Cellocator
by **PowerFleet®**

Driving IoT Innovation

CelloTrack LTE Plus™

Next Level Asset Management & Sensor Tracking Solutions

The CelloTrack LTE Plus product line is designed for advanced asset tracking with remote monitoring, that features enhanced functionality, robustness and ease of installation. The CelloTrack LTE Plus is suitable for a wide variety of asset management applications that require a long operational life with or without a power source.

The CelloTrack LTE Plus product line is available in 3 HW variants:

CelloTrack Standalone
Rechargeable unit designed for non-powered assets

CelloTrack Power
Rechargeable unit designed for assets which have a power connection
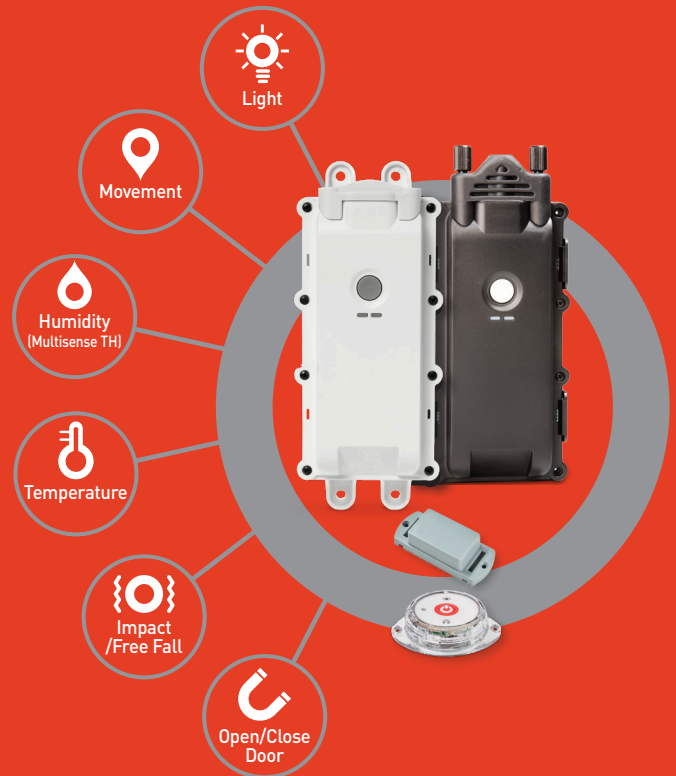
CelloTrack 10Y
Non-rechargeable unit which enables up to 10 years of operational lifetime

Taking Asset Tracking to the Next Level

Highlights

- **Based on LTE Cat 1 NA modem with 3G as a fallback network and LTE Cat 1 EU with 3G and 2G as fallback networks**

- **Supports a Wireless Sensor Network**

- **GPS and GLONASS positioning for greater accuracy and more versatility**

- **Rugged housing with IP67 rating.**

- **3D accelerometer for movement and towing detection**

- **MMI: programmable push button (on/off/test/panic) and two monitoring LEDs for GSM/GNSS status**

- **ISO16750 compliance (shock, temperature, humidity, UV, chemical, salt)**

- **Up to 100 built-in Geo-Fences**

- **Supports OTA configuration and FW upgrades**

- **Tampering detection mechanism to detect tampering of device from mounting surface**

Light
Movement
Humidity (Multisense TH)
Temperature
Impact /Free Fall
Open/Close Door

Use Cases

Logistics, Cold Chain & Security
The CelloTrack product line enables you to verify that the required shipment conditions of highvalue goods shipped from manufacturer sites or distribution centers are kept according to the defined specifications. Real-time alerts are generated when the goods are mishandled – for example, if they are unloaded at the wrong address, deviate from the planned route, or are opened unexpectedly. The CelloTrack product line, used with MultiSense or CelloSense devices, enables on-the-fly responses when breaches of the required temperature or humidity thresholds occur, and enables compliance with the strictest cold chain regulations (EN 12830).

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, can significantly interrupt 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 generate alerts when the equipment is moved and provide its precise location to the stakeholder. The CelloTrack 10Y, with a 10 year operational lifetime using a non-rechargeable battery, can be used for assets located in hard to reach locations, where maintenance is not possible to perform.

Rental Equipment
The easy to install CelloTrack device enables stakeholders to remotely and efficiently monitor the status of their rented assets' usage, including storage containers, construction machines, electricity generators, caravans, chemical toilets and more. During the rental period, the location, displacement, operation hours (by movement), door status and other inventory management aspects for adherence of contractual obligations can all be monitored. The CelloTrack 10Y device is ideal for long term leasing applications where the unit is installed for several years, and then no longer used.

