USER MANUAL

For

MODEL: T11013310

REVISION HISTORY:

REV	DESCRIPTION	DWN	APVD	DATE
0.1	Initial Version	TNS	TNS	

Table of Contents

1. Introduction

1.1. Purpose

This document describes the usage of a T11012860 (marketing name TBD) device.

1.2. Scope

The intended audience is a valued customer.

1.3. Description

The T11012860 is a LTE-M/NB-IoT/2G GSM Quad band tracking device, and sensor data logger designed to facilitate communication between remote sensors via sub-GHz radio frequencies. It is primarily intended to be used as a gateway with real time position monitoring which will also produce accurate environmental sensing. The following is a brief summary of its features:

1. GNSS that supports concurrent constellation solutions (GPS, GLONASS, BeiDou/Compass, Galileo, QZSS)
2. LTE-M/NB-IoT/2G GSM Quad Band
3. 868/915 MHz radio communication
4. Internal battery
5. Accelerometer
6. Temperature Sensor
7. Humidity Sensor
8. Light Sensor
9. Charging jack
10. USB-C for configuration and secondary download
11. User Interface

Manufacturer Information

Company Name: SENSITECH Inc.

Address: 800 Cummings Center, Beverly, MA USA

Importer Information

Company Name: XXXXXXXXXX

Address: XXXXXXXXXXXX

1.4. Radio Frequency Characteristics

1.4.1. Operating Frequencies

LTE-FDD: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28

LTE-TDD: B39 (for CAT-M only)

GSM: GSM850/900/1800/1900

FCC: 902-928 MHz

CE: Bands 46A/47/48/50/54/56B

Wifi: 2.4GHz (only used for location purposes, not communication)

Bluetooth

1.4.2. TRP/TIS

Cellular Maximum Conducted TRP: +33dBm

Cellular Minimum Conducted TIS: -110dBm

Sub-GHz Maximum Conducted TRP: +14dBm

Sub-Ghz Minimum Conducted TIS: -100dBm

Bluetooth (<10dBm)

2. Physical Appearance

2.1. User Interface

The user interface consists of the following:

1. Nine LEDs (3 sets of red, green, blue)
2. One button

2.1.1. LEDs

The LEDs are intended to allow quick and easy-to-read status to be conveyed to the end user. The user can immediately know the current status of the unit during startup and operation.

The LEDs are grouped together in three categories: Short range network status, cellular status, and system status.

If the user has the power supply connected to the charging jack, then the LEDs will stay illuminated. If it is not connected, then the LEDs will turn on for five seconds due to a button press.

2.1.1.1. System Status

During startup, the green LED on the status group will blink rapidly.

Once it has completed its startup tests, the LED will indicate the following:

Red	Hardware test failure, solid Low battery, blinking
Green	Fully charged, solid Charging, blinking
Blue	USB is connected

2.1.1.2. Short Range Network Status

During startup, these LEDs are blank.

Once it has completed its startup tests, the LED will indicate the following:

Red	Communication error with transceiver Transceiver calibration error
Green	At least one sensor registered
Blue	Blink while waiting for at least one sensor to register

2.1.1.3. Cellular Status

During startup, these LEDs are blank.

Once it has completed its startup tests, the LED will indicate the following:

Red	The most recent signal strength is below -100dBm
Green	The most recent signal strength is above -100dBm
Blue	Blink while attempting to get on network

2.1.2. Button

There is one button on the device that changes behavior based on the state the device is in:

1. Customer Ready – this is the state the device is in when shipped to a customer, holding the button will start the device.
2. Run – this is the state that the device is in while running, pressing the button during this state will illuminate the LEDs for five seconds. This behavior is only valid when the power supply is disconnected since the LEDs are always on when the power supply is connected.

2.2. Connectors

The unit has two connectors. These connectors are located on the front panel of the device. The connectors are:

1. USB-C – this connector is used if the customer has purchased a unit that supports secondary download or configuration. Otherwise, it is not used.
2. Charging Jack – this connector is used for charging.

3. Using the Device

The usage of the device is intended to be simple and transparent to a customer's process.

To start a device, press the button for > 1 second.

Once started, ensure no LEDs are red. If all LEDs are green, then that means the system is in good health, the cellular connection is in good coverage and stable, and that at least one sensor is communicating with the gateway.

4. Software

This unit reports data over the cellular network. This data is accessible via several web-based platforms that target various industries. Please contact customer support for more information.

5. Disclaimers

⚠	Risk of Fire Hazard if battery is not charged in accordance with manufacturer's instruction.
⚠	RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS
⚠	Do not dispose battery along with household waste.
⚠	There are no user serviceable parts inside, battery cannot be replaced by the end user, and will result in damaging device.
⚠	To comply with FCC/IC RF exposure limits for general population / uncontrolled exposure, 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 co-located or operating in conjunction with any other antenna or transmitter.

5.1. FCC

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 or more of the following measures:

1. Reorient or relocate the device.
2. Increase the separation between the equipment and device.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer 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 my cause undesired operation.

MODIFICATION: Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the device.

5.2. IC

This device complies with Industry Canada RSS standard(s). 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.

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

Leprésent appareil est conforme aux CNR d'Industrie Canada applicable aux appareils radio Exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, meme si le brouillage est susceptible d'en compromettre le fonctionnement.

5.3. CE

Hereby, Sensitech declares that the radio equipment type LTE-M/NB-IoT/2G GSM/GPRS Tracking Device is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available upon request.

5.4. Brazil

"Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados"

Anatel ID: TBD

Modem: Quectel BG-96

5.5. NOM

La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

Número IFETEL: TBD