eDoctor

User Guide

DOCUMENT TYPE:	User Guide
DOCUMENT NUMBER:	T0006922_UG
DOCUMENT VERSION:	1.3
PRODUCT NAME:	eDoctor
PRODUCT CODE:	T0006955
RELEASE DATE:	August 23, 2023

Revision History

Revision	Issue Date	Editor	Comments
0.1	Nov 4, 2020	Reza Nikjah	Initial release.
0.2	Feb 2, 2021	Reza Nikjah	Minor edits. Added Mobile Application view.
0.3	June 6, 2023	Shania Stewart	• Updated product name and product code. • Expanded on product specifications and added product images. • Updated the instructions for use and added troubleshoot information.
1.0	Aug 4, 2023	Shania Stewart	• Updated product code to support Rev C modules. • Corrected T-code in document footer. • Added additional setup information and safety precautions. • Added regulatory compliance statements.
1.1	Aug 22, 2023	Shania Stewart	• Minor edits.
1.2	Aug 23, 2023	Shania Stewart	• Edited wording and added additional safety warnings based on feedback.
1.3	Aug 23, 2023	Shania Stewart	• Added tool requirement.

1 Product Description

1.1 Overview

The eDoctor health and fitness monitor is a small, light, battery powered LoRaWAN sensor that is worn around the chest (upper torso) to monitor and periodically report the user's skin temperature, heart rate, respiratory rate, chest expansion, body position, and their physical activity status. The eDoctor also measures and periodically reports the remaining battery lifetime.

The eDoctor is configured to send uplinks every 5 minutes by default while the device is being worn. For more information on all the available Over-the-Air configuration options, see the eDoctor Technical Reference Manual located on the TEKTELIC support portal.

1.2 Specifications

The eDoctor specifications are listed in Table 1-1.

Table 1-1: eDoctor Specifications

Parameter	Specification
Use environment	Indoor professional use only
Size	eDoctor: 105 mm x 38 mm x 18 mm Chest Band: up to 1450 mm x 2 mm x 30 mm
Weight	eDoctor: 53.8 g (with battery) Chest Band: 28.8 g
Power source	Battery operated (one CR2477)
Network technology/Frequency band	LoRaWAN with different regional variants
Air interface	LoRa
Battery lifetime	2-3 months
Maximum transmit power	14 dBm
Number of indicator LEDs	2 (one red and one green)
Number of push buttons	2 (one blue and one green)
Sensing functions	Skin temperature, heart rate, respiratory rate, chest expansion, body position, and physical activity status

1.3 Interfaces

Figure 1-1 shows the enclosure and external interfaces of the eDoctor. Two indicator LEDs (one green and one red) are present on the front of the enclosure, while two push buttons (one blue and one green) are accessible on the top of the enclosure. There are two strap snaps on the back of the enclosure so that the device can be attached to an adjustable strap for different chest sizes.

