

RadioLINK⁺ Module Ei100MRF for Mains Powered Smoke / Heat Alarms Ei160e / Ei2110e Series



Ei100MRF Module

(for use with eSeries Alarms only)

Instructions

Read and retain carefully for as long as the product is being used. It contains vital information on the operation and installation of your Module. The leaflet should be regarded as part of the product.

If you are just installing this Module, the leaflet must be given to the householder. The leaflet is to be given to any subsequent user.

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Introduction

The Ei100MRF RadioLINK⁺ Module is the next generation RF module designed to fit in the Ei160e and Ei2110e series, Easi-fit mains powered Alarms. The Ei100MRF RadioLINK⁺ Module effectively replaces the Ei168RC RadioLINK Base.

The primary function of the Ei100MRF is to wirelessly interconnect all Ei Electronics Alarms in a system by the means of an RF signal i.e. when one Alarm senses a fire event, the Ei100MRF module attached to that Alarm will transmit an RF signal that will activate the sounders in all other Alarms in the system.

The Ei100MRF module is plugged into the rear of the base of an Ei160e or Ei2110e series Alarm. RF communication through this module eliminates the need to install long interconnect wires between all the Alarms on different floors in different rooms. The Ei100MRF is powered from the Alarm it is connected to.

The module also has “multiple repeater” transmission – this provides multiple signal paths to create a robust RF ‘mesh’ system and also increase the RF range.

Installation and House Coding

N.B Disconnect Mains Before Alarm Head Removal

After disconnecting the mains power supply, it is now safe to remove the Alarm from its base. Using a screwdriver, insert into the removal slot on the side of the Alarm. Push the lower half of the Alarm away away from the screwdriver, in the direction of the arrow on the cover (see Figure 1 below).

CAUTION: The existing hard-wired interconnection may need to be disconnected at this point (refer to the Installation section in the Alarm instruction manual). If a hard-wired connection and an RF connection exist between the **SAME** two Alarms, a continuous Alarm loop signal may occur.

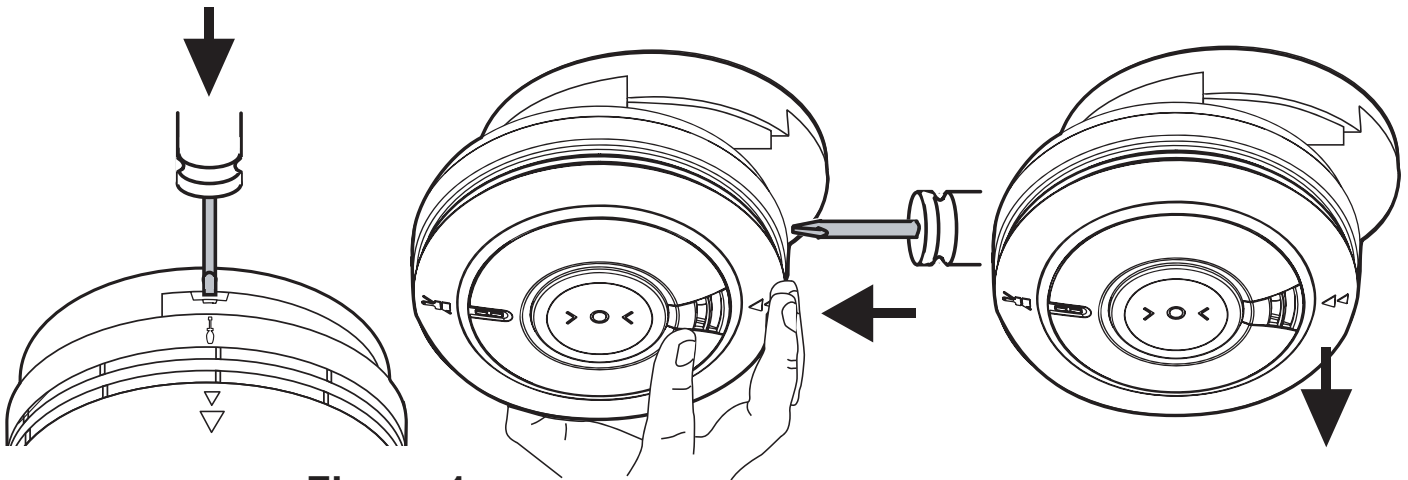


Figure 1

Fitting the Ei100MRF Module

To fit the Ei100MRF Module, first hold the flexible antenna and guide it into its designated hole in the rear of the unit until about 2/3 of its length is inserted (Fig. 2a). Then, hold the module housing (Fig. 2b) & plug it into the Alarm, being careful to align the pins and keeping them perpendicular to the base as the module is inserted (Fig. 2c). Ensure the module is fully home, by checking that it is flush with the surrounding Alarm housing (Fig. 2d).

