

RFID temperature logger

Advanced information D14TEMP01 (ISO 14443A)

Features

- Fully compliant up to ISO 14443A-4
- Temperature accuracy: $\pm 0.5^{\circ}\text{C}$ (abs), $\pm 0.1^{\circ}\text{C}$ (relative)
- Temperature range -30°C to $+100^{\circ}\text{C}$
- Fully configurable temperature logging profile
- 10 K samples storage capacity
- SPI master interface for auxiliary slave
- Optional ultra low power crystal clock
- JTAG debug interface
- Can be operated without battery power
- Firmware upgradable
- Ultra low power tag storage mode ($< 0.1\mu\text{A}$)
- Support for tamper detection
- Available as Tested Dies (KGD) or in QFN4x4

Description

The DELTA Microelectronics D14TEMP01 is an ISO 14443A transponder chip (PICC) that performs and stores temperature measurements with a configurable time interval (0.1s to 10h). The start of the temperature logging can be delayed. The total logging capacity is 10 K samples, each with a precision of 10 bits. Data transfer rate is up to 848 kb/s and the UID is configurable up to 10 bytes. With a credit card size antenna, operation up to 10 cm from reader is possible.

For autonomous temperature logging the device is mounted with a 2.7 – 5.5V battery. When no temperature measurement is performed standby current consumption is below $1\mu\text{A}$. When an RF field is applied, the internal power supply switches to power extracted from the RF field. This way, data from a tag can be accessed even with an expired battery. The chip can also supply 2.7 – 5.5V to an auxiliary slave.

The embedded flash/eeprom memory size is 32k bytes. Apart from temperature data and default drivers, it can also hold custom SW applications. It is therefore possible to use the chip for accessing and controlling auxiliary SPI components. Guard banding is possible yielding a warning if the temperature has been measured outside the guard band. Tamper detection e.g. revealing if a wire has been broken, can also be supported.

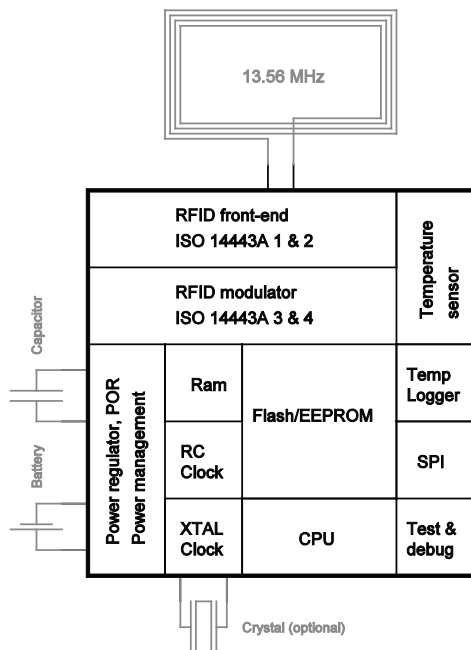
Possible application areas

Temperature logging for temperature sensitive objects/parcels or RF interface to various SPI controlled sensors e.g. pressure, tilt voltage, light etc. Customised solutions can be supplied.

For further information please contact

Gert Jørgensen – gj@delta.dk

Gunnar Bjarne Andersen – gba@delta.dk



DELTA
 Venlighedsvej 4
 2970 Hørsholm
 Denmark
 Tel. +45 72 19 40 00
asic@delta.dk
madebydelta.com