logic IO
The M2M Enabler

AN CONSULT ESPAÑA

RTCU NX-400

Advanced Industrial M2M / IoT Gateway

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

For Professional M2M / IoT Applications

The RTCU NX-400 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 NX-400 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 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.

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

Experience and Know-how

For almost 18 years Logic IO has been committed to offer the most sophisticated platform for advanced and highly demanding M2M / IoT applications.

The RTCU NX-400 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

- Powerful processor.
- Large memory capacity.
- Penta-band UMTS cellular engine.
- Wi-Fi.
- Bluetooth (Classic / LE).
- USB host port.
- Digital and analog input/outputs.
- Modbus expandable I/O.
- Graphical display with touchscreen.
- Multiple RS232/RS485 channels.
- Full CAN 2.0B support.
- Ethernet interface.
- 1-Wire bus.
- Digital audio with playback / record.
- Integrated battery backup.

Platform Advantages

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

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

RTCU NX-400 Highlights

Advanced Industrial M2M / IoT Gateway

Platform:

- Based on the **RTCU M2M Platform**.
- **NX32L (NX32 for Linux) execution architecture.**
  - RTCU IDE 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:

- Penta-band world-wide **UMTS/HSPA engine**.
- **Wireless LAN** (Wi-Fi).
- Classic and Low-Energy **Bluetooth**.
- **Optional**: Wireless M-Bus, ZigBee and KNX.

Wired Communication:

- 100 Mbps **Ethernet** LAN interface.
- **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.
- **USB host** port for expandability.
- **2 x RS232** channels and **2 x RS485** channels.

I/O Interfaces:

- **4 x analog inputs** and **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.

User Interaction:

- **Graphical 240x160 pixels White-on-Blue display.**
- **Touch-screen** with virtual buttons.
- **Digitized audio** with GSM / Speaker / Line-out and Microphone.
- **DTMF** support for Interactive Voice Response applications.
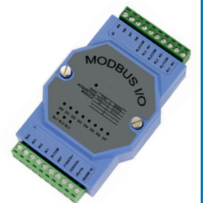- High-speed **Mini-USB service-port** connector.

Storage:

- Internal **flash drive** with up-to 512 MByte capacity.
- **Persistent memory** and circular **datalogger**.
- Standard **SD-CARD** reader.
- USB **flash media**.

Services Available

Technical Support.

Application development support.

Maintenance.

Hardware support.

Warranty services.

Accessories

Modbus I/O extension modules.

HD Camera with video stream.

GPS receiver.

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 NX-400, please download the **"RTCU NX-400 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 NX-400 Specifications

RTCU M2M Platform
- NX32 for Linux - NX32L.
- Fully NX32 compatible.
- Larger capacity and higher performance compared to NX32.
- Open and user-extendable API*.
- Lua prepared*.

NX32L Hardware Core
- Cortex-A5 32-bit ARM processor.
- Hardware floating point and DSP.
- 128 MByte LP-DDR RAM.
- 512 MByte NAND flash.
- 16 MByte NOR flash.
- 8 MByte Dataflash.
- 128 KByte SRAM with battery-backup.
- Real-time clock with battery-backup.

Security
- Embedded firewall.
- TLS/SSL support with full certifcate management.
- TLS/SSL support for SMTP, MQTT, FTP, HTTP, Gateway 2 and TCP/IP sockets.
- Hardware assisted strong encryption/authentication: AES-128, AES-192, AES 256, DES, TripleDES, HASH, RND and RSA signature.

Storage
- Persistent data flash.
- Non-volatile SRAM.
- Internal flash drive (Up-to 512 MByte).
- Circular datalogger.
- SD-CARD.
- USB flash media.

Cellular UMTS
- Penta-band UMTS/HSPA. GSM: 850/900/1800/1900 MHz. UMTS: 800/850/900/1900/2100 MHz. SMS / PDU.
- DTMF decoding / transmission.
- Digitized voice playback / IVR.
- External SIM card-reader, with Mini-SIM 1.8/3 volt.
- Optional eSIM.

Wireless LAN
- WiFi at 2,4 GHz ISM bands.
- IEEE 801.11b/g/n/d/e/h/i.
- WPA/WPA2 certification.
- Up-to 150 Mbps.

