

RTCU CX1i flex

Advanced Control and Tracking Platform

The RTCU CX1i flex is a compact and ruggedized telematic tracking and control platform based on the powerful X32-architecture.

The RTCU CX1i flex offers a unique and outstanding approach allowing seamless upgrade with new hardware options – even after the product has been installed in the field!

With a fully upgraded RTCU CX1i flex the functionality is approaching that of RTCU CX1i pro – merely lacking the RF transceiver and SD-CARD reader!

The RTCU CX1i flex sports a state-of-the-art 66-channels SuperGPS receiver with unprecedented performance. In addition, the device offers an on-board advanced 3D-movement sensor.



The RTCU CX1i flex product is a worthy member of a growing number of advanced telemetry/telematic products all based on the proven and powerful X32-architecture. The RTCU CX1i flex is specifically based on the powerful RTCU CX1i pro and is 100% software compatible with all other X32 based devices from Logic IO. The unique features of the RTCU CX1i flex includes a 3D-movement sensor allowing a range of new applications to be developed such as detailed driving behavior and even crash detection. There is on-board Li-Ion battery for uninterrupted operation during power-fail.

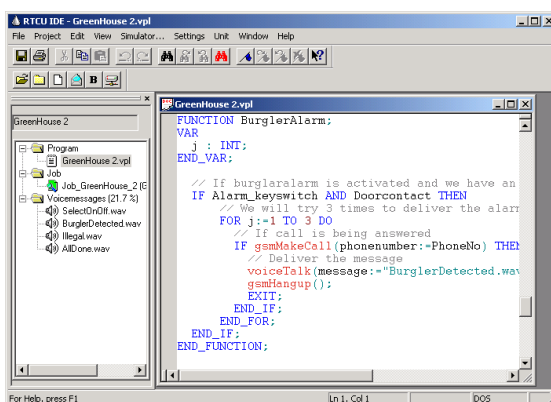
The unit is delivered pre-mounted with a 50 cm interface cable with power, I/O and 1-wire interface easily accessible. For the most flexible installation, the RTCU CX1i flex is factory delivered with an external high-performance waterproof magnet GPS antenna and a small thumb-sized waterproof GSM antenna already installed. Everything necessary to install the device is therefore included in the box, so that the total cost of device deployment are effectively reduced to a minimum. The RTCU CX1i flex is housed in a highly ruggedized IP66 waterproof encapsulation, which allows a new spectrum of applications to be realized due to the new installation possibilities.

The RTCU CX1i flex offers many other sophisticated features such as: 512 Kbyte internal flash drive with a FAT32 compatible file-system for easy sharing of files locally and remotely with a PC/Server.

The RTCU CX1i flex is of course fully programmable using the user-friendly Integrated Development Environment (RTCU IDE) running under Windows. In this environment the complete application is developed, simulated and finally transferred to the unit via a standard USB port or remotely using GPRS or CSD (Datacall).

Some of the application areas includes:

- ❖ Fleet management system.
- ❖ Mobile datalogging applications.
- ❖ Alarm / Security systems
- ❖ Mobile tracking applications
- ❖ Asset management.
- ❖ *Your applications...*



The RTCU-IDE Integrated Development Environment for the RTCU is an easy-to-use program for all aspects in the development of applications for the RTCU. The RTCU-IDE contains a broad range of features, such as project control, comprehensive online help, built-in syntax highlighting editor, code generating wizard, voice recorder etc. A built-in simulator enables complete simulation of all features on the RTCU: GSM, GPRS, SMS messaging, GPS, Analog / Digital I/O etc. A remote update feature allows the application developer to download new versions of a program, firmware or voice messages to a remote RTCU via a modem connection or over GPRS. Together, all of these features enables the user to cut development time to a minimum.

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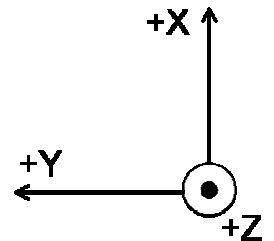
Powerful and Flexible Platform...

High Performance 32-bit Processor with large memory capacity

- Powerful industry leading dedicated 32-bit ARM7 Processor.
- Fast processor execution (24 Mhz) with optional performance option (48 Mhz).
- 1088 KByte RAM.
- 2304 KByte Flash for application and database.
- 512 Kbyte Dataflash for datalogging / parameters.
- 512 Kbyte internal flash drive with FAT compatible file-system for easy sharing of files with a PC.
- 8 KByte VFRAM (Virtual FRAM) for fast access memory without any write endurance limitations.

Extensive Range of Standard Features

- 1 Digital input / ignition (upgradeable with I/O option).
- Dedicated high-speed USB programming port providing improved communication speed.
- One user available bi-color LED-Indicators with 3 colors: Green, Red and Yellow.
- One bi-color and one yellow system LED indicating state of GSM, Power management and Battery charging etc.
- High performance +/-16g 3-axis accelerometer / movement sensor.
- Temperature sensor.



State of The Art Communication Technology

- Quad Band (850/900/1800/1900 Mhz) GSM based on industry leading solution.
 - SMS (Text and PDU)
 - GPRS. Multislot class 10
 - CSD (Datacall)
 - Delivered with a pre-mounted waterproof GSM 'thumb' size quad-band antenna.
- On-board high-sensitivity GPS-receiver with extremely fast acquisition and low-power consumption.
 - Full SBAS (EGNOS / WAAS / MSAS) support for enhanced GPS precision
 - Prepared for A-GPS.
 - Delivered with a compact waterproof GPS antenna with 2 meter cable for easy and flexible installation.



