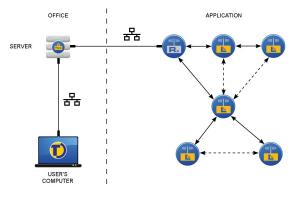## Tinytag Plus Radio Ethernet Receiver

**connect**

The ACSRF-4040 receiver is an Ethernet device that is used to collect data from a network of Tinytag Radio data loggers.

The receiver plugs into an Ethernet port on a LAN allowing data to be passed from the radio network to the computer running the Connect Gateway software that manages the system (ideally, this software is installed on a server). Data can then be viewed across the network or the Internet using the Tinytag Explorer Connect software.

The Ethernet receiver allows a network of loggers to be used without the need for a computer where the logging is taking place.



The typical radio range of the receiver on a clear line of sight is 200m.

The receiver is a PoE (Power over Ethernet) device that also has back-up batteries. If power to the computer running the system goes down, or there is a problem with the LAN, the receiver will maintain the mesh network until the fault is corrected, allowing faster access to data when the system is restored.

- LAN connected Radio receiver
- Robust data network
- Easy to install
- 200m typical range (line of sight)
- Power over Ethernet (PoE) with battery back-up
- Low battery monitor
- User-replaceable batteries
- Waterproof case

## Tinytag Plus Radio Ethernet Receiver

### Radio Specification

| Radio Frequency | EU | 869.88MHz (-A part numbers) |
|---|---|---|
| | AUS | 917.8MHz (-B part numbers) |
| Radio Power | EU | <5mW (-A part numbers) |
| | AUS | <3mW (-B part numbers) |
| Radio Range | | 200m, typical (line of sight) |
| Radio License | | SRD licence-free |

The logger uses FSK modulation, with +/-32 kHz deviation.

These frequencies will easily penetrate most internal walls, but the range may be reduced to between 30% and 80% (however it will sometimes be increased, maybe up to double the nominal range, due to reflections off walls and roofs etc.).

Although the radio waves cannot penetrate a metal wall (fridges or corrugated iron sheds etc.) the signal will often still get through gaps around door seals, windows and air vents etc.

These frequencies are very slightly absorbed by water. Wet walls are not a problem, but the signal will not get through a room filled with shelves full of fruit or bottled water, for example.

The advantage of the mesh network is that loggers in locations with shorter ranges will often be able to relay data though other loggers that are able to transmit further.

### Physical Specification
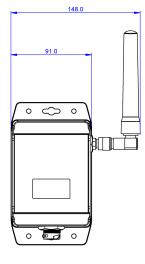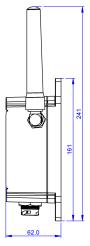
**IP Rating**                    IP67*

*Applies only if the supplied waterproof shroud for the Ethernet connection is fitted, otherwise the rating is IP20.

**This receiver is for indoor use only. The waterproofing provided by the connector shroud supplied is to protect against ingress in indoor applications when condensation or liquids may be present.**

| **Operational Range**\*\* | -20℃ to +55℃ |
|---|---|
| **Case Dimensions (excluding antenna)** | |
| Length/Height | 241mm / 9.49" |
| Width | 148mm / 5.83" |
| Depth | 62mm /  2.44" |
| **Weight (inc. antenna)** | 475g / 16.76oz |

**The Operational Range indicates the physical limits to which the unit can be exposed.
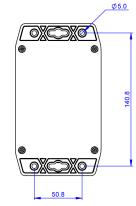


### Physical Specification

#### Mounting Instructions

The receiver can be wall mounted or placed on its back on a flat surface, such as a shelf.

The receiver's back-plate has mounting holes, as shown.
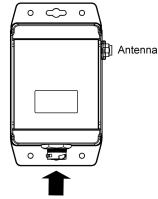


#### Positioning Instructions

The receiver can also be positioned on a non-conductive flat surface, such as a desk or a shelf, with its antenna positioned vertically, with no loss of performance.



