

In ESCORT Console you can choose both the COM port the software uses for communication with your REDi and loggers, as well as the products you are using. In the Edit menu choose the Options command, then go to the Communications tab to choose the COM port you have connected the REDi to. Further, check in the Products tab that REDi was selected as one of the product you wish to work with.

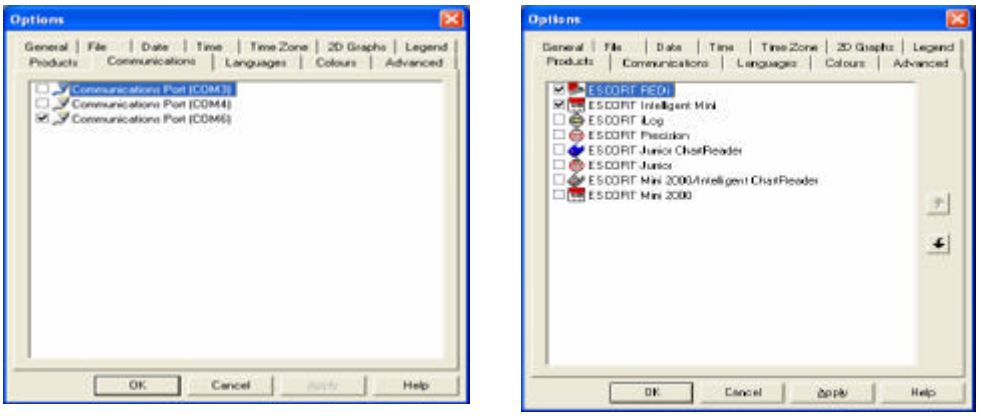


Figure 5.3 ESCORT Console Options dialog box

5.4 – Configuring REDi

The REDi configuration allows you to define a password for your unit, select the appropriate temperature unit (ºC or ºF), auto off and backlight times, and further offers you the option to delete all data blocks within the REDi.

To configure the REDi, choose the 'Program and Configure' command from the Action menu, or click on the 'Program and Configure' icon.

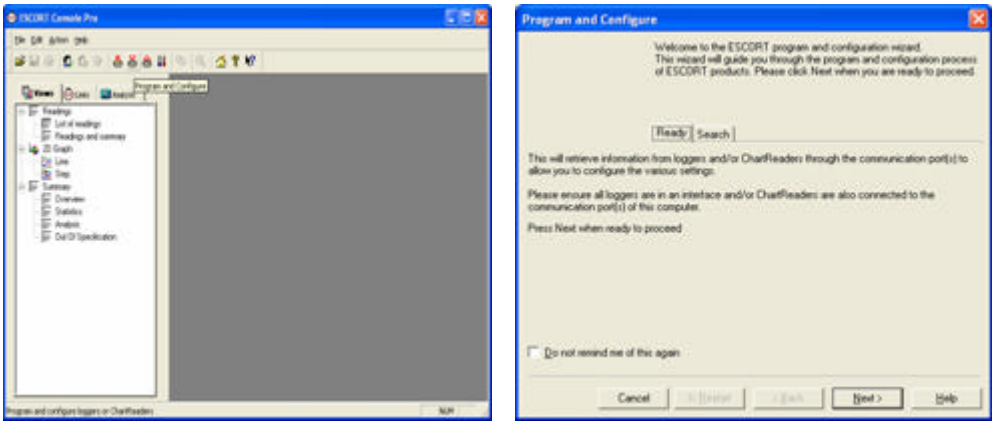


Figure 5.4: Configure wizard

Please follow the instructions on the screen of the Configuration Wizard to proceed to the Search screen. Make sure your REDi is switched on when trying to communicate to the unit. The REDi will show a double arrow at the bottom of the current screen while it is communicating with ESCORT Console.

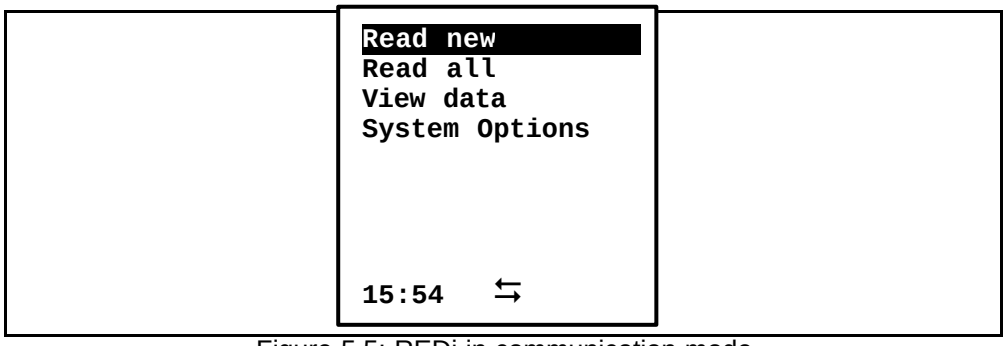


Figure 5.5: REDi in communication mode

5.4.1 – Enter Password

If your REDi is password protected, the tick box next to 'REDi Device' in the Search screen will be empty. Click on the tick box and enter the password to proceed. The factory default for your REDi password is 0000.

