



EKOTEK IK10 REPEATER AND CALL POINT INSTALLATION GUIDE

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0 PREFACE

0.1 About This Document

This document covers the full installation, configuration, and operation of the EkoTek IK10 Repeater and the EkoTek IK10 Call point in an EkoFamily system.

0.2 Intended Readers

This document is intended for use by product installers. Installers of this product must be suitably qualified (0.7.1).

0.3 Warranty

This Multitone product is supplied with a 12 month warranty beginning upon receipt of the solution. Please see the Multitone standard terms and conditions of purchase.

0.4 Compliance

EU Territories

This product complies with the requirements of the following EU Directives:



Radio Equipment Directive (RED) 2014/53/EU
RoHS Directive 2011/65/EU (Decision 768/2008/EC Annex II, Module A)

A complete copy of the declaration of conformity for this and other Multitone products may be obtained upon request from supportdesk@multitone.com. Or, contact your Multitone Electronics PLC representative.

This equipment contains low power radio devices and has been tested for compliance with the recognised operational performance and personnel safety working limits specified for such equipment. Should any problems arise in relation to interference affecting signals both to and from the equipment, the apparatus may require repositioning or the fitting of additional filtering components, such as ferrite absorbers or in-line filters. Should such action be deemed necessary, contact either Multitone Electronics PLC or their authorised agents.



WEEE Directive 2012/19/EU & UK S.I. 2013/1113 Product Disposal

At the end of its serviceable life, this product should not be treated as household or general waste. It should be handed over to the applicable collection point for the recycling of electrical and electronic equipment, or returned to Multitone or their agent, for disposal.

FCC Statement of Compliance



These devices comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. These devices may not cause harmful interference, and
2. These devices must accept any interference received, including interference that may cause undesired operation.

Un authorised modification to these equipment will void the user's authority to continue to operate the devices within the scope of the FCC Part 15 Rules.

A full technical specification for these products may be obtained from your Multitone Electronics PLC representative.

Information to user (FCC section 15.105): Class A devices

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

0.5 Company Liability

This document has been compiled for guidance only and the content checked for technical accuracy. The user should ensure that the correct issue of the document is used, as Multitone Electronics plc will not accept any liability for inaccuracies or errors resulting from its use. In line with the Multitone's policy of continued technical advancement, technical specifications are subject to change without notice. The products and services offered may be subject to availability and differ from those described, or illustrated, in this document.

Note 1. The warranty and IP66 dust/water ingress protection rating (battery only) and IP65 dust/water ingress protection rating (DC power) for this product is valid only when the equipment is installed by Multitone or its authorised agent.

Note 2. When installing the EkoTek Call Point Ligature and Vandal Resistant 12VDC Installation Kit supplied with Part No:IK10-INK warranty is only valid if correct screwdriver is used when installing. See section 4.1.2 for required screwdriver.

See the Multitone terms and conditions for warranty and liability information.

0.6 Data Protection

As the equipment user or controller, you may collect and manage personal data. In this instance, you must be in compliance with any local privacy protection laws and regulations which protect the rights and interests of other people, by implementing measures which include but are not limited to: handling such data securely and only for a period of time that is reasonably required for its intended use.

0.7 Safety

The following information applies to both operating and servicing personnel. General Warnings and Cautions will be found throughout the manual where they apply.

All the safety and operating instructions should be read before the equipment is connected and operated, and retained for future reference.

All warnings marked on the equipment and within this guide must be strictly adhered to.

No attempt should be made to remove any designated safety covers, as these areas contain voltages of a sufficient magnitude to constitute a risk of electric shock to personnel.

0.7.1 Installation Notes

The installation and servicing of this product must only be carried out by suitably qualified personnel.

Any personnel installing, connecting, terminating, and maintaining this hardware MUST be suitably qualified personnel.

When installing the IK10 devices with the additional DC power connection (supplied separately: 0301-1641 IK10 DC Installation Kit), the customer MUST present suitable 12VDC power connections.

This equipment has been designed to conform to the relevant Safety and EMC performance standards, but it may be necessary to take additional precautions during installation to ensure continued compliance.

0.7.2 Connection of Power Supplies

Battery power ONLY:

This equipment is powered by an onboard battery installation. Any replacement of these batteries should only be undertaken by designated service personnel.

DC Power with battery back-up:

This equipment is powered by a separate EkoTek Call Point Ligature & Vandal Resistant 12VDC Installation Kit (supplied with Part No:IK10-INK). A backup battery is also included in the device to provide power in case of DC failure. The customer must present the correct power source and voltage required at the target site prior to installation. All setup and battery replacement must be undertaken by designated qualified service personnel. See section 4 page 13 for full instructions.

0.7.3 Servicing

All servicing, setup, repairs, and battery replacement must be undertaken by designated qualified service personnel.

0.8 Limitations

The EkoTek IK10 Call point and Repeater products are approved for use in a range of temperature environments, between -20 °C and +55 °C. The products are also IP66 rated (water and dust protection) when powered with BATTERY ONLY. If the device is installed with DC power connections, the IP rating is IP65. In this case, AVOID installing the device in a wet area or bathroom, or any room with condensation or dust.

0.9 Feedback

Multitone welcomes feedback relating to this document and the product(s) described. Please direct any comments to supportdesk@multitone.com or to Multitone's Head Office:

FAO Technical Documentation
Multitone Electronics plc Multitone House Shortwood
Copse Lane Kempshott Basingstoke Hampshire RG23 7NL

0.10 Version Control

Version 1 23/10/2025 First release

1 INTRODUCTION

EkoTek IK10 Overview

The EkoTek IK10 product line are 2.4 GHz network repeater and call point variants for use as part of EkoFamily systems.

The product enclosures are designed for suitability in environments with heightened risk of physical impact damages and ligature risk considerations, such as psychiatric facilities. This device is rated IK10 (impact resistance) and IP66 (ingress protection) to ensure protection for the external enclosure and the device internals.

Call points have a further variation:
Magnet Key isolation variant or standard.

The EkoTek IK10 repeater variant is pictured in figure 1.F.

The present guide will provide an overview of the installation process for each variant of the IK10 product group.



Figure 1.A. EkoTek IK10 Call Point unit with magnet key isolation.

IK10 Product Variants

EKOCP-LVR-M	IK10 Call Point, Ligature/vandal resistant, with magnetic keyswitch isolation
EKOCP-LVR	IK10 Call Point, Ligature/vandal resistant
EKOREP-LVR	IK10 Repeater, Ligature/vandal resistant

Figure 1.B. List of the currently available IK10 devices.

IK10 Installation Kit

Part No:IK10-INK	EkoTek IK10 DC Installation Kit
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Figure 1.C. List of the currently available IK10 devices.