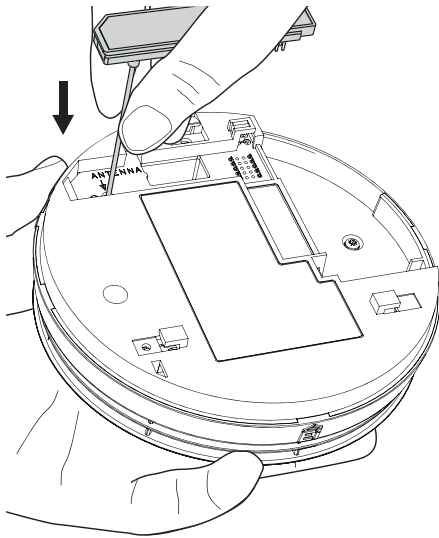


Figure 2a

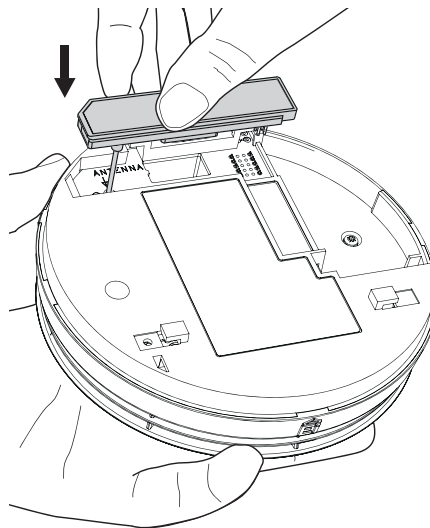


Figure 2b

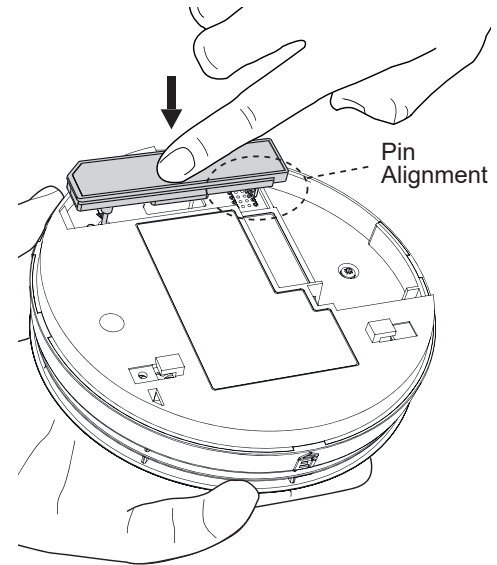


Figure 2c

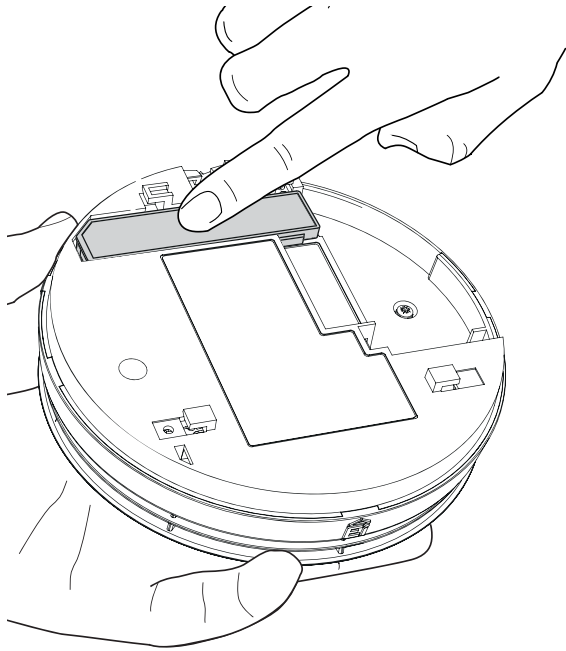


Figure 2d

House Coding the Unit

Ensure that the Alarm is re-connected to the base correctly by checking for the green LED on the cover of the Alarm. Power supply to the Ei100MRF will be confirmed by an initial flash of the red, blue and green LED on the side of the unit (see Fig 3).

Using a screwdriver, press and hold the House Code button on the side of the unit until the blue light illuminates (see Fig 4).

Immediately release the button, the Blue light will flash rapidly and then stop.

The flashing will repeat every 5 seconds thereafter. Repeat this procedure for all alarms in the system and any RF accessories such as the Ei450 Alarm Controller.