Bluetooth
- Classic and Low Energy (LE).
- Bluetooth 2.1 + EDR up-to 3 Mbps
- Bluetooth 3.0 and 4.0 Dual mode.
- Intelligent co-existence with WiFi.

Optional Wireless
- Wireless M-Bus.
- ZigBee / IEEE 802.15.4.
- KNX RF.

Audio
- Fully digitized audio system.
- Transfer, store and play audio.
- Line and amplified speaker output.
- Microphone input.
- Digitized GSM audio.

Wired Communication
- 100BASE-T Ethernet interface.
- Full CAN2.0B with hardware filtering and multi-speed support.
- 2 x RS232. One with control signals.
- 2 x RS485.
- 1-Wire bus.
- USB host port.
- USB service/programming port.

User Interaction
- Dot-matrix LCD with 240x160 pixels,
- White-on-blue back-lit.
- Status-bar with information on all interfaces.
- Fully programmable with high-level functionality such as graphs, buttons, dialogs etc.
- Touch screen with virtual buttons.
- DX4i pro compatibility mode.
- 4 x bi-colour LED.
- DIP-switches.
- I/O configuration jumpers for analog mode.
- Virtual jumpers for RS485 and CAN termination
- Reset / recovery switch.

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RTCU NX-400 Specifications (continued)

Digital I/O 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.
  User supplied power.
- 8 x digital inputs.
  Logic high: 8 to 40 VDC.
  Logic low: -5 to 3 VDC.
  Impedance: 3.3kohm @ 12V.
- 4 x IEC62053-31 Class A input.
- Digital input #1 can be used as ignition.

Analog I/O Interface

- 4 x analog inputs.
  Range is 0..10VDC or 0..20 mA
  Resolution: 12 bit
  Accuracy: Typ. ±0.3% FSR @ 25°C
  Impedance: 40 kohm (V)/504 ohm (C).
- 4 x analog outputs.
  Range is 0..10VDC or 0..20 mA
  Resolution: 12 bit
  Accuracy: Typ. ±0.3% FSR @ 25°C.
- Protected against transients and low-
  pass filtered.

Electrical

- Operating voltage: 8 to 36 VDC.
- Short and reverse power protected.
- 5 VDC-out @ 300 mA.
- USB 5 VDC @ 500 mA.

Battery and Charger

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

Power Management

- Low-power modes.
- Wait for Event: Timer, Digital input,
  Touch screen, RS232*, CAN, GSM*,
  Power change state.
- Wait for event, from: 2 mA@12V.
- Supervision of supply voltage / type.

External Interfaces

- SD-CARD slot with presence and write
  protect detection.
- Audio line-Out. 3.5mm mini-jack.
- Speaker-Out. 3.5mm mini-jack.
- Microphone. 3.5mm mini-jack.
- SIM-card slot for micro-SIM with lock
  and presence detection.
- Service-port (Mini USB-B).
- RJ45 for RS232 (EIA-561).
- RJ45 for LAN with LED indicators.
- USB host-port (USB-A receptable).
- SMA female connector for UMTS.
- RP-SMA connector for Wi-Fi/Bluetooth.
- Pluggable terminal blocks with 3.5 mm
  pitch and M2 screw:
  Supply, I/O, CAN, RS485, RS232, 1-
  wire, DC-Out and external battery.

Expandable

- I/O expansion Modbus modules.
- RFID-Reader*.
- GPS receiver.
- Additional Ethernet port.
- Additional RS232 / RS485 ports.
- Industrial USB hub.
- Camera with HD video streaming*.
- Speaker and microphone.
- External battery pack.

Physical Characteristics

- Encapsulation: 9M DIN-rail (EN60715)
- Colour: Dark-Grey.
- Material: Self-extinguising blend PC/ABS.
- Approx. 465 gram without accessories.
- W 160.2 x H 89 (top) x D53.5 mm.
  (wihout connectors and terminal blocks).

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

- 2014/53/EU Radio Equipment Directive.
- 2014/30/EU EMC Directive
- 2011/65/EU RoHS Directive.

Warranty

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

Certain features may still be under development.

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Models Available
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