BAT-SUR (ATD530)

USER GUIDE

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2 INTRODUCTION

The BAT-SUR (ATD530) is a battery-operated low power LTE CAT-M1 Tracker optimized for one-way destination tracking of premium cargo.

BAT-SUR employs a 3-axis accelerometer and NIST traceable sensors for precise temperature monitoring. Equipped with LED indicators and operator button provide visibility and control to the user. Power is supplied by 2 AA field replaceable Alkaline batteries. When turned on will BAT-SUR periodically reports sensor data and location to a cloud platform.

2.1 UNPACKING/INSTALLATION

On very first use, verify that the device's serial number or IMEI listed on the box's label matches what is printed on the device.

Figure 2.1 - Device Label

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2.1.1 IN THE BOX

Inside the BAT-SUR package will be included:

1. BAT-SUR tracker
2. 2x AA batteries

Figure 2.2 Device and accessories

2.1.2 INSTALLING THE BATTERIES

The back panel can be removed with a T6 torx driver. After removing the back panel, the 2 AA batteries can be installed. Once the batteries are installed the mode of the device may be checked with the button.

Figure 2.3 Multi-angle model with battery location

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2.1.3 POWERING ON THE DEVICE

From the factory, device is powered down, radios are off. To check if the device is turned on the button can be pressed quickly one time to check the state. If the red LED blinks once the device is turned on. If the red LED blinks twice, the device is turned off.

To turn on/off the tracker the button must be held for 3 seconds or longer.

NOTE: All LEDs may flash when turning on/off

Figure 2.4 Button

3 FUNCTION

3.1 PERIODIC SENSOR SCANNING – SENSOR REPORT

While the device is turned on, it will periodically wake up according to its settings, to generate a sensor report containing the sensor and location data then send to the cloud. If network connectivity is not available, it shall store the data for transmitting later when connectivity is available.

3.1.1 SENSORS

1. Temperature
2. Humidity
3. 3-axis accelerometer
4. 3-axis tilt angle

3.1.2 GNSS/GPS LOCATION AND WIFI SCANNING

GNSS/GPS is scanned with each sensor report to get the device's location. If a GNSS/GPS fix cannot be achieved, WIFI is scanned (RX only, TX is disabled) for access point data for use with WIFI LAAS.

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3.1.2.1 GPS/GNSS DATA

1. Latitude
2. Longitude
3. Speed
4. Bearing (Heading)
5. Altitude
6. Accuracy

3.1.3 COARSE LOCATION DATA

1. Serving cell
    a. CID
    b. LAC/TAC
    c. MCC
    d. MNC
    e. Short Network Name (Operator ID)
    f. Signal Strength
    g. RAT
2. Neighbor cells (up to 8)
    a. CID
    b. LAC/TAC
    c. MCC
    d. MNC
    e. Signal Strength
    f. RAT
3. WIFI Access Points (up to 8)
    a. MAC
    b. Signal Strength

3.2 BUTTON

Button press has three features:

1. Quickly double press = on-demand periodic report
2. Hold the button for >3sec = turn on/off (Long Press)
3. Quickly press once = check the mode

3.2.1 QUICK DOUBLE PRESS

Pressing the button twice quickly results in a dedicated (“btn”) sensor report published to the cloud. Note that the device will not recognize more than one double-button press every 3 minutes.

When the double-button is pressed, the LEDs will illuminate and when the Green LED stops flashing and illuminates solid, the device has published the message to the cloud.

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3.2.2 LONG BUTTON PRESS FOR TURN ON/OFF

Pressing the button continuously for 3 seconds or longer results in the device turn on or off.

3.2.3 QUICK SINGLE PRESS

Press the button once quickly to check the current tracker status on or off.

1. If the red LED blinks once the device is turned on
2. If the red LED blinks twice, the device is turned off

3.3 LED INDICATORS

3.3.1 ACTIVE MODE (TURNED ON)

While turned on, the LEDs are normally off, and will illuminate for about 30 seconds when the button is pressed.

Table 3.1

LED	OFF	1 flash/sec	2 flashes/sec	ON
Blue: GPS status indicator	Sleep mode	Acquiring GPS location fix	N/A	GPS location acquired
Green: Network status indicator	Sleep mode or Normal Disconnect	Searching for cellular network or Connecting to Cellular Network	Connected to cellular network (No MQTT Connection)	Connected to cellular network (MQTT connected)
Red: Power status indicator	Sleep mode	Blink once to indicate Turned On		Low Battery

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3.3.2 WHILE DEACTIVATED (TURNED OFF)

Table 3.2

LED	Turning off	Short Button Press
Blue: GPS status indicator	Off	Off
Green: Network status indicator	Off	Off
Red: Power status indicator	Blink Twice	Blink Twice

3.3.3 TEST MODE LED INDICATORS

While in test mode the device will blink only the green LED at a rate of 1x/sec if turned on.

4 CONTACTS

- support@mobilogix.com
- https://mobilogix.com/contact/

5 DISCLAIMERS

5.1 FCC INTERFERENCE STATEMENT (PART 15.105 (B))

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:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

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Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. Consult the dealer or an experienced radio/TV technician for help.

5.2 FCC PART 15 CLAUSE 15.21

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

5.3 FCC PART 15.19(A) [INTERFERENCE COMPLIANCE STATEMENT]

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.

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5.4 ISED RSS-GEN NOTICE

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

(1) This device may not cause interference; and

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage;

(2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'encompromettre le fonctionnement.

5.5 FCC RF EXPOSURE GUIDANCE STATEMENT

In order to comply with FCC/ISED RF Exposure requirements, this device must be installed to provide at least 20 cm separation from the human body at all times.

5.6 ISED RF EXPOSURE GUIDANCE STATEMENT

In order to comply with FCC/ISED RF Exposure requirements, this device must be installed to provide at least 20 cm separation from the human body at all times.

Afin de se conformer aux exigences d'exposition RF FCC / ISED, cet appareil doit être installé pour fournir au moins 20 cm de séparation du corps humain en tout temps.

6 VERSION HISTORY

Date	Description
2021-11-16	Document release.

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