Advanced Power Management

- On-board Li-Ion battery pack (800 mAh) with advanced sub-zero degrees charging circuit
- Supervision of supply voltage and supply type.
- Several power-saving modes: Power-down, 'Wait for Event' and 5 Processor execution steps.
- Wakeup from Power-down using Ignition Input and optional timer.
- Wakeup from 'Wait for Event' using: Digital input, 3D movement sensor, Timeout or GSM- activity.
- Real time clock with battery back-up.



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...ready to meet ALL your requirements...

Flexible hardware options!

- **Unique and state-of-the-art 'on-demand' upgrade of hardware features.**
- The following hardware options are available:
 - **I/O Option:** Full I/O with: 2 digital inputs, 2 digital outputs and 1 analog input.
 - **Communication option:** RS232, 1-Wire interface and full Fleet-management support.
 - **Performance option:** Very fast execution (48 Mhz) and X32 enhanced memory for huge applications.
- Options can be requested and applied to the device from within the RTCU IDE.
- Options can be requested and applied remotely to an already installed device.

Development Tools for Rapid Application Development

- Programmable using the FREE RTCU IDE full-feature development environment .
- Easy to learn VPL high-level programming language based on IEC 1131-3 industrial standard.
- More than 800+ standard functions and 1000+ pages of on-line documentation suits every application.
- Many example programs available to "kick-start" application development.
- Full feature Microsoft Windows Simulator allowing test of complete application without use of physical unit.
- VSMS technology seamlessly supports SMS, GPRS, CSD without application/server changes.
- Seamless upgrade to future technologies.
- 100% backward compatible with previous generation RTCU products.

Industry Leading Deployment Features

- Full Logic IO GPRS Gateway Professional / Upgrade & Deployment server compatible.
- Upgrade of application, firmware and parameters over CSD, GPRS and USB.
- Upgrade can occur during full unit operation minimizing down time of the application.
- Unattended and fully automatic upgrade and deployment.
- Automatic "bootstrap" of un-programmed unit on first time installation.

Innovative Design

- Encapsulated in a robust and compact plastic housing.
- IP-66 ingress protected for outside installation.
- Power and I/O externally accessible for easy and safe installation.
- Designed and developed in Denmark, produced in the EU.



Proven Technology from Logic IO

- All Hardware and Software developed by Logic IO.
- In the GSM/GPRS/GPS business since 1999.
- Practical experience from more than 50+ GSM networks.
- Network of Partners around the globe.
- More than 70.000 units in operation worldwide.
- Logic IO has D&B highest credit rating **AAA**.
- Rewarded the Gazelle Award 2007 / 2008 for strong growth.





...and beyond!

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Technical Data

| | Min | Typ | Max | | |
|---|--|-----|-----|-----|---|
| Operating Voltage | 8 | - | 36 | VDC | Protected against wrong polarity. |
| On-board Li-Ion Battery Pack | | 800 | | mAh | Low-temperature charging possible. |
| Unit Active | | 50 | | mA | <i>Typical measurements @ 12 VDC Supply.</i> |
| Unit Active with GSM On | | 60 | | mA | GSM idle @ -63 dBm |
| Unit Active with GPS On | | 60 | | mA | |
| Unit Active with GSM/GPS On | | 75 | | mA | GSM idle @ -63 dBm |
| Unit Active while Charging | | 500 | | mA | |
| Unit in Power-down | | 0,6 | | mA | Restart on: Ignition and RTC |
| Unit in "Wait for Event" | | 0,6 | | mA | Resume on: DI, 3D accel., RTC |
| Unit in "Wait for Event" | | 7 | | mA | Resume on: RS232 |
| Unit in "Wait for Event", GSM On | | 20 | | mA | Resume on: GSM |
| I/O: | | | | | |
| Digital input logic "high" | 8 | 12 | 40 | VDC | • Digital inputs are protected against transients and low-pass filtered. |
| Digital input logic "low" | -5 | - | 3 | VDC | • Digital outputs are short-circuit, transient and ESD protected. |
| Digital output voltage | - | - | 36 | VDC | • Digital Output current is per channel |
| Digital output current | - | - | 750 | mA | • Analog input resolution is 10 bits. Input are protected against transients / low-pass filtered. |
| Analog input | 0 | - | 10 | VDC | |
| 3D Movement Sensor: | | | | | 3-axis digital accelerometer with hardware buffer. |
| Resolution | 12 bit @ +/- 16g | | | | |
| GPS: | | | | | Supports SBAS (WAAS, EGNOS, MSAS) |
| • Channels | 66 Channels SuperGPS | | | | |
| • Tracking Sensitivity | -165 dBm | | | | |
| Storage temperature: | -30 | - | +65 | °C | External color coded wires and LED's: • Power • Digital I/O and analog input • 1-Wire interface • Two Bi-color LED and one yellow status LED • SMA connector for GPS / GSM antennas • Delivered GSM/GPS antennas pre-mounted. |
| Operating temperature (According to GSM 11.10 specification) | -25 | - | +55 | °C | |
| Restricted operation (deviations from the GSM specification may occur) | -30 | - | +65 | °C | |
| Charging Temperature | -10 | - | +45 | °C | Internal interfaces: • Mini USB programming connector. • Standard 3 Volt SIM Card Reader |
| Humidity (RH non condensing) | 5 | - | 90 | % | |
| Weight (with antennas/cable) | 0.250 | | | Kg | |
| External dimensions | W 92 x H 30 x D 58 mm | | | | Excluding mounting flanges |
| Ingress Protection (IP) | IP-66 | | | | Black UL94 plastic enclosure. |
| Approvals | EN-61000-6-3;2001 Emission EN-61000-6-2;2001 Immunity | | | |  10R-036481  |

Technical data subject to change



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