Track it All

CelloTrack Standalone   CelloTrack 10Y   CelloTrack Power

CelloTrack Standalone

A self-powered, mobile tracking device equipped with a durable and long-life rechargeable battery that functions without direct access to power. It also supports wireless sensor connectivity and has high resilience under severe conditions.

CelloTrack Power

A rechargeable tracking device with an internal charger and wireless sensor connectivity, suitable for permanent installations where external power sources exist. Its versatile GPIO provides additional monitoring and control capabilities where required.

Highlights

- Dual tampering detection mechanism to detect tampering of device from cradle and/or cradle from mounting surface
- Two configurable general-purpose inputs/outputs (GPIO) supporting digital, analog and frequency counter inputs
- Easy installations, utilizing built-in zip tie holes or optional magnetic cradle
- Long operation time (up to 20 months @ 1 transmission / day) via 5.3 Ah of rechargeable Lithium-polymer battery
- Extended operating temperature range -30°C to 70°C

CelloTrack 10Y

Asset tracking device with an operational lifetime of up to 10 years, using a non-rechargeable battery and including wireless sensor connectivity. This makes it ideal for long-term remote applications requiring minimal or no maintenance at all, and is suitable for use in extreme operating temperatures in which charging and performance can be challenging.

Highlights

- 10 years @ 1 transmission / day (42.5Ah non-rechargeable battery pack)
- Extended operating temperature range -30°C to 75°C
- Supports a Short-Range RF Wireless Multi-Sensor Network (including Temperature, Humidity, Impact, Light, Door Contact, Movement)
- Easy installation using screws, fasteners or an optional magnetic cradle

Cargo Solutions

CelloTrack Container Lock
A unique container tracking solution based on the CelloTrack and encased in a hardened enclosure, providing robust cargo monitoring with ease of installation and removal.

CelloTrack Security Seal
The CelloTrack Seal is based on the CelloTrack and is encased in a hardened enclosure. It uses a stainless steel electronic wire rope - available in different cable lengths - which can be quickly installed in virtually any type of truck, container trailer, tanker truck, w arehouse or critical zone doors.

The Seal detects the Lock´s opening, wire rope cutting or tampering to generate alerts of any unauthorized intrusion attempts.

CelloTrack Container Lock

CelloTrack Security Seal

CelloTrack LTE Plus Specifications

Communication	CelloTrack LTE Standalone/Power	CelloTrack 10Y
Cellular communication	LTE Cat 1 NA with 3G Fallback LTE NA: Bands 2, 4, 5, 12 (700, 850, 1700/2100 (AWS), 1900 MHz), data rates: 10.2[DL] / 5.2[UL] Mbps 3G NA: UMTS Bands 5, 4, 2 (850, 1700/2100 (AWS), 1900); HSPA 5.76[UL]/7.2[DL] Mbps Packet Data: TCP/IP, UDP/IP SMS: PDU mode LTE Cat 1 EU with 3G and 2G Fallback LTE EU: Bands 1, 3, 8, 20. 28 (700, 800, 900, 1800, 2100 MHz), data rates: 10.2[DL] / 5.2[UL] Mbps 3G EU: UMTS Bands 1, 8 (900, 2100 MHz); HSPA 5.76[UL]/7.2[DL] Mbps 2G EU: GSM 900, 1800 MHz; GPRS: 24[UL]/48[DL] Kbps	
SIM	Internal, Micro Sim, replaceable, 1.8/3V Optional SIM on chip Remote PIN code management	Internal, full size replaceable, 1.8/3V Optional SIM on chip Remote PIN code management
Antenna	Internal, multi-band antenna	Internal, multi-band antenna

GNSS	CelloTrack LTE Standalone/Power	CelloTrack 10Y
Technology	Internal module, CSR SiRFstarV™ based GPS and GLONSS supported	Internal module, CSR SiRFstarV™ based GPS and GLONSS supported.
Sensitivity (tracking)	-165dBm	-165dBm
Acquisition (normal)	Cold <27 Sec, Warm<10 Sec, Hot<1 Sec	Cold <27 Sec, Warm<10 Sec, Hot<1 Sec
Antenna	Internal, on board patch antenna	Internal, on board patch antenna

Inputs & Outputs	CelloTrack LTE Standalone/Power	CelloTrack 10Y
I/O	Two configurable ports supporting true GPIO (General Purpose Input Output). Each I/O port supports: • 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 to 2.5 V: 20mV resolution, accuracy ±30mV; • 8bit - 0 to 30 V: 100mV resolution, accuracy ±100mV • 12bit - 0 to 2.5 V: 3mV resolution, worst case accuracy <10mV; max 20mV. • 12bit - 0 to 30 V: 8mV resolution, worst case accuracy <40mV Frequency counters – Up to 5kHz input signal; Signal level (3V < Vin ≤ 30V); Accuracy ±2% Output - Open collector	

