The M2M Enabler

RTCU DX4i pro
Advanced Telemetry Appliance

The perfect balance of quality, performance, flexibility and affordability

For Professional M2M Applications

The RTCU DX4i pro has been designed for the most demanding M2M and Internet of Things applications, which cannot be solved with simpler non-programmable devices.

The RTCU DX4i pro rests on the **RTCU M2M Platform,** that brings all the necessary tools together to develop, implement and maintain todays sophisticated M2M/IoT applications.

The **development task** is supported by the **free** RTCU IDE development environment complimented by a large and comprehensive documentation and application example library.

The RTCU Gateway 2 is the corner-stone of the **communication infrastructure** ensuring reliable two-way device communication in any network environment.

Deploying and maintaining new application and firmware versions for devices in the field are handled by the powerful RTCU Deployment Server.

15 years of experience and know-how in one product!

Experience and Know-how

For 15 years Logic IO has been committed to offer the most sophisticated platform for advanced and highly demanding M2M / IoT applications.

The RTCU DX4i pro is the result of this accumulated experience combined with valuable feedback from hundreds of professional and mission critical applications by major organizations around the world.

RTCU products are deployed **underground**, **stationary**, **on the road**, **at sea**, **on the rail** and **in the skies**! - In any imaginable application and environment.

Device Advantages
- Quad-band GSM engine.
- Internal and external SIM reader.
- Digital and analog input/outputs.
- MODBUS expandable I/O.
- Graphical display with keypad.
- Multiple RS232/RS485 channels.
- Full CAN 2.0B support.
- 1-Wire bus.
- Digitized voice playback.
- DTMF decoding/transmission.
- Large flash memory capacity.
- SD-CARD with up to 32 GB.
- FAT32 file-system.
- High-capacity battery.
- State of the art power-management.

Platform Advantages
- X32 execution architecture.
- Free RTCU IDE development tool.
- Programmable in VPL.
- Huge standard API.
- Comprehensive protocol support.
- Full featured Device Simulator.
- Sophisticated deployment tools.
- Fast and free email support.
- Backward and forward compatible.

World Leader in Advanced and Professional M2M/IoT Technology since 1999.

RTCU DX4i pro Highlights
Advanced Telemetry Appliance

The RTCU DX4i pro is targeting a broad range of advanced telemetry applications and has been designed according to the highest technical standards for professional industrial use.

- Based on the **RTCU M2M Platform**.
- **X32 execution architecture.**
  - RTCU IDE development tool with full featured device simulator.
  - Huge standard API with more than 800+ functions.
  - Comprehensive protocol support, including:
    TCP-UDP/IP, FTP, SMTP, RACP, MQTT, MODBUS.
- World-wide **Quad-band GSM engine**.
- Internal and external SIM-card reader.
- **Digitized audio** can be played over GSM or to an external device.
- **DTMF** support for implementation of Interactive Voice Response applications.
- **Graphical 144x32 pixels display** with white-on-blue back-lit text/graphics.
- **Keypad** with 8 keys for sophisticated user interaction and control.
- Large data-flash/logger memory with a capacity **of 4.5 MB**.
- Internal **4 MB FAT32 flash drive**.
- Standard FAT32 **SD-CARD** reader with up to 32 GB capacity.
- **2 x RS232** channels and **2 x RS485** channel.
- **4 x analog inputs** with 0..10 volt / 0..20 mA with **12 bit precision**.
- **4 x analog outputs** with 0..10 volt / 0..20 mA.
- **8 x digital inputs** and **8 x high-power** solid-state **digital outputs**.
- Up to 4 digital inputs can be configured as **IEC62053-31 Class A** compliant.
- **Expandable I/O** with standard MODBUS modules.
- **Full CAN 2.0B** controller with hardware filtering and multi-speed support.
- **1-Wire bus** for accessories such as ID-button reader, temperature sensors, etc.
- Wide operating range from **8..36 VDC**.
- On-board **high-capacity Li-Ion battery**.
- Advanced **power-management** with wake-up on a wide range of events.
- High-speed **Mini-USB programming** connector.
- Housed in an industry standard **M36 DIN compliant** encapsulation.
- Two-part pluggable connectors for easy installation and maintenance.
- Fully supported by the **RTCU Gateway 2** and the **RTCU Deployment Server**.
- **Accessories:** MODBUS modules, Wi-Fi, Ethernet, Bluetooth and 2 MP camera.
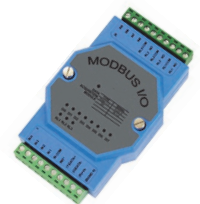
Services Available

Technical Support.

Application development support.

Maintenance.

Hardware support.

Warranty services.