Check to ensure all RF devices have been successfully House Coded. This can be done by counting the number of blue flashes on each RF Module. The number of flashes should correspond to the number of RF devices in the system. (i.e. 4 flashes if there are 4 devices in the system).

N.B. We recommend, for ease of installation and RF communication, that up to 12 RF devices can be installed in any one RF coded system. Please contact us for further advise if additional RF devices are required.

You can exit this mode by pressing the House Code button on one of the RF Alarms. Keep the button pressed until the blue light comes on solid and then release.

blue, red & green LED

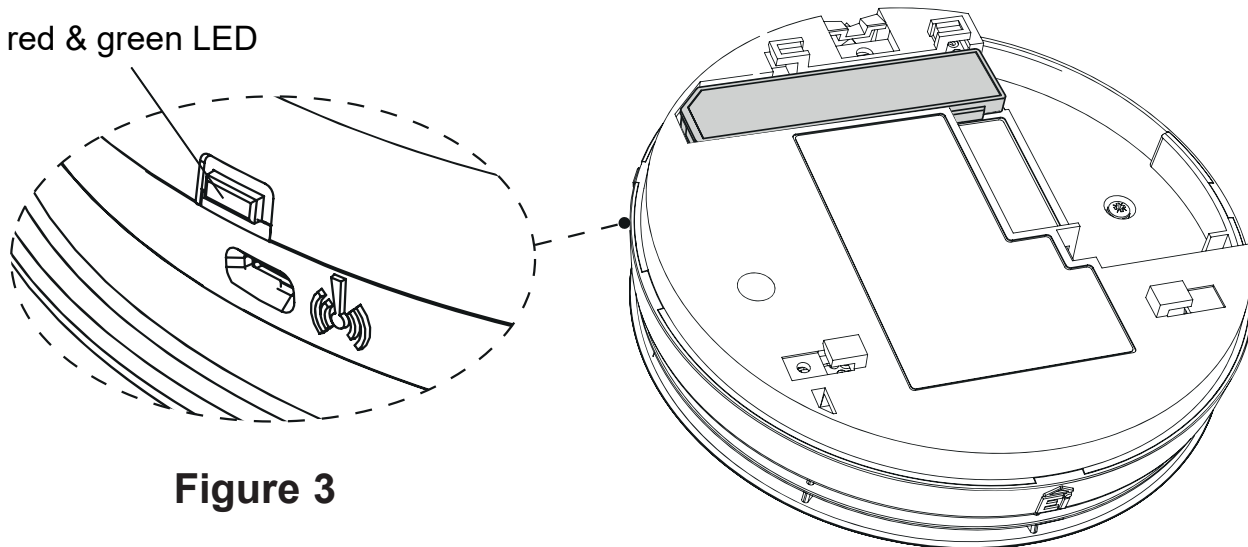


Figure 3

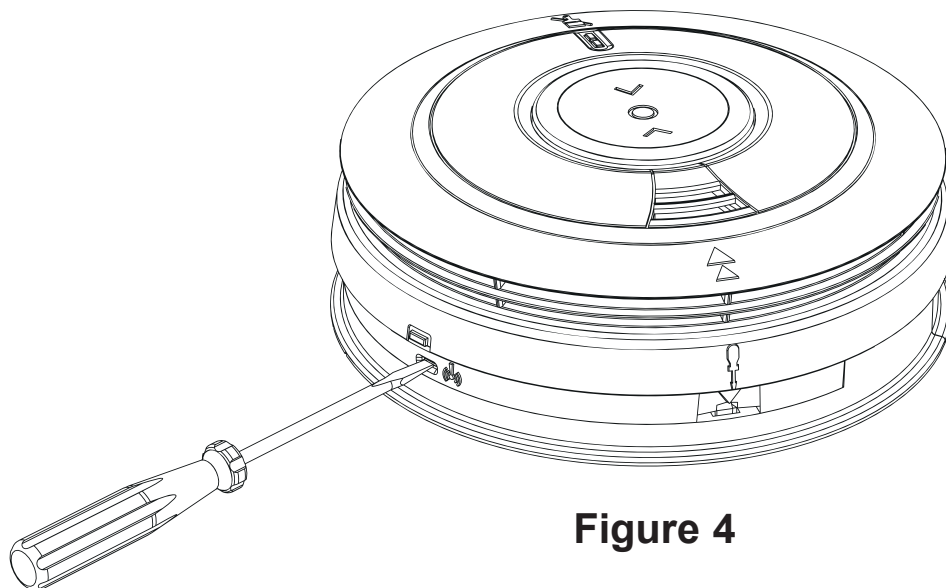


Figure 4

The Alarm will now send a signal to all the other RF devices in the system to exit House Code. Alternatively, the RF Alarms will automatically exit the House Code mode after 30 minutes. To check the system, press the test button on any Alarm. After a few seconds all Alarms should now sound. All Alarms in the system should be checked similarly. **Caution:** Do not House Code another group (e.g. adjacent apartment) until the current House Code has been completed.

