Tinytag

Tinytag Plus Radio USB Receiver with Temperature Monitoring (-20 to +55°C)

connect

Tinytag Plus Radio data loggers are a range of wireless data logging products designed for outdoor and industrial use. The receiver is used as part of a Tinytag Connect system that forms a robust data network that allows a user to see the conditions within an application from their own desk, across a LAN or the Internet.

Housed in a robust, waterproof case, the ACSRF-4030 is a USB receiver for the Tinytag Connect system. The receiver also incorporates temperature monitoring to make it more versatile.

Features

• Radio receiver with temperature monitoring

• Robust data network

• Easy to install

• Alarm e-mails

• 200m typical range (line of sight)

• High accuracy and reading resolution

• USB powered with battery back-up

• Low battery monitor

• User-replaceable batteries

• Waterproof case

Popular Applications

Used for temperature monitoring in:

• Warehouses and product storage

• Fridges and freezers

• Industrial processes

• Outdoor applications

Tinytag Plus Radio USB Receiver with Temperature Monitoring (-20 to +55°C)

How the Receiver Works

The ACSRF-4030 is a USB powered radio receiver that can also record temperature data.

The receiver is used as part of a Tinytag Connect system that requires a receiver and the Connect version of the Tinytag Explorer software.

After the software has been installed and configured, the receiver will form part of a mesh network where it will then control the transmission of data to and from the radio system.
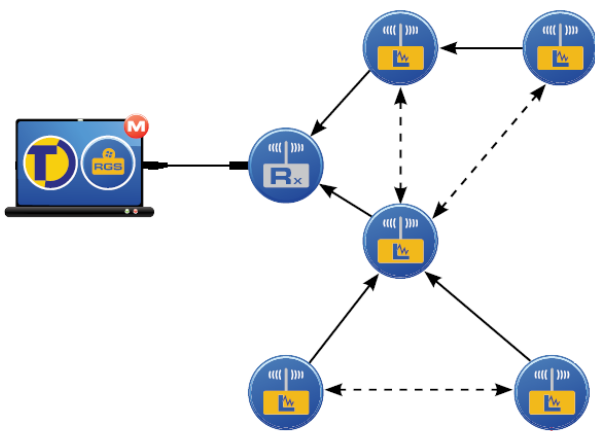
The typical range of the receiver on a clear line of sight is 200m.

The receiver can then be set to record at a user-defined logging interval, anything from once every 2 minutes to once every 10 days.

The data recorded by the receiver is stored on the computer running the system by a Windows service (called the radio gateway) and this is then viewed across a LAN or the Internet through the Tinytag Explorer Connect software.

If power to the computer running the system goes down, the receiver will maintain the mesh network until power is restored.

The receiver can be programmed with alarms. Warning e-mails can be sent when the limits entered are exceeded.

Data recorded by the system can be viewed as a graph or as a table of readings. There are also summary views containing information about the recording run and a daily min/max view.

Data from multiple devices recording at the same time can be combined into a single graph using Tinytag Explorer Connect.

Data can be exported from the software as a graph image, for use in report writing, or as a data table, for further analysis in third-party spreadsheet programs.

Features

Logging Interval	2 minutes to 10 days
Off-line storage Capacity*	2 weeks typical, at a 10 minute logging interval

The receiver can be set to record in intervals of once every 2 minutes or greater (by default the logging interval is set to once every 10 minutes).

When radio communications are good, data is transmitted immediately and stored by the gateway service.

When communications with the gateway service are interrupted, by a power failure to the computer running the gateway, for example, receivers will record locally and then transmit data when communications are restored.

The off-line storage capacity of a receiver, for any given logging interval, is stated at the bottom of the configuration page in the Tinytag Explorer Connect software when it is programmed (this will be a minimum of 2 weeks when set to record at the default 10 minute logging interval).

*The local storage capacity of the receiver is an indication of how much data the unit can record when it is unable to communicate with a receiver.

Alarms	2 fully programmable, latching alarms
Alarm Delay	1 second to 10 days

Receivers can be programmed with alarm limits that will cause warnings to be shown in Tinytag Explorer Connect and to make the unit's LED flash red.

Two alarm limits can be programmed per channel, allowing upper and lower boundaries to be set.

Delays can be set on the alarms so that routine tasks, such as restocking a fridge of freezer, can be performed without causing alarms to be activated.

E-mail warnings can be sent when alarm limits are breached, and these in turn can be used to send SMS messages using third party messaging services.

