

RTCU DX4 pro

Remote Telemetry and Control Unit

The RTCU DX4 pro is designed for a broad range of advanced wireless monitoring, control and remote access applications which require a product based on the most versatile and powerful platform available today. Being based on the well proven RTCU X32-architecture, the RTCU DX4 shares the same powerful features as the other members of this family, adding unique features such as: **Multiple RS485 ports with full Modbus slave/master support, Transparent support for Modbus based I/O module extension, Graphical display with keys and support for a M2M chip instead of a traditional SIM-card!**



The RTCU DX4 pro has been designed ground up for professional wireless industrial applications with its strong on-board I/O capabilities and multiple communication interfaces such as: CAN bus, 1-Wire, USB, RS232 and dual RS485 channels. 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, combined with the possibility to operate as a Modbus master and slave simultaneously, positions the RTCU DX4 pro as the perfect product for SCADA-like applications.

The RTCU DX4 pro offers many other sophisticated features such as: A 512kbyte internal flash drive and a SD-CARD reader with a FAT32 compatible file-system for easy sharing of files locally and remotely with a PC/Server. There is optional support for Bluetooth, Ethernet, Wi-Fi, Camera module and a Mobile Data Terminal for user interaction.

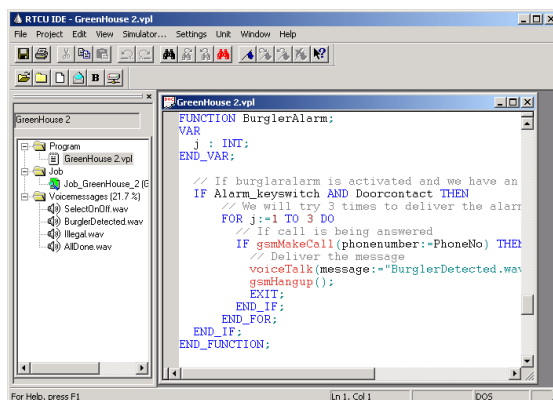
The RTCU DX4 pro is based on the well proven RTCU X32-architecture sharing powerful features such as: IVR (Interactive Voice Response) implementation using Voice/DTMF, SMS/PDU messages, optimized host implemented TCP/IP stack with full support the Logic IO Gateway concept. Using the Logic IO VSMS (Virtual 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 DX4 pro 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 serial 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 (Prepared for up to 8 MByte)
- 512 Kbyte Dataflash for datalogging / parameters.
 - Support for additional 8 MByte DataFlash.
- 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
- Standard SD-CARD reader with FAT file-system support for standard PC-compatibility. Up to 32 GB capacity.

Extensive Range of Standard Features

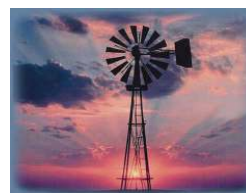
- 8 digital solid state outputs, 8 digital inputs, 4 analog outputs and 4 analog inputs.
- Digital input 1-4 can individually be configured to operate as IEC62053-31 Class B compliant inputs.
- All analog inputs and outputs can be configured individually to either 0-10V or 0-20mA range.
- Two-part pluggable connectors for easy installation and maintenance.
- Primary RS232 serial port. Can be used as service port with special cable or as a standard RS232 port.
- Secondary RS232 serial port with all control signals present.
- RS485 multidrop communication port with support for Modbus slave/master and IO extension modules.
- Full CAN 2.0B Controller with hardware filtering and multi speed support.
- Basic support for industrial CAN bus protocols.
- 1-Wire support for connecting a range of accessories, such as ID-Button reader, Temperature sensors, etc.
- Piezo buzzer for audible notification.
- Graphical 144x32 pixels white-on-blue back-lit LCD display for presentation of graphics and text.
- 8 fully user programmable keys next to the LCD display.
- 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.

State of The Art Communication Technology

- Quad Band (850/900/1800/1900 Mhz) GSM based on industry leading Texas Instruments Chipset solution
 - Voice. Digitized (182 seconds)
 - SMS (Text and PDU)
 - GPRS. Multislot class 10. Support for simultaneous Voice and GPRS (suspended)
 - CSD (Datacall)
- Support for optional Gemalto M2M chip solution instead of a removable SIM card (factory mounted)
- Digitized voice and DTMF decoding. User spoken dictionary for implementation of voice response systems

Advanced Power Management

- High-capacity (1900 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-, CAN- or UART activity



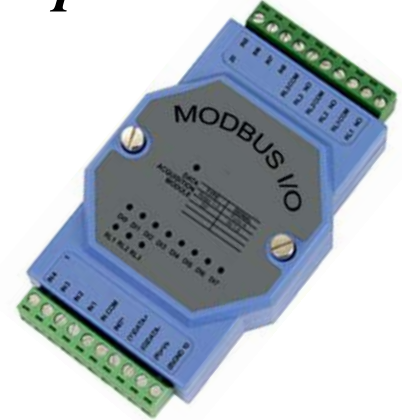
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...ready to meet ALL your requirements...