Factory Reset

Sometimes in order to resolve an RF communication issue it may be necessary to reset (factory reset) and House Code the system again. To do so, press and hold the House Code button until you see a flashing blue light on the Alarm cover (approx. 7 seconds), release immediately. Repeat this procedure on all Alarms.

Removing the Ei100MRF Module

If it is necessary to remove or replace an RF Module already fitted to an Alarm, it can be taken out by firstly using your index finger to lift it by 5 to 6mm to release the connection pins (Fig. 5a), repeat this process on the opposite end to release the antenna (Fig. 5b), after which the module can be fully removed from the Alarm by lifting it away while keeping the pins perpendicular to the Alarm (Fig. 5c).

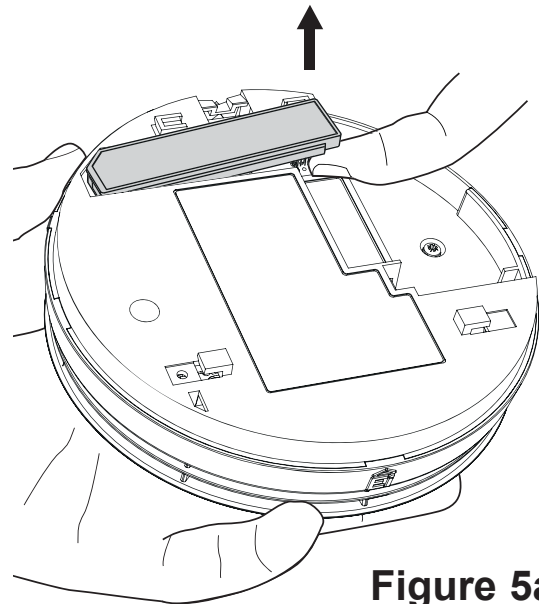


Figure 5a

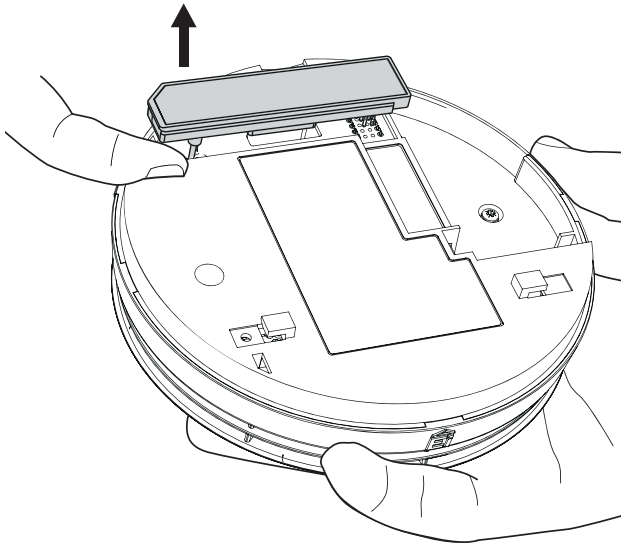


Figure 5b

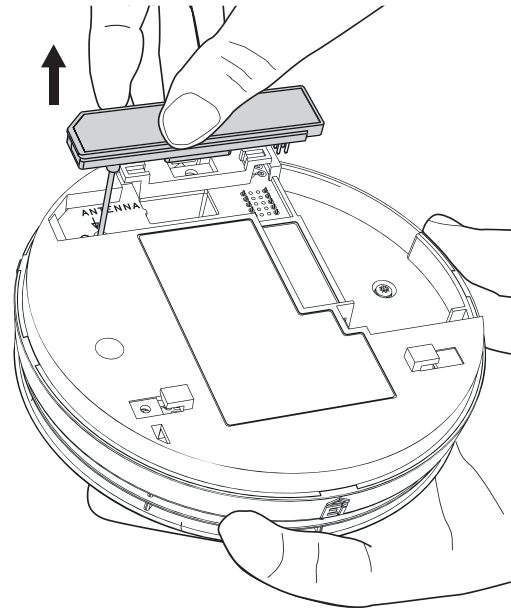


Figure 5c

Additional Features

The Ei100MRF RadioLINK⁺ Module provides additional features not available with Ei Electronics RadioLINK products. The following features will only work with RadioLINK⁺ devices.

