

# WIFCX1 flex

## *Advanced Control and Tracking Platform*

**The WIFX1 flex is a compact and ruggedized telematic tracking and control platform based on the powerful X32-architecture.**

**The WIFX1 flex offers a unique and outstanding approach allowing seamless upgrade with new hardware options - even after the product has been installed in the field!**

**With a fully upgraded WIFCX1 flex the functionality is approaching that of WIFCX1 pro - merely lacking the RF transceiver and SD-CARD reader! The WIFCX1 sports a state-of-the-art 66-channels SuperGPS receiver with unprecedented performance. In addition, the device offers an on-board advanced 3D-movement sensor.**



The WIF CX1 flex product is a worthy member of a growing number of advanced telemetry/telematic products all based on the proven and powerful X32-architecture like WifMx2. The WIF CX1 flex is specifically based on the powerful WIF CX1 pro and is 100% software compatible with all other X32 based devices from Wif. The unique features of the WIF CX1 flex includes a 3D-movement sensor allowing a range of new applications to be developed such as detailed driving behavior and even crash detection. There is on-board Li-Ion battery for uninterrupted operation during power-fail.

The unit is delivered pre-mounted with a 50 cm interface cable with power and I/O easily accessible. For the most flexible installation, the WIF CX1 flex is factory delivered with an external high-performance waterproof magnet GPS antenna and a small thumb-sized waterproof GSM antenna already installed. Everything necessary to install the device is therefore included in the box, so that the total cost of device deployment are effectively reduced to a minimum. The WIF CX1 flex is housed in a highly ruggedized encapsulation, which allows a new spectrum of applications to be realized due to the new installation possibilities. For outdoor applications, an optional sealing membrane is available, thus yielding IP-66 waterproofness.

The WIF CX1 flex offers many other sophisticated features such as: 512 Kbyte internal flash drive with a FAT32 compatible file-system for easy sharing of files locally and remotely with a PC/Server.

The WIF CX1 flex is of course fully programmable and remotely updatable using GPRS or CSD (Datacall).

### **Some of the application areas includes:**

- ❖ Fleet management system.
- ❖ Mobile datalogging applications.
- ❖ Alarm / Security systems
- ❖ Mobile tracking applications
- ❖ Asset management.
- ❖ *Your applications...*

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## *Advanced Control and Tracking Platform*

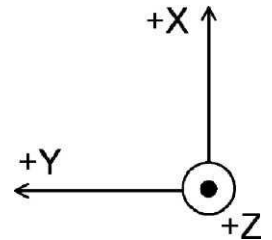
### *Powerful and Flexible Platform...*

#### *High Performance 32-bit Processor with large memory capacity*

- > Powerful industry leading dedicated 32-bit ARM7 Processor.
- > Fast processor execution (24 Mhz) with optional performance option (48 Mhz).
- > 1088 KByte RAM.
- > 2304 KByte Flash for application and database.
- > 512 Kbyte Dataflash for datalogging / parameters.
- > 512 Kbyte internal flash drive with FAT compatible file-system for easy sharing of files with a PC.
- > 8 KByte VFRAM (Virtual FRAM) for fast access memory without any write endurance limitations.

#### *Extensive Range of Standard Features*

- > 1 Digital input / ignition (upgradeable with I/O option).
- > Dedicated high-speed USB programming port providing improved communication speed.
- > One user available bi-color LED-Indicators with 3 colors: Green, Red and Yellow.
- > One bi-color and one yellow system LED indicating state of GSM, Power management and Battery charging etc.
- > High performance +/-16g 3-axis accelerometer / movement sensor.
- > Temperature sensor.



#### *State of The Art Communication Technology*



- > Quad Band (850/900/1800/1900 Mhz) GSM based on industry leading solution.
  - > SMS (Text and PDU)
  - > GPRS. Multislot class 10
  - > CSD (Datacall)
  - > Delivered with a pre-mounted waterproof GSM 'thumb' size quad-band antenna.
- > On-board high-sensitivity GPS-receiver with extremely fast acquisition and low-power consumption.
  - > Full SBAS (EGNOS / WAAS / MSAS) support for enhanced GPS precision |
  - > Prepared for A-GPS.
  - > Delivered with a compact waterproof GPS antenna with 2 meter cable for easy and flexible installation.



