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DATA SHEET

RTCU LX5 core

Advanced Industrial M2M / IoT Gateway

State-of-the-art platform for tomorrows demanding applications



For Professional M2M / IoT Applications

The RTCU LX5 core has been designed for the most demanding M2M and Internet of Things applications that demands the absolutely most advanced product available on the market.

The RTCU LX5 core rests on the **RTCU M2M Platform,** that brings all the necessary tools together to develop, implement and maintain the most sophisticated M2M/IoT applications.

The **development task** is supported by the **free** RTCU M2M Studio development environment complimented by a large and comprehensive documentation and application example library.

The RTCU Communication Hub 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.

Two decades of know-how in one product!

Experience and Know-how

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

The RTCU LX5 core 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

- High-performance IoT core.
- LTE Cat.1 Cellular Engine.
- GNSS positioning engine.
- 3-axis accelerometer.
- Medium range ISM RF transceiver.
- CAN bus interface.
- 1-Wire bus.
- Multiple RS232/RS485 channels.
- Digital and analog input/outputs.
- Modbus expandable I/O.
- Digital audio subsystem.
- Integrated battery backup.
- On-board Micro SD-card reader.
- Compact plastic encapsulation.
- DIN rail mounting option.

Platform Advantages

- NX32L execution architecture.
- Free development tools.
- Secure platform.
- Hardware accelerated security.
- Huge standard API.
- Open platform SDK.
- Comprehensive protocol support.
- Device Emulator.
- Sophisticated deployment tools.
- Fast and free email support.

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RTCU LX5 core Highlights

Advanced Industrial M2M / IoT Gateway



Platform:

- Based on the **RTCU M2M Platform**.
- **NX32L (NX32 for Linux) execution architecture.**
  - RTCU M2M Studio development tool.
  - Operates under a full and highly optimized Linux variant.
  - Secure communication with TLS and hardware assisted encryption/ authentication.
  - Open and extendable with Platform SDK.

Wireless Communication:

- **LTE Cat. 1 EMEA Multi-Band Cellular Engine.**
- Medium range **ISM band RF transceiver**.
- **Multi-constellation GNSS with GPS, GLONASS and GALILEO.**

Wired Communication:

- **Full CAN 2.0B** interface with hardware filtering and multi-speed support.
- **1-Wire bus** for accessories such as ID-button reader, temperature sensors, etc.
- **1 x RS232** channels and **1 x RS485** channel.

I/O Interfaces:

- **3 x flex inputs with 0..30 volt.** Configurable for analog or digital mode.
- **3 x digital inputs.**
- **2 x digital outputs.**
- **Expandable I/O** with standard Modbus modules.

User Interaction:

- **Digitized audio** subsystem.
- **DTMF** support for Interactive Voice Response applications.
- High-speed **Mini-USB service-port** connector.
- High-performance **3-axis accelerometer** with 16g scale.

Storage:

- Internal **flash drive** with up-to 64 MByte capacity.
- Persistent memory and circular datalogger.
- Standard Micro SD-card reader.

Encapsulation:

- Housed in a black plastic encapsulation.
- DIN rail mounting option.



Services Available

Technical Support.

Application development support.

Maintenance.

Hardware support.

Warranty services.

Accessories

Modbus I/O extension modules.

Antennas.

Cable parts.

1-Wire parts.

...and more.



Find out more and start developing today!

Learn more about the RTCU M2M platform and the NX32L architecture in the **"The RTCU M2M Platform"** data sheet.

To learn more about the technical details and usage of the RTCU LX5 core, please download the **"RTCU LX5 core Technical Manual"**.

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

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RTCU LX5 core Specifications

RTCU M2M Platform
- NX32 for Linux - NX32L.
- Fully NX32 compatible.
- Hardened execution environment.
- Full TLS/SSL support.

LX Hardware Core
- Powerful 32-bit ARM processor.
- Hardware floating point and DSP.
- 128 Mbyte RAM.
- 512 Mbyte NAND flash.
- Real-time clock with battery-backup.

Storage
- Internal flash drive (Up to 64 MByte).
- Persistent data flash.
- Multiple circular dataloggers.
- Micro SD-card reader.

Cellular Engine
- LTE Cat.1 Engine (EMEA).
  Max 150 Mbps(DL)/Max 50 Mbps(UL).
  LTE FDD: B1/B3/B5/B7/B8/B20
  LTE-TDD: none.
  WCDMA: B1/B5/B8
  GSM: B3/B8.
- DTMF decoding / transmission.
- Digitized voice playback / IVR.
- Internal mini SIM-card reader.
- Optional eSIM.

Sensors
- Temperature sensor.
- 3-axis accelerometer. 12 bit @ ±16g.

ISM RF
- 868 Mhz ISM RF.
- Multiple protocol support.
- Range (depending on environment / antenna):
  Up to 50 meter indoor.
  Up to 300 meter outdoor.
- Can be disabled for worldwide compliance.

GNSS
- GPS, GLONASS, GALILEO and QZSS.
- Active 3 volt GNSS antenna.
- Antenna and short-circuit detection.

Wired Communication
- 1 x Full CAN2.0B with hardware filtering and multi-speed support.
- 1 x RS232.
- 1 x RS485.
- 1-Wire bus with LED support
- USB service/programming port.

Audio
- Fully digitized audio system.
- Transfer, store and play audio.
- Digitized cellular audio.

Digital I/O Interface
- 2 x open-drain digital outputs (max 1A).
- 3 x digital inputs.
  Logic high: 8 to 40 VDC.
  Logic low: -5 to 3 VDC.
- I/O expansion Modbus modules.

Flex Inputs
- 3 x flex (analog/digital) inputs.
  Range is 0..30 VDC.
  Resolution: 12 bit
  Accuracy: Typ. ±0.6% FSR.
  Impedance: 120 kohm.
- Protected against transients and low-pass filtered.

User Interaction
- 3 x bi-colour LED.
- Jumpers for CAN/RS485 termination
- Reset / recovery switch.

Electrical
- Supply operating range: 8 to 36 VDC.
- Short and reverse power protected.

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

Physical Characteristics
- Encapsulation: Black colour.
  UL94 V0 fire-resistant PC plastic.
- Approx. 175 gram without accessories.
- W 105 x H 85 x D 35 mm.
  (wihout external connectors.
- DIN rail mounting clip version.

Environmental Specification
- Operating temperature: -40 to 60°C.
- Battery charge temperature:
  -10 to 45 °C
- Recommended storage temperature:
  0 to 45°C.
- Humidity: 5..90% (non condensing).

Approvals
- 2014/53/EU Radio Equipment Directive.
- 2014/30/EU EMC Directive
- 2011/65/EU RoHS Directive.
- Cellular:
  GCF/CE/FCC/PTCRB/IC/Anatel/SRRC/NAL/CCC/KC/NCC/JATE/TELEC/RCM/IFETEL/FAC/NBTC/ICASA.

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

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Models Available
SKU: RT-LX5C
SKU: RT-LX5C-DIN

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