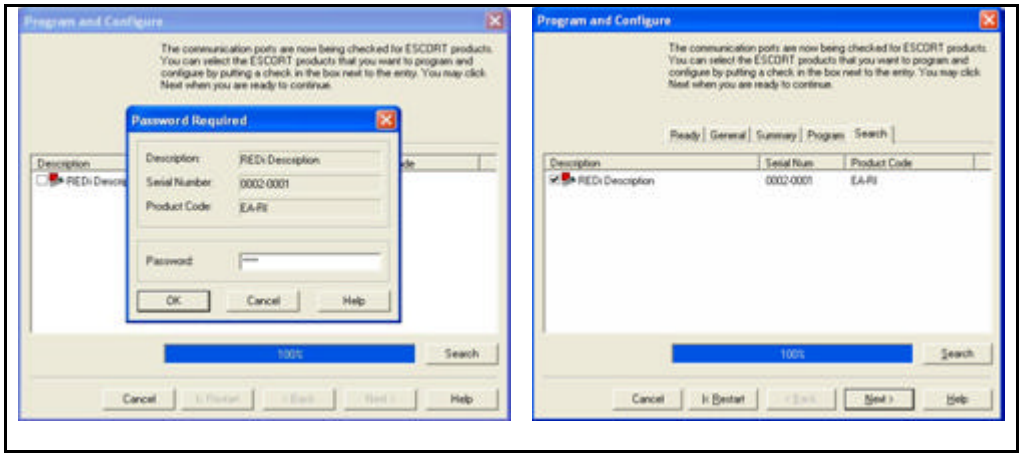
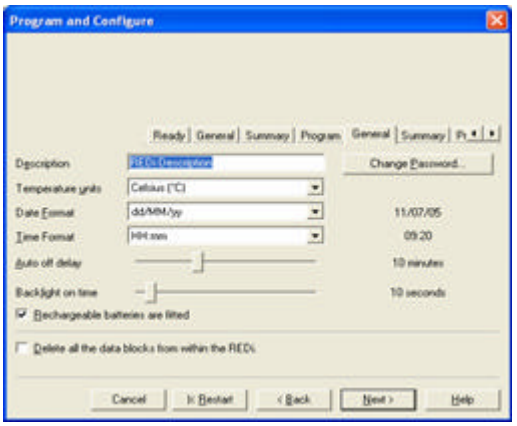


Figure 5.6: (Password input)

5.4.2 – Description

After clicking 'Next' on the Search screen, you can view and adjust the configuration of your REDi unit.

The description can be up to 42 characters long, consisting of numbers and letters. Simply type the desired description for this unit in the Description field. This information will show within the System Information of the unit, and on the Search screen in Console.



Figur e 5.7: ('Description' menu option)

5.4.3 –Password Settings

The ‘Change Password’ button is located on the right hand side of the ‘Program and Configure’ window and next to the ‘Description’ field. This button opens the ‘Password Settings’ window. To assign a password to your REDi, simply click the ‘Change Password’ button and enter your desired password in both the ‘Password’ and ‘Confirmation’ fields. In addition, you have the option to turn the password protection on or off by selecting the ‘Restrict Access’ tick box (see figure 5.8).

Figure 5.8: (‘Password Settings’ window)

5.4.4 – Temperature Scale

Below the ‘Description’ field in the ‘Program and Configure’ window there is a drop-down box allowing you to select the temperature scale. Simply, select the scale that you would prefer your REDi to display when showing information about downloaded loggers (ºC or ºF).

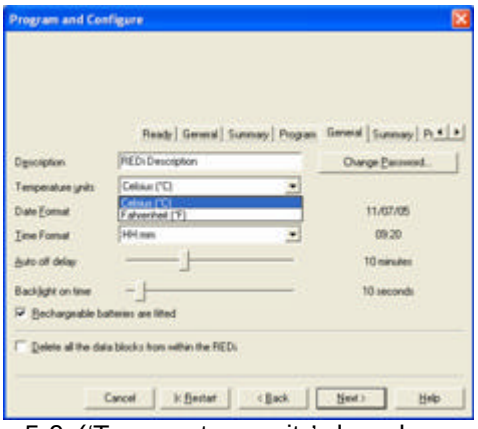


Figure 5.9: (‘Temperature units’ drop down menu)

5.4.5 – Date Format

The 'Date Format' drop-down box is located under the 'Temperature Unit' drop-down box. This is where you select the format the REDi will use to display the dates of events or readings. A sample of today's date in the selected format is displayed to the right of the drop-down box.

