

Tracking Hardware UK Ltd

CelloTrack™

Advanced Asset Tracking and Remote Monitoring Solution

The CelloTrack product line is designed for advanced asset tracking and remote monitoring, featuring enhanced functionality with full fleet management capabilities, robustness and ease of installation, suitable for a wide variety of asset management applications.

The CelloTrack product line is available in two variants – a standalone version and a power version, which includes extended battery life and the ability to connect external sensors via two configurable GPIOs. Models are suitable for 2G, 3G (North America) and 3G (Europe) cellular communication technologies.

The capabilities provided by the CelloTrack product line can greatly increase the productivity and bottom-line of enterprises. This is largely due to the improvement in the often difficult task of successfully tracking and remotely managing the location, usage profile and security aspects of transportation equipment such as trailers, containers, train wagons or any kind of valuable mobile and fixed assets, such as electricity generators, heavy machinery, chemical toilets and waste containers.



Track it All

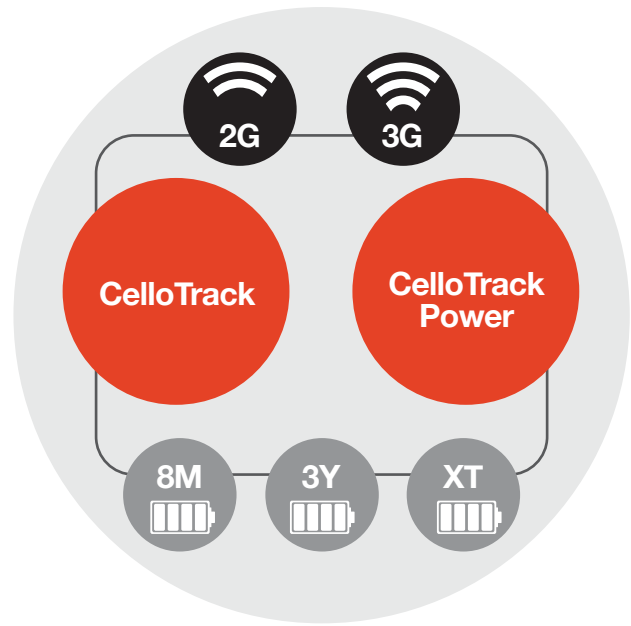
CelloTrack

A standalone, self-powered, mobile device, equipped with a durable and long-life battery as well as a highly durable IP67 weatherproof casing. This device functions optimally without direct access to a power supply, without ongoing maintenance and with high resilience under severe conditions.

CelloTrack Power

A device with an internal charger suitable for cases where an intermittent power supply exists and permanent installation with additional monitoring and control capabilities through the versatile GPIO are required. The unit charges its internal battery when the power is connected and uses its battery while power is disconnected to ensure continuous serviceability, sometimes with long periods between power connection events.

A connection to the vehicle power outlet in the vehicle for applications which require quick deployment is also available with the **CelloTrack Lighter Harness** - the harness is equipped with a plug that allows for an easy connection to the cigarette lighter outlet.



CelloTrack Power Add-On Accessories

- Fuel Level Sensor - measures the fuel level in the vehicle tank.
- Fuel Cap Protector - disables access to the fuel tank when closed and reports on fuel cap openings.
- Analog Temperature Sensor - connects to the analog input of the unit. Available in 5m and 20m lengths and has a temperature range of -40°C to +75°C.
- Door Sensor - a massive and rugged device used to detect the opening of doors, especially in container/trailer applications.

Highlights

- GNSS receiver, supporting GPS and GLONASS positioning engine and offering high acquisition and tracking performance.
- Rugged IP67 enclosure for outdoor durability and long operating life.
- Dual tampering detection mechanism to detect tampering of device from cradle and/or cradle from mounting surface.
- Fully-featured fleet management capabilities.
- High performance Li-Poly rechargeable battery with various battery solutions (3Y, 8M, XT).
- Adaptive transmission rate, automatically adjusted as a function of external power availability and movement status.
- 2 configurable GPIOs: can be used as general purpose input/output supporting digital, analog, frequency counter inputs.
- Built-in 3D accelerometer for movement and towing detection.
- MMI: Programmable push button and two monitoring LEDs for GSM/GPS status.
- 100 Built-in Geo-fences.
- Easy installation, including built-in zip tie holes and optional magnetic cradle.
- CelloTrack accessories include: cradle, magnetic cradle, lighter harnesses*, charger**.
- Cellocator + maintenance server compliant.

