Rythmos® Kallos – User Guide (DRAFT)

Rythmos® Kallos

Quick Guide

First Use

1. Takes a device and suitable holder (wrist or pendant)
2. Turn the power on by holding the side button for a few seconds.

3. The device shows unit QR -code on the screen.
4. Read the QR code from the display to identify the device.
5. Check resident's profile from the Rythmos system.
6. Assign the device to the resident by putting the code in their settings.
7. The device updates with resident's chosen pictures and personal settings
    a. Resident profile to include:
        i. Personal picture chosen and given by the resident.
        ii. Unit sensitivity (push settings)
        iii. Unit mode (Independ Living, Assistance Living, Memory Care, Standalone)
        iv. Watch style (wrist or pendant)
        v. Onboarding completion
        vi. Ability to cancel the emergency call
        vii. Digital or analog clock/time
        viii. Wrist or pendant use option
8. The device is ready to give to the resident.

Continue to read the detailed instructions.

User and Installation Guide v. 0.01

General Information

Kallos product is a battery-operated single wearable device to provide following main features:

1. Nurse Call
2. Real-Time Location
3. Fall Detection
4. Access Control
5. Digital /analog functioning watch
6. Customizable with pictures (love ones)

Product is one device in Rythmos+ Community System, Safety and Wellness solution for senior communities.

Device has two use-case, wrist use and pendant use. Variants are changeable by two different holders. The device itself does not vary.

Accessories

1. Individual charger
2. Holder for the wrist bands
3. Standard wrist bands
4. Holder for the necklace
5. Standard necklace

Using of holders

1. Wrist band holder

Set the side button to the same location as the cavity of the holder and press down carefully until the device is locked on the holder.

Removing from the holder can be done by fingernail or flat tool by which can be open the snap contact of the holder without damaging it.

Put the fingernail or flat tool behind the snap contact and bend it to outside at the same time pressing the device from the bottom.

2. Pendant holder

Setting the pendant holder is done the same way as wrist band holder.

Set the side button to the same location as the cavity of the holder and press down carefully until the device is locked on the holder.

Removing from the pendant holder is also done the same way as wrist band holder. The difference is that there is more space around snap contact.

Put the fingernail or flat tool behind the snap contact and bend it to outside at the same time pressing the device from the bottom.

Using of Kallos Device

Kallos is an advanced wearable, featuring location information within and outside the community, unobtrusive fall detection, an OLED display with analog or digital watch, nurse call button in display, possibility to add love ones pictures, waterproof design, and multiple wear styles. Kallos including access control also inside of the communities.
Kallos can be changed to different user profiles, such as Independ Living, Assistance Living, Memory Care and Stand Alone. This will be chosen when first use of device is in progress.

Kallos has two use case options as wrist use and pendant use. This needs to be chosen from Rythmos system during First Use procedure.

Onboarding

First use time start the onboarding flow so the unit can be tested, and the user can learn how to use the device. Onboarding flow will be defined by user settings in their profile.

1. Press the button to move from the screen to the next one.

2. Use of side button for viewing pictures. Picture will display for 20 seconds and if there are multiple pictures a side button will be used to look at the next picture.

3. Use of screen button for starting emergency call. When user starts pressing the screen, the device starts emergency “call”. With vibration and audio. 3 seconds countdown is shown on screen, vibration with each count and audio countdown.

Before the call starts a distress signal is sent. Distress signal is sent even if the call function is disabled.

After the call is picked up by a caregiver, unit displays ongoing call state with the duration of the call. Call can be ended with the side button.

4. Next step is Fall detection. View of fall detection and emergency call cancellation.

Emergency call starting in 30 seconds.

Use press and hold side button to cancel emergency call. If the user cancels the call unit displays call cancelled view. This view can be closed with the side button or 5 second timeout.

5. Use if incoming call, answer with screen button. End call with the side button.

6. All of needed onboarding completed and the unit is ready to be used normally. Press the side button to move to watch face.

User Guide

Viewing Pictures

User has possibility to view pictures from the device if given pictures are downloaded into Rythmos system to the resident's profile.

Press the side button. Personal pictures showing for 20 seconds, if there are multiple pictures the side button is used to switch to next one. After 20 second of last press of the side button, the display goes back to time view.

Individual Charging

Low battery icon displays when the device has 10% battery left. Low battery notification is shown to the user accompanied by vibration. This view can be closed by using the side button. The low battery icon will continue showing until the device is charged.

Individual charger requires USB-C type cable and external power source. The power source's output recommendation is 5V/2A.

1. Ensure that the power source's output power is good enough for the charging (min. 5V/500mA)
2. Connect USB-C cable into charger.
3. Place the individual charger below the Kallos device. The position of the individual charger is shown in the picture below. The individual charger and the Kallos device have magnets in both units that guide the charger to the correct position.