1. Remote House Coding (required if you want to add an Alarm to an installed system)
2. Monitoring
3. Data Extraction

*Note these functions will not be available unless you have completed House Code Entry.

1. Remote House Coding

If it is necessary to extend an RF system or you find that you want to add an extra Alarm to a system you can now do so quite simply via the 'Remote House Coding' feature. Firstly using a screwdriver, press and hold the House Code button of one of the previously installed Alarms until you see all colours flashing (red, blue, green). Immediately release the button. This Alarm will now send an RF message to all the previously installed (compatible) devices to re-enter House Code mode. Similarly, install and put the new Alarm you wish to add to the system into House Code mode (see "Installation and House Coding" section). As before, allow sufficient time so that all Alarms are now house coded correctly (this can be confirmed by counting the number of flashes on each Alarm). You can then exit House Code mode manually or let it exit automatically after 30 minutes. **(N.B. for this feature to work all devices in the system must be RadioLINK+).**

2. Monitoring

The Ei100MRF RadioLINK+ Module has the ability to “Monitor” the RF signal path and strength. This is an enhanced self-monitoring function that recognises system tampering or alarm head removal. In monitoring mode each Alarm will check the presence of its strongest received RF signal. If the signal is missing then the Alarm will record a monitoring failure event. It will also signal the failure via a change in the indicator light pattern.

For more information on using this feature, please visit www.eielectronics.com and refer to the relevant section on the RadioLINK+ Monitoring feature.

3. Data Extraction

The Ei100MRF RadioLINK+ Module is equipped with a feature that allows for the extraction of information from an Ei Electronics Compatible Alarm, using an Ei Electronics download device. Once the system has been set up, information can be accessed securely from within or outside a property if access is an issue. The event log can contain very useful information about any recorded events in the history of the Alarm such as: Fire Events, Alarm Head removals, Button Tests, and so on.

Event logs can be retrieved as many times as necessary.

For more information on using this feature, please visit www.eielectronics.com and refer to the relevant section on the RadioLINK+ Data Extraction feature.

