

# GenII Secure Data Logging System

# Eltek

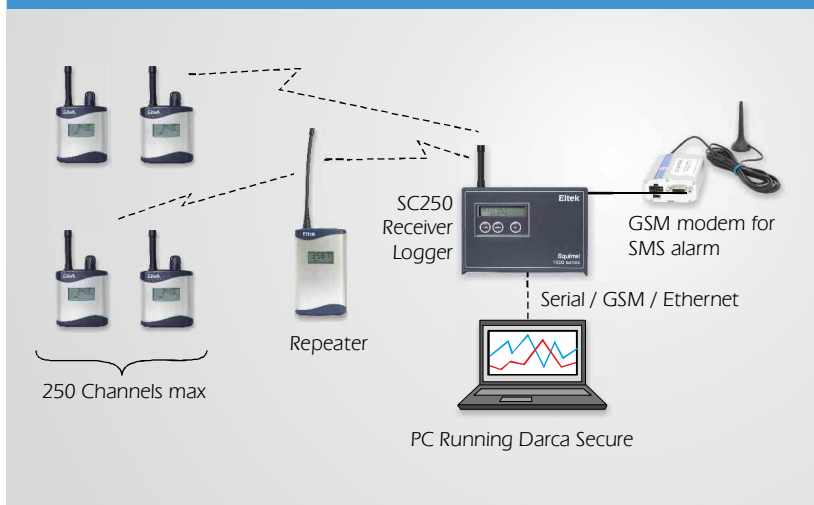
SPECIALIST DATA LOGGERS

**Eltek GenII Secure Data Logging Systems provide data logging and alarm generation compliant to the requirements of FDA 21 Part 11.** The system is ideal for

users whose processes require an independent and autonomous audit of a work environment such as a laboratory, pharmaceutical warehouse or assisted conception clinic. Encrypted data and tamperproof audits satisfy this requirement using high accuracy radio connected sensors sited around the facility.

Long range, one-way telemetry offers a cost effective and practical alternative to hard wired data logging systems without forfeiting accuracy or reliability. Compact sensors for RH, temperature and many other parameters can be sited almost anywhere. One way telemetry means long battery life using off-the-shelf batteries.

## Typical System Configuration



## Radio Telemetry Features

- UHF
- Wireless connection of sensors
- 12 bit resolution for high accuracy
- 250 channel system capability
- Easy system design and installation
- Fully configurable by the user
- Complete turnkey system solution
- Range easily extended by Repeaters
- Options for use in extreme ranges of temperature and physical environments
- Tamperproof indoor or outdoor wall mounting brackets

## Transmitter Features

- Available with or without LCD display
- High performance transmitter compliant to EN 300-220
- Transmitters with up to 8 physical inputs
- Sensors can be integral, external or a combination of both
- Battery operation allows flexible and rapid installation
- Powered by standard alkaline batteries
- Up to 2 year battery life
- Compact size and light weight
- Unobtrusive rugged aluminium case and wall bracket



## Receiver Logger Features

- Data Logger with integral receiver
- Alarm and GSM text output
- 24 hour built-in standby battery
- 247K readings expandable to 2M readings
- Dual RS232 serial ports
- Connectivity options: GSM, ethernet, and internet
- Transmitter battery alarm
- Display and keypad for "on line" metering
- Darca setup, graphing and data export software

## GENII SC250 RECEIVER / LOGGER

The SC250 receiver logger is the hub of the secure logging system. It is not necessary to have a permanent connected PC and the built-in battery means data logging is not interrupted if there is a temporary AC supply failure. Alarms are included as standard (SMS and local), and include grouping so that alarms for individual departments can be configured.

### SC250 Features

- Alarms are logged
- Data is checksummed to prevent corrupted data from being downloaded
- Alarm raised if external power removed (e.g. mains failure)
- Grouping for alarm text messages

### SC250 Specification

Number of channels	Up to 250
Number of transmitters	Up to 125
Ambient temperature	-10 to +55°C
Humidity	Up to 95% (non condensing)
Power supply	12V DC at 500mA powered using type MP12U, (input 100-250V AC)
Built-in batteries	6 x AA Ni Mh battery
Backup battery life	Typically 24 hours
Memory	247,000 readings expandable to 2,000,000
Clock accuracy	1 second/day at 20°C
Dimensions	D 60mm x W 180mm x H 120mm
Weight	1Kg inc. batteries
Case material	Scratch resistant Nextel coated ABS
PC/modem interface	RS232C up to 38.4K Baud
Receiver	Crystal controlled
Sensitivity	UHF: -117dBm
Antenna connector	SMA 50 ohm female
Antenna	Quarter wave standard, lightweight dipole optional
Communication options	USB, GSM, ethernet, internet and GPRS
Alarm	SMS + 1 contact closure



## GENII RP250GD REPEATER

The RP250GD receives and rebroadcasts signals from GenII transmitters, significantly extending the distance over which a system can operate. Multiple repeaters can be used in a system.