yy is the abbreviation for the year in two digits (e.g. 05 for 2005),
yyyy means the year will be reported in full (e.g. 2005 for 2005).
MM is the abbreviation for the month (e.g. 05 for May)
dd marks the position of the day of the month (e.g. 10 for the 10th day of the month)

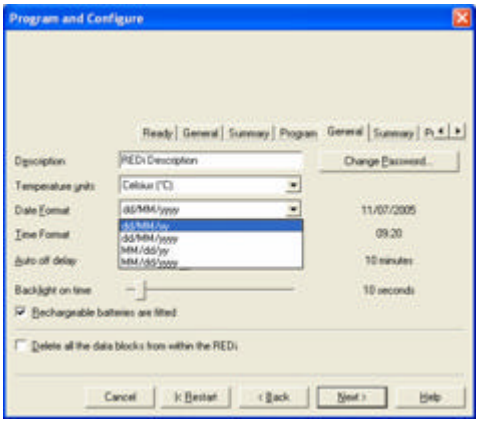


Figure 5.10: ('Date Format' drop-down menu)

5.4.6 – Time Format

The 'Time Format' drop-down box is located under the 'Date Format' drop-down box. This is where you format your REDi's date and time functions. You will use this feature to display the time of events or readings, as well as the clock of the REDi. A sample of the current time in the selected format is shown on the right hand side.

HH will show the hour of the day in 24 hour format (17 for 5pm)
hh will show the hour of the day on 12 hour format (05 for 5pm)
mm is the abbreviation for the minutes
ss marks the position of the seconds.
tt is the abbreviation for the morning or afternoon indicator (am or pm)

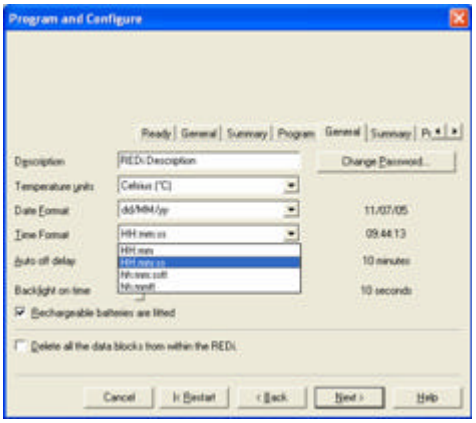


Figure 5.11: ('Time Format' drop-down menu)

5.4.7 – Auto Off Delay

This option lets you choose the time the REDi will remain switched on while no key is pressed. After this time has elapsed, the unit will automatically shut down to save battery life.

Please use the sliding control to adjust the auto off time; the time in minutes is displayed on the right hand side. The auto off time can be between 2 and 30 minutes.

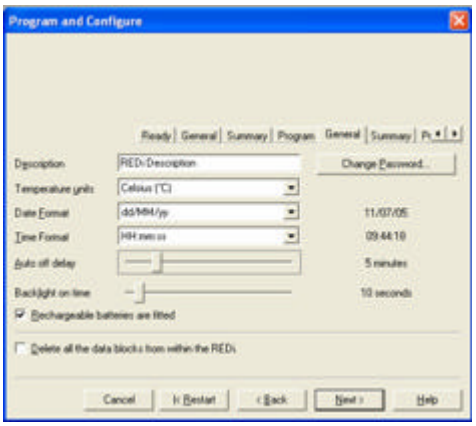


Figure 5.12: ('Auto off control)

5.4.8 – Backlight On Time

The 'Backlight On Time' control configures for how long the screen (LCD) of the REDi will be lit after a key is pressed. Backlight helps you see the data on the screen in the dark. You can choose to use your REDi without the backlight by

selecting a backlight time of 0 seconds. The maximum backlight time is 3 minutes (180 seconds).

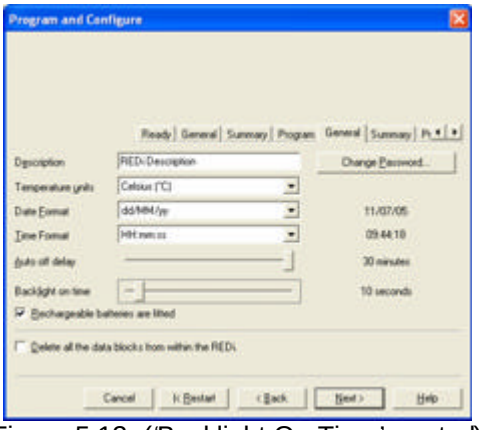


Figure 5.13: ('Backlight On Time' control)

5.4.9 – Rechargeable Batteries

If the REDi has been fitted with rechargeable batteries, you can tick the 'Rechargeable Batteries Fitted' tick box. Please make sure that this box is not ticked if you are working with disposable batteries.

Important: Charging disposable batteries may cause those batteries to explode. Never try to charge batteries unless they are clearly marked as re-chargeable.

