# PUREONE
# ELECTRONIC MONITORING SOLUTION
## User's Guide

# 1    PureOne Monitoring

## PureOne monitoring solution overview

The PureOne is an all-in-one device, containing GNSS, cellular and RF BLE modules. The integrated BLE module allows the device to communicate with the PureBeacon (home unit) Bluetooth device while the GNSS module is used for location positioning using satellites. The built in LTE cellular module is used for communication with PureMonitor.

The PureOne device comes with a portable charger, that allows seamless and convenient charging.

Both the charger and the PureOne device are equipped with LED interface that indicates the different states and modes of the devices.

## Turning the PureOne on

To turn on the PureOne, simply connect the charger to the device. Once the device detects that the charger is attached, the PureOne will automatically be turned on.

## Allocation of the PureOne & the PureBeacon devices in PureMonitor

Once offender profile was created in the system the device can be assigned to it.  The allocation of the device is done via PureMonitor, in the following steps:

1. On the Offender's **Equipment Tab**, click **Allocate Device**

2. Search for the PureOne serial number or select the PureOne from the list of devices then click **Allocate**

3. If a PureBeacon device is needed repeat step 2 i.e. select a PureBeacon home unit by serial number and click **Allocate**

4. The PureOne and PureBeacon devices are now added to the Offender's Equipment list and is ready for activation.

*Monitoring devices are allocated to an offender and ready for activation.*

## Monitoring start (activation) in PureMonitor

Once the monitoring device/s are allocated the main device can be activated in order to enroll and start monitoring. Click "Activate" button colored in green to send activation request to the PureOne. Once clicked, the information section soon will become available and device's status and recent events will be displayed.

## Monitoring end (unallocation) in PureMonitor

To finish the monitoring devices needs to be removed from offender in PureMonitor. The unallocation of the device/s is done in the following steps:

1.  If the offender has any PureBeacon(s) allocated to them, the device must be unallocated from the offender prior to the unallocation of the PureOne device.

2.  A device can be unallocated by going to the Offender's **Equipment Tab,** clicking on a device's **Settings** button and then clicking on the red **Unallocate** button:
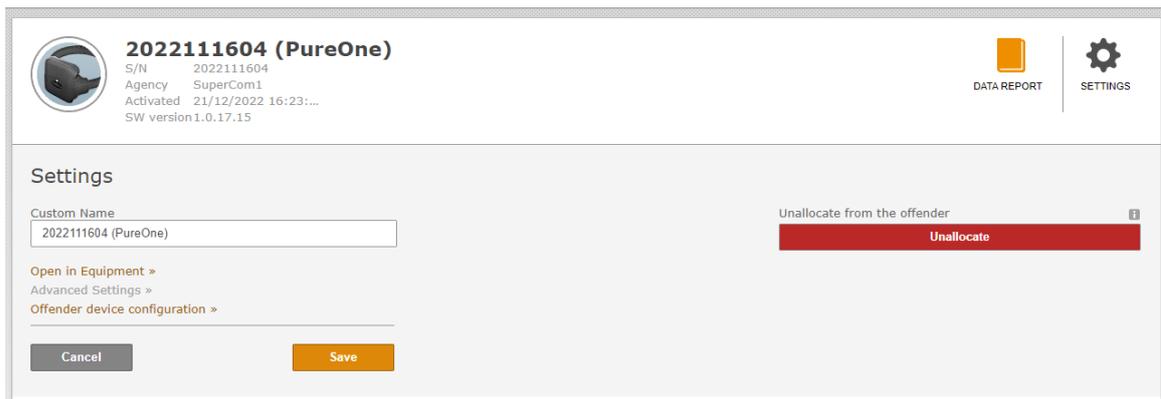


3.  Once the device confirms the unallocation request was received it will be removed from the offender and will not appear under their Equipment tab.

