



R-LINK Getting Started Guide

About this document

This document is supplied as a part of the Reactec eco-system.

Intended purpose

This document is intended to provide an overview of the Reactec eco-system hardware.

Intended audience

This document is intended for all users of the Reactec eco-system.

Original instructions

Read this document before using the equipment

Retain this document for future use

Document information

Published on: 12 April 2024

Document ID: 290-230 - 3.0

Copyright and proprietary information

Copyright © 2024 Reactec. All Rights Reserved. You must obtain prior written permission for the republication or redistribution of any content.

This user guide is protected by national and international copyright and other laws. Unauthorised storage, reproduction, transmission and/or distribution of this user guide, or any part of it, may result in civil and/or criminal proceedings.

Where this user guide and any associated documents refers to quotes and links from the HSE please note that such public sector information is published by the Health and Safety Executive and licensed under the Open Government License v 3.0.

Trademarks

Other product and company names in these materials may be trademarks or registered trademarks of other companies and are the property of their respective owners. They are used only for explanation purposes only and to the respective owners' benefit, without intent to infringe.

Contact address

Reactec Ltd.
Vantage Point,
3 Cultins Road,
Edinburgh,
EH11 4DF

Contact Reactec support if you have any questions:

helpdesk@reactec.com

www.reactec.com/support

Registered in Scotland (no. SC221428).

Conventions used

This guide uses the following formats for safety notices.



WARNING

Provides important information to prevent serious problems, for example, the loss of data.



Caution

Provides important information to prevent serious problems, for example, the loss of data.



Information

Provides additional information.



Tip

Provides useful hints and tips.

Contents

- 1 Reactec eco-system 4
- 2 Checklist of items required 6
- 3 Downloads 7
- 4 Gather information 8
- 5 Set up users 9
- 6 HAV options 10
- 7 Proximity options 11
- 8 Assign ID cards 12
- 9 Program tool tags 13
- 10 Hardware verification 14
- 11 Management training 15
- 12 Operator training 16
- 13 Key reports summary 17
- 14 R-LINK battery life 19



1 Reactec eco-system

The Reactec eco-system is a group of hardware and software components which allow the collection, organisation, and analysis of HAV (Hand Arm Vibration) exposure data, proximity data and other health risk data.

The main component of the Reactec eco-system is the watch worn by the Operator. The watch is part of the R-LINK and HAVwear eco-systems.



WARNING

If the equipment described in this guide is used in a manner not specified by Reactec, the protection provided by the equipment may be impaired

R-LINK eco-system

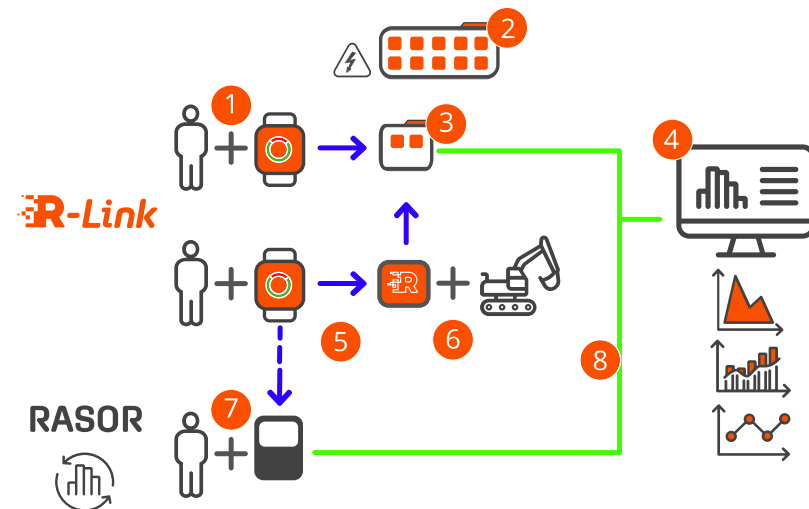


Figure 1 - R-LINK eco-system

1	R-LINK watch	Used to collect HAV and other important information. Also used to notify users of any potential hazards.
2	Charging station	Used to quickly charge the R-LINK watches.
3	2 Bay Gateway	Used to charge two R-LINK watches and to collect data