### RP250GD Features

- Contains high performance receiver and transmitter compliant to EN 300-220
- LCD indicates on-air transmitter identity, status and signal strength
- Extends range of transmitters many fold
- Multiple repeaters can be used, enabling difficult sites to be covered easily
- Mains powered with built-in rechargeable batteries to provide up to 48 hours standby in the event of a mains failure.
- Free standing or wall mountable
- Antenna socket permits use of external antenna to improve performance in difficult conditions
- Software is used to configure the repeater, download transmitter activity data and specify transmitter authorisation.
- Survey option - for availability contact Eltek



## GENII TRANSMITTERS - COMMON SPECIFICATIONS

RF specification	EN300-220	Dimensions (footprint)	78 x 41mm
RF power	10mW	Battery endurance	up to 5 years (interval set to 5 minutes) (less for GL70 and GS40 series)
Environment specification:		Transmission interval range	1 sec to 4 hours
Compliant to EN300-220	-10 to +55°C	Indicator (red LED)	transmit active/on/off
Actual	-30 to +65°C	Control switch (concealed)	test mode / hibernate
Humidity	100% non condensing	Antenna socket	SMA
Environmental rating	IP40		

# GENII TELEMETRY TRANSMITTERS

Sensors can be located almost anywhere, giving a system which is simple to install and use.

Eltek's telemetry transmitters are designed to complement each other, sharing a common case style, RF specification, battery system and choice of antennas. GD models have a display. For specification details see the table later in this document.

## Built-in sensors



Built-in temperature and humidity  
GD10  
Built-in thermistor temperature  
GD06  
**For ambient monitoring**

## Temperature and humidity



Temperature and humidity  
GD13  
input for Eltek RHT10E  
GD14  
As GD13 plus 2 x thermistor temperature inputs  
**For ambient monitoring using a probe**

## Temperature



Thermocouple T / K\*\*  
GD20 series  
1 or 4 inputs  
**For freezers and super freezers below -10°C**

Thermistor  
GD30 series  
1, 2, 4 or 8 inputs  
**For fridges and ambient temperature -10°C to 50°C**

Platinum resistance sensors  
GD52 / GS52\*  
2 inputs  
**For wide range of temperatures and user who prefer PT100 sensors**

The Eltek RHT10E is a compact and robust, precision humidity and temperature probe with replaceable mesh filter and cap.

Designed for use with: GD13E, GD14E, GD72E, GD43E



<b>Temperature:</b>	<b>Relative Humidity:</b>
Range: -40 to +85°C	Range: 0 to 100%
Resolution: 0.1°C	Resolution: 0.1%
Accuracy: ±0.4°C (+5 to +40°C)	Accuracy: ±2% (10 to 90%RH)
±1.0°C (-20 to +80°C)	±4% (0 to 100%RH)

## Voltage and Current



Inputs for voltage or current  
GS42 / GS44 / GS44AVE  
2 or 4 Voltage/current inputs with sensor supply  
**For use with pressure transducers etc.**

AVE = value averaged at point of transmission

## Voltage / current, RH & temperature

### GD43E

- 1 x Voltage / current input
- 1x RH / temperature probe input for Eltek RHT10E
- 1 x Thermistor temperature (-50 to 150°C)
- \* Vaisala GMP251 0-20% CO<sub>2</sub>

**For incubator monitoring**



GD43E

## CO<sub>2</sub> plus RH and temperature



All in one air quality monitor

- CO<sub>2</sub> (0 to 5000ppm)
- RH (0 to 100%)
- Temperature (-10 to 65°C)
- All sensors built-in
- Mains operation with built-in rechargeable batteries

**For room monitoring**

GD47

## Thermistor with visual and audible alarms



### GD32ALS / GD34ALS

- Inputs for 2 or 4 thermistor probes
- Visual and audible alarms

## Differential pressure



### GD84

- Built in differential pressure sensor
- Range: -250 to 250 pascal
- Quick connect tube system