Push Buttons

Indicator LEDs

(a) Front View

Left Strap Snap   Temperature Probes

Right Strap Snap

Battery Lid
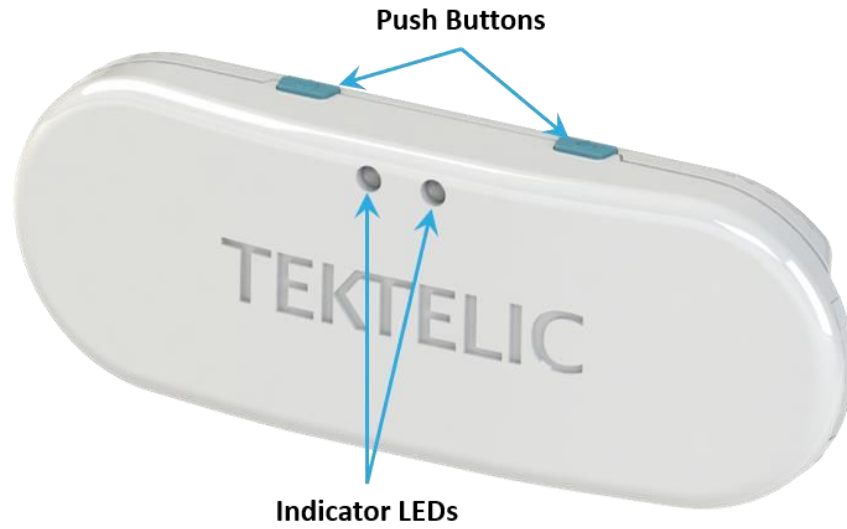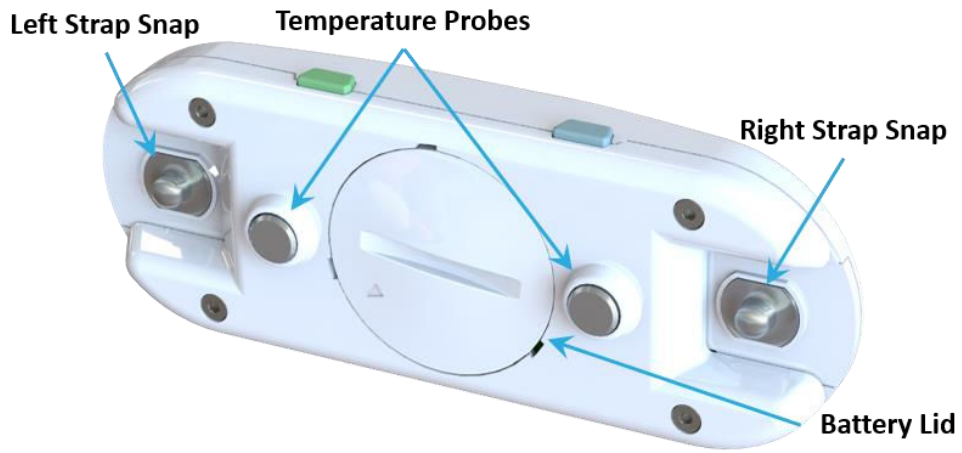
(b) Back View
Figure 1-1: eDoctor External Interfaces

2 Setup and Operation

2.1 Included Product

The following items are included with each sensor:

- An eDoctor sensor
- Adjustable chest strap
- Quick start guide

2.2 Safety Precautions

The following safety precautions should be observed:

- The eDoctor strap is intended to be worn around the chest only.
- The eDoctor contains a lithium coin cell battery.
- **CAUTION** – Do not ingest battery, Chemical Burn Hazard.
- **CAUTION** – This product contains a coin cell battery. If the coin cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.
- **CAUTION** – Keep new and used batteries away from children. If the battery compartment does not close securely, stop using the product and keep it away from children. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.
- **CAUTION** – Risk of fire or explosion if battery is replaced by an incorrect type.

2.3 Unpacking and Inspection

The following should be considered during the unpacking of a new eDoctor:

1. Inspect the shipping carton and report any significant damage to TEKTELIC.
2. Unpacking should be conducted in a clean and dry location.
3. Do not discard the shipping box or inserts as they will be required if a unit is returned for repair or re-configuration.

2.4 Required Equipment

A flat tool (e.g., a coin) is required to lock/unlock the battery lid located on the back of the device. No other special equipment or tools are required to power or operate the eDoctor.

2.5 Instructions for Use

The eDoctor is shipped with a battery installed and an insulating sticker on the negative terminal of the battery to prevent device operation. Removing the sticker and re-inserting the battery will activate the device. After the sticker has been removed, the battery must be removed to turn off the device.

Before activating the device, ensure that the eDoctor is provisioned on your LoRaWAN Network Server before proceeding with the instructions below. One way to provision your device is by downloading the TEKTELIC eDoctor Mobile App available on iOS and Android and following the app's setup instructions.

To activate the unit or to replace the battery when required, the following steps can be followed.