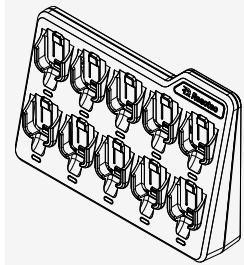
		from the R-LINK watch and to then transmit this data, using mobile or networked connection, to be analysed using the cloud-based Reactec Analytics.
4	Reactec Analytics	Cloud-based software for reporting and managing your users, tools, and plant.
5	Data transfer using Bluetooth	Data transfer from R-LINK watches to the Gateway, Beacon, or RASOR.
6	Beacon	Attached to equipment or fixed location and used to highlight potential hazards or proximity issues.
7	RASOR	Optional: RASOR captures real-time, multiple workforce risks and supports remote and lone workers with location information, slips/trips and fall detection.
8	Data transfer to Reactec Analytics	Data transmitted to Reactec Analytics using mobile or networked connection.



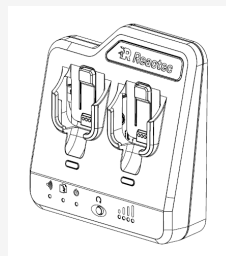
2 Checklist of items required

Check you have received all the required items.

Hardware



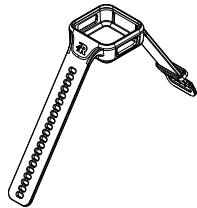
10-bay charging station



Gateway



R-LINK watch



R-LINK strap



Beacon (optional)



ID card



Tool tags



RFID Read/Writer

Software

- Internet-enabled Windows computer
- Reactec Analytics account
- ID Card Manager software
- Tool Tag Manager software
- RFID Read/Writer driver



3 Downloads

An online Reactec Analytics account is required to log into www.reactecanalyticsplatform.com

In the interface, top-right, select  to download software and drivers.

ID Card Manager software

ID Card Manager is used to assign ID cards to operators.

Tool Tag Manager software

Tool Tag Manager is used to program tool tags.

RFID Read/Writer driver

Download and install the RFID Read/Writer driver from Reactec Analytics prior to connecting the device.

After you have installed the driver, connect the RFID Read/Writer to your PC or tablet with a USB cable.



Information

If you connect the RFID Read/Writer before installing the driver, Windows may automatically install a different driver which may not work as expected.



4 Gather information

List of Reactec Analytics Users

Details of personnel who are required to be set up as Users for the following tasks:

- Administer the system
- View Reports
- Assign ID cards
- Program tool tags

List of operators

To collate details of operators using the Operator Import template in Reactec Analytics, follow these steps:

1. Select **Data/Project Manager** from the top toolbar.
2. Select **Operators**.
3. Select **Bulk Upload**.
4. Select **Download Template**.
5. Populate and save the file.

List of vibratory tools to be tracked

To collate details of tools using the Tool Import template in Reactec Analytics, follow these steps:

1. Select **Data/Project Manager** from the top toolbar.
2. Select **Tools**.
3. Select **Bulk Upload**.
4. Select **Download Template**.
5. Populate and save the file.



Information

If an existing company-owned ID card is to be used then by collating the electronic RFID identity number for the ID card, it is possible that the ID card can be used without the need of an additional assignment process using ID Card Manager.

► *Refer to the Software Administration Guide for more details.*



5 Set up users

Types of Reactec Analytics user accounts

- **Report:** View reports. No ability to add or amend any information within Reactec Analytics
- **Group Administrator:** Manage Users, Operators and manage data for specified groups
- **Administrator:** In addition to the above, manage all user accounts, all groups, permissions, options, and data

Tutorial

Watch the [video](#) on how to set up new users.

https://www.youtube.com/watch?v=_AaKC4Obf8

Set up a new user

Employees require a user account to access Reactec Analytics.

To set up a new user, follow these steps:

1. On the toolbar, select **Users > Create New**.
2. Enter the employee's details and select the appropriate type of user.



Information

For group administrators it is essential to select the groups the administrator is responsible for.

3. Select the modules the employee should have access to.

4. Use the **Data Access** options to specify the groups, regions, and divisions from which the employee can view data.
5. Select **View TEP & SEP** to create smart users who can access both TEP and SEP data.
6. Select **On** to receive e-mail alerts next day for breaches of EAV, ELV or both.



Information

For group administrators and administrators, it is essential that at least one of the **Admin Access** boxes at the bottom of the page are ticked:

- **System:** Allows a User to manage Users, Data, Groups, Permissions, HAV options and export Data, Control Measures and Interventions.
- **Operators:** Allows the management of operators only.
- **Hardware:** Allows the management of asset admin. Hardware and tools.
- **Interventions:** Allows the creation of interventions only. This option is populated automatically if **System** is selected.