# 2 PureOne and PureBeacon Installation

## Parts of PureOne installation kit

The kit of the PureOne includes the following items:
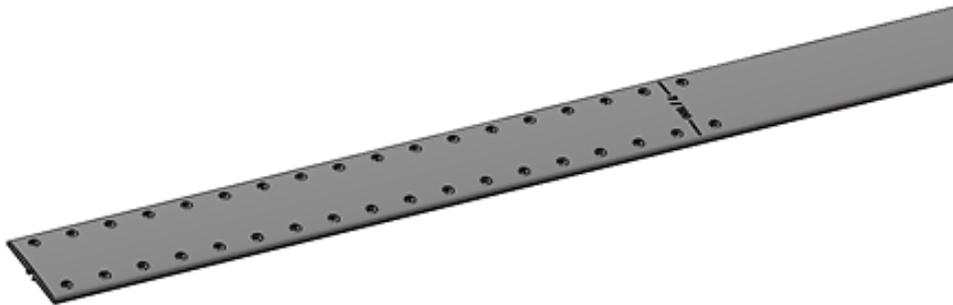


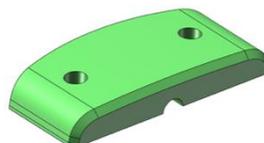**PureBeacon device (optional)**



**PureOne device**

**Portable PureOne charger**



**PureOne strap**



**Upper strap buckle (disposable)**
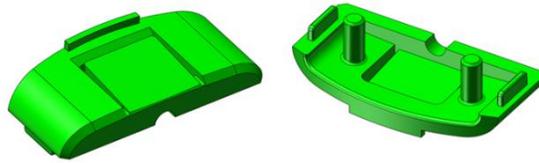
**Bottom strap buckle (disposable)**
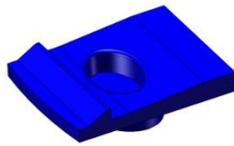


**Locking clip (disposable)**
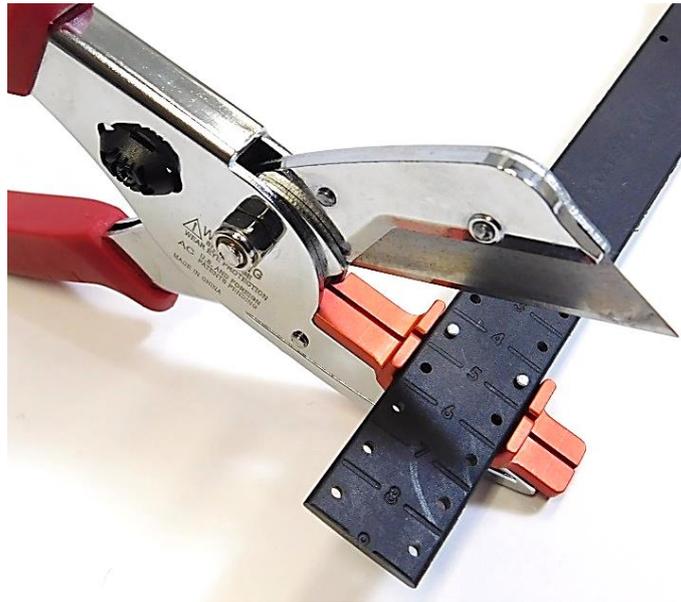
**Strap cutting tool for strap length adjustment**



**Medical scissors for strap cutting and PureOne bracelet removal**

## PureOne Installation

The kit of

1. Prepare:

    a. PureOne device

    b. The upper and bottom strap locks

    c. Locking pin

    d. Strap

2. Attach the upper and lower strap buckles to one end of the ankle bracelet strap.
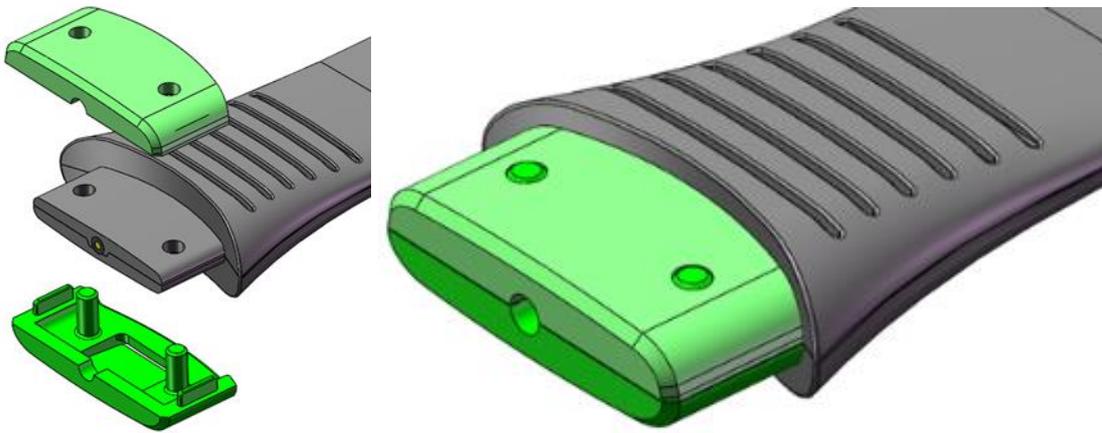