EkoTek System Overview

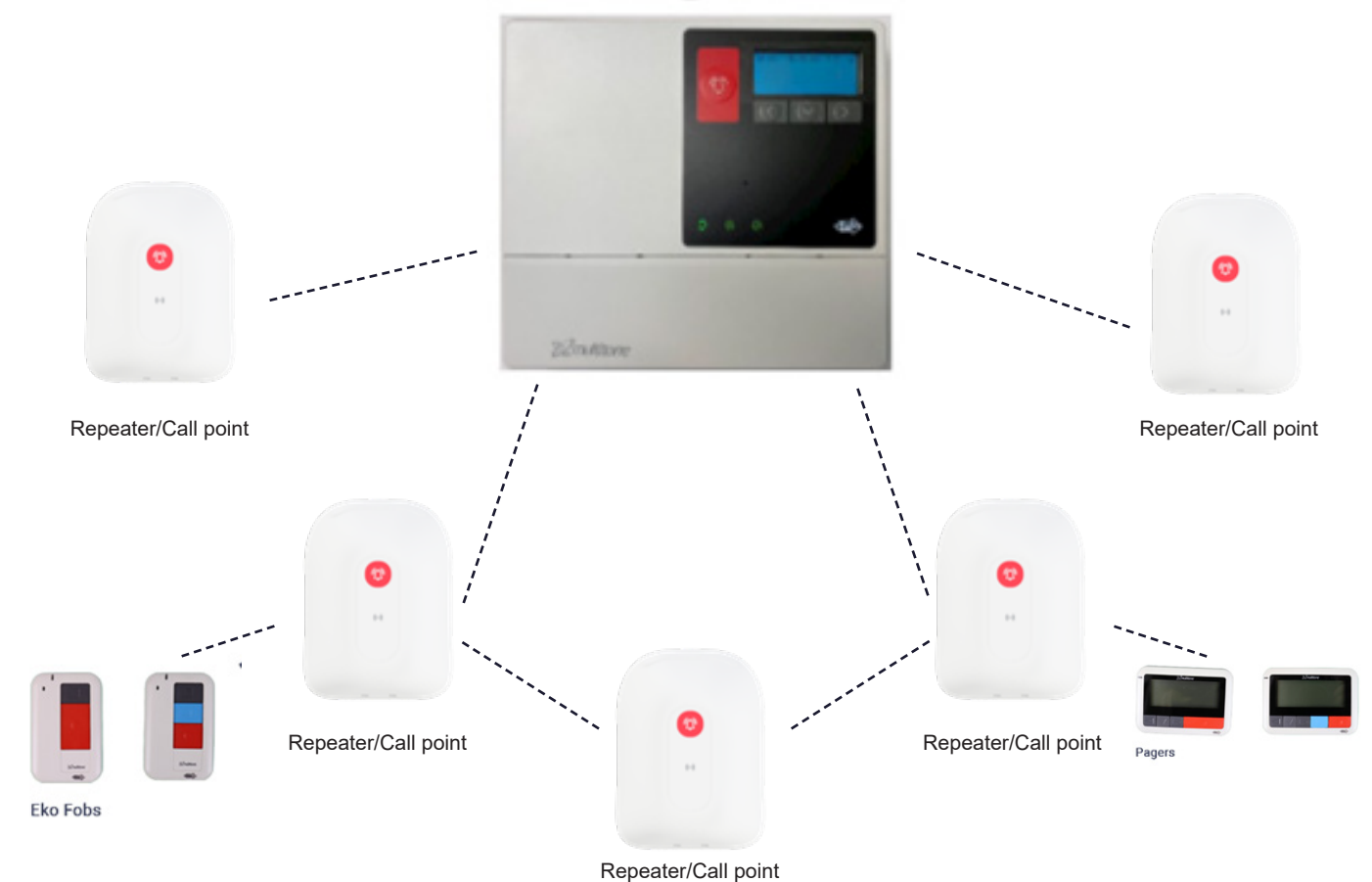


Figure 1.D. EkoTek system example illustration.

Messages are communicated via a mesh radio network, which makes use of repeaters to relay the data around the network.

Due to the multi-hop nature of the mesh network, its physical shape and size is defined by the layout of the repeaters, which may be in three dimensions e.g. covering multiple floors in a building.

EkoTek is truly wireless (only the hub needs AC power), making system installation and expansion very quick and easy.

EkoTek Principles

Each EkoTek product acts as a node, which forms part of a self-organising radio mesh network.

Each node in the network searches for links to nearby nodes, to form the network mesh. Organising the network is an automatic function carried out by the nodes themselves – Configuration is not required.

As the network is self-organising, it is also self-repeating. Should a node (Repeater (RE) or Call point (CP)) fail, the network will automatically reconfigure around the failed node.

The dimensions of the network are defined by the layout and distribution of repeater nodes, the layout being arranged to meet the requirement, e.g. reception and public areas of a hospital, accident and emergency department, or all floors of a building for a security guard lone worker protection.

Sizable networks can be easily built, due to the large number of repeaters supported by EkoTek.

Repeaters are normally installed on walls and/or ceilings. By adding an enclosure, they can easily be installed outdoors. The hub is installed either on a wall or on a desk, so that the display can be easily seen.

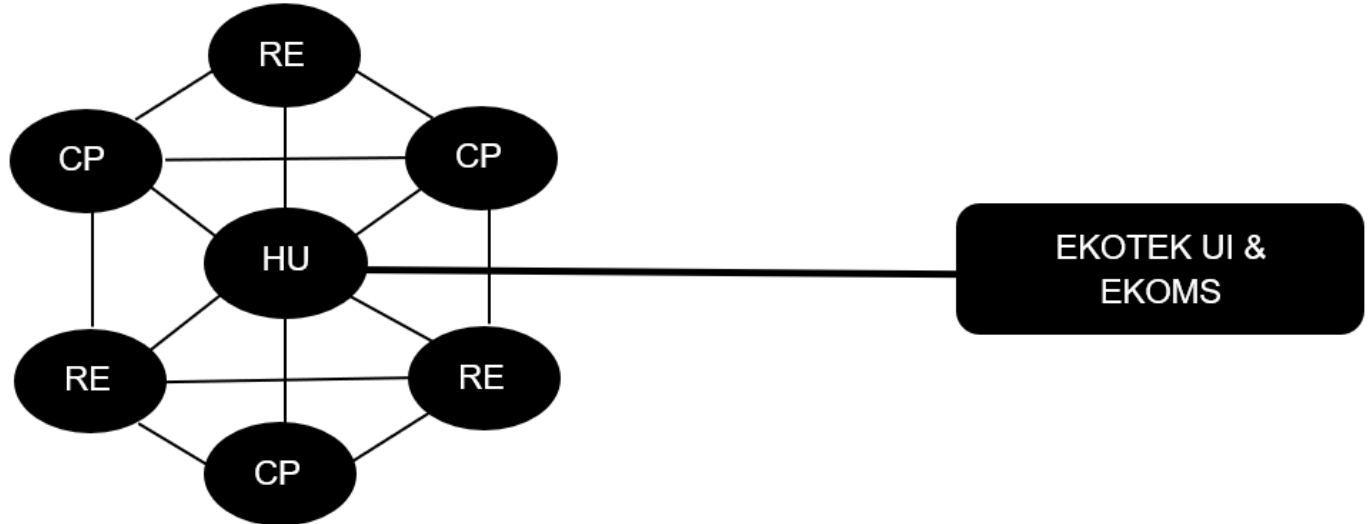


Figure 1.E. EkoTek system network mesh formed by repeaters.