#### *Advanced Power Management*

- > On-board Li-Ion battery pack (700 mAh) with advanced sub-zero degrees charging circuit
- > Supervision of supply voltage and supply type.
- > Several power-saving modes: Power-down, 'Wait for Event' and 5 Processor execution steps.
- > Wakeup from Power-down using Ignition Input and optional timer.
- > Wakeup from 'Wait for Event' using: Digital input, 3D movement sensor, Timeout or GSM- activity.
- > Real time clock with battery back-up.

# Technical Data

	Min	Typ	Max		
Operating Voltage	8	-	36	VDC	Protected against wrong polarity.
On-board Li-Ion Battery Pack		700		mAh	Low-temperature charging possible.
Unit Active		50		mA	Typical measurements @ 12 VDC Supply. GSM idle @ -63 dBm
Unit Active with GSM On		60		mA	
Unit Active with GPS On		60		mA	GSM idle @ -63 dBm
Unit Active with GSM GPS On		75		mA	
Unit Active while Charging		500		mA	Restart on: Ignition and RTC Resume on: DI, 3D accel., RTC
Unit in Power-down		0.6		mA	
Unit in "Wait for Event"		0.6		mA	Resume on: RS232
Unit in "Wait for Event"		7		mA	Resume on: GSM
Unit in "Wait for Event", GSM On		20		mA	
I/O:					<ul style="list-style-type: none"><li>Digital inputs are protected against transients and low-pass filtered.</li><li>Digital outputs are short-circuit, transient and ESD protected.</li><li>Digital Output current is per channel</li><li>Analog input resolution is 10 bits. Input are protected against transient / low-pass filtered.</li></ul>
Digital input logic "high"	8	12	40	VDC	
Digital input logic "low"	-5	-	3	VDC	
Digital output voltage	-	-	36	VDC	
Digital output current	-	-	750	mA	
Analog input	0	-	10	VDC	
3D Movement Sensor:					3-axis digital accelerometer with hardware buffer.
Resolution	12 bit @ +/- 16g				
GPS:					Supports SBAS (WAAS, EGNOS, MSAS)
• Channels	66 Channels SuperGPS				
• Tracking Sensitivity	-165 dBm				
Storage temperature:	-30	-	-65	°C	External color coded wires and LED's: <ul style="list-style-type: none"><li>Power</li><li>Digital I/O</li><li>Analog Input</li><li>Two Bi-color LED and one yellow status LED</li><li>SMA connector for GPS / GSM antennas</li><li>Delivered GSM GPS antennas pre-mounted.</li></ul>
Operating temperature (According to GSM 11.10 specification)	-25	-	-55	°C	
Restricted operation (deviations from the GSM specification may occur)	-30	-	-65	°C	
Charging Temperature	-10	-	-45	°C	Internal interfaces: <ul style="list-style-type: none"><li>Mini USB programming connector.</li><li>Standard 3 Volt SIM Card Reader</li></ul>
Humidity (RH non condensing)	5	-	90	%	
Weight (with antennas/cable)	0.250			Kg	Excluding mounting flanges
External dimensions	W 92 x H 30 x D 58 mm				
Ingress Protection (IP)	IP-40 / IP-66 (optional)				Black UL94 plastic enclosure with <u>optional</u> sealing membrane.
Approvals	EN-61000-6-3:2001 Emission EN-61000-6-2:2001 Immunity				 E1 10R-xxxxx 

Technical data subject to change



# RTCU CX1 pro / pro-c

## *Advanced Control and Tracking Platform*

The RTCU CX1 pro/pro-c is a compact, waterproof and ruggedized telematic tracking and control platform, based on the powerful X32-architecture also found in the popular MX2i Series.

