USER’s MANUAL

March / 2024 / Revision.0

Sky Labs Inc.

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NOTICE

Sky Labs Inc. CART BP

Thank you for using CART BP. To ensure safe and proper use of the product, please read this user's manual before using the product.

Failure to follow the contents of the user manual may result in damage or malfunction of the product, or even personal injury. If the User's Manual is more than three months old, please download the latest USER's MANUAL from the Sky Labs website (www.skylabs.io) or contact Sky Labs to see if there is additional information you need. If you have any questions about using the product or software, please contact Sky Labs.

Manufacturer	Sky Labs Inc.
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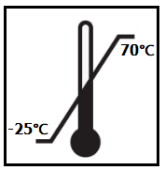
Tel	+82-1599-3402
Country	Made in KOREA

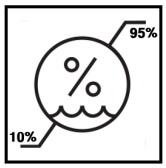
1. label and symbols

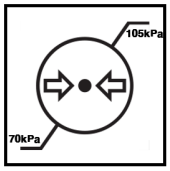
1.1. Symbols on the shipping carton

Handling with care

Guard against Damp







Storage and transport temperature, humidity and atmospheric pressure

1.2. Symbols

Manufacturer

Date of manufacture

Lot Number

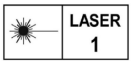
Type BF Applied part

See the User's manual

IP58

IP Grade

DC



CLASS 1 Laser

Do not dispose as household waste

Temperature limits

Humidity limits

Atmospheric pressure limits

No alarm

Warning

Note

2. Safety Warnings

Warning: Failure to follow safety warnings specified in the user manual may result in fire, electric shock, injury or product damage. Make sure to check all safety precautions and warnings before using the product.

2.1. Safety-related information

This product is designed and made to meet “IEC 60601-1, IEC 60601-1-2” which is international standards applicable to medical equipment.

When using this product, make sure to follow the Medical Device Regulation Act, General Data Protection Regulation Act and other applicable laws and regulations.

2.2. Limitations on the use

This product can be used by adults only. Ensure that the CART-RING is put on properly, using the correct method to wear it.

The CART-RING can be put on a finger only. Ensure that it is not put on a body part that is not a finger.

This product cannot be used to diagnose any disease without assistance by a medical professional.

Sky Labs Inc. does not guarantee any data resulting from malfunction of the device caused by abuse, misuse, modification or negligence of the product, an accident, or failure to perform maintenance as instructed in the user manual.

2.3. General safety

Due to its technical nature, this product cannot be repaired. If there are any problems, please contact the manufacturer.

Do not modify, repair, dismantle or alter this product. Injury or product damage may occur.

The CART-RING has an ingress protection rating of IP58, which is daily life waterproof. Nevertheless, if your hand or the CART-RING is wet, use a soft cloth to wipe the moisture away, to increase the quality of collected data.

If this product has been stored at a minimum or maximum temperature, keep it at a room temperature for at least one hour before use.

If you use procedures or control actions for a maneuver or maintenance that is not specified herein, this may cause exposure to hazardous radiation.

Do not leave this product in a location where there are children or pets.

The CART-RING contains a lithium-polymer battery that can be a choking hazard and may cause severe tissue injury if ingested. Never swallow.

2.4. Product maintenance

Do not clean this product with hot water or immerse it in a cleansing solution. The product may become seriously damaged.

Before wearing the CART-RING, use a soft cloth to wipe the inner and outer surfaces.

Once a day, wipe the surfaces of the CART-RING before putting it on.

2.5. Radio frequency / electromagnetism / environmental requirements

Do not expose this product to a strong electromagnetic field.

Do not use this product together with MRI, CT or X-ray equipment.

This product contains electromagnetic field-emitting components and uses radio frequencies.

LED sensor of CART-RING is a device that emits Class I laser. For safe use, do not look or look directly at the light from a close location.

⚠	Do not store the product in a location that is exposed to extremely high or low temperature, humidity, moisture, or direct sunlight.
⚠	Use this product under the specified environmental conditions only.
⚠	The CART-RING comes with an embedded battery. Do not leave it inside an automobile for a prolonged period of time.
⚠	Do not put the CART-RING or other component in your mouth or swallow it.
⚠	Do not use an uncertified adapter or cable.
⚠	If you move your body excessively during measurement, correct measurement may not be obtained. Do not exercise or engage in strenuous movements.
⚠	This device can be operated in at least one Member State without infringing applicable requirements on the use of radio spectrum.