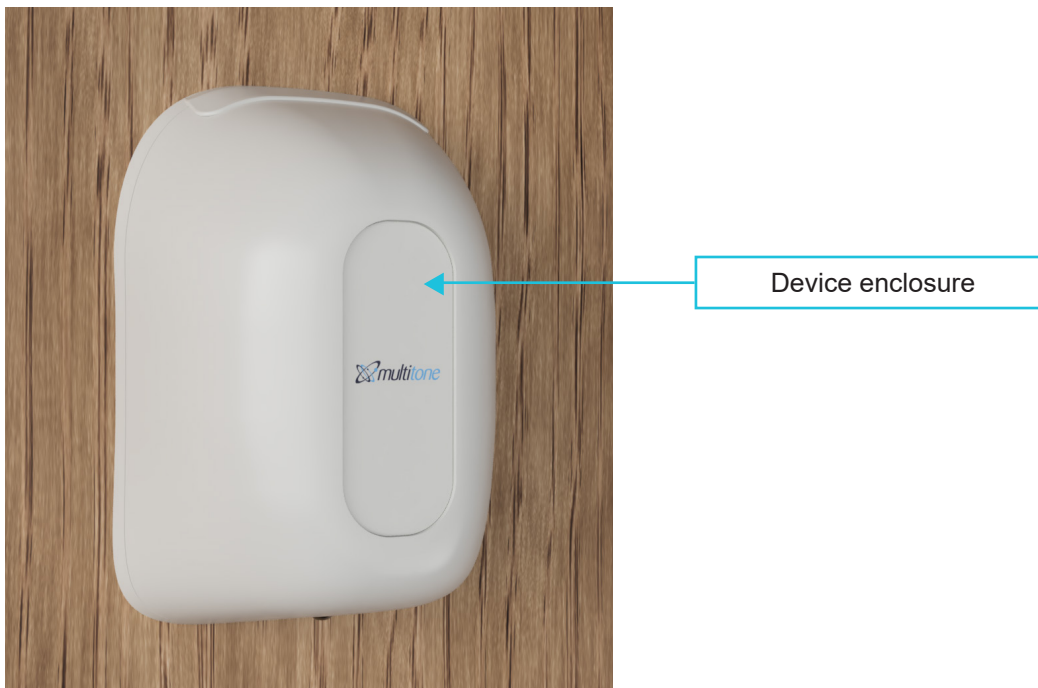


Figure 1.F. EkoTek IK10 Repeater variant design.

2 COMPONENTS

The EkoTek IK10 product purchase contains the following components:

Call Point Variants:	Repeater Variant:
EkoTek IK10 Call Point Device unit (including mounting plate)	EkoTek IK10 Repeater Device unit (including mounting plate)
2x D cell Batteries	2x D cell Batteries
Mounting screws: Mounting plate screws (4x No 6 x 1.25 screws (countersink), 4x Plastic raw plugs to suit)	Mounting screws: Mounting plate screws (4x No 6 x 1.25 screws (countersink), 4x Plastic raw plugs to suit)
Quick Guide	Quick Guide
EKOCP-LVR-M ONLY: Magnetic Keyswitch isolator.	

Figure 2.A. Product Kits Component List.

Additional components are required for customer requirements such as DC power. See section 1, figure 1.C.

EkoTek System Minimum Requirements

This document provides comprehensive instructions for the installation and configuration of the EkoTek Ik10 Call Point and Repeater within a wireless mesh network. The system will require:

- EkoTek Hub (central control unit)
- IK10 Repeaters
- IK10 Call Points (EKOCP-LVR)
- Pagers*

The system employs two-way radio communication, frequency hopping, and self-configuring mesh networking for robust and reliable operation.

*Note that pagers are a mobile display tool to receive/view alarm status and information, they do not 'repeat' or send signals through the mesh network in the way that the other components of the system would.

3 OVERVIEW AND OPERATION

Device Dimensions

Device: 164 x 121.3 x (59.5 + 5) mm. As assembly with components below.

Enclosure: 157.86 x 117.46 x 59.5 mm.

Inner Plate: 137.87 x 106.52 x 5 mm.

Rear Plate: 164 x 121.3 x 22.5 mm.

Features

Repeater: Both the Repeater and Call point variants of this product act as repeaters in the mesh network, and can be configured as any other EkoTek repeater (including location reporting).

IK10 rating: These devices are impact resistance rated to IK10. Making it suitable to withstand environments prone to vandalism or impact.

IP66 rating: Completely protected against dust and can withstand powerful water jets. This means that the device may be installed in a bathroom, wet room, or other humid environments.

Note. These ratings apply only to devices installed to be battery-powered ONLY.

Call Point and Call Point with Magnetic Keyswitch Features

Alarm button: Press the call point alarm button to raise an alarm from the device. Once raised, the alarm will sound from the device, and the alarm will be sent onto the system. This will prompt designated staff to respond to the alarm.

LED: The LED indicates the activation or activation status of the call point.

Magnet Key Switch (magnetic key isolation variant ONLY): The magnet key switch is used to disable and enable the audible alarm being alerted at the device when the call point alarm button is pressed. When disabled, the alarm button WILL still send the alarm to the Hub, but will not produce an alarm noise at the site of the device.

3.1 POWERING THE DEVICE

Battery Powered Devices

IK10 devices are powered via 2 x internal alkaline D cell batteries.

The device can be powered solely via the onboard batteries.

DC Powered Devices

If DC power is required for either the call point or repeater, the device will need to be equipped with a separate EkoTek Call Point Ligature & Vandal Resistant 12VDC Installation Kit supplied with Part No:IK10-INK.

If the DC power is connected, the mains supersedes the battery power as a source, in this case the batteries will be used to power the device ONLY if the mains connection fails (battery backup power).

See section 4.3 for information on DC power failure and the role of the onboard batteries.

3.2 OPERATION

Repeater

Each IK10 repeater is a node within the self-configured EkoTek radio network. Repeaters are used to extend the network by enabling information to be passed throughout the network, to and from the system Hub.

Call Point

The IK10 call point also functions as a repeater in the EkoTek network. On top of this, the call point provides the ability for a person in the vicinity of the device to raise an alert from the device. This will send an alert to the EkoTek Hub to alert staff and prompt response.

An alarm can be raised from the IK10 call point device by simply pressing the **alarm button** on the front membrane of the device.

Call Point with magnetic keyswitch isolation

This product is identical to the IK10 call point, but with one additional feature: The ability to disable and enable the alarm sound at the call point location. When disabled, the alarm button can still be used to generate alarms on the Hub system, but will not produce an audible sound at the call point itself.

Enable and Disable the Call Point Alarm:

1. Touch the magnet key switch to the **membrane indicator icon** on the front of the call point for a brief moment (approx less than one second), this will indicate the current status of the call point.
2. Once the status is known, touch the magnet key switch to the membrane indicator icon again, and hold this contact for around 2-3 seconds, then the LED and beep will alert you to the status change.
This will switch an enabled call point to disabled mode, and a disabled call point to enabled mode.

