RTCU CX1i pro / pro+

Advanced Control and Tracking Platform

The RTCU CX1i pro/pro+ is a compact, waterproof and ruggedized telematic tracking and control platform, based on the powerful X32-architecture also found in the popular MX2i Series.
In addition to a long list of standard features, the RTCU CX1i pro/pro+ sports a state-of-the-art 66-channels SuperGPS receiver with unprecedented performance. Unique features includes an advanced 3D-movement sensor and wireless RF transceiver.

The RTCU CX1i pro/pro+ 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 pro/pro+ is specifically based on the popular RTCU MX2i series and is 100% software compatible with all other X32 based devices from Logic IO. The unique features of the RTCU CX1i pro/pro+ includes a 3D-movement sensor supporting a range of new applications such as detailed driving behavior and even crash detection. The RTCU CX1i pro/pro+ has support for medium range wireless communication using the ISM 868 Mhz frequency band. This feature allows implementation of wireless I/O, RF-tracking and simple remote key fob applications. There is on-board Li-Ion battery for uninterrupted operation during power-fail.

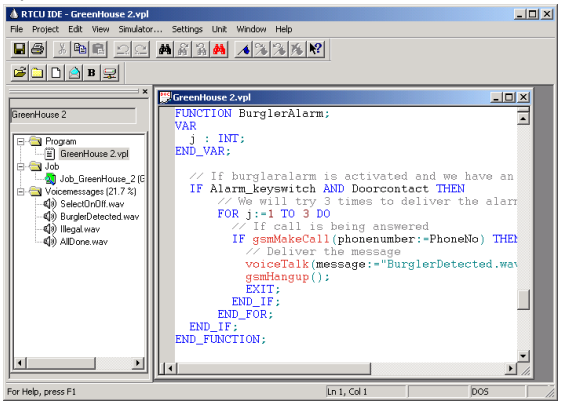
The ISM RF antenna is on-board and internal to the device, and the unit is delivered pre-mounted with a 50 cm interface cable with power, I/O, RS232 and 1-Wire interface bus signals easily accessible. For the most flexible installation the RTCU CX1i pro/pro+ is factory delivered with an external high-performance waterproof magnet GPS antenna and a small waterproof thumb-sized GSM antenna already installed. Everything necessary to install the device is therefore included in the box, so the total cost of the device deployment is effectively reduced to a minimum. The RTCU CX1i pro/pro+ 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 pro/pro+ offers many other sophisticated features such as: Micro SD-CARD with up to 32 GB capacity and a 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 pro/pro+ 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 by 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.

Logic IO, Holmboes Allé 14, DK-8700 Horsens, Denmark, Tel: (+45) 7625 0210, Fax: (+45) 7625 0211

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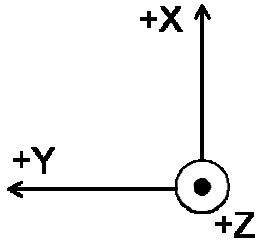
Powerful and Flexible Platform...

High Performance 32-bit Processor with large memory capacity

- Powerful industry leading dedicated 32-bit ARM7 Processor.
- Very fast execution (48 Mhz).
- 1088 KByte RAM.
- 2304 KByte Flash for application and database.
- Large Dataflash for datalogging / parameters:
  - 512 Kbyte on the RTCU CX1i pro
  - 4512 Kbyte on the RTCU CX1i pro+
- 512 Kbyte internal flash drive with FAT compatible file-system, for easy sharing of files with a PC.
- 8 KByte FRAM for fast access memory without any write endurance limitations.
- Micro-SD Card Reader with FAT32 file-system and up to 32 GB capacity.

Extensive Range of Standard Features



- 2 Digital inputs (1 working as ignition), 2 Digital output and 1 Analog input.
- Dedicated high-speed USB programming port providing improved communication speed.
- Standard RS232 serial port. Alternatively used as service port.
- 1-Wire interface for connection to accessories such as ID-button and temperature reader.
- 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.
- On-board medium range ISM 868 MHz RF transceiver with antenna.
- 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 1.5 meters cable for flexible installation.

- On-Board medium range RF transceiver (868 MHz) with antenna for wireless I/O and remote control.

Advanced Power Management

- On-board high-capacity Li-Ion battery pack (1000 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, GSM- or UART activity.
- Real time clock with battery back-up.

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Advanced Control and Tracking Platform

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

Advanced user interaction

- Mobile Data Terminal with backlit LCD and keyboard.
- Full integration to Garmin Navigation devices for advanced. Fleetmanagement / Messaging and Navigation applications.

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 the EIC 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 75.000 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		1000		mAh	Low-temperature charging possible.
Unit Active		50		mA	*Typical measurements @ 12 VDC Supply.*
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 inputs are protected against transients and low-pass filtered.
Digital input logic "high"	8	12	40	VDC	
Digital input logic "low"	-5	-	3	VDC	• Digital outputs are short-circuit, transient and ESD protected.
Digital output voltage	-	-	36	VDC	
Digital output current	-	-	750	mA	• Digital Output current is per channel
Analog input	0	-	10	VDC	• Analog input resolution is 10 bits. Input are protected against transients / low-pass filtered.
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			
On-board ISM RF:					
• Frequency		868 MHz			GFSK modulation
• Channel Spacing		250 kHz			Automatic frequency compensation.
• Maximum Transmit power		+10 dBm			Compliant with EN 300 220
• Receiver sensitivity		-112 dBm			Operating range depends on the environment
• Operating Range		Indoor:up to 15m / Outdoor:up to 50m			Outdoor range is at line-of-sight
Storage temperature:	-30	-	+65	ºC	External color coded wires and LED's:
Operating temperature (According to GSM 11.10 specification)	-25	-	+55	ºC	• Power • Digital I/O and analog input. • RS232 • 1-Wire • Two Bi-color LED and one yellow status LED • SMA connector for GPS / GSM antennas • Delivered GSM/GPS antennas pre-mounted.
Restricted operation (deviations from the GSM specification may occur)	-30	-	+65	ºC	
Charging Temperature	-10	-	+45	ºC	Internal interfaces:
Humidity (RH non condensing)	5	-	90	%	• Mini USB programming connector. • Standard 3 Volt SIM Card Reader
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 with sealing membrane
Approvals		EN-61000-6-3;2001 Emission EN-61000-6-2;2001 Immunity			E1 10R-036481 CE

Technical data subject to change

For more information:
Web: www.logicio.com
Email: info@logicio.com

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