In addition to a long list of standard features, the RTCU CX1 sports a state-of-the-art 66-channels SuperGPS receiver with unprecedented performance. In addition, the device offers an on-board advanced 3D-movement sensor and wireless RF transceiver.



The RTCU CX1 pro/pro-c product is a worthy member of a growing number of advanced telemetry/telematic products all based on the proven and powerful X32-architecture. The RTCU CX1 pro/pro-c is specifically based on the popular RTCU MX2i series and is 100% software compatible with all other X32 based devices from Logic IO. The unique features of the RTCU CX1 pro/pro-c includes a 3D-movement sensor supporting a range of new applications such as detailed driving behavior and even crash detection. The RTCU CX1 pro/pro-c has support for medium range wireless communication using the ISM 868 Mhz frequency band. This feature allows implementation of wireless I/O, RF-tracking and simple remote key fob applications. There is on-board Li-Ion battery for uninterrupted operation during power-fail.

The ISM RF antenna is on-board and internal to the device, and the unit is delivered pre-mounted with a 50 cm interface cable with power, I/O and RS232 or CAN bus signals easily accessible. For the most flexible installation the RTCU CX1 pro/pro-c is factory delivered with an external high-performance waterproof magnet GPS antenna and a small waterproof thumb-sized GSM antenna already installed. Everything necessary to install the device is therefore included in the box, so the total cost of the device deployment is effectively reduced to a minimum. The RTCU CX1 pro/pro-c is housed in a highly ruggedized IP66 waterproof encapsulation which allows a new spectrum of applications to be realized due to the new installation possibilities.

The RTCU CX1 pro/pro-c offers many other sophisticated features such as: Micro SD-CARD with up to 8 GB capacity and a 512 Kbyte internal flash drive with a FAT32 compatible file-system for easy sharing of files locally and remotely with a PC/Server.

The RTCU CX1 pro/pro-c is of course fully programmable using the user-friendly Integrated Development Environment (RTCU IDE) running under Windows. In this environment the complete application is developed, simulated and finally transferred to the unit via a standard USB port or remotely by using GPRS or CSD (Datacall).

### **Some of the application areas includes:**

- ❖ Fleet management system
- ❖ Mobile datalogging applications.
- ❖ Alarm / Security systems
- ❖ Mobile tracking applications
- ❖ Asset management.
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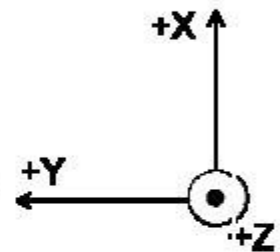
# *Powerful and Flexible Platform...*

## *High Performance 32-bit Processor with large memory capacity*

- Powerful industry leading dedicated 32-bit ARM7 Processor.
- Very fast execution (48 Mhz).
- 1088 KByte RAM.
- 2304 KByte Flash for application and database.
- 512 Kbyte Dataflash for datalogging / parameters.
  - Support for additional 4 MByte DataFlash.
- 512 Kbyte internal flash drive with FAT compatible file-system, for easy sharing of files with a PC.
- 8 KByte FRAM for fast access memory without any write endurance limitations.
- Micro-SD Card Reader with FAT32 filesystem and up to 8 GB capacity.

## *Extensive Range of Standard Features*

- 2 Digital inputs (1 working as ignition), 2 Digital output and 1 Analog input.
- Dedicated high-speed USB programming port providing improved communication speed.
- **CX1 pro:** Standard RS232 serial port. Alternatively used as service port.
- **CX1 pro-c:** Full CAN 2.0B Controller with hardware filtering and multi speed support.
- One user available bi-color LED-Indicators with 3 colors: Green, Red and Yellow.
- One bi-color and one yellow system LED indicating state of GSM, Power management and Battery charging etc.
- High performance +/-16g 3-axis accelerometer / movement sensor.
- On-board medium range ISM 868 MHz RF transceiver with antenna.
- Temperature sensor.