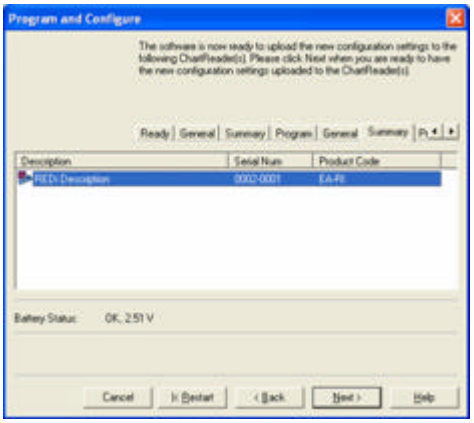
5.4.10 – Delete Data

The REDi configuration offers you to delete all the data blocks that are currently stored in your REDi unit. Before you tick this option, make sure that the logger data currently in the memory is no longer used or has been downloaded to a PC and saved.

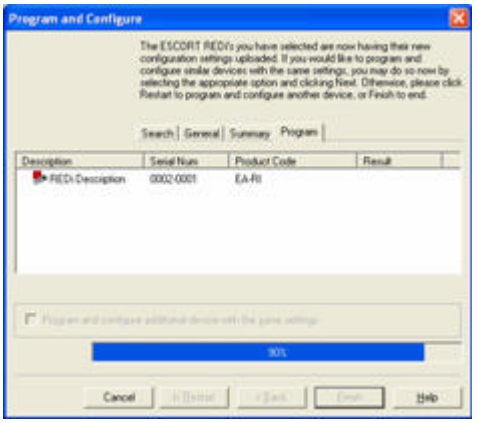
If you select the tick box next to 'Delete all the data blocks from within the REDi', the whole memory will be reset, and all logger data is deleted. This action cannot be reversed!

5.4.11 - Summary

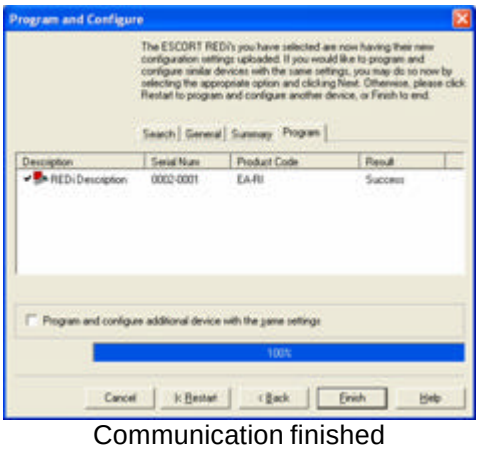
After selecting the 'Next' button on the Configuration screen, you see the summary screen. If you wish to make further adjustments to your configuration, you can still go 'Back'. Once you click ‚Next', the new configuration will be loaded into your REDi. Please make sure that the communication with the REDi is not interrupted during this process. Wait until the Finish button becomes active before you close down the Configuration wizard or disconnect the REDi.



Summary screen



During communication



Communication finished

Figure 5.14: Uploading configuration to REDi

5.5 - Download logger data to PC

Through using ESCORT Console software you can download the logger data stored in your REDi memory to a PC. This is made possible via the 'Download Readings' wizard. In addition, the 'Download Readings' wizard offers you the option to delete all data blocks from your REDi's memory.

To download the dat a blocks, choose the 'Download' command from the Action menu, or click on the 'Download' icon which is located on the task bar below the action menu.

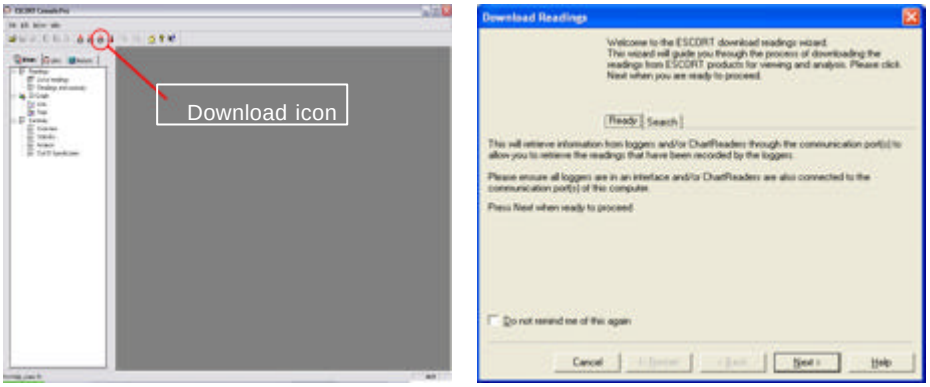


Figure 5.15: ('Download Readings' wizard)

Please follow the instructions displayed in the 'Download Wizard' to proceed to the Search screen, making sure that your REDi is switched on. The REDi will show a double arrow at the bottom of the screen during communication with ESCORT Console (see figure 5.15).

For password protected units please follow the instructions described in chapter 5.4.1.

