



Cellular Tracker - User's Guide

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Revision History

Date	Revision Notes	Version
08/15/24	Original text	v1.00
09/15/24	Specifications updated	v1.01
10/20/24	Specifications updated Clarified state descriptions Added FCC IC and CE conformance	v1.02

MonoLets Cellular Tracker

The Cellular Tracker is an all-purpose battery powered device that can be attached to or co-located with valuable items during transport and shipping. The device includes GPS, Cellular and Bluetooth components that are used to provide real-time location tracking information to the Cloud. The Tracker also includes various sensors: temperature, air pressure, humidity, orientation, acceleration, battery voltage, and light intensity. Some sensor information is used to dynamically control the device during shipping and transport, while other information is regularly reported in real-time to the Cloud.



Device Operation

The MonoLets Cellular Tracker operates with minimal user interaction.

DEACTIVATED STATE

The device is shipped in a deactivated state. The deactivated state is indicated by an Orange LED blinking twice every 10-secs. While the device is deactivated, it consumes very little power and brand new batteries can be expected to last more than two years. Pressing down the button for more than 5-secs activates the device, indicated by a Green LED blinking rapidly.

ACTIVATED STATE

The activated state is indicated by a Green LED blinking twice every 15-secs. When activated, the device will read sensors and the GPS, and using a Cellular connection regularly (every 30-45 mins)

report information to the Cloud. While activated, the device can be deactivated by pressing down the button for more than 5-secs. The device will deactivate and indicate the deactivated state.

LOW BATTERY STATE

When the battery voltage level drops below being useful, the device will indicate this state by blinking the Orange LED 5 times every 15-secs. The device will remain in this state until either the batteries are depleted, or until the batteries are replaced.

ERRORS

The device may indicate possible errors while activated. Whenever the Green LED blinks indicating activated, the Orange LED may blink at the same time.

One Orange LED blink indicates the device has been unable to make a cellular connection for some time - missed last 3 cellular connection attempts.

Replacing Batteries

The MonoLets Cellular Tracker has a press fitted enclosure. Use a broad flat screwdriver or similar flat edged tool to gently all the way around, pry the lid from the base.

Remove and replace the batteries with Alkaline AAA 1.5V 1200mAH batteries.

Push the lid back onto the base and press firmly on all sides to fully seat the lid onto the base.

Product Specifications

Bluetooth Connectivity	Bluetooth Low Energy (BLE) v5.1 2.4 GHz ISM, Tx Power: +2.0dBm
Cellular Connectivity	LTE Cat M1 LPWAM
Networking Topology	Proprietary BLE wireless Mesh
Power Source	4 x AAA Alkaline Batteries, 1.5V 1200mAH
GPS Location	10-20m, or nearest cell tower
Sensors	Shock, Orientation, Light, Humidity Temperature, Barometer, Altitude
Internal Temperature Sensor Range & Accuracy	0 °C to +70 °C ±0.8 °C -40 °C to +85 °C ±1.3 °C
Operating Temperature range	-20 °C to +60 °C (limited by AAA batteries)
Certifications	➤ FCC ID: 2BLATMLCELTRK072409 ➤ IC ID: 33091-CT072410 ➤ DO-160G ➤ CE
Dimensions (L x W x H)	153 x 95 x 16.5mm 6.0" x 3.75" x 0.64"
Weight with batteries	~310 grams ~11 oz
External Button	Power On/Off, Activate/Deactivate
LED Indicators	Green: Activated and activity Orange: Deactivated or errors Yellow: Cellular Activity

FEDERAL COMMUNICATIONS COMMISSION (FCC) INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

RF Exposure Warning

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This product may not be collocated or operated in conjunction with any other antenna or transmitter

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operated in conjunction with any other antenna or transmitter.

Industry Canada (IC)**CAN ICES-3 (B)/NMB-3(B)**

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Cet appareil est conforme à la norme RSS d'Industrie Canada. Son fonctionnement est sujet aux deux conditions suivantes:

1. le dispositif ne doit pas produire de brouillage préjudiciable, et
2. ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

IMPORTANT NOTE:**Radiation Exposure Statement:**

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

Déclaration D'exposition aux Radiations:

Cet Équipement Est Conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet Équipement Doit Être Installée Utilisé avec un minimum de 20cm de distance entre la source de rayonnement et votre corps.

CE Statement

1. In cases where there are restrictions, there were two descriptions, one is that Restrictions or Requirements in following countries, another is that Add pictogram like as below:

	AT	BE	BG	CH	CY	CZ	DE	DK
	EE	EL	ES	FI	FR	HR	HU	IE
	IS	IT	LI	LT	LU	LV	MT	NL
	NO	PL	PT	RO	SE	SI	SK	

Do we have any restrictions/requirements for other countries??

Do we need this table here?

2. Band	Power Class	Tx Frequency Range	Rx Frequency Range	Maximum Tx power
1	3	1920 MHz ~ 1980 MHz	2110 MHz ~ 2170 MHz	23 dBm ±2 dB
3	3	1710 MHz ~ 1785 MHz	1805 MHz ~ 1880 MHz	23 dBm ±2 dB
8	3	880 MHz ~ 915 MHz	925 MHz ~ 960 MHz	23 dBm ±2 dB
20	3	832 MHz ~ 862 MHz	791 MHz ~ 821 MHz	23 dBm ±2 dB
28	3	703 MHz ~ 748 MHz	758 MHz ~ 803 MHz	23 dBm ±2 dB

3. This device meets the EU requirements on the limitation of exposure of the general public to electromagnetic fields by way of health protection. The device complies with RF specifications when the device is used at 20 cm from your body.