2.6. Waterproof

⚠	Be careful and ensure that the CART-RING does not come into contact with high-pressure water.
⚠	Do not wear the CART-RING when playing a water sport in fast-flowing water, diving or snorkeling.
⚠	If the CART-RING or your hand is wet, thoroughly dry it before using the Ring.
⚠	If the CART-RING is wet in clean water, use a clean, soft cloth to wipe the moisture away.
⚠	If the CART-RING has been exposed to liquid that is not clean water (e.g., salted water, swimming pool water, soapy water, oil, or chemicals such as perfume, sunblock, hand sanitizer or cosmetics), rinse it with clean water and then use a clean, soft cloth to wipe and thoroughly dry it before use. If you use it without drying it, the performance or the exterior may become affected.
⚠	Be careful and ensure that the CART-RING is not dropped or impacted. The waterproof or dustproof performance may be affected.
⚠	The CART-RING cannot be dismantled. Do not dismantle it. The water/dust-proof (ingress protection) performance may be affected.
⚠	Do not expose the CART-RING to extreme air or water temperature fluctuations.
⚠	Do not dry the CART-RING using a heat generating device, such as a hair dryer.
⚠	Do not wear the CART-RING in a sauna or steam bath. The waterproof performance may be affected.
⚠	The CART-RING was tested under controlled environmental conditions (IEC60529) and has an ingress protection rating of IP58. For the ingress protection to work properly, follow the instructions specified above. Failure to follow the instructions above may damage the product.

2.7. Cyber security

- Bluetooth 5.0 LE (Low Energy) communication of CART-RING uses AES-256 encryption algorithm to safely protect user's sensitive information.
- Firmware update of CART-RING can only be done with CART BP APP to block unauthorized access. After logging in to CART BP APP, update the firmware of CART-RING.
- CART-RING can be used only when the authenticity of the device is verified for security. Complete device activation using CART BP APP.
- Security Add a passcode (personal identification number [PIN]), or Touch ID (fingerprint), or Face ID recognition (if your phone supports this) to your smartphone to add a layer of security. It is important to secure your smartphone since you will be storing personal health information. Review your smartphone for information on how to add a layer of security.
- If the user's account is not used for one year, it will be converted to a dormant account for security.
- In principle, CART-RING does not store data in the device and transmits it to CART BP APP. However, untransmitted data can be stored in the flash memory to prevent data omission in the actual use environment.

Stored data is transmitted immediately when Bluetooth communication between CART-RING and CART BP APP is connected, and the storage capacity of memory is 8 M bits.

- CART-RING is shipped with the latest version of firmware to protect against malware. If there is a firmware update, the user must log in to CART BP APP to update. To protect your device from malware, pay attention to the following:
  - Always keep CART-RING's firmware and mobile device's OS up to date.
  - Do not trust pop-up windows asking you to download software on your mobile device.
  - Use the antivirus program required by your mobile device.
- If a problem relating to cyber security for this product occurs, report it to the manufacturer and wait for the administrator to fix the problem.

If a problem relating to cyber security for this product occurs, report it to the manufacturer and wait for the administrator to fix the problem.

2.8. FCC compliance information

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.

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:

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.

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

This device complies with RF exposure requirement.

For CART-CRADLE, it should be installed and operated with minimum 20 cm between the radiator and your body.

3. Product Description

3.1. Intended Use

CART BP is a device that subjects wear for extended periods of time to noninvasively measure and display systolic and diastolic blood pressure and pulse rate.

3.2. Principles of operation

This product is a blood pressure monitoring device that collects PPG signals by wearing a ring-shaped device and transmits, stores, and analyzes the collected signals through wireless communication (Bluetooth) to display systolic and diastolic blood pressure (BP), average blood pressure, and pulse rate. The collected PPG signals are analyzed by a programmed algorithm.