5.5.1 – Selecting Logger Data for Download

Once the 'Download Readings' wizard has located your REDi device via one of your PC's available ports (COM and/or USB) the 'Download readings' wizard will display a REDi icon, the logger files ready for download and a series of tick boxes. With a full REDi memory (162 logger files), it may take several minutes to populate this screen.

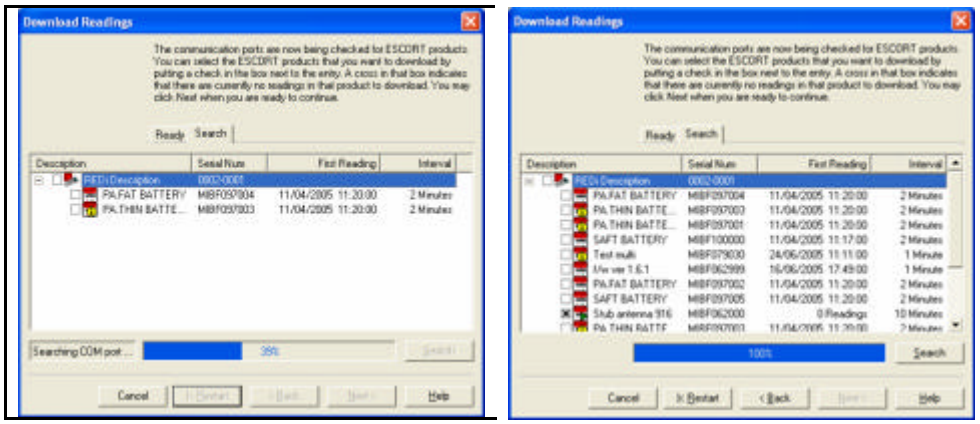


Figure 5.16 ('Download Readings' Search screen)

You can now select which logger files you wish to download by clicking on the tick box located to the right of the logger description. If you wish to select all of the logger files, simply click the tick box located beside the REDi description.

5.5.2 - Download password protection

If you attempt to select a logger file for download that has been password protected against download, you will be asked to supply the password. You cannot download protected data without entering the correct password. If the password has been lost, the logger has to be returned to your ESCORT distributor for password reset.

5.5. 3 – Logger Properties

Logger data with a cross in the tick box next to the logger information cannot be downloaded. You can, however, view the logger information of any logger by right-clicking on the description of the logger and selecting Properties.

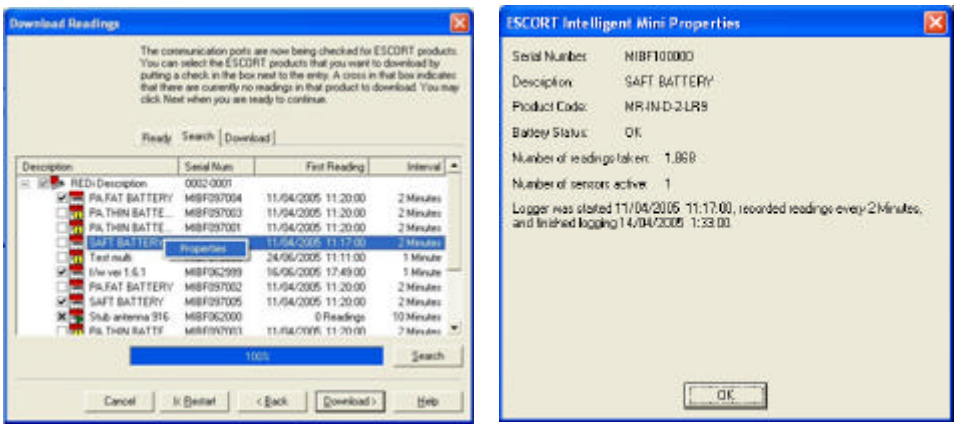


Figure 5.17: Logger properties

5.5.4 – Retrieving Logger Data from the REDi

After selecting the logger data files you wish to view, click 'Download'. Please make sure that the REDi is switched on for this step. When you click 'Finish', the data of the selected loggers will be displayed in ESCORT Console (see figure 5.18).