Accessories

MDT-200 Data Terminal.

MODBUS IO extension modules.

2 mega-pixel Camera.

Ethernet / Wi-Fi.

Bluetooth.

Antennas.

Cable parts.

1-Wire parts.

...and more.

Find out more and start developing today!
Learn more about the RTCU M2M platform and the X32 architecture in the ”**The RTCU M2M Platform”** data sheet.

To learn more about the technical details and usage of the RTCU DX4i pro, please download the ”**RTCU DX4i pro Technical Manual**”.

Also make sure to get the **FREE RTCU IDE** Development Environment, **RTCU Gateway 2** and the **Deployment Server** to get a hands-on experience how rapid development/deployment of game changing M2M/IoT applications were meant to be.

Please visit **www.logicio.com**

RTCU DX4i pro Specifications

Processor and Main-memory

- Powerful 32-bit ST ARM7 processor.
- 1088 KB fast execution RAM.
- 2304 KB Flash for firmware/application.

Storage

- 3.5 MB persistent data flash.
- 4 MB internal FAT32 flash drive.
- 1 MB circular automatic datalogger.
- 8 KB FRAM with fast access / unlimited write endurance.
- SD-CARD reader with up to 32 GB.

GSM

- Quad-band GSM engine. 850/900/1800/1900 MHz.
- GPRS Class B, Multislot 10.
- CSD with up to 19 Kbps.
- SMS / PDU.
- DTMF decoding / transmission.
- Digitized voice playback / IVR.
- Micro-SIM 1.8/3 volt.
- External and internal SIM card-reader.
- Optional Gemalto SIM-on-chip.

User Interaction

- 144x32 pixels graphical/text display. White-on-blue back-lit.
- Keypad with 8 user defined keys.
- Piezo Buzzer for user attention.
- 3 x bi-colour LED.
- Yellow status LED.
- DIP-switches.
- Reset / recovery switch.

Electrical Specification.

- Operating voltage is 8 to 36 VDC.
- Short and reverse power protected.

Battery and Charger

- On-board 2Ah (nominal) Li-Ion battery.
- Intelligent charger with temperature throttle and sub-zero degrees support.
- On-board temperature sensor.

Digital/Analog Interface

- 8 x digital solid-state digital output. Max. 36 volt / 1.5 A per. channel. Short-circuit, ESD, Inductive kick-back protected up to 20 mH.
- 8 x digital inputs. Logic high: 6 to 40 VDC. Logic low: -5 to 3 VDC.
- 4 x IEC62053-31 Class A input.
- Digital input #5 can be used as ignition.
- 4 x analog inputs. Range is 0..10VDC or 0..20 mA Resolution: 12 bit Precision: ±1.5% FSR @ 25°C
- 4 x analog outputs. Range is 0..10VDC or 0..20 mA Resolution: 10 bit Precision: ±1.5% FSR @ 25°C
- Protected against transients and low-pass filtered.
- Expandable I/O with MODBUS.

Communication

- Full CAN2.0B with hardware filtering and multi-speed support.
- 1 x RS232 with control signals.
- 1 x RS485
- 1 x shared RS232 / RS485.
- 1-Wire bus.

Power Management

- 5 execution speeds.
- Wait for Event: Timer, Digital input, RS232, CAN, GSM, power change state.
- Wait for event, from: 600 uA@12V.
- Supervision of supply voltage / type.

External Interfaces.

- SIM-card slot for micro-SIM with lock and presence detection.
- SD-CARD slot with presence and write protect detection.
- Audio out for digitized voice playback.
- LED indicators and DIP switches.
- Reset/recovery switch,
- Two-part pluggable connector for: Power, I/O, RS485, 1Wire. CAN.
- TE-Connectivity "Mate'n'Lock' for: RS232 / DCOUT.
- RJ45 for RS232 (EIA-561)
- SMA Female connector for GSM.
- Mini USB-B as service port.

Physical Characteristics

- Encapsulation: 9 Module M36 DIN-rail.
- Approx. 430 gram without accessories.
- W 157 x H 86 x D 58 mm. (wihout SMA and screw-terminals).

Environmental Specification

- Operating temperature: -30 to 60°C.
- Battery charge temperature: -10 to 45 °C
- Recommended storage temperature: 0 to 45°C.
- Humidity: 5..90% (non condensing).
- Ingress Protection: IP20 .

Approvals

- CE. EU EMC directive 2004/108/EU.
- Applied R&TTE directive.
- GSM engine: CE/GCF/FCC/PTCRB.

Warranty

- Two-years return to factory parts and labor.
- Optional warranty up to 5 years. (restrictions apply).

Models Available
SKU: RT-DX4IP.