

# RTCU AX9i eco

## Advanced Telemetry Appliance

The perfect balance of quality, performance, flexibility and affordability

### For Professional M2M Applications

The RTCU AX9i eco has been designed for the most demanding M2M and Internet of Things applications, which cannot be solved with simpler non-programmable devices.

The RTCU AX9i eco rests on the **RTCU M2M Platform**, that brings all the necessary tools together to develop, implement and maintain today's sophisticated M2M/IoT applications.

The **development task** is supported by the **free** RTCU IDE development environment complemented 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 AX9i eco 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/external antenna.
- Digital and analog inputs.
- AC/DC relay outputs.
- RS232 channel.
- 1-Wire bus.
- Digitized voice playback.
- DTMF decoding/transmission.
- Large flash memory capacity.
- FAT32 file-system.
- AC / DC powered.
- On-board back-up battery.
- IP65 Ingress Protection
- 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.

# RTCU AX9i eco Highlights

## Advanced Telemetry Appliance

The RTCU AX9i eco 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.
- World-wide **Quad-band GSM engine**.
- **Internal and external antenna** connector. Selectable from application.
- Internal SIM-card reader.
- **Digitized audio** can be played over GSM.
- **DTMF** support for implementation of Interactive Voice Response applications.
- Large data-flash/logger memory with a capacity of **4.5 MB**.
- Internal **4 MB FAT32 flash drive**.
- **1 x RS232** channel.
- **2 x analog inputs** with 0..10 volt / 0..20 mA with **12 bit precision**.
- **5 x digital inputs** and **4 x high-power relays**.
- Up to 4 digital inputs can be configured as IEC62053-31 Class A compliant.
- **1-Wire bus** for accessories such as ID-button reader, temperature sensors, etc.
- Wide AC/DC power operating range from **85..265VAC / 8..36 VDC**.
- On-board **Li-Ion battery**.
- Advanced **power-management** with wake-up on a wide range of events.
- High-speed **USB programming** connector.
- Housed in an **ruggedized plastic** encapsulation with **cable glands**.
- **IP65** water protected for outdoor usage.
- Fully supported by the **RTCU Gateway 2** and the **RTCU Deployment Server**.



### Services Available

Technical Support.  
Application development support.  
Maintenance.  
Hardware support.  
Warranty services.

### Accessories

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 AX9i eco, please download the "RTCU AX9i eco 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](http://www.logicio.com)

# RTCU AX9i eco 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.

## 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.
- Internal SIM card-reader.
- Internal quad-band GSM antenna.
- External or internal antenna selectable by DIP-switch or user application.
- Optional Gemalto SIM-on-chip.

## User Interaction

- 3 x bi-colour LED.
- Yellow status LED.
- DIP-switches.
- Reset/recovery switch.
- Antenna selection dip-switch.
- Configuration jumpers.
- USB-B for service port.

## Electrical Specification.

- Supply operating range: 8 to 36 VDC. 85 to 265 VAC.
- Short and reverse power protected.

## Battery and Charger

- On-board 1Ah (nominal) Li-Ion battery.
- Intelligent charger with temperature throttle and sub-zero degrees support.

## Digital/Analog Interface

- 4 x relay output. Max. 5A @ 250VAC / 30 VDC
- 5 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.
- 2 x analog inputs. Range is 0..10VDC or 0..20 mA Resolution: 12 bit Precision:  $\pm 1.5\%$  FSR @ 25°C
- Protected against transients and low-pass filtered.

## Communication

- 1 x RS232.
- 1-Wire bus.

## Power Management

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

## Internal Interfaces.

- Screw-terminals for: Power and I/O.
- Angled screw-terminals for: RS232 and 1-Wire.

## External Interfaces.

- SMA Female connector for external GSM antenna.
- 3 x PG11 cable glands.
- 2 x PG9 blind plugs.

## Physical Characteristics

- Encapsulation: Durable Polycarbonate plastic.
- Approx. 640 gram without accessories.
- W 130 x H 180 x D 60 mm. (without SMA and PG connectors).

## 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: IP65.

## 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).

## Logic IO Worldwide Headquarters

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## Models Available

SKU: RT-AX9IE