Note that switching the current status repeatedly from disable to enable will trigger a 'wait period'. This forces the device to stay in the disabled state for 20 seconds, to avoid over crowding the network with information. Once the 20 second wait period has passed, touch the magnet key switch to the membrane indicator icon again to enable the device. This will be confirmed with the corresponding LED and beep sequence (figure 3.2.B).

- Disable -> Enable
- Enable -> Disable
- Disable -> Enable = WAIT PERIOD before you can re-enable.

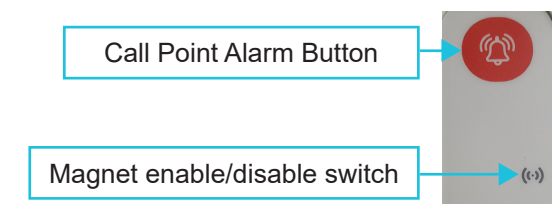


Figure 3.2.A. The Call Point membrane.

Call Point Activation: LED and Beep sequence

You have enabled the call point.	Red -> Green, Single beep
You have disabled the call point.	Green -> Red, Single beep
The call point is in the 'wait period'. Wait 20 seconds and try again.	Red, Single beep

Figure 3.2.B. The visual and audio cues.

4 INSTALLATION

The device can be installed by mounting high up on a wall or on a ceiling (call points must be reachable by users). Ensure the mounting surface is flat and on a non-metallic surface, and avoid obstructions that may interfere with radio signals.

Ideally repeaters should be spaced 10-15 metres apart. They should be no closer together than 6 metres, except where there is a structural barrier sufficient to attenuate the radio signal, such as a solid wall between repeaters. The maximum range between repeaters is 20 metres, but placing repeaters at this distance should be avoided, as any degradation of the radio path may result in the loss of connection between repeaters.

The Hub should have been installed centrally within the network footprint for optimal coverage, so that repeaters can be placed to facilitate strong and reliable connections in multiple directions. Distribute the repeaters/call points evenly but consider the environment to ensure strong connections.

To ensure the best protection against moisture, install the device high up on a vertical wall with the discreet screw (see figure 4.1.1.A, 4.1.1.B) facing downwards, so that the shrouding catch is on the top of the device.

The device serial number is located on the inside of the device enclosure on the product bar code label. The serial device number will be required for device registration to the EkoTek system Hub (Section 5). Be sure to make a note of the number prior to physical installation.

Screws: Torx torque screwdriver (torque set to 0.25 Nm (25 cNm). PZ2 screwdriver for the inner plate and rear mounting plate screws.

IF installing an EkoTek IK10 product with DC power (with the additional 0301-1641 IK10 DC Installation Kit) skip to page 15, Section 4.1.2.

Note. For best practice, ensure that a survey of the intended location is conducted prior to installation. See the EkoTek System Installation and Configuration Manual (9261-8173) for survey information.

4.1.1 Installation Instructions (Repeater and Call Point, BATTERY ONLY):



1. Screw the mounting plate to the mounting surface with a flush fit using the 4 mounting screws provided. Ensure that for the call points, the device is installed at an accessible height (1.2-1.5m from the floor)
2. Fit batteries into the device. Once the batteries are fitted, the device must be sealed shut using the inner plate. See figure 4.1.1.C for battery placement. Use the screws provided to screw the inner plate to the enclosure.

Consider testing the device by sending a call prior to the next step.



Note. The image to the left depicts the rear plate fixed to the wall (step 1) next to the fitted and sealed device.

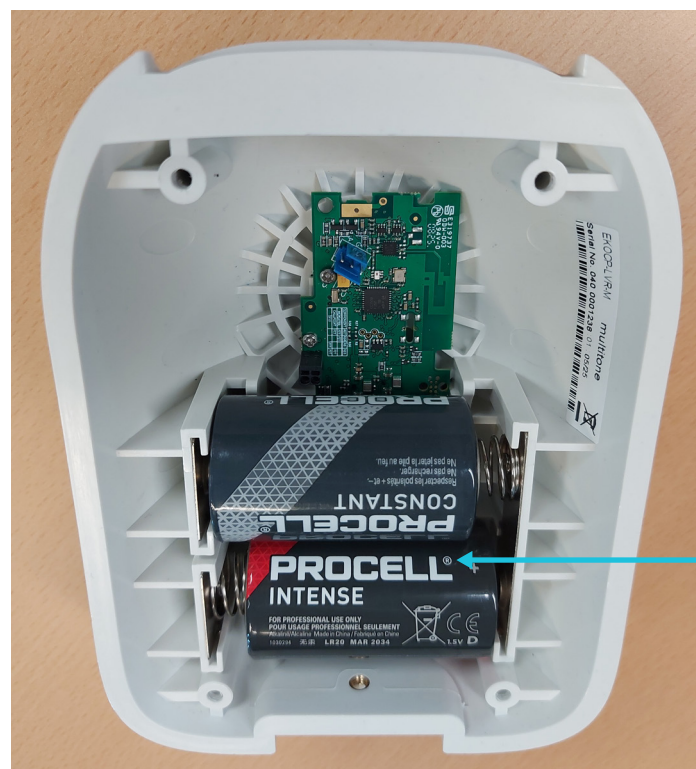
Figure 4.1.1.A. Mounting the device.

3. The next step is to connect the sealed device into the mounted rear plate. Hook the device unit into the shrouding catch at the top of the mounted rear plate, then hinge the device unit into the rear plate.
4. Once the device is in place, use the bottom discreet screw(s) to secure the unit in place within the mounting plate.
5. Finalise and begin configuration (see section 5).



Note. The image to the right shows the assembled and completely installed device, once all of the instructions above have been followed. From this point, the device can be registered to the EkoFamily system.

Figure 4.1.1.B. Fit the bottom discreet screw.



Battery placement

Figure 4.1.1.C. The inside of the device enclosure (BATTERY POWERED ONLY).

4.1.2 Installation Instructions (Repeater and Call Point, 12VDC with Battery Backup):

Requirements:

- IK10 DC Installation Kit (Part no:IK10-INK) 1 per device. This includes 2 cables and 1 zip tie
- IK10 unit devices
- Appropriate power supply (set up by customer) this requires a 12VDC power outlet
- 1 Screwdriver (SZS 0,4X2,0 - Screwdriver 1205202 from the manufacturer (Phoenix Contract) is the compatible screwdriver) **Note: The use of a different screwdriver will void warranty**

1. Ensure that the mounting location and power provided by the customer site is appropriate, i.e the connections and wire lengths are correct. Ensure that for the call points, the device is installed at an accessible height (1.2-1.5m from the floor).
2. Using the **IK10-INK**, check that the wire length is appropriate and connect each wire to the PCB connector in the device enclosure.
3. Once the wires are in place, insert the device's batteries.
4. Run the wires through the hole in the back plate of the enclosure.
5. Before screwing in and sealing the back plate to the device enclosure, make a loop with the wires and tie a cable tie snug at the crossing point. This is intended to prevent the wires from being accidentally disconnected from the PCB connector if pulled via the back plate. Note. Before fastening the back plate, ensure that wires are securely connected to the PCB, and the wire is at the correct length. It is recommended to test the system prior to sealing the back plate and setting on the rear mounting plate.
6. Pass the device wires through the hole in the rear mounting plate.
7. Connect the device wires to the customer's power connector, then pass the connector back through the wall carefully.
8. Screw the mounting plate to the mounting surface with a flush fit using the 4 mounting screws provided.
9. Finish by fixing the bottom discreet screw to secure the unit in place within the mounting plate.
10. Finally, Complete device configuration (see section 5).