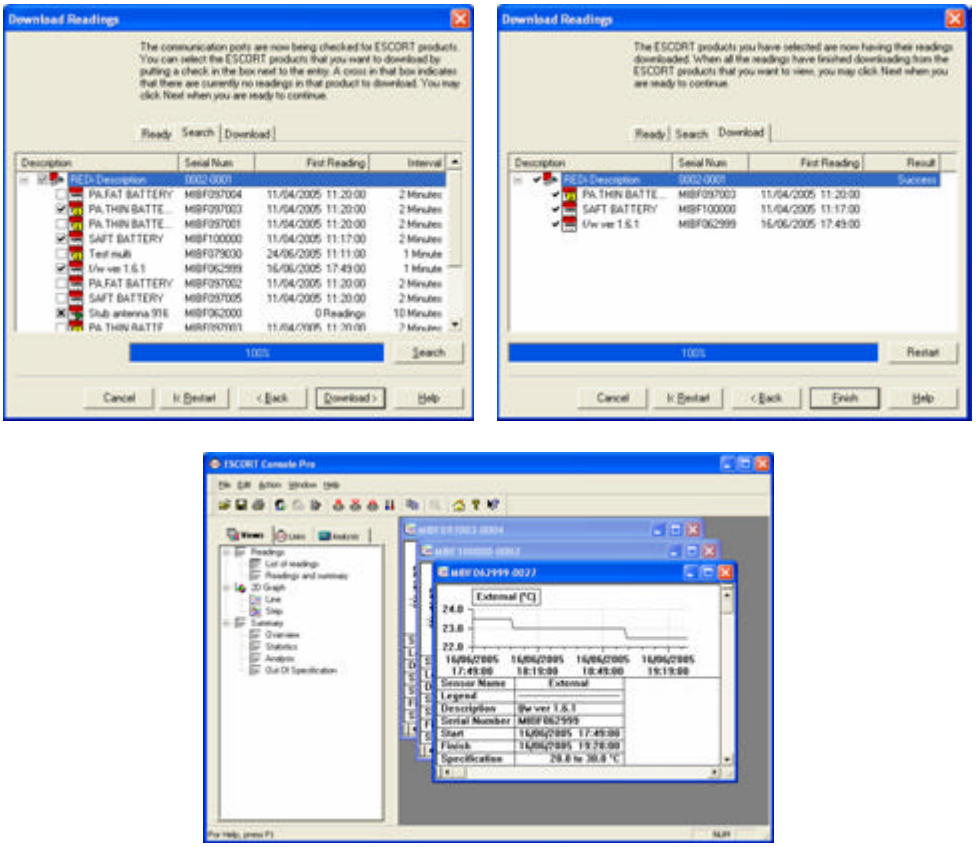


Figure 5.18: Download data from REDi

For more details on analysing logger data using ESCORT Console software, please refer to the Help file located under the help dropdown menu of the menu bar.

5.5.5 – Deleting Logger Data Blocks

You have the ability to delete all logger files currently stored in your REDi once they have all been downloaded. To perform this function, simply select the 'Delete all the data blocks from within this device' tick box (see figure 5.19).

Important: Please ensure that you save the files displayed in ESCORT Console as the data cannot be retrieved once it has been deleted from the REDi (see figure 5.19).

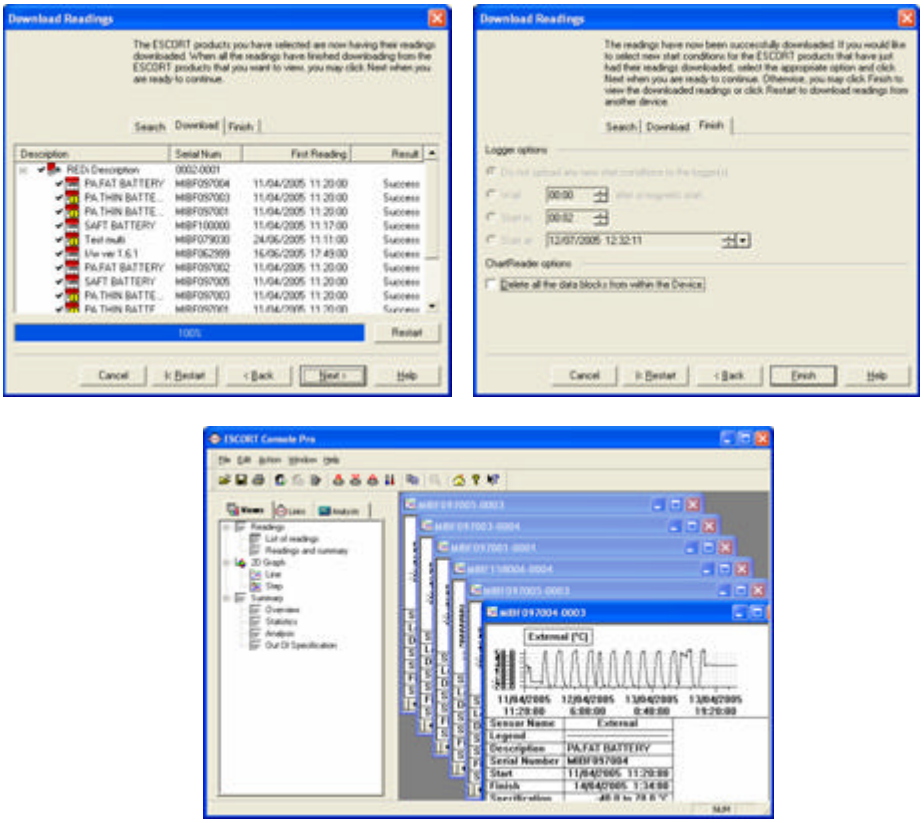


Figure 5.19: ('Downloading all logger data and deleting all data blocks')

6 – Useful Information

6.1- Battery Specifications

Communicating via radio transmission requires a significant amount of power to be effective. This fact is even more prevalent in regard to facilitating radio communication via portable devices because a high degree of strain is placed on the batteries required to power such devices. The REDi is no different to any other radio transmission device and the battery life is comparably limited.