Highly Expandable

- Additional RS485 port (for a total of 2 ports).
- Additional 8 MBytes of DataFlash for datalogging / parameters.
- VGA CMOS Camera for intelligent remote surveillance.
- Bluetooth for wireless connection to Headset, PDA, PC, etc.
- Ethernet (cable) or Wi-Fi connection.
- Modbus based I/O extension modules.



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 650+ standard functions and 850+ 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, Ethernet, Wi-Fi without application/server changes.
- Full TCP/IP with simultaneous session support for GPRS Gateway, TCP/IP, UDP/IP, SMTP and FTP(coming).
- 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 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

- Encapsulated in a 9 module M36 DIN-rail house.
- All interfaces externally accessible.
- 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 75.000 units in operation worldwide.
- Logic IO has D&B highest credit rating **AAA**.
- Awarded the Danish Gazelle Award 2007/08 for strong growth.




...and beyond!

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Technical Data

Power supply	Min	Typ	Max			
On-board Li-Ion Battery Pack		1900		mAh		
Operating Voltage	8	-	36	VDC	Protected against wrong polarity.	
Unit Active		55			<i>Typical measurements @ 12 VDC Supply.</i>	
Unit Active with display on		70		mA		
Unit Active with GSM on		65		mA	GSM idle @ -63 dBm	
Unit Active while charging		580		mA		
Unit in Power-down		0.6		mA	Restart on: DI5 and RTC	
Unit in "Wait for Event"		0.6		mA	Resume on: DI, RTC	
Unit in "Wait for Event"		13		mA	Resume on: CAN	
Unit in "Wait for Event"		8		mA	Resume on: RS232	
Unit in "Wait for Event", GSM On		17		mA	Resume on: GSM	
Digital Outputs (per channel)	-	-	36	VDC	Outputs protected against: Short circuit, ESD and inductive (Relay) kickback up to 20mH.	
	-	-	1.5	A		
Digital Inputs	Logic "High"	6	-	40	VDC	Inputs are protected against transients and low-pass filtered.
	Logic "Low"	-5	-	3	VDC	
Analog Outputs	0	-	10	VDC	Resolution is 10 bits. Max load: 250 Ω. Accuracy @ 25°C ±1,5 % FSR.	
	0	-	20	mA		
Analog Inputs	0	-	10	VDC	Resolution is 10 bits. All inputs are protected against transients and low-pass filtered. Accuracy @ 25°C ±1,5 % FSR.	
	0	-	20	mA		
• GSM Radio Frequency • GSM Transmit Power • GPRS Packet Mode	850 / 900 / 1800 / 1900 MHz Class 4 (2W@800/900 MHz) Class 1 (1W@1800/1900 MHz) Class B, Multislot 10					
Storage temperature:	-30	-	+65	°C	External interfaces: <ul style="list-style-type: none"> • 5.08mm two-part pluggable screw terminals for: <ul style="list-style-type: none"> ▪ Power, Digital I/O, Analog I/O ▪ CAN, RS485 and 1-Wire • TYCO Mate'n'Lock for RS232 port 1 and DCOUT. • RJ45 for RS232 port 2 (EIA-561 compliant) • Three bi-color LED and one yellow status LED. • Three DIP-Switches and 8 navigation keys. • SD-CARD reader. • Mini USB-B (slave) • SMA-Female connector for GSM antenna. • Graphical 144x32 pixels LCD. <p>All interfaces, are externally accessible</p>	
Operating temperature <small>(According to GSM 11.10 specification)</small>	-25	-	+55	°C		
Restricted operation <small>(deviations from the GSM specification may occur)</small>	-30	-	+65	°C		
Charging Temperature	-10	-	+45	°C		
Humidity <small>(non condensing)</small>	5	-	90	%		
Weight	0.430			Kg		
External dimensions	W 157 x H 86 x D 58 mm				without SMA connectors and pluggable screw terminals	
Ingress Protection (IP)	IP-20				9 Module M36 DIN-rail enclosure	
Approvals	EN 61000-6-2 EN 61000-6-3				 EU EMC Directive 2004/108/EU	

Technical data subject to change



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