### Connections



Antenna

Ethernet Communications

## Tinytag Plus Radio Ethernet Receiver

### LED Flash Patterns

Ethernet Radio Receivers and LAN data loggers have two status LEDs; one to show the status of the logger's Ethernet connection (yellow/blue) and the second to show the status of the unit (green/red).

| Action | LED | Status/Operation |
|---|---|---|
| n/a | No Indicators | Device is powered off |
| n/a | Red flash every 4 seconds | The device is powered on and has a problem.<br><br>Either:<br>a) Battery is low or<br>b) An alarm indicator is signalled.<br><br>Check the nature of the problem using Tinytag Explorer. |
| n/a | Green flash every 4 seconds | The device is powered on, and does not have any problems. |
| Press and briefly hold the mute switch. | Green indicator shows for one second. It then briefly flashes green then red. | The device has been switched on. |
| Press and hold the mute switch for 3 seconds. | Red indicator shows for one second. | The device has been switched off. |
| n/a | Yellow indicator on constantly | The device is being powered from its Ethernet connection, but no communications have been established. |
| n/a | Blue (flickering) | Ethernet communications are established and on-going |

**Note that the yellow and blue LEDs cannot be on at the same time. If the blue LED is on (or flickering) then PoE power must be available.**

### Power Information

This logger is a PoE (Power over Ethernet) device that is powered from its Ethernet connection (a PoE injector is supplied).

In the event of a failure of the PoE supply, the logger has a battery back-up that will keep it recording (communications will be suspended until power is restored).

#### Back-up Battery Power

**Battery Type**  2 x Duracell Industrial ID1500 AA (LR6) 1.5V (supplied)

The logger will operate with other AA cell batteries but performance cannot be guaranteed.

When the logger's back-up batteries start to run flat, the LED on the front of the logger will flash red. If being used as part of a Tinytag Connect system, a low battery warning will be displayed in the Tinytag Explorer Connect software. The low battery warnings will start to show when the logger has approximately two weeks of battery power remaining.

Before replacing batteries the logger must be disconnected from the LAN and turned off.

Alkaline batteries should always be replaced in pairs.

Data stored in the logger will be retained after its batteries are replaced.

### Warranty

This product carries a manufacturing defects warranty of 12 months from the date of purchase. Units returned under warranty will be repaired or replaced at the manufacturer's discretion. This warranty does not cover mishandling, modification or battery replacement and is subject to our standard Terms and Conditions of Sale, a copy of which can be found at **www.tinytag.info**.

### Approvals

Gemini Data Loggers (UK) Limited hereby declares that this radio data logger is in compliance with the essential requirements and other relevant provisions of RED 2014/53/EU and RoHS directive 2011/65/EU. A copy of the declaration of conformity is available upon request.

The radio system also complies with EN 300 220:V2.4.1 and EN 301 489-3: V1.6.1 (-A EU version) and AS/NZS 4268:2012 (-B AUS version).

This receiver also conforms to the following EMC standards: EN 55032:2012; EN 61326-1:2013 Table 1 & EN 301 489-1:V1.9.2.

This receiver also complies with (RJ45) 10/100Mb Base-T for Ethernet connectivity and PoE standard IEEE 802.3af.

Gemini Data Loggers (UK) Ltd. operates a Business Management System which conforms to ISO 9001 and ISO 14001.

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### Required and Related Products

#### Required Parts

**Two Ethernet cables (not supplied) are required to connect this receiver to a LAN via the PoE adaptor supplied.**

This receiver forms part of a Tinytag Connect system and cannot be used as a standalone device.

To use this receiver you will require a copy of the Tinytag Explorer Connect software.

Receivers are supplied in a pack containing the receiver, a PoE kit, a waterproof shroud and a copy of Tinytag Explorer Connect:

**ACSRF-4040-PK** Plus Radio Ethernet receiver & software pack

Additional receivers, to expand a system, can be purchased individually and are supplied as above, excluding a copy of the software:

**ACSRF-4040** Plus Radio Ethernet receiver

A USB connected receiver, that can be used outdoors, can be purchased in the following pack:

**ACSRF-4030-PK** Plus Radio USB receiver and software pack

Or individually:

**ACSRF-4030** Plus Radio USB Receiver

#### Further Related Products

**ACS-0040** RJ45 waterproof (IP67) Shroud (supplied)
**ACS-0041** PoE Injector (supplied)
**ACS-0042** Plus Radio remote antenna mounting kit, 10m