For stability it is recommended to use the included zip tie to secure the wires approximately 4mm directly above the terminal block

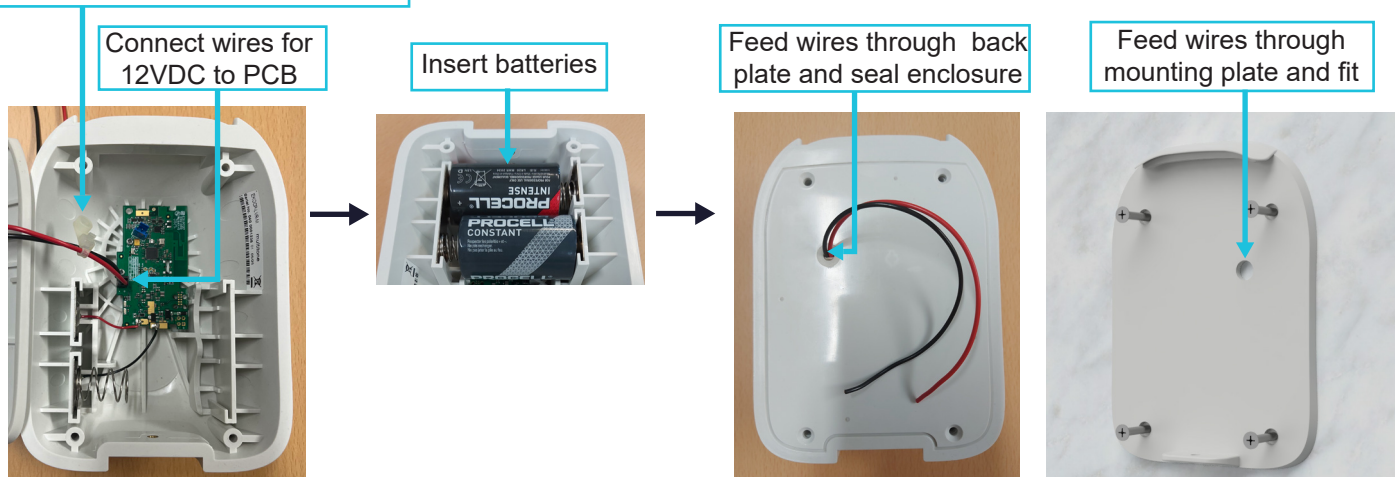


Figure 4.1.2A. Installing the IK10 device with 12VDC power and battery backup.

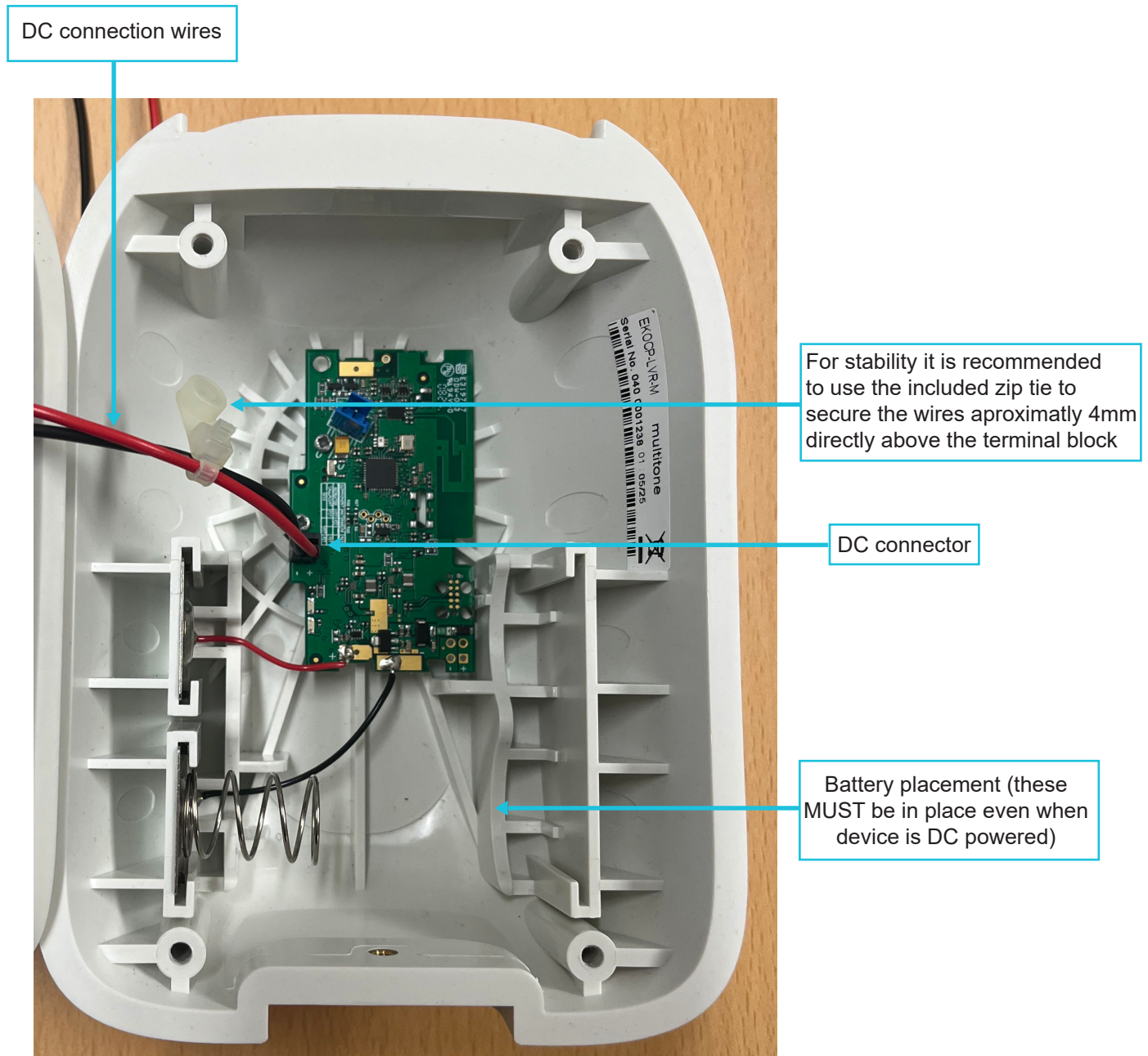


Figure 4.1.2.B. The inside of the device enclosure (DC powered) remember to insert batteries where indicated before sealing.

4.2 Changing the Batteries

Any device maintenance, including changing batteries, must be carried out by qualified personnel ONLY.

The onboard batteries will require replacing when the Hub's Maintenance>Device Status screen displays the device's battery percentage as below 20%.

