RTCU CX1 warp series

Advanced Telematics and Telemetry Appliance

The perfect balance of quality, performance, flexibility and affordability

For Professional M2M Applications

The RTCU CX1 warp series has been designed for the most demanding M2M and Internet of Things applications, which cannot be solved with simpler non-programmable devices.

The RTCU CX1 warp series rests on the **X32 architecture,** 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 CX1 warp series 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 Series Advantages

- Quad-band GSM engine.
- Large memory capacity.
- FAT32 file-system.
- SuperGPS positioning engine.
- Internal SIM reader.
- 3-axis accelerometer.
- Full CAN 2.0B support.
- 1-Wire bus.
- ISM medium range RF.
- RS232.
- Digital and analog I/O.
- Back-up battery.
- State of the art power-management.
- IP66 ruggedized encapsulation.
- Ready to use with interface cable!

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 CX1 warp series Highlights

Advanced Telematics and Telemetry Appliance

The RTCU CX1 warp series is targeting a broad range of advanced telemetry / telematics applications and has been designed according to the highest technical standards for professional automotive and 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, FMS/J1939, Garmin FMI.
- World-wide **Quad-band GSM engine**.
- Internal SIM-card reader.
- State-of-the art **SuperGPS positioning engine**.
- High-performance **3-axis accelerometer** with 16g scale.
- Large data-flash/logger memory with a capacity **up to 4.5 MB**.
- Internal **4 MB FAT32 flash drive**.
- **1 x digital inputs** and **1 x high-power** solid-state **digital output** (upgradeable).
- Wide operating range from **8..36 VDC**.
- On-board **Li-Ion battery**.
- Advanced **power-management** with wake-up on a wide range of events.
- High-speed **Mini-USB programming** connector.
- Support the **Garmin Fleet Management Interface**.
- Fully supported by the **RTCU Gateway 2** and the **RTCU Deployment Server**.
- Available in two powerful hardware versions:
      CX1 warp   (RS232/1-wire)
      CX1 warp-c   [CAN]
- **Ruggedized IP66** plastic encapsulation.
- Delivered a 50 cm interface cable.
- **Powerful on-demand hardware options:**
      I/O: **2 x digital inputs, 2 x digital outputs and 1 x analog input** [total].
      RF: **Medium range ISM band RF transceiver with on-board antenna.**
      FLASH: **Micro-SD card reader and 3 MB extended flash.**
      COM: **RS232/FMI and 1-Wire bus (warp) or CAN [warp-c].**
- **On-demand options** can be applied **anytime** — even remotely after installation.

Services Available

Technical Support.

Application development support.

Maintenance.

Hardware support.

Warranty services.

Accessories

On-demand hardware options.

RF accessories.

Antennas.

Cable parts.

1-Wire parts.

Industrial SD-CARD.

...and more.

Find out more and start developing today!

Learn more about the RTCU M2M platform and the NX32 architecture in the ”**The RTCU M2M Platform”** data sheet.

To learn more about the technical details and usage of the RTCU CX1 warp series, please download the
”**RTCU CX1 warp series 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 CX1 warp series 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 Virtual FRAM with fast access / unlimited write endurance.
- Micro SD-CARD reader. 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.
- Micro-SIM 1.8/3 volt.
- Optional Gemalto SIM-on-chip.
- Delivered with 'thumb' antenna.

SuperGPS
- Mediatek MT3329 Single Chip.
- 66 acquisition / 22 tracking channels.
- SBAS (WAAS,EGNOS,MSAS).
- Prepared for A-GPS.
- Position update with up to 4 hz.
- Sensitivity. Tracking: -165 dBm Reacquisition: -160 dBm Cold start: -148 dBm.
- Accuracy: < 2.5m CEP.
- Active 3 volt GNSS antenna.
- Delivered with a tiny magnet antenna with 2 meter cable.

Battery and Charger
- On-board 900mA (nom.) Li-Ion battery.
- Intelligent charger with temperature throttle and sub-zero degrees support.
- On-board temperature sensor.

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

Digital/Analog Interface
- 2 x digital solid-state digital output. Max. 36 volt / 0.75 A per. channel. Short-circuit, ESD, Inductive kick-back protected up to 20 mH.
- 2 x digital inputs. Logic high: 8 to 40 VDC. Logic low: -5 to 3 VDC.
- Digital input #1 can be used as ignition.
- 1 x analog input. Range is 0..10V. Resolution: 10 bit Precision: ±1.5% FSR @ 25°C

Communication
- **Warp-c:** Full CAN2.0B with hardware filtering and multi-speed support.
- **Warp:** RS232 and 1-Wire bus.
- On-board 868 Mhz ISM RF Up to 15 meter indoor / Up to 50 meter outdoor.

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

Accelerometer
- 3-axis digital acceleormeter.
- Resolution: 12 bit @ ±16g.
- Low-power mode.

Internal Interface
- Mini-USB connector for service port.
- SIM-card slot for micro-SIM.
- Micro SD-CARD slot.
- Reset/recovery switch,

External Interface
- 2 x bi-color LED indicators.
- Yellow LED for status.
- SMA female connector for GSM antenna.
- SMA female connector for GPS antenna.

On-Demand Hardware Options
- Applied "*any-time*" - locally or remotely.
- Over-the-air hardware upgrade.

Physical Characteristics
- Encapsulation: Black UL94 plastic.
- Sealing membrane.
- 50 cm open-ended interface cable.
- Approx. 250 gram without accessories.
- W 92 x H 30 x D 58 mm. (without mounting flanges).

Environmental Specification
- Operating temperature: -30 to 55°C.
- Battery charge temperature: -10 to 45 °C
- Recommended storage temperature: 0 to 45 °C.
- Humidity: 5..90% (non condensing).
- IP-66 ingress protected.

Approvals
- E1 type approval: 2004/104/EC UN ECE R10.
- CE mark / 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-CX1W
SKU: RT-CX1W-A
SKU: RT-CX1WC
SKU: RT-CX1WC-A