7. Select **Create**.

The employee is added to the list of users.



6 HAV options

These are settings which determine how data is displayed on the R-LINK watch and in Reactec Analytics.

Enable OFF button

When this mode is enabled, the operator can prevent the R-LINK from detecting TEP HAV risk exposure data at any time. The OFF function is for customers who are concerned about operators picking up exposure points from non-tool activity, for example, driving vehicles in rough terrain.

The default is set to **Disabled**.

To enable this feature, follow these steps:

1. On the top toolbar, select **Data/Project Manager**.
2. Select **SETUP > HAV Options**.
3. Select **Enabled**.
4. Select **Save**.

Exposure assessment type

The majority of HAV reports available with Reactec Analytics can be viewed as either TEP or SEP, or a combination.

TEP (Tool Exposure Points) is calculated based on the vibration level programmed in the tool tag.

SEP (Sensed Exposure Points) is calculated based on the sensed vibration level with the R-LINK worn on the wrist.

Most organisations use TEP points initially to assess operator's risk. In situations where an organisation chooses to select SEP data, the R-LINK watches will display SEP points and the exposure risk data reported will be based on SEP points wherever possible. The default is set to TEP.

To switch to SEP, follow these steps:

1. On the top toolbar, select **Data/Project Manager**.
2. Select **SETUP > HAV Options**.
3. Select **Sensed Exposure Points (SEP)**.
4. Select **Save**.



Information

Before switching to SEP, an authorised member of management must evaluate the working environment using an ISO 5349 compliant measurement instrument.

Operator sign out control

An option is available to limit the potential for an Operator to sign out more than one R-LINK within a configurable time period.

The default for this option is set to **Off**, which makes it possible for any ID card to be used to sign out more than one R-LINK.

An Administrator can set a time period of up to four hours during which an ID card cannot be used to sign out a second device.

To set a limit on R-LINKs being signed out, follow these steps:

1. On the toolbar, select **Data/Project Manager**.
2. Select **SETUP > HAV Options**.
3. Select the required time from **Min Time Between Sign Outs**.
4. Select **Save**.



7 Proximity options

You must confirm the exclusion area settings for a beacon to be configured with an exclusion radius around it. The watch gives an alert when it enters the exclusion radius.

You can override the Beacon global settings on a unit by unit basis.

You can change the Beacon mode and update the proximity settings for example Alert type and proximity incursion distance.

To update these settings, follow these steps:

1. On the toolbar, select **Data/Project Manager**.
2. Select **Beacon Devices** .
3. Select **Edit** for the Beacon you need to override settings for.
4. To edit the settings, from **Settings** select **Override global settings** and update each field for your requirements.
5. Select **Save**.



8 Assign ID cards



Information

Only a Group Administrator or company-wide Administrator can assign ID cards.

A newly assigned ID card is only able to be used within the Reactec eco-system if the employee details have been downloaded to the Docking Station.

Employee lists are downloaded to Docking Stations overnight. To force a download at another time, switch the Docking Station off then back on.

Tutorial

Watch the [video](#) on how to assign an ID card.

<https://www.youtube.com/watch?v=aLwuxS9O-LQ>

Uploading the ID card template

To upload the ID card template, follow these steps:

1. Select **Data/Project Manager** from the top toolbar.
2. Select **Operators**.
3. Select **Bulk Upload**.
4. Select **Choose file**, locate the saved template. then select **Open**.
5. Select **Import**.

Operators are now visible in the Reactec Analytics operator list.

Assign ID cards

To assign an ID card, follow these steps:

1. Open ID Card Manager.
Log in using Reactec Analytics account credentials.
2. Connect the RFID Read/Writer to your computer.
A green tick is displayed in the **RFID Read/Writer Status**.
3. Select **Assign**.
A list of Operators that belong to this User account is imported and displayed in table format.
4. Place an ID card on the RFID Read/Writer.
A green tick will be displayed in the **Card Status**.
5. To assign the data to the ID card, select **Assign** next to the appropriate operator.
6. To assign another ID card, remove the previously assigned ID card and repeat this process.
7. Select **Close** to exit ID Card Manager.



Information

If an existing company-owned ID card is to be used then by collating the electronic RFID identity number for the ID card, it is possible that the ID card can be used without the need of an additional assignment process using ID Card Manager.