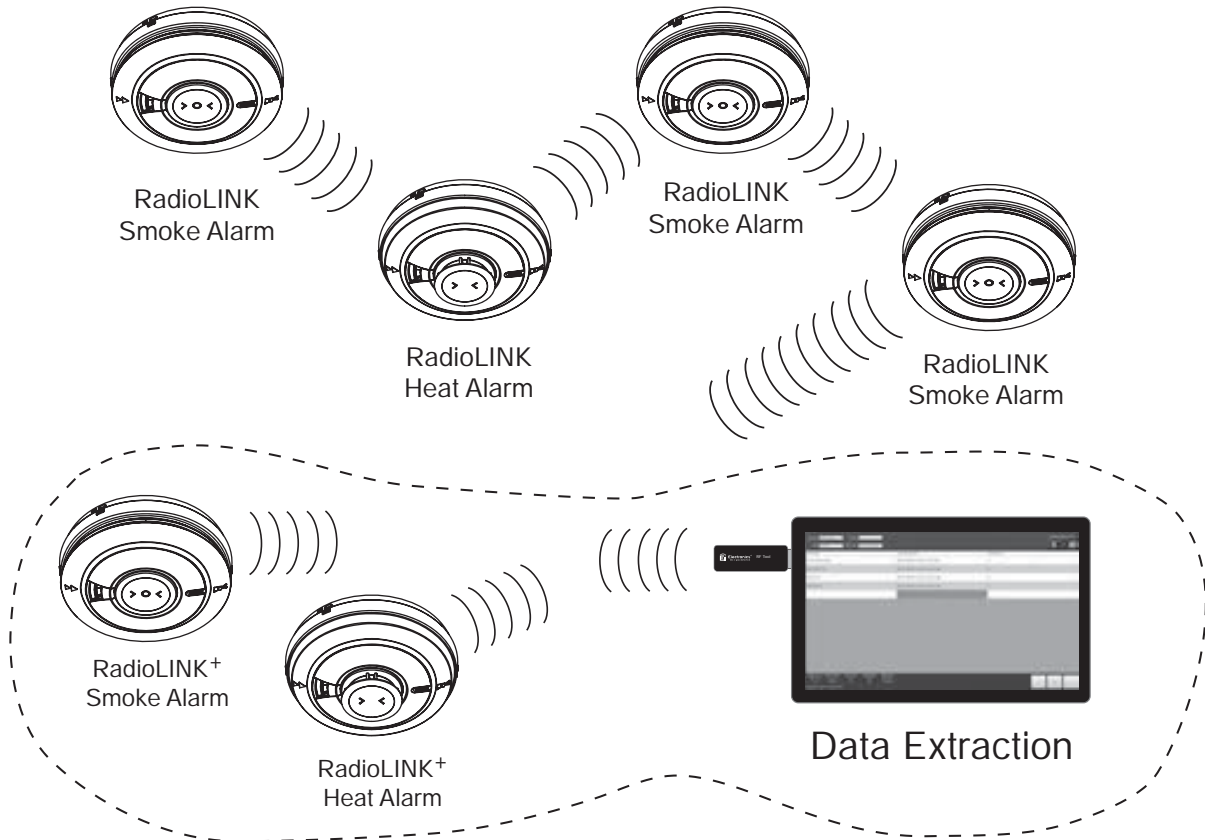
Ei100MRF Indicator Summary

Ei100MRF Indicator Summary					
Normal Operation		Blue LED	Red LED	Green LED	Sounder
Power Up		1 flash	1 flash	1 flash	Off
Standby		Off	Off	Off	Off
Alarm		3.5 Sec flash followed by flash every 10 Sec	Off	Off	Full Sound
Head Removal		3.5 Sec flash every 6 mins for 4 hrs	Off	Off	Off
Mode-Enter / Exit	Button Action	Blue LED	Red LED	Green LED	Sounder
House Code Enter	Press & Release on Solid Blue	Flashes briefly & stops	Off	Off	Off
In House code		(1 flash per unit) every 5 Sec *	Off	Off	Off
House code Exit	Press & Release on Solid Blue	3.5 Sec flash	Off	Off	Off
Factory Reset	Press & Release on Flashing Blue	Rapid flashing followed by single flash	Off	Off	Off
Remote House Coding	Press & Release on Multi- Colour Flashing	Rapid flashing followed by 3.5 Sec flash	Off	Off	Off