3. Fit the disposable locking clip into one end of the main body.



4. Fit the end of the strap into the end of the main body and push until the strap clicks in place.
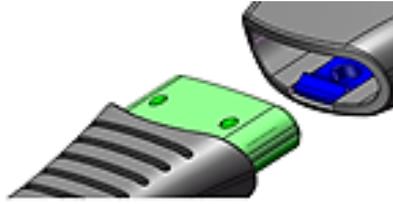
5. Measure the strap on the offender's ankle. The strap should be snug, but still have some looseness so it does not hurt the ankle. The correct strap tightness should be loose enough that you can fit an index finger between the Strap and the ankle.



*Measuring the band on the ankle*

6. Use numbering on the strap to select and remember the suitable length of the band.
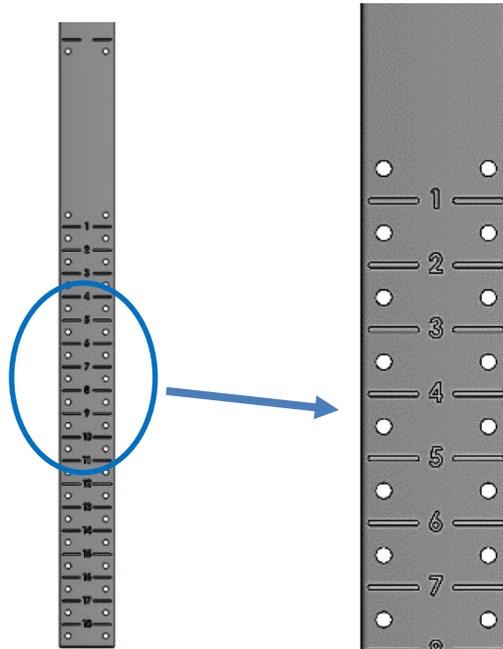
*Selecting a number on the band*

7. Use the provided cutter to cleanly cut the band.
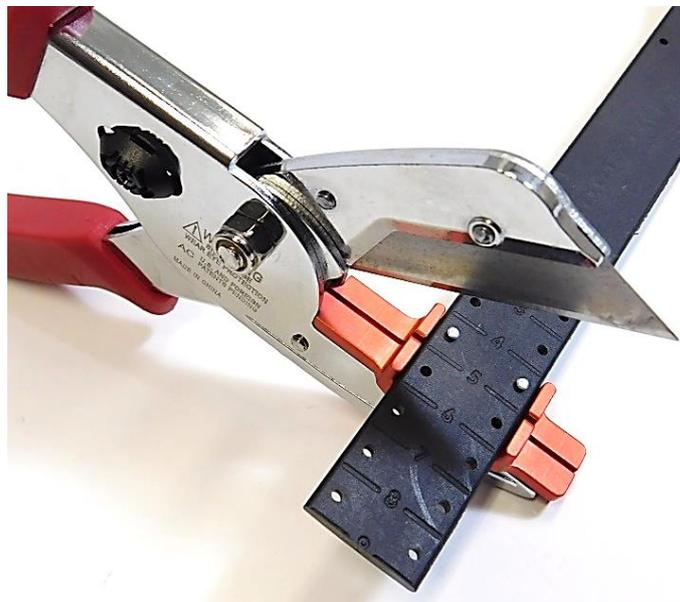


*Cutting the strap to required length using the provided cutter.*

8. Verify strap length by attaching the strap to offender's ankle.

*Rechecking measurement*

9. If the strap fits:

    a. Attach the upper and lower strap buckles to the 2$^{nd}$ end of the ankle bracelet strap.

    b. Insert the locking pin in the side of the PureOne body.
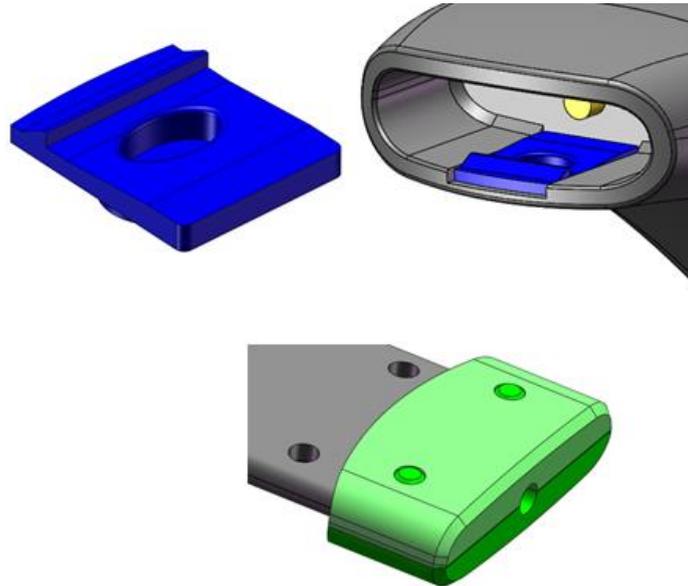
*Inserting locking pin and strap*