► *Refer to the Software Administration Guide for more details.*



9 Program tool tags

Only a group administrator or company-wide administrator can program tool tags.

Tutorial

Watch the [video](#) on how to program tool tags.

<https://www.youtube.com/watch?v=aLwuxS9O-LQ>

Upload the tool import template

To upload a tool import template, follow these steps:

1. Select **Data/Project Manager** from the top toolbar.
2. Select **Tools**.
3. Select **Bulk Upload**.
4. Select **Choose file**, locate the saved template, then select **Open**.
5. Select **Import**.

Tools are now visible in the Reactec Analytics Tool List.

Program tool tags

To program tool tags, follow these steps:

1. Open Tool Tag Manager.
2. Connect the RFID Read/Writer to your computer.
A green tick is displayed in the **RFID Read/Writer Status**.
3. Select **Download Tools**.
Log into your Reactec Analytics account. A list of tools that belong to this user account is imported and displayed as a table.
4. Place a tag on the RFID Read/Writer.
A green tick is displayed in **Tag Status**.
5. To write data to the tag, select the appropriate **Write** option.
6. To program another tag, remove the previously programmed tag and place a new tag on the RFID Read/Writer.
7. Select **Close** to exit Tool Tag Manager.



10 Hardware verification

Power up and sign out an R-LINK watch to verify the charging station and gateway are operational.

Gateway configuration

Before installing the Gateway, it should be determined if there is mobile phone signal coverage in the area. If there is no coverage, then the Gateway must have access to a private Wi-Fi network as an alternative.

- For more information, refer to "Configuring Gateways" in the *Software Administration Guide*.



Caution

For optimum performance, the ratio of watches to be used with a single Gateway should be limited to 30.

Communication with a Gateway

The charging station must be within communication distance of a Gateway. This is typically within 30m but will depend on any blocking surfaces within that 30m.

To establish that a charging station is in communication with a Gateway, the Gateway must first be powered up and connected to the internet.

With the Gateway in position, powered and connected to the internet, power up the charging station and dock at least one R-LINK watch in the charger.

After establishing power connection with the charger, the R-LINK watch searches for a nearby Gateway. If a Gateway is found and is verified as belonging to the same company as the R-LINK watch, the watch displays a blue cloud and purple wireless symbol in the top left hand corner of the display.

Confirm communications

After you have installed the charging station, perform a test to check that data is transmitted to Reactec Analytics using the Gateway.

1. Sign out a watch from the charging station.
2. Connect to a tool tag and use for a short time.
3. Return the watch to the charging station.
4. Wait 2 hours.
The data is automatically uploaded to Reactec Analytics.
5. Login to Reactec Analytics.
6. From the toolbar, select **Data/Project Manager**.
7. Under **Data** select **View/Upload**.
8. Confirm there is an upload record for your test.



11 Management training

Manager awareness training

Navigate here to access various manager training resources, for example, videos and PowerPoint presentations:

<https://www.reactec.com/support>

Reactec Analytics reports training resources

Refer to the following resources to understand and use reports in Reactec Analytics:

- Watch [How to use the key Reactec Analytics reports for best practice](https://www.youtube.com/watch?v=bOa8liZ_p54)
https://www.youtube.com/watch?v=bOa8liZ_p54
- Watch [How to schedule reports](https://www.youtube.com/watch?v=wbYjtobav70)
<https://www.youtube.com/watch?v=wbYjtobav70>



12 Operator training



Caution

The wrist strap is personal and should always be subject to appropriate occupational hygiene procedures regarding cleaning and replacement.

Ensure operators can demonstrate

- Signing out an R-LINK module
- Fitting the R-LINK module into the wrist strap and onto the wrist
- Switching R-LINK off, if required
- Successfully connecting to a number of tool tags
- An understanding of the R-LINK screen display and alerts

Operator training resources

Navigate here to access various manager training resources, for example, videos and PowerPoint presentations:

<https://www.reactec.com/support>



13 Key reports summary

The report modules are accessible from the toolbar in Reactec Analytics and are used to view information about operator HAV exposure and tool usage.

This allows analysis, monitoring of policies and planning and, where required, recording of any actions that need to be taken.

Workforce average exposure

Review the trend of overall HAV exposure and the impact of either exposure reduction activity and or levels of workload in relation to average.