Interfaces	CelloTrack LTE Standalone/Power	CelloTrack 10Y
COM port	Cellocator Serial Protocol Debug, Configuration, FW upgrade RS232, CMOS levels	Cellocator Serial Protocol Debug, Configuration, FW upgrade USB 2.0, internal micro-USB connector
3D Accelerometer	3D, ±8g range, 12 Bit representation, 4mg resolution Movement detection	3D, ±8g range, 12 Bit representation, 4mg resolution Movement detection
MMI	2 dual colored LED status indication Activation / Distress button Tamper switch	2 dual colored LED status indication Activation / Distress button Read relay and magnet-based tamper detection
Wireless	2.4 GHz proprietary wireless interface for MultiSense integration	2.4 GHz proprietary wireless interface for MultiSense integration
Connectors	CelloTrack Standalone: 6 pin Molex, Automotive CelloTrack Power: Pigtail	Internal micro-USB connector

CelloTrack LTE Plus Specifications (Continued)

Power	CelloTrack LTE Standalone/Power	CelloTrack 10Y
Input voltage	CelloTrack Standalone: 4.2V 1A CCCV Charger CelloTrack Power: 9-32V DC	
Internal Battery	Li-Polymer, 3.7V, 5.3Ah, rechargeable	Lithium-thionyl chloride (SOCl2), 3.6V, 42.5 Ah, primary (non-rechargeable)

Environment	CelloTrack LTE Standalone/Power	CelloTrack 10Y
Temp, Operating	Discharging: -30°C to 70°C Charging: -20°C to 60°C	-30°C to 75°C
Temp, storage	-20°C to 60°C	0°C to 30°C (battery limitation)
Humidity	95% non-condensing	95% non-condensing
Ingress Protection	IP67	IP67
Vibration, Impact, Humidity, Chemical	ISO 16750 parts 3 & 4	ISO 16750 parts 3 & 4
Mounting	Magnetic or screw mounted cradle Tampering detection	Screw or magnetic mounting

Regulatory Compliance/ Certification	CelloTrack LTE Standalone/Power	CelloTrack 10Y
CE	CE Safety EN60950-1:2001+A11:2004	CE Safety EN60950-1:2001+A11:2004
FCC	Part 15 Subpart B, part 22/24 compliant	Part 15 Subpart B, part 22/24 compliant
IC	ICES-003, Issue 5:2012 Class B. CAN/CSA-CEI/IEC CISPR 22:10	ICES-003, Issue 5:2012 Class B. CAN/CSA-CEI/IEC CISPR 22:10
PTCRB	TRP, TIS, Spurious and harmonics emission	TRP, TIS, Spurious and harmonics emission
AT&T	Yes	Yes
Environment	ISO 16750 part 3 & 4	ISO 16750 part 3 & 4
UL	Compliant	Compliant
Reliability Assessment	Annual Failed Ratio <0.5%	Annual Failed Ratio <0.5%
HALT (Highly Accelerated Life Test)		Passed
RoHS and Conflict Minerals	Compliant	Compliant

Dimensions & Weight	CelloTrack LTE Standalone/Power	CelloTrack 10Y
Dimensions	~155mm x 81mm x 45mm	~ 203mm x 81mm x 50mm
Weight	CelloTrack Standalone ~ 330gr CelloTrack Power ~ 370gr	~ 510 gr
Enclosure Material	Polycarbonate	Polycarbonate

Battery Life Time Table

TX / 24Hrs	CelloTrack 10Y - 42.5 Ah Battery Life	CelloTrack LTE Standalone/Power - 5.3 Ah Battery Life
1	120 Months (10 Years)	20 Months
2	90 Months (7+ Years)	15 Months
4	62 Months (5+ Years)	10 Months
6	48 Months (4 Years)	7 Months
8	39 Months (3+ Years)	6 Months
12	28 Months (2+ Years)	4 Months
24	15 Months (1+ Years)	2 Months
48	8 Months	1 Month
96	4 Months	0.5 Month

The battery life calculations are based on the following assumptions and setup:

Battery self-discharge rate for the CT LTE: 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, with up to 1.3 minutes GPS on-time on peeking. Based on LTE Cat1 modem HW variant. Values may vary according to operational conditions. Values may vary according to environment and use.

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