

# RTCU AX9 eco

## Remote Telemetry and Control Unit

The RTCU AX9 eco is the economical choice for a powerful and versatile platform based on the popular and advanced RTCU AX9 pro. The RTCU AX9 eco has a reduced feature set compared to the RTCU AX9 pro, but still offers an impressive palette of advanced features and is of course software compatible with all other members of the X32 architecture family. The RTCU AX9 eco maintains the same basic functionality as the RTCU AX9 pro and also offers support for a M2M chip solution instead of a traditional SIM-card!



The RTCU AX9 eco has been designed ground up for professional wireless industrial applications with its strong on-board I/O capabilities and multiple communication interfaces such as: 1-Wire, USB, RS232 and optional RS485. The on-board I/O system can be expanded almost indefinitely and completely transparent by adding external MODBUS compatible I/O modules! This unique I/O expansion capability positions the RTCU AX9 eco as the perfect product for SCADA-like applications (I/O expansion requires optional RS485).

The RTCU AX9 eco offers many other sophisticated features such as: A 512 Kbyte internal flash drive with a FAT32 compatible file-system for easy sharing of files locally and remotely.

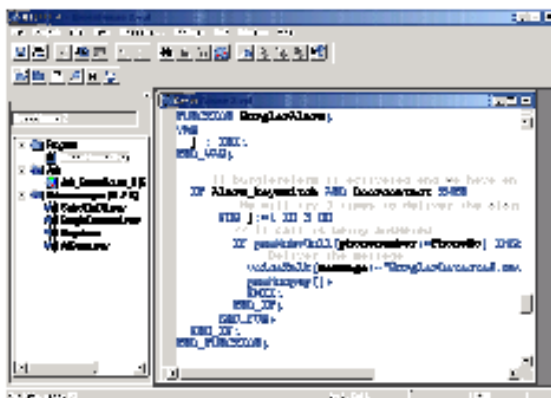
The RTCU AX9 eco is based on the well proven RTCU X32-architecture sharing powerful features such as: IVR (Interactive Voice Response) implementation using Voice/DTMF, SMS/PDU messages, optimized host implemented TCP/IP stack with full support the Logic IO Gateway concept. Using the Logic IO VSMS (Virtual SMS) technology SMS, GPRS and CSD (Datacall) merges together allowing any RTCU application, that uses the VSMS-messages paradigm to transparently send / receive messages using either SMS, GPRS or CSD (Datacall) *without* any changes to the software already developed.

The unit has full SMTP support for sending e-mails with attachments and file transfer with FTP for easy exchange of information with external sources.

The RTCU AX9 eco is of course fully programmable using the user-friendly Integrated Development Environment (RTCU IDE) running under Windows. In the 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:

- ❖ Surveillance and control of industrial equipment.
- ❖ Remote site control and data acquisition.
- ❖ Alarm and security systems.
- ❖ Process monitoring and reporting application.
- ❖ SCADA-like applications.
- ❖ *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, 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
- 1088 KByte RAM
- 2304 KByte Flash for application, database and voice messages
- 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 FRAM for fast access memory without any write endurance limitations

*X32 Architecture!*

#### *Extensive Range of Standard Features*

- 4 digital relay outputs, 5 digital inputs and 2 analog inputs.
- Digital input 1-4 can individually be configured to operate as IEC62053-31 Class A compliant inputs.
- All analog inputs can be configured individually to either 0-10V or 0-20mA range.
- Dedicated high-speed USB programming port providing improved communication speed.
- Standard RS232 serial port as a generic RS232 port.
- Optional RS485 multidrop communication port with support for MODBUS and I/O extension modules.
- 1-Wire support for connecting a range of accessories, such as ID-Button reader, Temperature sensors, etc.
- Two user available bi-color LED-Indicators with 3 colors: Green, Red and Yellow.
- Three user accessible DIP-switches and one reset and system recovery switch.
- On-board temperature sensor.
- Wide AC/DC power range from 85..265 VAC / 8..36 VDC.
- Screw terminals for easy interfacing

#### *State of The Art Communication Technology*

- Quad Band (850/900/1800/1900 Mhz) GSM based on industry leading chipset solution
  - Voice. Digitized (182 seconds)
  - SMS (Text and PDU)
  - GPRS. Multislot class 10.
  - CSD (Datacall)
  - Voice, GPRS and CSD handled simultaneously by an advanced GSM host implementation.
- Support for optional Gemalto M2M chip solution instead of a removable SIM card (factory mounted).
- On-board quad-band GSM antenna for cost and installation saving, or SMA connector for external antenna.
- Digitized voice and DTMF decoding. User spoken dictionary for implementation of voice response systems.