Frequency - Quarterly / Annually

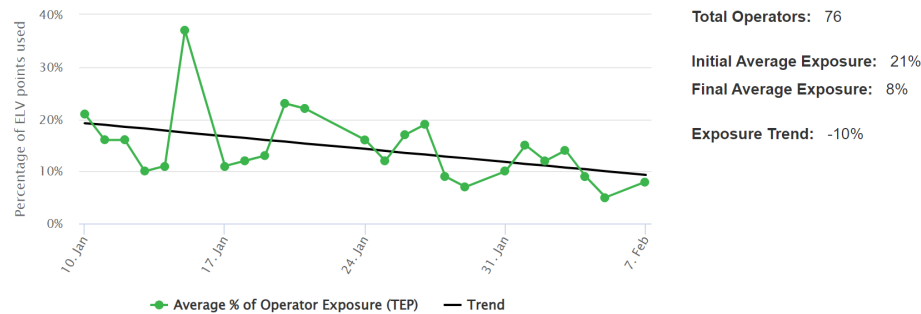


Figure 2 - Workforce average exposure report example

Exposure levels reached

This report shows any breach of exposure. This report should be generated monthly or quarterly as part of the management review, total exposure level breaches and exposure level breaches over time.

Frequency - Weekly / Monthly / Quarterly

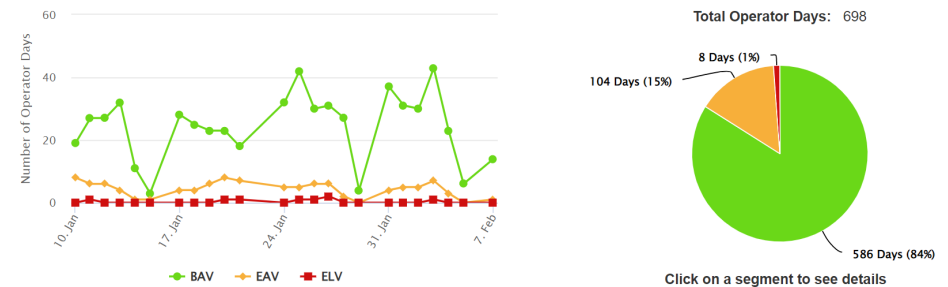


Figure 3 - Exposure levels reached report example

Operator average exposure

This report is used to review operators most exposed overall and their exposure trends. Further view of tools used overall to understand main source of exposure as well as specific daily tool use and tool sharing. This information helps with exposure reduction planning.

Frequency - Weekly / Monthly / Quarterly

Annually in support of occupational health surveys

Overridden	Group	Operator ID	Name	Days Monitored		Avg Daily Exposure		Current Levels		Exposure Thresholds			Individual Exposure Variance	Last Seen	Tool Usage	
				Previous	Current	Previous	Current	EAV	ELV	BAV	EAV	ELV			Total	By Day
	Group_14572	5605	Operator_141149	3	6	32	175	100	300	100	4	1	+447%	07/02/2022	Total	By Day
	Group_14572	5601	Operator_141150	10	12	79	149	100	300	100	4	3	+89%	07/02/2022	Total	By Day
	Group_14565	7055	Operator_55714	12	9	105	143	75	300	100	7		-36%	28/01/2022	Total	By Day
	Group_14565	7299	Operator_88855	13	14	90	124	75	300	100	11		+38%	03/02/2022	Total	By Day
	Group_14565	7877	Operator_55721	15	14	94	123	75	300	100	11		+31%	07/02/2022	Total	By Day
	Group_14565	7819	Operator_55696	20	8	64	120	75	300	100	7		+88%	03/02/2022	Total	By Day
	Group_14565	7045	Operator_55734	14	4	93	116	75	300	100	2		+25%	03/02/2022	Total	By Day
	Group_14565	7974	Operator_55695	7	9	98	109	75	300	100	4		+11%	07/02/2022	Total	By Day
	Group_14565	7287	Operator_55722	7	18	126	102	75	300	100	8	1	-19%	04/02/2022	Total	By Day
	Group_14572	5007	Operator_42850	0	4	0	90	100	300	100	3	1	0%	27/01/2022	Total	By Day
	Group_14565	76678	Operator_125748	8	21	90	65	75	300	100	8	1	-28%	07/02/2022	Total	By Day
	Group_14565	7080	Operator_55707	22	15	66	64	100	300	100	4		-3%	04/02/2022	Total	By Day
	Group_14565	7828	Operator_55723	5	14	54	60	75	300	100	4		+11%	04/02/2022	Total	By Day
	Group_14565	7053	Operator_55698	13	18	81	59	75	300	100	6		-27%	04/02/2022	Total	By Day
	Group_5099	7801	Operator_37226	13	18	4	57	75	300	100	8		+1225%	05/02/2022	Total	By Day
	Group_14572	76703	Operator_141153	10	14	80	54	100	300	100	10	1	-32%	07/02/2022	Total	By Day