* See 'Installation and House Coding' section for further details

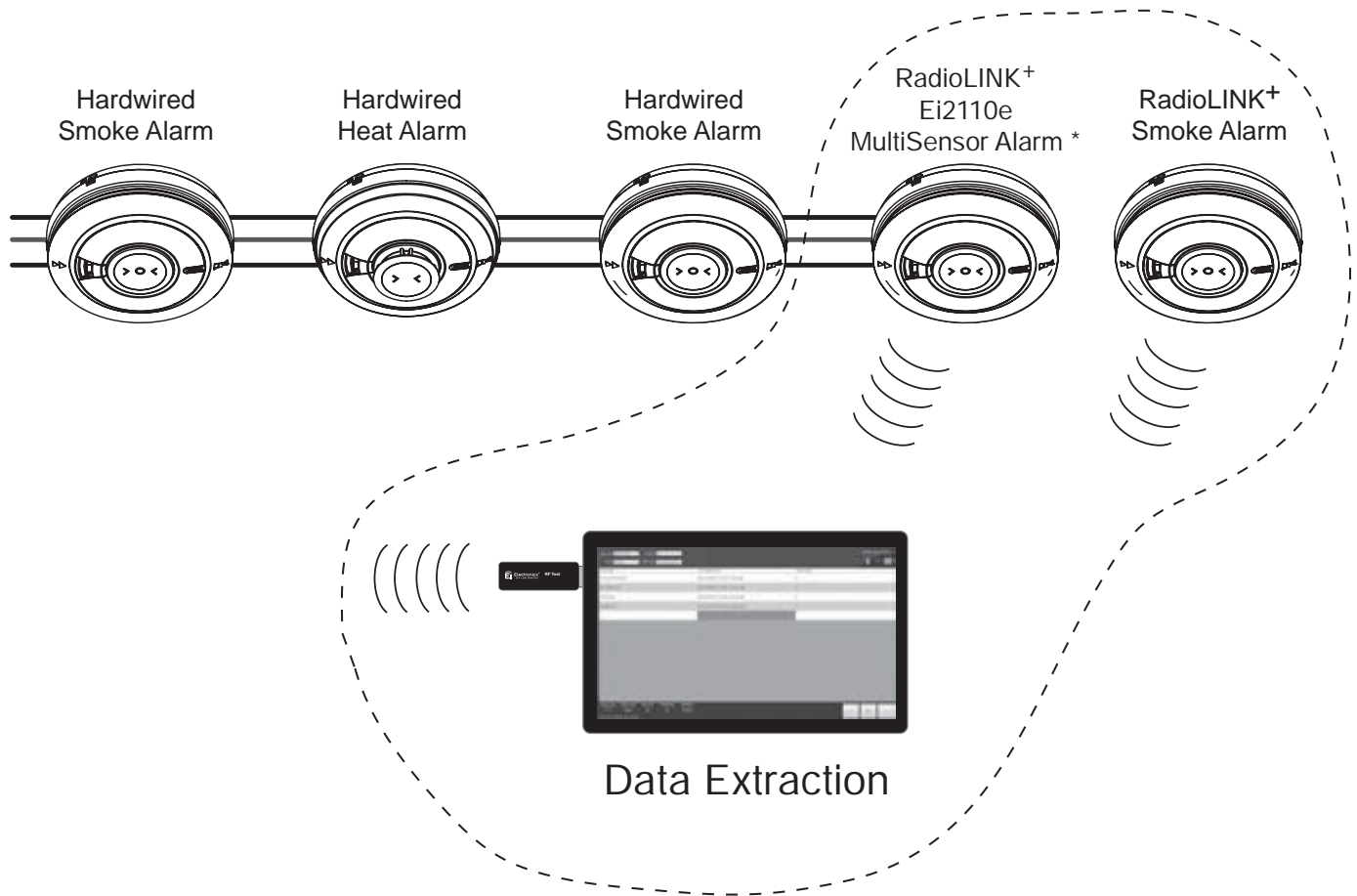
System Examples

RF System (RadioLINK & RadioLINK⁺)



Note: Remote House Coding / Monitoring / Data Extraction only available on RadioLINK⁺ Alarms

RadioLINK+ & Hardwired Hybrid System



* N.B. In Hybrid systems we recommend up to 6 Alarms on the hard-wire interconnection line and the link Alarm be an Ei2110e MultiSensor Alarm

Testing the System

Check that the green light is on continuously to indicate that mains power is present and that the red light flashes every 40 seconds.

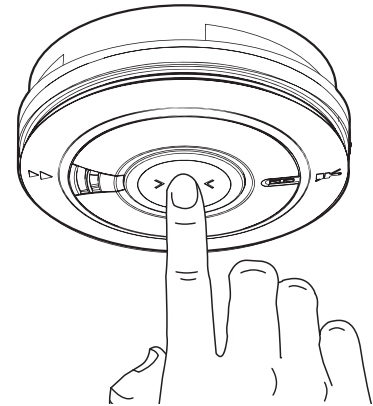
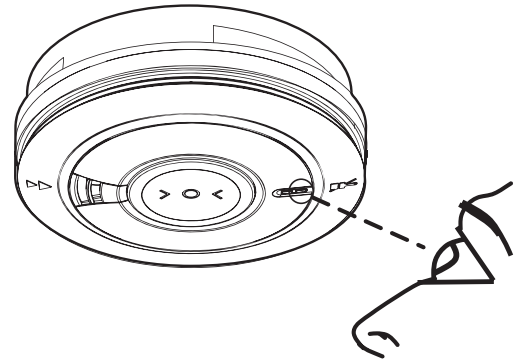
Frequent testing of the system is a requirement to ensure its continued and safe operation. Guidelines and best practices for testing are as follows:

1. After the system is installed.
2. Regularly (monthly testing is recommended).
3. After prolonged absence from the dwelling (e.g. after holiday period).
4. After repair or servicing of any of the systems elements or household electrical works.
5. After renovations to the house.

To test an individual Alarm press and hold the test button until the horn sounds and the red light flashes.

This will ensure that the sensor, electronics and sounder are working.

To test the RadioLINK⁺ system, press and hold the test button on one of the Alarms. The blue LED from the Ei100MRF will illuminate for approximately 3.5 seconds. Continue to hold the test button until all the Alarms in the system are sounding. This will take between 20 to 45 seconds depending on the number of Alarms and their locations in the system, e.g. a system with 12 Alarms may take up to 45 seconds for all to sound. Release the test button when the test is completed.



The local Alarm will stop sounding but you will hear the other Alarms still sounding in the distance.

End of Life (EOL) Check

Check the 'replace by date' label on all Ei100MRF modules and attached Alarms. If the date has been exceeded then the module should be replaced.

Interconnected Carbon Monoxide Alarms and Smoke Alarms

Identifying source of Alarm

Ei Electronics Carbon Monoxide Alarms and Smoke Alarms can be interconnected via RadioLINK or RadioLINK+ so that one Alarm sensing danger will cause all the other units to sound, enabling the alarm to be heard throughout the residence.

When a system alarms, check to see which unit has its red light flashing rapidly - this is the source of the alarm.

If it is a Carbon Monoxide Alarm, ventilate the residence and follow the instructions in the Carbon Monoxide Alarm manual.

If it is a Smoke Alarm, evacuate the residence and follow the instructions in the Smoke Alarm manual.