4. Charging is ongoing when the device will display charging view.
5. When the battery is full, the device will display the full battery state until it is taken off charging.

The full battery icon will display for 10 seconds and disappear after the device is taken off charging.

Swapping and charging of the device (Community use)

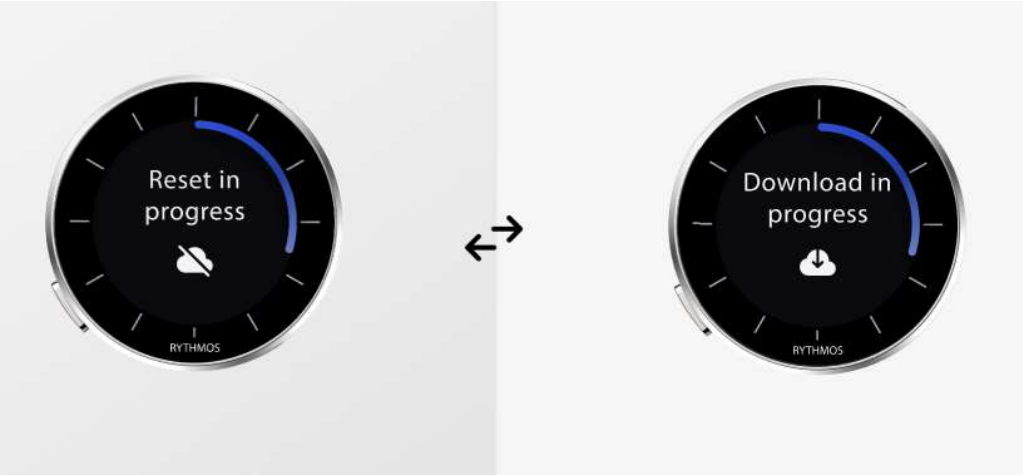
Low battery icon displays when the device has 10% battery left. Low battery notification is shown to the user. This view can be closed by using the side button.

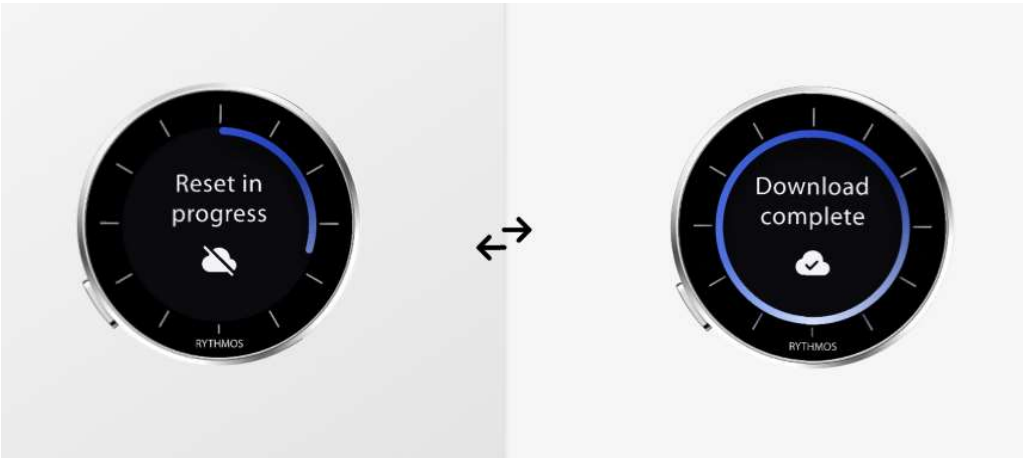
1. The caregiver takes a low battery device and already fully charged device to swapping process.

2. The caregiver takes the low battery device out of the holder and places both devices on Swap Pad. **Be Noted, that battery low device is located left slot of Swap Pad and fully charged device in right one. Printed arrow on the Swap Pad shown direction where data transferred from low battery device to fully charged device.**

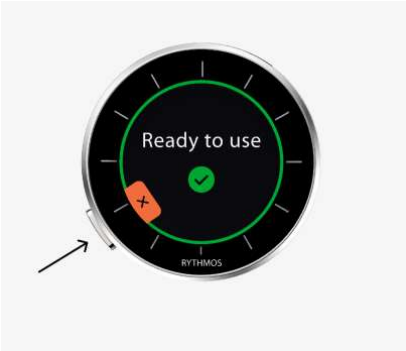
3. When Swap Pad /Rythmos system has identified the devices, in displays is text "Unit Connected". **Be Noted, information is shown in displays, but reading is not possible without taking device out from the Swap Pad.**

Press "Arrow button" from the Swap Pad to start the swapping process. After pressing the swap button, the low battery device starts resetting and the full battery device downloads the user data. **Be Noted, information is shown in displays, but reading is not possible without taking device out from the Swap Pad.**





4. After the download is complete, the full battery device displays “Ready to use” state.
5. Ready to use device can be given to the user and continue being used normally.