Figure 4 - Operator average exposure report example

Top tool exposure

This report is used to review which tools are most exposing operators to HAV overall and the trend of exposure. This can help in understanding actions that will provide the greatest benefit in reducing exposure to workers by identifying tool replacements or changes in working practices.

Frequency - Monthly / Quarterly / Annually

Overridden	Tool ID	Manufacturer	Model	Tool Name	Vib ms ²	Total Operators	Total Exposure Points	Trigger Time (Hours)	Average Daily Points	Average Daily Operator Points
	TL_196801	Bosch	GEX150AC	SANDER	5.2	78 (100%)	97.6200	97.6200	218	8
	TL_94371	Darg	1600	STRAIGHT GRINDER	14.0	5 (6%)	1737	4.4322	217	134
	TL_112489	Darg	1600	STRAIGHT GRINDER	7.2	3 (17%)	1373	13.2472	137	108
	TL_193011	Kobe	KBE270	Die Grinder	16.8	2 (33%)	1284	12.3861	183	160
	TL_94367	Darg	1600	STRAIGHT GRINDER	7.2	2 (11%)	1124	10.8408	140	94
	TL_94714	Darg	1600	STRAIGHT GRINDER	7.2	2 (11%)	982	9.4697	154	140
	TL_100312	Darg	1600	STRAIGHT GRINDER	6.7	2 (11%)	941	10.4842	134	134
	TL_94656	Darg	1600	STRAIGHT GRINDER	7.2	1 (6%)	884	8.3344	144	144
	TL_95449	Darg	1600	STRAIGHT GRINDER	7.2	1 (6%)	771	7.4361	154	154
	TL_94543	Darg	1600	STRAIGHT GRINDER	7.2	1 (6%)	740	7.1406	148	148
	TL_80044	Unallocated	GAV5	CHIPPING HAMMER	15.7	3 (17%)	664	1.3472	95	83
	TL_94798	Darg	1600	STRAIGHT GRINDER	7.2	2 (11%)	570	5.4947	114	95
	TL_187353	Atlas Copco	LSR48 S120 CW	Barrel Grinder	4.5	2 (11%)	531	13.1169	48	38
	TL_95046	Darg	1600	STRAIGHT GRINDER	7.2	3 (17%)	498	4.8075	124	124
	TL_94834	Darg	1600	STRAIGHT GRINDER	7.2	3 (17%)	430	4.1514	72	61
	TL_94398	Darg	1600	STRAIGHT GRINDER	7.2	1 (6%)	417	4.0189	139	139

Figure 5 - Top tool exposure report example

Workforce incursions

This report is used to identify the number of operator proximity incursions, identified as short, moderate or sustained instances. This can help in understanding actions that will provide the greatest benefit in reducing dangerous exposure to workers.

Figure 6 - Workforce incursions report

Scheduling a report

Any Reactec Analytics report can be scheduled to be received by e-mail on a regular basis such as daily, weekly, or monthly. Scheduled reports are PDF copies of the reports sent to one or more user email addresses on a predefined schedule. These are useful to ensure key stakeholders are kept informed.

1. On the toolbar, navigate to the report that you want to schedule.
2. Using the filter options, filter the report data as required.



3. Select **Recipients** and choose who you want to receive a PDF copy of the report.
5. Select **Periodically**.
The schedule options are displayed.
6. Specify the schedule and select **Ok**.



14 R-LINK battery life

A R-LINK watch is a rechargeable product with the following battery life and charge requirements:

- After a typical days use of a fully charged unit, the time to recharge is two hours
- Maximum battery life is 16 hours
- The R-LINK watch should be fully recharged before being put into storage, when not mounted in a powered up docking station

► *For more information on battery care, refer to the Hardware Overview.*



Caution

A R-LINK watch must not be allowed to be without recharging for a period of greater than 6 months.