6.1.1 - Battery Indicator

When your REDi batteries are getting low, an empty battery symbol will be displayed. When your REDi batteries are charging, an animation of changing battery is shown. , , , . This is simply an animation and does not reflect your current battery capacity. At the completion of the charge cycle the charger switches to trickle charge. In this state the battery symbol will flash once every 20 seconds.

Under normal operation conditions, with a fresh battery, no symbol is shown.

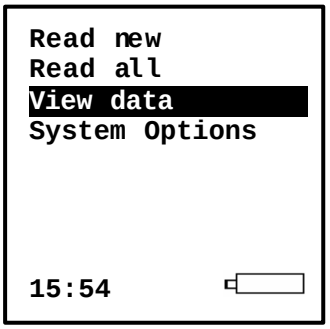


Figure 6.1 (Low battery)

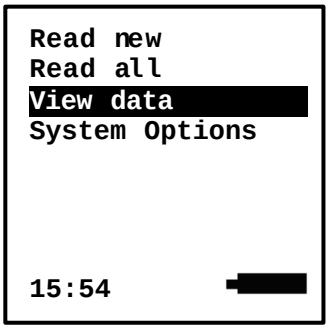


Figure 6.2 (High battery)

6.1.2- Prolonging the battery life of wireless loggers

In a communication system one device must initiate communications by sending a signal and the other device must reply with a compatible signal. In the case of the REDi/ Wireless Mini system it is the REDi that sends a signal and the loggers that replies with a compatible signal. This means, that each Mini must be active all the time. This requires significant battery power. If you will not be using your Wireless Mini for some time then it is recommend that you remove the battery to save power.

6.2 – Successful REDi to Wireless Communication

In order to ensure an optimum communication environment for both the ESCORT Wireless loggers and the ESCORT REDi, ESCORT Data Logging Systems strongly recommend that the following points or procedure are followed.

- Optimum REDi to Wireless logger communication will be achieved when an empty, unobstructed space is provided to allow for a clear line of communication between the two devices (Electrically conductive obstructions such as metal screens or walls create the biggest barrier).
- When using Wireless loggers with external sensors it is important that the loggers are not inside the packaging of the goods being shipped but are attached to the outside of the packaging.
- The Wireless loggers' antennae should be pointing in a horizontal position and free of interference. There should be at least 0.5m of free space around the antenna in all directions.
- The Wireless loggers should be securely attached to the outside of the package that it is being shipped with.
- The package should be secured so that it cannot move during the course of its transportation, as that might result in damage to the logger or obstruction of the REDi and Wireless logger's line of communication.
- You should always test REDi to Wireless logger communication before a consignment is shipped.
- To ensure that all the data from all loggers in the consignment is downloaded you should attempt the REDi's 'Read New' function several times.
- Your REDi will operate more effectively when it has fully charged or new batteries.
- Try holding your REDi device at different angles and from different positions around your consignment in order to gain optimum communication.

6.3 – Recharging your REDi

You have the ability to recharge your REDi batteries via the interface cable supplied with your REDi (see figure 3.0). This should only be attempted if you have fitted your REDi with rechargeable batteries, you should never attempt to charge your REDi with standard batteries.

In order to recharge your REDi's batteries you will first need to purchase an AC Adaptor with the following specifications:

- Output DC6V 400mA
- Polarity – C +

To recharge your REDi simply attach your REDi PC Connector to your REDi device and to your AC Adaptor and switch your power supply on (see chapter 2.2). The battery status icon located in the bottom right corner of your REDi's screen will be initiated and will fill (in black) from right to left (see figure 6.3). If the

battery symbol does not appear or appears but disappears quickly either your REDi batteries have been sufficiently charged or the polarity of your AC Adaptor is incorrect.