To change the onboard batteries:

1. Unscrew the bottom discrete screw displayed in figure 4.1.1B on the unit.
 2. Rotate/unhinge the unit away from the mounted rear plate.
 3. Unscrew the inner plate screws from the device enclosure.
 4. Once the back plate is removed, the batteries can be removed and replaced from their location in the enclosure.
- Note. To avoid damaging the PCB, take extra care when removing and replacing the batteries in the device.**
5. Replace the inner plate and screw it back into the device enclosure, sealing the new batteries in place.
 6. Re-connect the sealed enclosure to the rear plate, as in the previous instructions (Installation, step 3).

4.2.1 Changing the Batteries (DC Component)

Any device maintenance, including changing batteries or wires, must be carried out by qualified personnel ONLY.

The onboard batteries will only deplete if the external power supply has failed (see 4.2).

Take care to avoid damaging the DC connection to the PCB while changing the batteries, as these components are proximally close to each other.

If the DC connection wires on the PCB must be removed or replaced, use a wire disconnecter:

1. Disconnect the device from the power source wires (12VDC). This is essential for safety.
2. Push the narrow end of the wire disconnecter into the connector hole opposite the wire.
3. Apply an amount of pressure until the wire becomes disconnected.

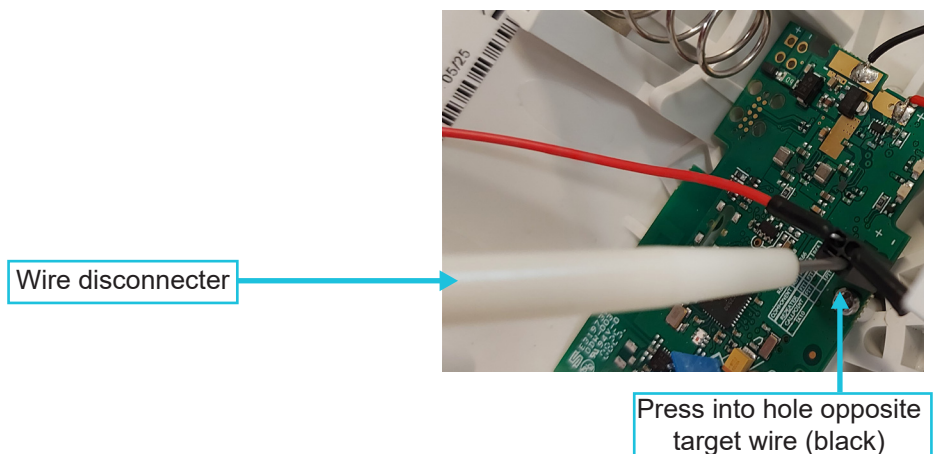


Figure 4.2.1.A. Removing a wire from the PCB connector (12VDC power).

4.3 Failure of the External Power Supply (DC Component)

If the device is connected to DC power:

Under normal operation, when connected to DC, the DC power supply will supersede the batteries. This means that the batteries are used ONLY as a backup power supply when the DC power is unavailable. In the event that the primary power supply of 12 V DC becomes inactive, the device will instead be powered by the onboard batteries.

Note: The DC power is NOT used to charge the onboard batteries.

5 USE AS PART OF AN EKOFAMILY SYSTEM

Once the IK10 device is installed, the existing EkoTek or EkoCare system must be configured to recognise the device and enable connection and communication.

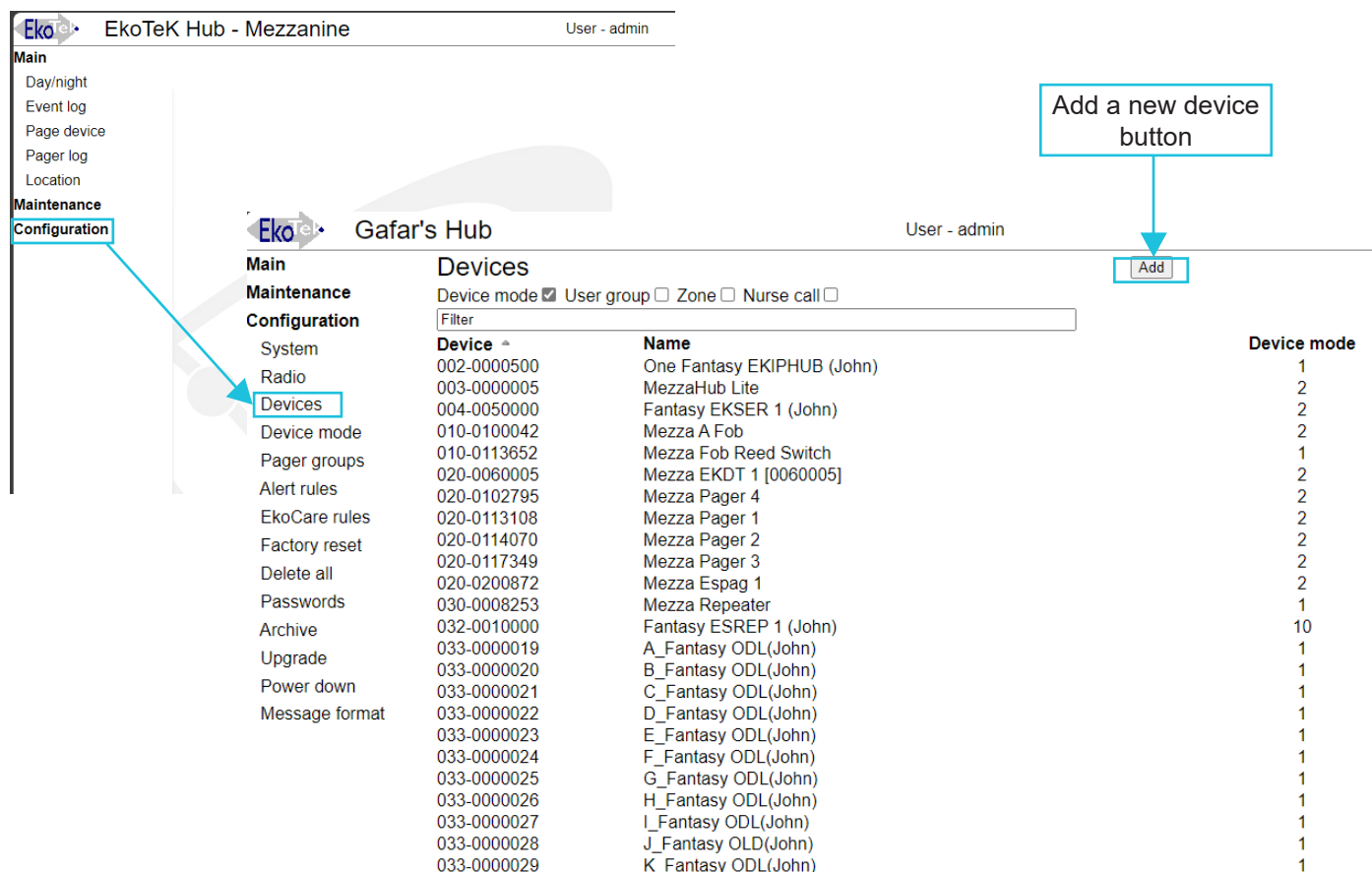
The following steps outline the basic process required to add the device to an existing system.

