

# RTCU DX4 flex

## Remote Telemetry and Control Unit

The RTCU DX4 flex 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.

The RTCU DX4 flex offers a perfect balance between low-cost and advanced features and with the unique 'on-demand options', hardware features can be enabled as required – even after the product has been installed in the field!



The RTCU DX4 flex 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, 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 flex as the perfect product for SCADA-like applications.

The RTCU DX4 flex 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 with a PC/Server.

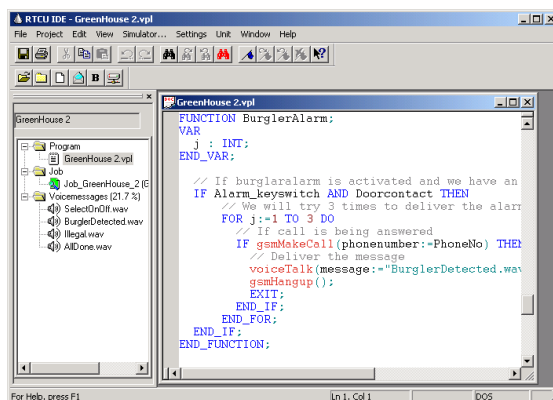
The RTCU DX4 flex is based on the well proven RTCU X32-architecture sharing powerful features such as: SMS/PDU messages, optimized host implemented TCP/IP stack with full support the Logic IO Gateway concept. Using the Logic IO VSMS (Virtual SMS) technology SMS, GPRS and CSD (Datacall) merges together 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 flex 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 and system-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 FRAM for fast access memory without any write endurance limitations

#### *Extensive Range of Standard Features*

- 3 digital solid state outputs and 5 digital inputs (upgradeable with I/O option).
- 2 analog outputs and 2 analog inputs (upgradeable with I/O option)
- 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 (*pluggable part ordered separately*).
- RS232 serial port. Can be used as service port with special cable or as a standard RS232 port.
- Two user available bi-color LED-Indicators with 3 colors: Green, Red and Yellow.
- 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
  - SMS (Text and PDU)
  - GPRS. Multislot class 10.
  - CSD (Datacall)
- Support for optional Gemalto M2M chip solution instead of a removable SIM card (factory mounted)

#### *Advanced Power Management*

- Supervision of supply voltage and supply type.
- On-board Li-Ion battery pack with a capacity of 900 mAh maintained by an advanced charging circuit.
- 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...*

### *Flexible hardware options!*

- **Unique and state-of-the-art 'on-demand' upgrade of hardware features.**
- The following hardware options are available:
  - **Digital I/O option:** Full digital I/O: 8 digital inputs and 8 digital outputs.
  - **Analog I/O option:** Full analog I/O: 4 analog inputs and 4 analog outputs.
  - **Communication option:** RS485/MODBUS and 1-Wire interface.
  - **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 EIC 1131-3 industrial standard.
- More than 700+ 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, Ethernet, Wi-Fi 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.

### *Industry Leading Deployment Features*

- Full Logic IO GPRS Gateway Professional / Upgrade & Deployment server compatible.
- Clock synchronization service using the GPRS Gateway Professional.
- 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, except SIM holder.
- 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 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**.
- Awarded the Danish Gazelle Award 2007/08 for strong growth.




*...and beyond!*

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### Technical Data

Power supply	Min	Typ	Max		
Operating Voltage	8	-	36	VDC	Protected against wrong polarity.
On-board Li-Ion Battery Pack		900		mAh	
Unit Active		50		mA	<i>Typical measurements @ 12 VDC Supply.</i> GSM idle @ -63 dBm  Restart on: DI5 and RTC Resume on: DI, RTC Resume on: RS232 Resume on: GSM
Unit Active with GSM on		55		mA	
Unit Active while charging		580		mA	
Unit in Power-down		0.6		mA	
Unit in "Wait for Event"		0.6		mA	
Unit in "Wait for Event"		7		mA	
Unit in "Wait for Event", GSM On		17		mA	
Digital Outputs (per channel)	-	-	36	VDC	
	-	-	1.5	A	
Digital Inputs	Logic "High"	6	-	40	VDC
	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	
<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@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"> <li>• 5.08mm two-part pluggable screw terminals for:               <ul style="list-style-type: none"> <li>▪ Power, Digital I/O, Analog I/O</li> <li>▪ RS485 and 1-Wire</li> </ul> </li> <li>• TYCO Mate'n'Lock for RS232 port 1 and DCOUT.</li> <li>• Three bi-color LED and one yellow status LED.</li> <li>• SMA-Female connector for GSM antenna.</li> </ul> All interfaces, except SIM-Card are externally accessible.
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 (non condensing)	5	-	90	%	
Weight	0.330			Kg	
External dimensions	W 157 x H 86 x D 58 mm				
Ingress Protection (IP)	IP-20				
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:**

**Web: [www.logicio.com](http://www.logicio.com)**

**Email: [info@logicio.com](mailto:info@logicio.com)**