6. Low battery device is reset, user data removed from the device. The device displays low battery state until it is put to charger.

7. After putting it to charger (community charging), the device will switch charging state. After the battery is full, the device switches to “Ready to be assigned” state, waiting to be assigned to a user to download user data.

Fall Detection

When a fall is detected, the device displays “Fall detected” and “Distress signal sent” changing those after every second and with vibrating.

1. Distress signal is sent automatically to the Rythmos system and caregiver.
2. Press the side button to return to the time view.

Emergency button

Emergency button is integrated onto display. Help request will start when the user press lens by finger for three seconds.

1. Pressing onto display by finger to start help request.
2. Keep your finger pressed onto the display, 3 seconds countdown is started and is shown on screen, vibration with each count.
3. Successfully sent help request is shown on screen with text “Distress signal sent”

4. At the end on the display can be seen the name and phone number of senior community in case that contact community is required.
5. Pressing the side button to return to the time view.

Memory care

Inside the community, just displaying time view. Outside community, displaying community name and phone number.

Technical information

KALLOS (Rythmos Brand)

Product Description:

Product is a battery-operated single wearable device to provide following main features:

1. Nurse Call
2. Real-Time Location
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Communication protocols:

- LTE M1 (VoLTE) (699 - 2200 Mhz, max. Tx 23dBm)
- GNSS (1559.1 - 1605.8 MHz)
- BLE /Wirepass 2400 - 2483.5 MHz)

Connectivity:

- Cellular LTE CAT M1 (VoLTE)
    - Cellular module Quectel BG77LA-64-SGNS
    - Supported bands: 2, 4, 12, 13 and 66 (US)
    - eSIM (MFF2) (AT&T)
- BLE connectivity
    - Bluetooth 5.4 Nordic Semiconductor nRF5340 (Main processor)
    - Bluetooth 5.4 Nordic Semiconductor nRF52832 (Wirepass)

Geo Location (GNSS with assistance):

- GPS/QZSS (L1)
- Galileo(E1)
- GLONASS (L10F)
- BeiDou (B1I)

Display:

- Dsplay type AMOLED
- Display size 1,28 Inch
- Display resolution 416 x 416

- Touch screen: YES
- Always on display: NO
- Ambient light sensor: YES

Sensors:

- Force button
- Touch sensor
- Accelerometer
- ALS (Ambient Light Sensor)

NFC:

- NFC (passive)
- Controlled by Nordic Semiconductor nRF52832

Battery:

- Battery type Lithium-Polymer (Li-Po)
- Battery capacity: 270mAh (3.8V, 10.26Wh)
- Rechargeable battery: Yes
- Battery life estimation, TBD
- Charging time, TBD

Dimensions:

- Diameter Ø45mm
- Height 12mm

Weight:

- Total Weight 51g
- Total weight without holder, wristbands or necklace 27g

Durability:

- Operation temperature min: -20 ℃
- Operation temperature max: +60 ℃
- Charging temperature: +10…+45 ℃
- Storage: -20…+35 ℃ (TBD)
- Water resistance: IPX7 (TBD)

Materials:

- Case material: plastic PA+30GF, black painted + MATT lacquer
- Bezel material: stainless steel SUS316
- Charging pins: stainless steel SUS316
- Screen material: Corning® Gorilla® Glass 3
- Holders: plastic PC/ABS
- Wrist bands: Wacker silicone
- Necklace: PET Tide Cord (recycled)

FCC requirements for operation in the United States

FCC Information to User

This product does not contain any user serviceable components and is to be used with approved, internal antennas only. Any product changes or modifications will invalidate all applicable regulatory certifications and approvals.

FCC Guidelines for Human Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Federal Communications Commission Statement

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

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

FCC Radio Frequency Interference Warnings & Instructions

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 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 methods:

- Increase the separation between the equipment and the receiver.
- Connect the equipment into an electrical outlet on a circuit different from that which the radio receiver is connected
- Consult the dealer or and experienced radio/TV technician for help

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.
- 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.

Canadian Department of Communications Radio Interference Regulations

This Class [B] digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe [B] est conforme à la norme NMB-003 du Canada.

Innovation, Science and Economic Development Canada (ISED) regulatory information

This device complies 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 harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Ce dispositif est conforme à la norme CNR 'Innovation, Sciences et Développement économique Canada applicable aux appareils radio exempts de licence. 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.

Radiation exposure statement / Déclaration d'exposition aux radiations

This device complies with ISED radiation exposure limits set forth for an uncontrolled environment.

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé.

Contact Information

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