Devices will need to be configured appropriately to integrate with the settings of the wider system into which the device is installed. For more information relating to the configuration of EkoTek device settings, see the EkoTek System Installation and Configuration Manual, document number 9261-8173.

To register the IK10 device as part of an existing system:

First, sign into the web interface for the Ekofamily system Hub.

1. Enter the IP address of the Hub into the URL/search field of a browser on a device (such as a PC) that is already connected to the EkoTek/EkoCare system. This will load the Hub interface on the browser.
2. When the login web page for the Hub is loaded, enter the appropriate user credentials and click **SUBMIT**
3. The landing page will now grant access to several menus and options. Using the menu on the left of the screen, navigate to Configuration > Devices.



The screenshot shows the EkoTek Hub web interface. The top navigation bar includes the EkoTek logo, the title 'EkoTek Hub - Mezzanine', and the user 'User - admin'. The left sidebar contains a menu with 'Main', 'Maintenance', and 'Configuration'. The 'Configuration' menu is expanded, showing options like System, Radio, and Devices. The 'Devices' option is highlighted. The main content area shows the 'Gafar's Hub' interface with a 'Devices' section. A blue box labeled 'Add a new device button' points to an 'Add' button. Below the 'Add' button is a table of devices.

Device	Name	Device mode
002-0000500	One Fantasy EKIPHUB (John)	1
003-0000005	MezzaHub Lite	2
004-0050000	Fantasy EKSER 1 (John)	2
010-0100042	Mezza A Fob	2
010-0113652	Mezza Fob Reed Switch	1
020-0060005	Mezza EKDT 1 [0060005]	2
020-0102795	Mezza Pager 4	2
020-0113108	Mezza Pager 1	2
020-0114070	Mezza Pager 2	2
020-0117349	Mezza Pager 3	2
020-0200872	Mezza Espag 1	2
030-0008253	Mezza Repeater	1
032-0010000	Fantasy ESREP 1 (John)	10
033-0000019	A_Fantasy ODL(John)	1
033-0000020	B_Fantasy ODL(John)	1
033-0000021	C_Fantasy ODL(John)	1
033-0000022	D_Fantasy ODL(John)	1
033-0000023	E_Fantasy ODL(John)	1
033-0000024	F_Fantasy ODL(John)	1
033-0000025	G_Fantasy ODL(John)	1
033-0000026	H_Fantasy ODL(John)	1
033-0000027	I_Fantasy ODL(John)	1
033-0000028	J_Fantasy ODL(John)	1
033-0000029	K_Fantasy ODL(John)	1

Figure 5.A. Use the web interface to access the Devices list (Configuration > Devices).

Note. The image to the right shows the assembled and completely installed device, once all of the instructions above have been followed. From this point, the device can be registered to the EkoFamily system.

- The devices page displays devices which are registered to the Hub. Once the devices web page has loaded, click the 'Add' button in the upper right area of the page.

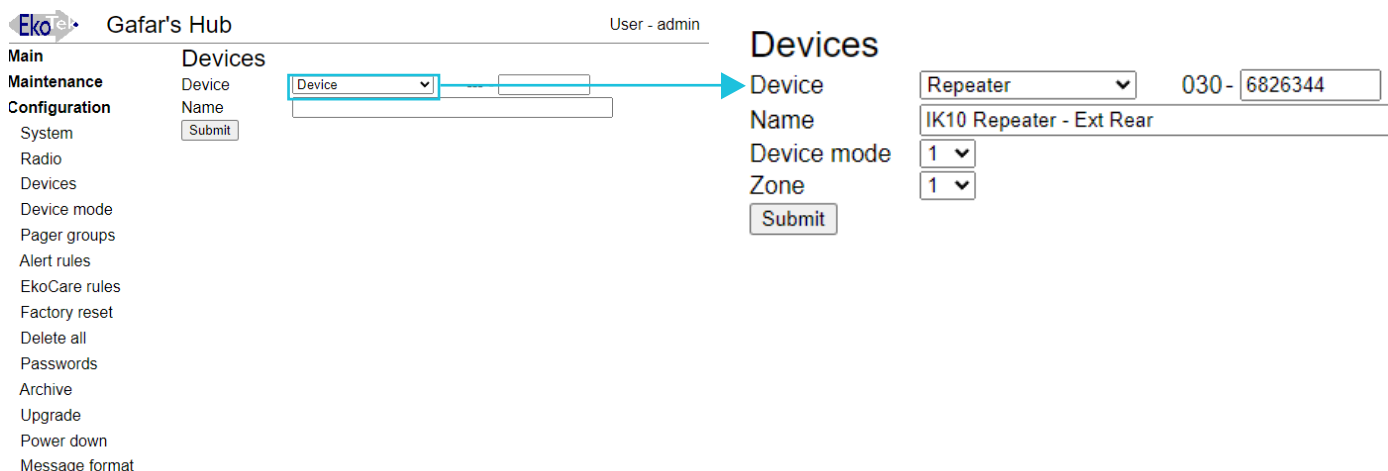


Figure 5.B. Adding a new device, filling in the necessary details on the system.

- Select 'Repeater' from the drop-down list, then set the configuration settings accordingly. Ensure that the serial number is entered in the box to the right of the drop down list, and that an appropriate and identifiable name is assigned. Set the device mode and zone. Once finished, click **Submit**.

Note on device mode setting. Ensure that the device mode setting is appropriate for the device, In accordance with those used on the specific Ekotek setup. IF no device modes currently in use are suitable, an unused device mode may need to be configured and set for the new device. When setting a repeater's device mode, the device is also assigned to a 2.4Ghz radio channel, which may be utilised by up to 60 fixed devices per channel (suggested).

- To set the zone (if required), first access the Devices table (figure 5.C) and tick the check mark that will display zones on the table. Click on the corresponding zone for the device in order to select a different zone.

Note on zones. These are used to define areas of the network coverage, and in conjunction with specific portable devices, identify locations that are not permitted for access. Zones can be used to set up rules within the wider system. During configuration, ensure that the assigned zone aligns with any existing alarm rules or Ekocare rules.

Note on user groups. If required by the organisation, call points can be added to user groups.

The device's details will now appear on the devices page. At this stage, the repeater is registered and managed by the system Hub, and will report to both the event log and device status pages.

Note. If using as part of a system that includes EkoSecure elements, due to EkoSecure operating on a different frequency (dual frequency capable), at least one EkoSecure repeater in range of the EkoTek IK10 device (en route back to the Hub) must be set to converter mode. This will enable the converter repeater to act as a bridge between the EkoTek frequency and the EkoSecure frequency.

Devices

Device mode ☒ User group ☐ Zone ☒ Nurse call ☐

Filter

Device	Name	Device mode	Zone	
005-0132727	Hub [0000005]	1	1	
020-0060005	Gafar EKDT	1		
020-0102781	Gafar4	1		
020-0114070	Gafar 5	1		
030-1111111	False Repeater	1	1	Submit

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Figure 5.C. In the devices list, make changes to the zone, user group, device mode, etc. of a device.