#### *Advanced Power Management*

- High-capacity (700 mAh) Li-Ion battery pack. Advanced charging circuit is implemented.
- 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 (Digital Input 5) and optional timer
- Wakeup from 'Wait for Event' using: Digital input, Timeout, GSM-, or UART activity



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

### *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 700+ standard functions and 900+ 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 and CSD without application/server changes.
- Full TCP/IP with simultaneous session support for GPRS Gateway, TCP/IP, UDP/IP, SMTP and FTP.
- Seamless upgrade to future technologies.
- 100% backward compatible with previous generation RTCU products.

\* X32 Enhanced Memory is not supported on the RTCU AX9 eco.

### *Industry Leading Deployment Features*

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



### *Innovative Design*

- Strong IP67 encapsulation for flexible installation options.
- Designed and developed in Denmark. Produced in 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 40+ GSM networks.
- Network of Partners around the globe.
- More than 45.000 units in operation worldwide.
- Logic IO has the highest credit rating **AAA** (2007/2009/2010).
- Awarded the Danish Gazelle Award 2007/08 for strong growth.




*...and beyond!*

# RTCX AX9 eco

## Remote Telemetry and Control Unit

### Technical Data

	Min	Typ		Max		
		DC	AC			
Power supply						
On-board Li-Ion Battery Pack		700			mAh	
Operating Voltage AC	85	-	-	265	VAC	Fused
Operating Voltage DC	8	-	-	36	VDC	Protected against wrong polarity.
Unit Active		50 mA	8 VA			<i>Typical measurements @ 12 VDC / 220 VAC.</i> <i>All outputs are OFF</i> GSM idle @ -63 dBm  Resume on: DI, RTC Resume on: RS232 Resume on: GSM
Unit Active with GSM on		60 mA	8,5 VA			
Unit Active while charging		530 mA	17,5 VA			
Unit in Power-down		0,8 mA	6,6 VA			
Unit in "Wait for Event"		0,8 mA	7 VA			
Unit in "Wait for Event"		6 mA	7 VA			
Unit in "Wait for Event", GSM On		20 mA	7 VA			
Digital Outputs (Relay SPST)	-	-	5	A	@ 250VAC / @ 30VDC	
Digital Inputs	Logic "High"	6	-	40	VDC	All inputs are protected against transients and low-pass filtered
	Logic "Low"	-5	-	3	VDC	
Analog Inputs	0 0	- -	10 20	VDC mA	Resolution is 10 bits. All inputs are protected against transients and low-pass filtered. Accuracy @ 25°C ±1,5 % FSR.	
<ul style="list-style-type: none"> <li>GSM Radio Frequency</li> <li>GSM Transmit Power</li> <li>GPRS Packet Mode</li> </ul>	850 / 900 / 1800 / 1900 MHz Class 4 (2W@850/900 MHz) Class 1 (1W@1800/1900 MHz) Class B, Multislot 10					
Storage Temperature	-30	-	+65	°C	External Interfaces: • 3 PG11, 2 PG9(blind) cable glands for cable entry • SMA-Female for GSM Antenna (optional)  Internal Interfaces: • USB B • SIM-card reader • Easy accessible screw terminals	
Operating Temperature (According to GSM 11.10 specification)	-25	-	+55	°C		
Restricted Operation (deviation from the GSM specification may occur)	-30	-	+65	°C		
Charging Temperature	-10	-	+45	°C		
Humidity (non condensing)	5	-	90	%		
Weight	0,640			Kg		
External dimensions	W 130 x H 180 x D 60 mm			Without SMA connector, and PG11 and PG9 cable glands		
Ingress Protection (IP)	IP-67					
Approvals	EN 61000-6-2 EN 61000-6-3			 <b>EU EMC Directive</b> <b>2004/108/EU</b>		

Technical data subject to change

**For more information:**  
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