

M2M Control CX465

Advanced M2M and IoT Platform

The perfect balance of quality, performance, flexibility and affordability

For Professional M2M and IoT Applications

The M2M Control CX465 has been designed for the most demanding M2M and Industrial Internet of Things (IoT) applications that cannot be solved with simpler, non-programmable devices. The device is especially suitable for harsh environments (IP65).

The CX465 combines a freely programmable PLC controller and a data logger with an integrated **LTE Cat.4 cellular engine**. This makes the CX465 a very powerful solution for professional industrial wireless applications.

The **M2M Control RTCU Platform** brings together all the necessary tools to develop, implement, and maintain today's sophisticated M2M and industrial IoT applications.

The development process is supported by the **M2M Control IDE development environment (IEC 61131-3)**, complemented by extensive documentation and a comprehensive library of application examples.

The CX465 is fully supported by the **M2M Control Communication Hub**, the cornerstone 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 is handled by the powerful **M2M Control Upgrade & Deployment Server (FOTA)**.

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

Experience and Know-how

For 20 years Infranet Technologies has been committed to offer the most sophisticated platform for advanced and highly demanding M2M / IoT applications.

The M2M Control CX465 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.

M2M Control products are deployed all over the world - In any imaginable application and environment.



Device Advantages

- Powerful processor and large memory
- Large 4 GB Internal Flash Drive
- LTE Cat. 4 Cellular Engine (World Wide)
- Multi-GNSS positioning engine
- WLAN and LAN Ethernet Interface
- Bluetooth LE 5.3
- Digital and analog inputs
- AC/DC relay outputs (5A)
- Multiple RS232 / RS485 interfaces
- MODBUS expandable I/O
- 1-Wire Bus
- Digitized voice playback and DTMF
- AC / DC powered
- High-capacity backup battery
- IP65 Ingress Protection

Platform Advantages

- NX32L (Linux) execution architecture.
- Secure platform (hardware support)
- RTCU IDE development tool.
- Programmable in IEC61131-3 (ST)
- Huge standard API.
- Comprehensive protocol support: TCP/IP,,FTP, SMTP, HTTP, SNMP, MQTT
- Security: VPN, TLS, AES Encryption
- Full featured Device Simulator.
- Sophisticated deployment tools.

M2M Control CX465 Specifications

Processor and Main-memory

- Cortex-A7 @1 Ghz 32-bit ARM processor.
- Cortex-M4 32-ARM co-processor for advanced power-management.
- Hardware floatingpoint and DSP
- 128 MB LP-DDR RAM.
- 512 MB Flash for firmware/application.

Storage

- 4 GB internal flash drive.
- Persistent data flash
- Circular datalogger.
- 26 KB Non-volatile SRAM

Cellular Engine

- LTE Cat. 4 Cellular Engine (World wide)
Max 150 Mbps (DL) / Max 50 Mbps (UL)
LTE FDD: 15 bands, LTE TDD: 4 bands,
WCDMA: 7 bands
- GSM: Quad band.
- SMS / PDU.
- Digitized Voice / DTMF decoding
- SIM card-reader (Mini SIM 1.8/3 V)
- Optional eSIM Chip.

GNSS / GPS

- Multi GNSS: GPS, GLONASS, GALILEO, QZSS
- 99 acquisition / 33 tracking channels
- SBAS (WASS, EGNOS, MSAS, GAGAN)
- Anti-jamming, Noise cancellation
- Active 3 volt GNSS antenna support

Internal Sensors

- On-board temperature Sensor
- 3-axis Accelerometer: 12-bit @ +/- 16g

Power Management

- Low power modes. Down to 0.3 mA@12V
- Supervision of supply voltage and type.
- On-board 2 Ah (nominal) Li-Ion battery.
- Intelligent charger with temperature throttle and sub-zero degrees support.

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Digital/Analog Interface

- 4x relay digital output.
Max. 5A @ 250 VAC / 30 VDC.
- 5 x digital inputs. (with ignition)
Logic high: 8 to 40 VDC.
Logic low: -5 to 3 VDC.
Impedance: 14 kohm @ 12V
- 4 x IEC62053-31 Class A input
- 4x analog inputs.
Range is 0..10 V or 0..20 mA
Resolution: 12 bit
Precision: $\pm 0.3\%$ FSR @ 25°C
- 4x analog output
Range is 0..10 V or 0..20 mA
Resolution: 12 bit
Precision: $\pm 0.3\%$ FSR @ 25°C
- Protected against transients and low-pass filtered.
- Expandable with Modbus I/O modules

Wired Communication

- 100BASE-T Ethernet Interface
- 2x RS232 (one with control signals)
- 2x RS485 with MODBUS support.
- 1-Wire bus.

Wireless Communication

- WiFi at 2,4 GHz ISM bands.
- IEEE 801.11 a/b/g/n/ac.
- WPA/WPA2/WPA3 encryption.
- Up-to 433 Mbps
- Bluetooth Low Energy (LE) 5.3.
- IEEE 802.15.4.2011 PHY
- Optional: Bluetooth Classic.

Security

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

Internal / External Interfaces.

- Plug compatible with CX460 Series products
- SIM-card slot for mini-SIM card
- DIP switches.
- Reset/recovery switch,
- Mini USB 2.0 Slave as service port
- Jumpers for RS-485 termination
- 5 VDC oout @ 300 mA
- 12 / 24 VDC out @ 500/250 mA
- 4 x LED indicators
- SMA female connector for cellular
- SMA female connector for GNSS
- RP-SMA female connector for WLAN
- RP-SMA female connector for Bluetooth

Electrical Specification.

- Operating voltage is 8 to 36 VDC and 100 to 260 VAC
- Short and reverse power protected
- 5VDC out @500 mA

Physical Characteristics

- Encapsulation: Durable Polycarbonate.
- Approx. 710 gram without accessories.
- W 130 x H 180 x D 60 mm (without antenna connectors).

Environmental Specification

- Operating temperature: -40 to 60°C.
- Battery charge temperature: -10 to 45°C
- Storage temperature: 0 to 45°C.
- Humidity: 5..90 % (non condensing).
- Impact resistance: IK08 (EN62262)
- UV resistance: UL 508
- Flammability Rating: UL746C 5"
- Ingress Protection: IP65 (EN60529)

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).