The REDi uses a fast charge algorithm so it will charge your batteries in just a few hours. Once fully charged it will switch into trickle charge mode to keep your batteries topped up. In this phase the battery symbol will flick on for 1 second, every 20 second

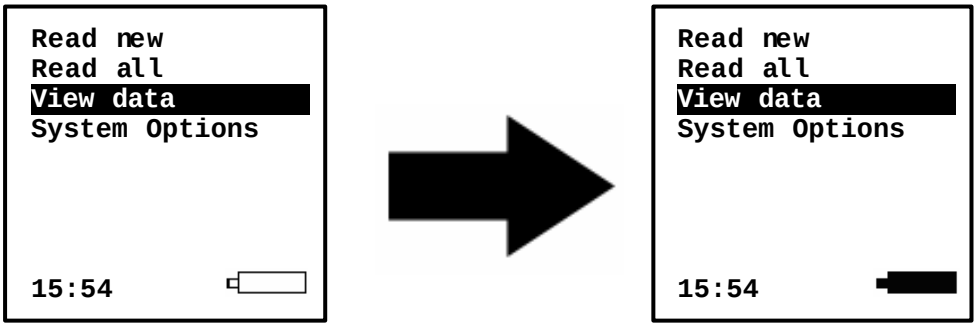


Figure 6.3 (Recharging Battery Indicator)

Caution: The use of an incorrect AC Adapter could result in considerable damage to you REDi device, please ensure that you only use an AC Adapter that matches the above specifications.

6.4 – Specifications

6.4.1 – Storage & Database

- Up to 1Mbyte of logged data.
- Up to 160 sets of logger data.

6.4.2 – Readout

- Dot Matrix LCD 160 x 160 pixels, back-lit.
- Menu driven interface.

6.4.3 – Power Supply

- Type: 2 x Alkaline or NiCd AA batteries.
- Design target life for continuous use (NiCd batteries): 8 hours
- In-built 3hour NiCd Charger.

6.4.4 – Processor

- Mitsubishi M16 / 20K RAM / 128k ROM.

6.4.5 – Communication

- Between REDi and PC - RS232 as 9600 baud.
- Between REDi and Logger - Radio Communication 83Kbaud (roughly 2.5KB per second transfer rate).

6.4.6 – Communication Frequency

- EA-RI-8 at 868.35 MHZ (European standard; also for South Africa).
- EA-RI-9 at 916.5 MHZ (American standard; also for Oceania and Asia).

6.4.7 – Keyboard

- 7 Mechanical buttons - up, down, left, right, select, escape and power down.

6.4.8 – Other Features

- Firmware update possible via PC.

6.4.9 – User Software

- ESCORT Console version 2.02.01 or later
- IBM PC and Windows 98 or later required.

6.5 Wireless Regulations

Radio, EMC and Safety Regulations

This device complies with part 15 of the Federal Communications Commission (FCC) rules. Operation is subject to the following conditions:

1. **This device may not cause harmful interference,**
2. **This device must accept any interference received, including interference that may cause undesired operation.**

Note: This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Note: The Manufacturer is not responsible for any radio or TV interference caused by unauthorised modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

6.6 – Warranty

Warrant conditions are set out in the ESCORT Data Logging Systems' current Terms and Conditions as published on the date a claim is made. Below please find the wording as per version TCEDLSINT042. This is, however, not binding and the current Terms and Conditions will prevail over the details given here.

Product Warranty period is 12 months (excluding batteries).

Warranty does not cover:

- Loss of use or consequential loss,
- Calibration if the unit has been subject to environmental conditions outside the specified ones
- Willful damage, mistreatment, misuse or abuse of the product,
- Loss or damage caused by the ingress of moisture, unless ordered with immersion rating,
- Batteries,
- Circumstances where the unit has been modified from manufacturers specifications,
- Exposure of the logger to temperatures outside the specified storage temperature,
- Exposure of the logger to environmental conditions outside the specified ones

In case of a warranty claim ESCORT Data Logging Systems Ltd. will repair the goods or supply an equivalent replacement.

In some circumstances, where a specific return was authorized, ESCORT Data Logging Systems Ltd. may permit the use of its Federal Express account for returning goods. Such permission is valid ONLY for the authorized shipment. ESCORT Data Logging Systems Ltd. will not accept any freight charges for goods that have been returned without ESCORT Data Logging Systems Ltd's expressed permission.

Customers and distributors may return product to us for accuracy testing, if they have doubts as to the product's overall accuracy:

- If the product is returned within the warranty period, a Traceability certification will be performed, and a certificate issued.
- If the logger does not pass the certification, i.e. the logger is at fault, the logger will be replaced or repaired as per the warranty conditions and no charges (other than freight charges) will apply. The new logger will be issued with a Traceability certificate free of charge.
- If the logger reads within the specifications, a Traceability certificate will be issued and you will be charged for this service.
- If the product is returned outside the warranty period, a Traceability certificate will be issued and charged regardless of the outcome of the test.

- ESCORT Data Logging Systems Ltd. will not pay for any performance tests undertaken by any outside organization without prior approval.

6.6 – Recycling of electronic devices

Some parts in products from ESCORT Data Logging Systems consist of recyclable materials, but others should not be disposed of in household waste. To avoid pollution, we kindly ask you to adhere to national policies and regulations concerning waste disposal and recycling. Wireless Mini loggers and REDi devices must not be placed in your household rubbish (European Standard EN 50419:2005).

If you have any questions please do not hesitate to ask at your nearest electronics shop or send an e-mail to sales@escortdls.com. Thank you for your understanding.