10. After the locking clip is inserted, attach the strap again around the offender's ankle and insert the strap into the PureOne base to lock it. You should hear a clicking noise. This indicates the locking of the strap.

## PureBeacon Installation Preparation

Verify that the beacon unit has a dual sided sticker on the back side. Then, position the unit on a flat table surface, preferably in the center of the premises (to provide the best coverage, similar to the House Arrest unit).

## PureBeacon Installation

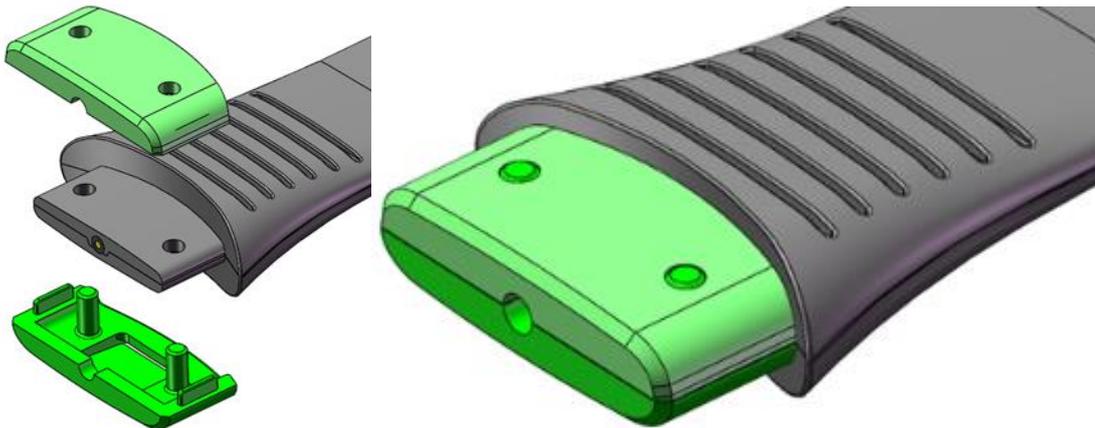For best performance, the unit shall be positioned on a table of a height of around 0.6 to 1.8 meters above floor level.

If possible, position the unit on a wooden or concrete surface and note that surfaces like metal, glass, mirror or tiles aren't suitable for the unit.

To reduce risk of interference, all electrical devices or large metal objects shall not be in immediate proximity to the PureBeacon unit.

Furthermore, the unit shall be kept away from water, chemicals, drink or food preparation areas.

## PureOne Removal

To remove the PureOne bracelet from offender's ankle perform the following:

1. Use the provided medical scissors to cut the band.

2. Save the PureOne bracelet and the band for re-use and recycling.



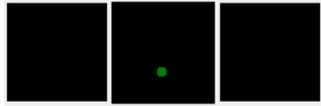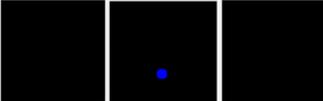*Cutting the strap for PureOne removal*

# 3    PureOne Unit LED Interface

## Introduction to PureOne Led interface

Both the PureOne device and the charger have LED's that serve as visual indicators. The PureOne device has a single LED light while the charger has 3.

The following table details each state and its corresponding LED sequence.