1. Locate the battery lid on the back of the eDoctor. Rotate the lid counter clockwise using a flat tool (e.g., a coin) to unlock it, and then remove the battery lid from the device.
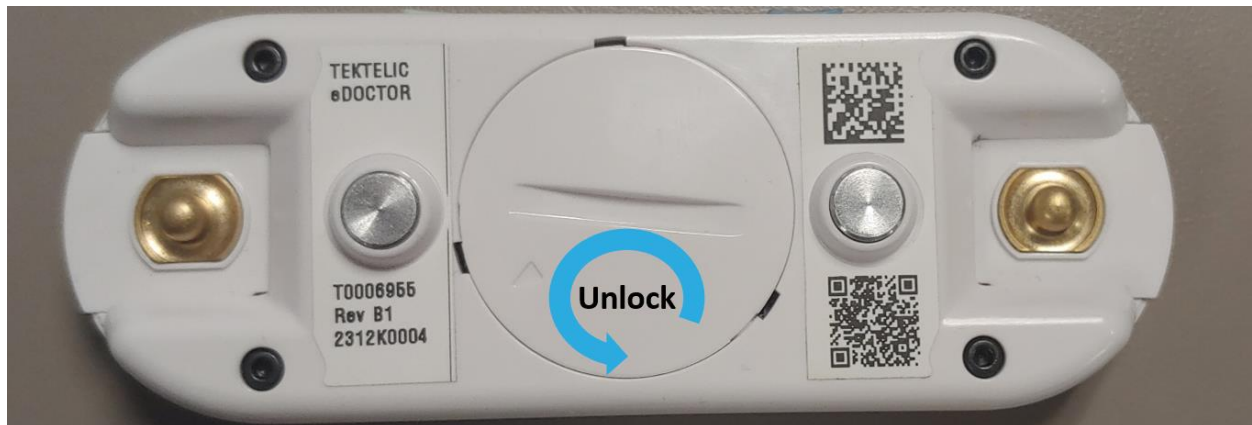
2. Remove the battery from the battery holder. For activation of a newly received device, peel the sticker off the negative terminal of the battery. For battery replacement, use only an approved CR2477, 3V Lithium Manganese Dioxide coin cell.

Negative terminal of battery
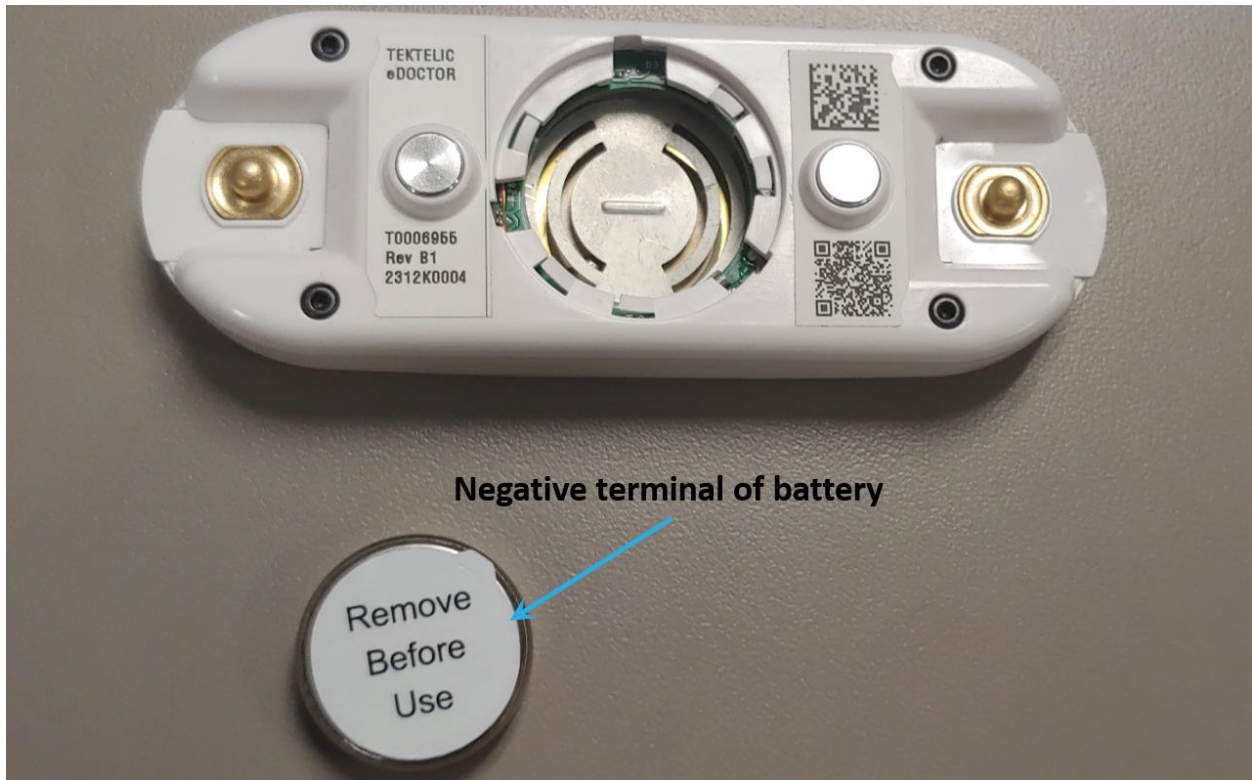
3. Place the battery inside the eDoctor battery compartment so that the positive terminal of the battery is visible after insertion. Align the battery lid so that the arrow is pointing to the bottom left, and turn the lid clockwise with a flat tool (e.g., a coin) until there is a click and noticeable resistance to further rotation to lock it in.