For added convenience we recommend that an Ei450 Alarm Controller is used with these systems. When there is an alarm, an icon on the Ei450 Alarm Controller shows if it is a CO or Fire incident and can be remotely controlled accordingly.

RadioLINK⁺ Troubleshooting

It is important that all Alarms in your system communicate with each other. The number of walls, ceilings and metal objects in the signal path will reduce the strength of the RadioLINK⁺ signals between the Alarms. Accordingly, one or more Smoke/Heat/CO Alarms may have difficulties in communicating to all the other Alarms in the system.

If, when checking the RadioLINK⁺ interconnection, some of the Alarms do not respond to the button test, then you will need to either:

(i) Position another RadioLINK⁺ Alarm to act as a 'repeater' between the Alarms which are not communicating and so shorten the path and/or by-pass an obstacle which is blocking the signal. When the new Alarm is fitted, House Code all Alarms again, as described above.

(ii) rotate / re-locate the Alarms (e.g. move them away from metal surfaces or wiring). After making these changes to the RF signal path, the RadioLINK⁺ signals may still not be reaching all the Alarms in your system, even though they have already been House Coded successfully. (see Section on "Limitations of Radio Communications").

It is important to check that all Alarms are communicating in their final installed positions. If Alarms are rotated, have had their antennas extended and/or re-sited, we would recommend that all the Alarms are returned to the factory settings and then House Coded again in their final positions (see above). The RadioLINK⁺ interconnection should then be checked again by button testing all units.

(NB. The RadioLINK⁺ module can be returned to the originally factory settings by pressing and holding the House Code switch until the blue light turns on solidly and then flashes rapidly. This will take about 7 seconds. This clears the learnt House Codes).

Technical Specifications

Supply Voltage:	9V from attached alarm
RF Range:	A minimum of 100 metres in free space
RF Visual Indicator:	Blue light flashes continuously for 0.5 to 3.5 seconds while transmitting RF signal
RF Frequency:	868.499MHz (1% duty cycle)
Max RF Power:	+10dBm
Dimensions:	80mm length x 19mm depth x 16mm height
Temperature Range:	0° to 40°C
Humidity Range:	15% to 95% Relative Humidity
Interconnect *:	Up to 12 RadioLINK ⁺ or RadioLINK modules
Optional Accessories:	Ei407 Manual Call Point, Ei428 Relay Module ,Ei414 Fire / CO Alarm Interface, Ei450 RadioLINK Alarm Controller
Approvals:	RF performance to EN 300 220-1 in accordance with EN 300 220-2 EMC performance to EN 301 489-1 in accordance with EN 301 489-3

* We recommend, for ease of installation and RF communication, that up to 12 RF devices can be installed in any one RF coded system. Please contact us for further advise if additional RF devices are required.

Guarantee

Ei Electronics guarantees this RF RadioLINK⁺ Module for five years from date of purchase against any defects that are due to faulty materials or workmanship. This guarantee only applies to normal conditions of use and service, and does not include damage resulting from accident, neglect, misuse, unauthorised dismantling, or contamination howsoever caused. This guarantee excludes incidental and consequential damage. If this RF RadioLINK⁺ Module should become defective within the guarantee period, it must be returned to Ei Electronics, with proof of purchase, carefully packaged, with the problem clearly stated. We shall at our discretion repair or replace the faulty unit.

Do not interfere with the Alarm or attempt to tamper with it. This will invalidate the guarantee, but more importantly may expose the user to shock or fire hazards. This guarantee is in addition to your statutory rights as a consumer.

Limitations of Radio Communications

Ei Electronics radio communication systems are very reliable and are tested to high standards. However, due to their low transmitting power and limited range (required by regulatory bodies) there are some limitations to be considered:

- (i) Receivers may be blocked by radio signals occurring on or near their operating frequencies, regardless of the House Coding.
- (ii) Alarms with RadioLINK⁺ modules should be tested regularly, at least weekly.


This is to determine whether there are sources of interference preventing communication, that the radio paths have not been disrupted by moving furniture or renovations, and if so, to give a warning of these and other faults.

C € 0889

Hereby, Ei Electronics declares that this Ei100MRF RadioLINK⁺ Module is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. The Declaration of Conformity may be consulted at www.eielectronics.com/compliance

The crossed out wheelie bin symbol that is on your product indicates that this product should not be disposed of via the normal household waste stream. Proper disposal will prevent possible harm to the environment or to human health. When disposing of this product please separate it from other waste streams to ensure that it can be recycled in an environmentally sound manner. For more details on collection and proper disposal, please contact your local government office or the retailer where you purchased this product.





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