## *State of The Art Communication Technology*

- Quad Band (850/900/1800/1900 Mhz) GSM based on industry leading solution.
  - SMS (Text and PDU)
  - GPRS. Multislot class 10
  - CSD (Datacall)
  - Delivered with a pre-mounted waterproof GSM 'thumb' size quad-band antenna.
- On-board high-sensitivity GPS-receiver with extremely fast acquisition and low-power consumption.
  - Full SBAS (EGNOS / WAAS / MSAS) support for enhanced GPS precision
  - Prepared for A-GPS.
  - Delivered with a compact waterproof GPS antenna with 1.5 meters cable for flexible installation.
- On-Board medium range RF transceiver (868 MHz) with antenna for wireless I/O and remote control.



## *Advanced Power Management*

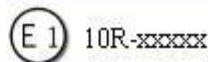

- On-board high-capacity Li-Ion battery pack (1000 mAh) with advanced sub-zero degrees charging circuit
- Supervision of supply voltage and supply type.
- Several power-saving modes: Power-down, 'Wait for Event' and 5 Processor execution steps.
- Wakeup from Power-down using Ignition Input and optional timer.
- Wakeup from 'Wait for Event' using: Digital input, 3D movement sensor, Timeout, GSM- or UART activity.
- Real time clock with battery back-up.



# RTCU CX1 pro / pro-c

## Advanced Control and Tracking Platform

### Technical Data

	Min	Typ	Max		
Operating Voltage	8	-	36	VDC	Protected against wrong polarity.
On-board Li-Ion Battery Pack		1000		mAh	Low-temperature charging possible.
Unit Active		50		mA	Typical measurements @ 12 VDC Supply. GSM idle @ -63 dBm
Unit Active with GSM On		60		mA	
Unit Active with GPS On		60		mA	GSM idle @ -63 dBm
Unit Active with GSM/GPS On		75		mA	
Unit Active while Charging		500		mA	Restart on: Ignition and RTC
Unit in Power-down		0,6		mA	
Unit in "Wait for Event"		0,6		mA	Resume on: DI, 3D accel., RTC
Unit in "Wait for Event"		7		mA	Resume on: RS 232
Unit in "Wait for Event", GSM On		20		mA	Resume on: GSM
I/O:					<ul style="list-style-type: none"><li>Digital inputs are protected against transients and low-pass filtered.</li><li>Digital outputs are short-circuit, transient and ESD protected.</li><li>Digital Output current is per channel</li><li>Analog input resolution is 10 bits. Input are protected against transients / low-pass filtered.</li></ul>
Digital input logic "high"	8	12	40	VDC	
Digital input logic "low"	-5	-	3	VDC	
Digital output voltage	-	-	36	VDC	
Digital output current	-	-	750	mA	
Analog input	0	-	10	VDC	
3D Movement Sensor:					3-axis digital accelerometer with hardware buffer.
Resolution	12 bit @ +/- 16g				
GPS:					Supports SBAS (WAAS, EGNOS, MSAS)
• Channels	66 Channels SuperGPS				
• Tracking Sensitivity	-165 dBm				
On-board ISM RF:					GFSK modulation Automatic frequency compensation Compliant with EN 300 220 Operating range depends on the environment Outdoor range is at line-of-sight
• Frequency	868 MHz				
• Channel Spacing	250 kHz				
• Maximum Transmit power	+10 dBm				
• Receiver sensitivity	-112 dBm				
• Operating Range	Indoor up to 15m / Outdoor up to 50m				
Storage temperature:	-30	-	+65	°C	External color coded wires and LED's: <ul style="list-style-type: none"><li>Power</li><li>Digital I/O</li><li>Analog Input</li><li>RS 232 (pro) / CAN-bus (pro-c)</li><li>Two Bi-color LED and one yellow status LED</li><li>SMA connector for GPS / GSM antennas</li><li>Delivered GSM/GPS antennas pre-mounted.</li></ul>
Operating temperature (According to GSM 11.10 specification)	-25	-	+55	°C	
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Weight (with antennas / cable)	0.250			Kg	
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