*CelloTrack Power
**CelloTrack



Use Cases

Fleet Logistics

The CelloTrack Power device, when installed on a trailer, provides information on the precise location of the trailer, including alerts in case it breaches a pre-defined geofence. In addition, the device recognizes if the trailer has been connected to a truck and whether it is currently on the move. The CelloTrack power device recharges the battery while the trailer is connected to the truck and uses its long life battery when disconnected.



Rental Companies

Efficient monitoring of rented assets, such as storage containers, construction machines, electricity generators, caravans, chemical toilets and more. The easy to install CelloTrack standalone device enables stakeholders to remotely monitor the status of their assets' usage during the rental period, including location, displacement, operation hours (by movement) and other inventory management aspects for adherence of contractual obligations.



Container Security & Cargo Logistics

Large industrial companies that deliver valuable cargo using containers often encounter theft and tampering attempts, leading to significant financial damages. In addition to insuring valuable cargo, monitoring is required along the cargo's journey, from the point of origin to the point of delivery. CelloTrack can be covertly installed inside the container, allowing the continuous tracking of the container and cargo and providing logistic and inventory information including alerts when there is a deviation from the route. In addition, the CelloTrack Container Lock can be installed on the outside to provide indication if the container has been opened during the supply chain.



Construction & Heavy Equipment

Trucks, earth-movers, paving equipment, dumpsters, generators and machinery – often left for long periods on construction sites – are expensive to replace and, if stolen, significantly interrupt the work progress. The robust, water and dust resistant CelloTrack device can easily be deployed and concealed on all types of heavy equipment. The device will immediately alert when the equipment is moved and provide its precise location to the stakeholder. Real time tracking and movement detection can effectively halt theft in progress and increase recovery rates of stolen equipment, thus substantially reducing monetary loss.



Securing ATMs

ATM crimes are becoming more common around the world. The CelloTrack device can prevent these violent ATM attacks and can assist in returning a stolen ATM. The CelloTrack is located inside the ATM's safe and routinely transmits data once a day. When tilt or movement are detected by the accelerometer or when the device is disconnected from power or is beyond a geo-fence, the device starts transmitting data in closer intervals and an alert is sent to the relevant person.

CelloTrack Container Lock

A complete control and real-time monitoring system that keeps track of cargo throughout the supply chain, independently from the vehicle transporting it (ship, truck, train, etc.).

The CelloTrack Container Lock is an electronic robust solution based on the CelloTrack Power, offering an agile tracking and cargo monitoring for containers with almost instant assembly and removal, eliminating the need to open the container and interfering with logistics operations such as authority inspections, transport, loading and unloading. It provides information on where the goods are at any given point and if there are any bottlenecks along the way. The device accelerometer senses movement and an embedded magnetic sensor detects when the container's doors are opened or tampered with.



CelloTrack Security Seal

Multifunctional external solution based on a rugged, massive, harsh weather resistant lock that integrates and protects the CelloTrack device, enabling its use in a wide range of security applications. Through the use of a stainless steel electronic wire rope available in different cable lengths, the CelloTrack Seal quickly installs into virtually any type of truck, container trailer, tanker truck, warehouse or critical zone doors and detects the Lock's opening, wire rope cutting or tampering to alert of any unauthorized intrusion attempts. It also helps monitor, control and leave evidence of the door's access events as part of a complete management solution.



Battery Life Time Table

TX / 24Hrs	CelloTrack 3Y - 13 AH Battery Lifetime	CelloTrack XT - 5.3 AH Battery Lifetime	CelloTrack 8M - 2 AH Battery Lifetime
96	1 Month	10 Days	5 Days
48	2 Months	20 Days	10 Days
24	4 Months	50 Days	20 Days
12	8 Months	3 Months	40 Days
8	11 Months	4 Months	50 Days
6	13 Months	5 Months	2 Months
4	16 Months	7 Months	3 Months
2	22 Months	10 Months	5 Months
1	28 Months	14 Months	8 Months

The calculations are based on the following assumptions and setup:

Battery self discharge rate: 3% of available capacity per month at 25°C. Battery is fully charged optimally before first use. Operation mode: periodic peeking. Number of messages per day as specified in the table. Up to 2.5 minutes total on time on peeking. Up to 1.3 minutes GPS on-time on peeking. Based on 2G modem HW variant. Values may vary according to operational conditions.