### GD81

- Barometric pressure:  
800 - 1100 mBar

**For clean room applications**

Models	Sensors	Range	Resolution	Accuracy
GD06	built-in thermistor temperature	As GC04		
GD10	built-in temperature (digital sensor)	-30 to 65°C	0.1°C	±0.4°C (+5 to +40°C) ±1.0°C (-20 to +65°C) ±1.5°C (-30°C)
	built-in RH	0-100%	0.1%	±2% (10 to 90%RH) ±4% (0 to 100%RH)
GC13E/GD13E	external RH (RHT10E)	0-100%	0.1%	±2% (10 to 90%RH) ±4% (0 to 100%RH)
	external temperature (RHT10E)	-40 to +120°C	0.1°C	±0.4°C (+5 to +40°C) ±1.0°C (-20 to +80°C)
GC14E/GD14E	external RH (RHT10E)	As GS13E		
	external temperature (RHT10E)	As GS13E		
	2 x external thermistor temperature	As GC04		
GD21	1 x external T or K type thermocouple temperature	-200 to 200°C	0.1°C / 0.2°C	±0.3°C
GD24	4 x external T or K type thermocouple temperature / state			
GD21AL/24AL	As GD21/GD24 with audible and visual alarm.			
GD24HV	4 x external T or K type thermocouple temperature			
GD31	1 x external thermistor temperature	-50 to 150°C	0.05°C (-5 to +75°C)	±0.1°C (-5 to +75°C)
GD32	2 x external thermistor temperature		0.1°C (-25 to +100°C)	±0.2°C (-25 to +100°C)
GD34	4 x external thermistor temperature / state inputs		0.2°C (-40 to +125°C)	±0.4°C (-40 to +125°C)
GD38	8 x external thermistor temperature / state inputs			
GD32-AL/34AL	As GD32 and GD34 with audible and visual alert			
GS42	2 x external voltage or current	0-100mV		
GS44	4 x external voltage or current	0-1V DC	0.25mV	±0.5mV
GS44AVE	As GS44 but with averaging function	0-10V DC	2.50mV	±5mV
		0-20mA DC	~5uA	20uA
		4-20mA DC	0.05%	0.1%
GD43E	1 x external RH and temperature (RHT10E)	as GS13E		
	1 x voltage / current	as GS42		
	1 x external thermistor temperature	as GS31		
GD47	1 x built-in RH and temperature	as GD10		
	1 x built-in CO2	0-5000ppm	3%	±50ppm
	1 x built-in 12VDC supply monitor			

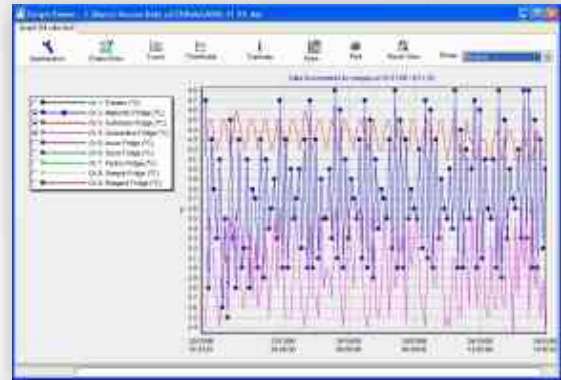
## Software

### Darca Secure - Software for the pharmaceutical and food sectors

Darca Secure is based on Darca Plus but contains enhanced security for the pharmaceutical industry following recommendations prescribed in FDA 21CFR Part 11. It is designed to communicate with the Eltek GenII telemetry receiver/logger type SC250 only (and cannot be used with standard 1000 series wired loggers).

- Tamper proof and secure data as prescribed in FDA 21 CFR Part 11
- Audit trails
- Administrator and user hierarchy

Darca Secure stores data in a file format which is encrypted using a key that is only known to Eltek. In addition to this, a key is placed in the audit trail at the point of download, and is updated on any changes that are made to the comments section of the file. The program does not modify the actual data and all stored data is completely tamper proof. Darca Secure also has audit trail and user management features that follow guidelines for electronic signatures set out in 21 CFR Part 11.



## GENII RADIO DATA LOGGING SYSTEMS

### Eltek Support

Eltek's Technical help line is there to assist from project conception to completion and beyond. A three year warranty is standard. Visit [www.eltekdataloggers.co.uk](http://www.eltekdataloggers.co.uk) for full details on our products together with the latest updates, downloads and applications.

### Technical Specifications

Common Features	GenII radio data logging system	Accessories	
UHF* Frequency	434.225MHz (Europe and countries where applicable)	External antenna	Light weight dipole
Compliant to	EN 300-220	WBG	Wall bracket for added security and difficult surfaces
Range	200 - > 1000 metres dependent upon environment. Contact Eltek for more details.		



**Guarantee** Equipment manufactured by Eltek is guaranteed against faulty materials or workmanship for three years. For repairs carried out under guarantee, no charge is made for labour, materials or return carriage.



## Eltek

Specialist Data Loggers  
 Eltek Ltd, 35 Barton Road, Haslingfield  
 Cambridge, CB23 1LL, England  
 Tel: +44 (0) 1223 872111  
 Fax: +44 (0) 1223 872521  
 email: [sales@eltekdataloggers.co.uk](mailto:sales@eltekdataloggers.co.uk)  
<http://www.eltekdataloggers.co.uk>