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.
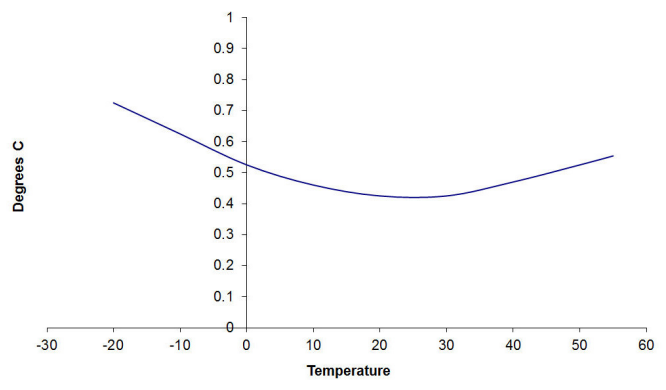
Tinytag Plus Radio USB Receiver with Temperature Monitoring (-20 to +55°C)
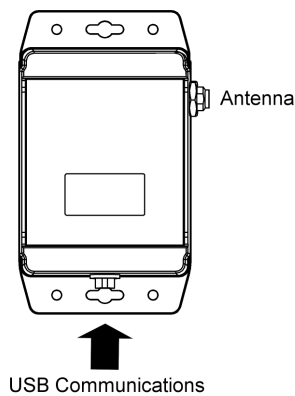
Reading Specification

Temperature

Reading Range	-20℃ to +55℃
Sensor Type	10K NTC Thermistor (Integral)
Response Time	10mins to 90% FSD in moving air
Logger Resolution	0.01℃ or better

Logger Accuracy

Connections

Antenna

USB Communications

Physical Specification

|	
IP Rating	IP67
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)	546g / 19.26oz

*The Operational Range indicates the physical limits to which the unit can be exposed.
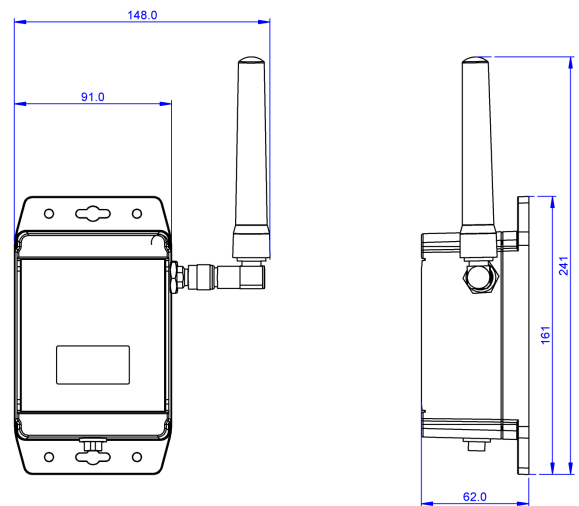
Mounting/Positioning Instructions

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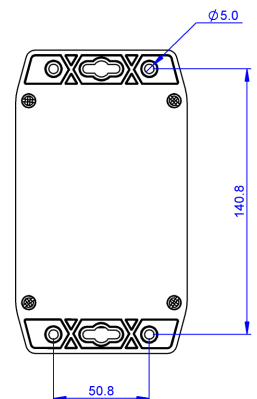
The receiver can also be positioned on a non-conductive flat surface, such as a desk or a shelf, with its antenna positioned vertically, with no loss of performance.

Issue 4 (16th June 2017) E&OE

Tinytag Plus Radio USB Receiver with Temperature Monitoring (-20 to +55°C)

Power Information

This receiver is designed to be powered by USB and has a battery back-up that will keep it working, and the mesh network intact (allowing faster communications when power is restored) if the power to it should fail.

Back-up Battery Power

Battery Type	2 x Duracell Industrial ID1400 C (LR14) 1.5V (supplied)

The receiver will operate with other C cell batteries but performance cannot be guaranteed.

When the receiver's batteries start to run flat, a low battery warning will be displayed in the Tinytag Explorer Connect software and the LED on the front of the receiver will flash red. The low battery warnings will start to flash when the receiver has approximately two weeks of battery power remaining.

Before replacing batteries the receiver must be turned off.

Alkaline batteries should always be replaced in pairs.

Data stored in the radio system will be retained after batteries are replaced.

A lithium battery powered version of the receiver is also available, that provides a wider working temperature range and a longer battery life. Please contact your supplier for further details.

Calibration

This receiver is configured to meet Gemini's quoted accuracy specification during its manufacture.

We recommend that the calibration of this unit should be checked annually against a calibrated reference meter.

A traceable certificate of calibration can be supplied for an additional charge either at the point of purchase, or if the unit is returned for a Service Calibration.

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

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

CE

Required and Related Products

Required Parts

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 a USB communications cable and a copy of Tinytag Explorer Connect:

ACSRF-4030-PK Plus Radio USB receiver & software pack

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

ACSRF-4030 Plus Radio USB receiver

An Ethernet connected receiver, that connects directly to the computer running a Connect system over a LAN, can be purchased in the following pack:

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

Or individually:

ACSRF-4040 Plus Radio Ethernet receiver

Further Related Products

CAB-0035 Plus Radio Receiver USB Cable, 5m (supplied)
ACS-0042 Plus Radio remote antenna mounting kit, 10m