Configuring Call Points

Additional parameters need to be set when configuring call points:

- Manual alarm enable (Single/Double Press)
- Alert text
- Contact input type



EkoTek
 User - admin

User - admin

Main
 Maintenance
 Configuration
 System
 Radio
 Devices
 Device mode
 Pager groups
 Alert rules
 EkoCare rules
 Factory reset
 Delete all
 Passwords
 Archive
 Upgrade
 Power down
 Message format

Devices
 Device
 Name
 Device mode
 User group
 Zone
 Nurse call

Main
 Maintenance
 Configuration
 System
 Radio
 Devices
 Device mode

Device mode
 Call point
 Lock to network ☒
 Radio ☒
 Upstream channel
 Downstream channel
 Location range
Nursecall operation
 Patient call
 Audible alert
 Escalation (minutes)
Alarm operation
 Manual alarm enable ☒
 Alert text
 Operation
 Alarm audible alert ☒
 Contact input ☒
 Alert text
 Operation
 Alarm escalation ☒
 Period (minutes)
 Clearance
 Alert text
 Key switch enable ☐
 Maintenance message ☐

Copy settings from

Figure 5.D. Additional configuration for call points.

6 DEVICE MONITORING AND TROUBLESHOOTING

Device Monitoring

Now that the call point or repeater is registered to the central Hub via the Hub interface as described above, the device may be monitored using this interface.

The Device Status Page can be accessed as follows:

1. Access the Hub interface landing page (as in section 5, points 1-2)
2. Navigate to Maintenance > Device Status in the left side menu.
3. Locate the target device in the list of registered devices, and click Details.
4. View the Device Status Report. This report displays values to indicate several variables. Pay attention to:
 - Low battery level (%)
 - High parent sync loss count
 - Low link quality
 - Low link strength
5. Cross reference the latest Device Status report information displayed with any known system events which may affect the functionality of connected devices.

Viewing the Network Traffic:

1. From the Hub's interface landing page, navigate to Maintenance > Traffic in the left side of the screen.
2. A graph will appear on the screen visualising the EkoTek radio activity across a period of time. This RX (receive) and TX (transmit) can also be plotted separately on the graph.

EkoTek radio traffic

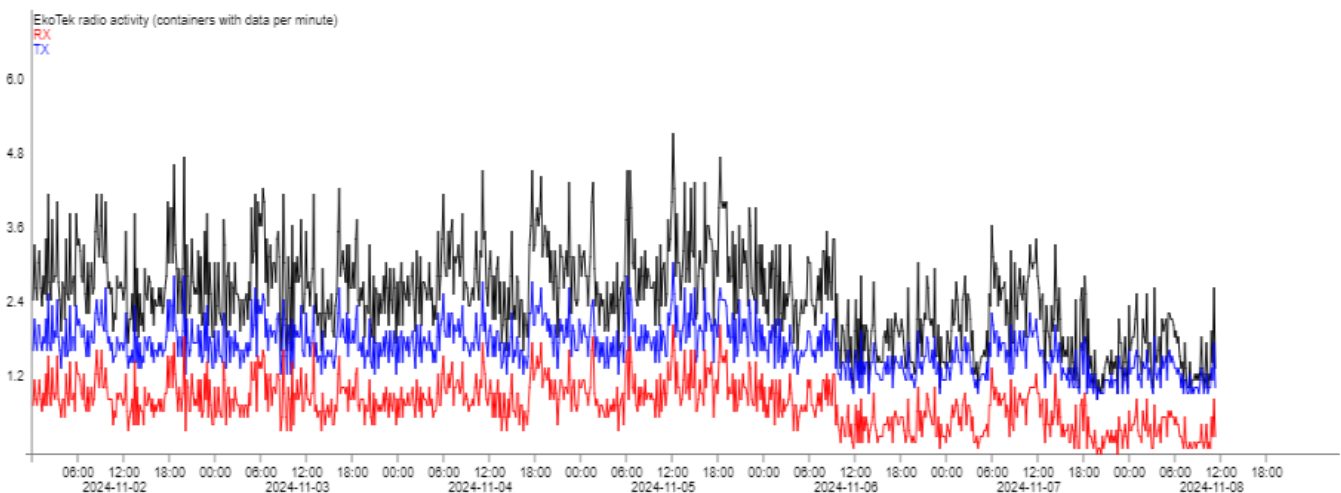
RX ☒ TX ☒

Figure 6.A. View the radio traffic graph via Maintenance > Traffic.

3. Look for any network traffic anomalies, and cross-reference the data with any system events that may affect the functionality of connected devices.

Network Tree

1. From the Hub interface landing page, navigate to Maintenance > Network Tree.
2. A screen will appear displaying the network tree values.

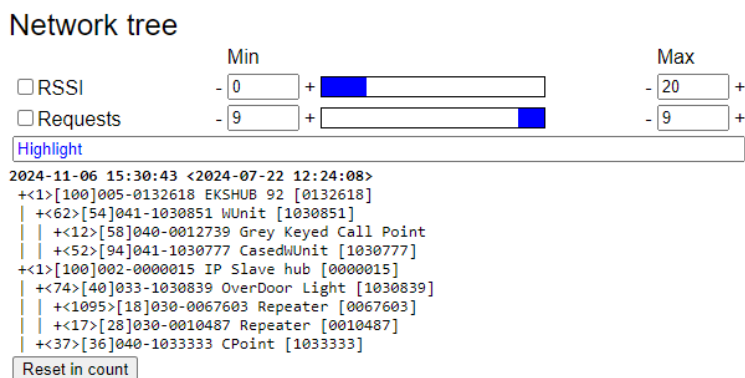


Figure 6B. View the network tree. This will show connections and strengths in the network. Maintenance > Network Tree.

3. Evaluate the device network path back to the Hub, and assess connection strength to the parent device (RSSI).
4. Ensure that the device radio channels have NOT been configured to exclude the call point/repeater

See 9261-8173 EkoTek System I&C Guide for a more detailed explanation of use as part of an EkoFamily system, connections and troubleshooting.

Testing and Maintenance

Testing: Network Signal and Device Connection

- Verify all devices are present in the Hub device list.
- Evaluate the signal strength between repeaters; reposition if weak links are detected.

Testing: Alarms

- **Activate the primary alarm button on call points and verify:**
 - The Hub and pagers accurately display the alarm event,
 - Audible alerts are generated as expected (if configured)
- Test external alarm inputs, including pull cords and switches. When activated, the external alarm should be received by the EkoFamily system Hub

Batteries

As with other registered EkoTek devices, the Hub web interface will report low battery alerts for repeaters. Replace D-cell batteries as indicated by voltage depletion. The installer or engineer will be expected to replace batteries.

Maintenance Requirements

- Monthly: Conduct alarm tests and inspect battery levels.
- Annually: Perform mounting stability assessments and device cleaning.
- After any Network Changes: Verify mesh connectivity after any device relocation.

Multitone Electronics PLC
Multitone House
Shortwood Copse Lane
Basingstoke
Hampshire
RG23 7NL

+44 (0)1256 320 292
info@multitone.com
www.multitone.com

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+44(0)1256 320 292 | info@multitone.com | www.multitone.com

Registered Office: Multitone Electronics plc, Multitone House, Shortwood Copse Lane, Basingstoke, Hampshire, RG23 7NL

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