CelloTrack Specifications

Communication		
Cellular communication	3G NA: HSPA 5.76[UL]/7.2[DL] Mbps; 850, 1900, AWS 3G EU: HSPA 5.7[UL]/7.2[DL] Mbps, 900, 2100 2G: GSM/GPRS, 850, 900, 1800, 1900 (Quad band)	
SIM	Internal, replaceable, 1.8/3V Remote PIN code management	
Antenna	Internal, multi band GSM antenna	
GNSS		
Technology	Internal module, MediaTek MT3333 chipset	
Sensitivity (tracking)	-165dBm	
Acquisition (normal)	Cold <35Sec, Warm<35Sec, Hot<1Sec	
Inputs & Outputs		
I/O	Two configurable ports supporting true GPIO (General Purpose Input Output). Each I/O port supports: <ul style="list-style-type: none"> • Discrete Dry Input • Discrete Wet Input • Analog 0-2.5V Input • Analog 0-30V Input • Frequency Counter Input • Output Discrete Dry – Ground sensing. Configurable ground threshold Discrete wet – Logic 1 and 0 Configurable thresholds Analog inputs with variable resolution - 8bit - 0-2.5V: 20mV resolution, accuracy ±30mV 8bit - 0-30V: 100mV resolution, accuracy ±100mV 12bit - 0-2.5V: 3mV resolution, worst case accuracy <10mV; max 20mV 12bit : 0-30V: 8mV resolution, worst case accuracy <40mV Frequency counters – Up to 5kHz input signal; Signal level (3V < Vin ≤ 30V); Accuracy ±2% Output - Open collector	
Interfaces		
COM port	Cellocator Serial Protocol Debug, Configuration, FW upgrade RS232, CMOS levels	
3D Accelerometer	Movement detection	
MMI	2 LED status indication Activation / Distress button Tamper switch	
Connectors	CelloTrack 6 pin Molex, Automotive	CelloTrack Power Pigtail



Power		
Input voltage:	CelloTrack 4.2V 1A CCCV Charger	CelloTrack Power 9-32V DC
Internal Battery	CelloTrack 3Y family: Li-Polymer, 3.7V, 13Ah, rechargeable CelloTrack 8M family: Li-Polymer, 3.7V, 2Ah, rechargeable CelloTrack XT family: Li-Polymer, 3.7V, 5.3Ah, rechargeable	
Environment		
Temp, operating	CelloTrack 3Y and CelloTrack 8M: Discharging: -20°C – 60°C. Charging: 0-45°C. CelloTrack XT: Discharging: -30°C – 70°C. Charging: -20°C – 60°C (Sonata 5300 mAH battery)	
Temp, storage	CelloTrack 3Y and CelloTrack 8M: -20°C – 35°C CelloTrack XT: -20°C – 60°C	
Ingress Protection	IP67	
Vibration, Impact, Humidity, chemical	ISO 16750	
Mounting	Magnetic or screw mounted cradle Tampering detection	
Certifications		
CE	CE EMC & R&TTE according to 89/336/EEC or 1999/5/EC CE Safety EN60950-1:2001+A11:2004 NBO number: CE 1177,1909	
FCC	Part 15 Subpart B, part 22/24 compliant	
IC	ICES-003, Issue 5:2012 Class B CAN/CSA-CEI/IEC CISPR 22:10	
PTCRB	TRP, TIS, Spurious and harmonics emission	
AT&T	Yes	
Dimensions & Weight		
Dimensions	~155mm x 81mm x 45mm	
Weight	CelloTrack 3Y ~ 490gr CelloTrack Power 3Y ~ 530gr CelloTrack 8M ~ 280gr CelloTrack Power 8M ~ 320gr CelloTrack XT ~ 330gr CelloTrack Power XT ~ 370gr	

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