## PureOne – 1 LED

| # | State | LED sequence | Sequence Image (Left to Right) |
|---|---|---|---|
| 1.1 | Unallocated (monitoring inactive), valid communication cycle. Charger not connected. The unit is communicating with the server and it's available for enrollment and monitoring. | Rapid double blink in yellow. |  |
| 1.2 | Unallocated (monitoring inactive), invalid communication cycle. Charger not connected. The unit has errors in communication with the server. | Rapid double blink in red. |  |
| 2.1 | Charger is connected - PureOne Battery Low (0%-29%) | Slow blinking in red. |  |
| 2.2 | Charger is connected - PureOne Battery Medium (30%-69%) | Slow blinking in yellow. |  |
| 2.3 | Charger is connected - PureOne Battery High (70%-99%) | Slow blinking in green. |  |

| 2.4 | Charger is connected - PureOne Battery Full (99%-100%) | Static green. |  |
|---|---|---|---|
| 3 | Monitoring active mode (charger is not connected). | Blinking in blue. |  |
| 4 | Monitoring active mode – charger connected and charger battery insufficient to charge the PureOne | Does not affect LED state. For example, if PureOne device is allocated and charger is connected and doesn't have sufficient energy to charge, the LED would continue to blink blue. | |
| 5.1 | Monitoring active mode – PureOne device battery is low (1%-20%) | Slow blinking in red. |  |
| 5.1 | Monitoring active mode – PureOne device battery is medium (21%-40%) | Slow blinking in yellow. |  |
| 5.1 | Monitoring active mode – PureOne device battery is high (70%-98%) | When battery is above 40%, no indication is given by the LED's | |

## Charger – 3 LED's

| # | State | LED sequence | Sequence Image (Left to Right) |
|---|---|---|---|

| 1 | Charger is connected to the wall – upon initial connection. | All 3 LED turn on and off sequentially | ● ○ ○<br>○ ● ○<br>○ ○ ● |
|---|---|---|---|
| 1.1 | Charger is connected to wall – charger battery is between 0%-40%. | First LED blinking<br>Second and third LED off | ● ○ ○<br>○ ○ ○ |
| 1.2 | Charger is connected to wall – charger battery is between 40%-80%. | First LED static<br>Second Led blinking<br>Third Led off | ● ○ ○<br>● ● ○<br>● ○ ○<br>● ● ○ |
| 1.3 | Charger is connected to wall – charger battery is between 80%-99%. | First and second LED static<br>Third LED blinking | ● ● ○<br>● ● ●<br>● ● ○ |
| 1.4 | Charger battery is full, and charger is connected to the wall. | All three LEDs blinking in unison rapidly | ○ ○ ○<br>● ● ●<br>○ ○ ○ |
| 2. | Charger is connected to PureOne – connection detected by the charger. | Each Led blinking twice sequentially | ● ○ ○<br>● ○ ○<br>○ ● ○<br>○ ● ○<br>○ ○ ●<br>○ ○ ● |
| 2.1 | Charger is connected to PureOne – charger battery has depleted and now at 80%-99%. | First and second LED static<br>Third LED blinking | ● ● ○<br>● ● ●<br>● ● ○ |

| 2.2 | Charger is connected to PureOne – charger battery has depleted and now at 40%-80%. | First LED static<br><br>Second LED blinking<br><br>Third LED off | |
| --- | --- | --- | --- |
| 2.3 | Charger is connected to PureOne – charger battery has depleted and now at 0%-40%. | First LED blinking<br><br>Second and third LED off | |
| 2.4 | Charger is connected to PureOne – charger battery is insufficient to charge PureOne. | All three LEDs blinking in unison slowly | |
| 3 | Charger is not connected to the wall or to PureOne<br><br>Charger battery is fully drained. | All 3 LED's are off | |
| 4.1 | Error – voltage exceeds allowed limit . | First and last LED are static<br><br>Second LED is blinking | |
| 4.2 | Error – no program running. | All three LED are static | |
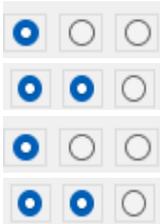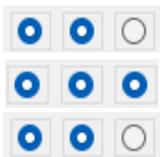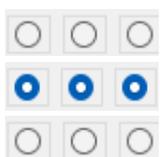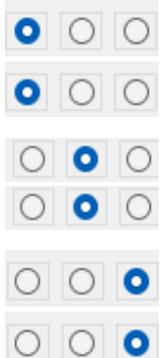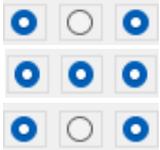
# 4 PureOne Radio Frequencies

## Introduction to PureOne RF communication

PureOne uses the following RF technologies:

Cellular LTE
- Certified cellular module
- LTE coverage

Bluetooth Low Energy
- BLE 5.1 module
- Low power
- BLE module does not transmit any data while cellular communication is active

Wi-Fi
- Wi-Fi is used in Rx (reception) mode only.
- Wi-Fi purpose is for location aiding.
- Wi-Fi module does not work while cellular communication is active