Positive terminal of battery
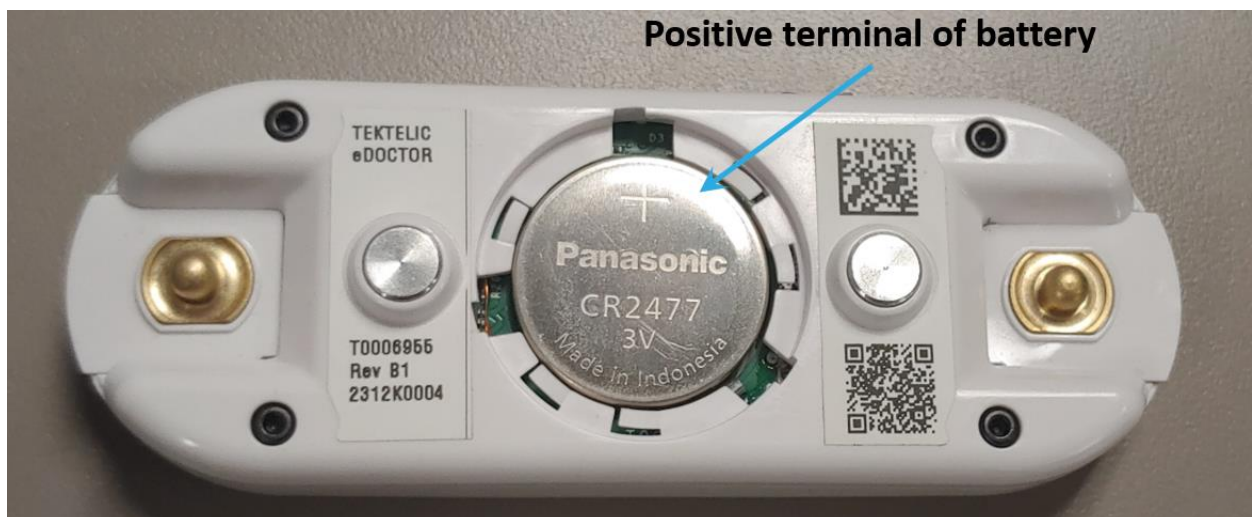
4. After a few seconds, the LEDs on the eDoctor should start blinking, showing that the eDoctor is trying to join the LoRaWAN network. The LEDs will stop blinking once the eDoctor has joined the LoRaWAN network, but you do not need to wait for this to happen before proceeding to step 5.

5. Attach the eDoctor to the adjustable chest strap using the snaps located on both the device and the strap. Make sure that the two metal probes in the middle of the device go through the holes in the strap.

6. Wear the eDoctor with the strap around the chest. It is meant to be worn on the upper torso with the device centered on the patient's chest. Make sure to wear the device so that the two push buttons face upwards.

Note: Adjust the strap length so that the eDoctor sits comfortably on the chest without sagging. Try taking shallow and deep breaths to ensure that the strap is adjusted properly.

2.6 Troubleshooting

If the device remains blinking for more than two minutes (see step 4 in Section 0), then follow these troubleshooting actions:

- Ensure the device is provisioned on the Network Server
- Ensure the local LoRaWAN Gateway has also been provisioned on the Network Server
- Ensure the local LoRaWAN Gateway is online and within range of the device

If you have questions about using this device, please refer to the support portal:
https://support.tektelic.com/portal/en/

3 Compliance Statements

Federal Communications Commission

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.

To comply with FCC exposure limits for general population / uncontrolled exposure, this device has lowered its maximum power to comply with SAR limits for wearable devices and must not be co-located or operating in conjunction with any other transmitter.

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

Innovation, Science and Economic Development Canada

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

(1) This device may not cause interference.

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

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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'en compromettre le fonctionnement.*

California Proposition 65:

⚠️ **WARNING:** This product can expose you to chemicals including lead, nickel, and carbon black, which are known to the State of California to cause cancer, birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.