Used for indirect (non-coronary) measurement of blood pressure, photoplethysmography (PPG) uses the optical properties of the skin to measure blood flow through blood vessels. The principle of photoplethysmography is that when the volume of blood vessels changes due to the heartbeat, a light source is shone on the body, and biological tissue reflects and transmits some of the light, and a light sensor detects the change in light sensitivity as the volume of blood vessels changes. Photoplethysmography consists of an LED that emits light and a photosensor that detects the emitted light and can be measured in reflection mode. The shape of the pulse wave is similar to that of the arterial blood pressure (ABP) waveform, and the changes in the waveform due to changes in blood pressure are also very similar. Therefore, the blood pressure can be estimated by tracking the changes in the shape of the pulse wave based on a convolution neural network (CNN) to estimate the change in blood pressure compared to the calibration.

3.3. Product Accuracy and Calculations

Contents			Measuring range and accuracy	
Pulse rate			40bpm~240bpm(± 2bpm) The number of pulses during the measurement period.	
Blood Pressure	BP measuring range	Systolic blood pressure	70 to 180 mmHg	
		Diastolic blood pressure	40 to 120 mmHg	
	Accuracy of BP (In case of calibration)	Systolic blood pressure	Mean difference	±5 mmHg
			Standard deviation	8 mmHg
		Diastolic blood pressure	Mean difference	±5 mmHg
			Standard deviation	8 mmHg

Blood pressure readings can vary throughout the day due to weather, emotions, and exercise.

Do not change the medication method or dosage based on the measurement results of this product. Be sure to consult your doctor.

This product is not suitable for continuously measuring a patient's blood pressure during surgery or other emergency situations.

This product corrects and measures the blood pressure based on the blood pressure value of the cuffed arm. If there is a large difference in blood pressure between the arms (more than 10 mmHg), be sure to consult a specialist.

Electrodes are applied parts. Operational temperature of the device is +10°C to +40°C. If ambient temperature exceeds +41°C, Applied Parts can exceed +41°C.

4. Product configuration

4.1. CART-RING

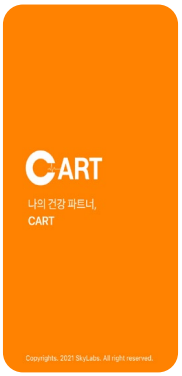
Device name	VITAL SIGNS MONITORING INSTRUMENTS
Model name	CART BP
Classification	Class IIa
Model Reference	SL-MRE1K06
	SL-MRE1K07
	SL-MRE1K08
	SL-MRE1K09
	SL-MRE1K10
	SL-MRE1K11
	SL-MRE1K12
	SL-MRE1K13

A mobile device to install the CART BP APP (mobile application) used with CART-RING is not provided by the manufacturer.

Bluetooth communication of CART-RING supports BLE 5.0 (Version) or higher. Check the Bluetooth version of the mobile device to be used in conjunction with the device.

CART-RING has 8 model references. Make sure to purchase after checking the size with the SIZING KIT provided by the manufacturer.

4.2. CART BP APP



A few more things are required to make the CART BP APP work.

- Mobile devices: ≥iPhone 7, ≥iOS 10.0, ≥Android 6.0 (& ≥BT 4.1)
- The CART BP APP is available for installation from the Apple App Store and Google Play.

The mobile device for installing the CART BP's software is not included in the components.

4.3. Accessories

1) CART-CRADLE

Model name	CART-CRADLE
Model Reference	SL-MCA1K06
	SL-MCA1K07
	SL-MCA1K08
	SL-MCA1K09
	SL-MCA1K10
	SL-MCA1K11
	SL-MCA1K12
	SL-MCA1K13

If it is not properly combined with the CART-RING, charging will not work. Please charge after checking the direction of CART-RING and CART-CRADLE.

The manufacturer does not provide a separate adapter for charging. Be sure to use an internationally certified adapter.

2) USB C-Type Cable

3) User's Manual

4.4. Sizing Kit

How to find the perfect size		
Step 1		- Video You can find the video through QR code and YouTube about "How to find the perfect size"
Step 2		- Finger Any finger except thumb and little finger.
Step 3		- Size Choose comfortable size which is too tight but not spinning.
Step 4	24 h	- Test Wear it at least 24 hours to test in avarious situations.
Step 5	6	- Confirm Confirm your size at Sizing page-www.skylabs.io
Step 6		- Delivery We will ship your CART BP right away.

The sizing kit is not included with this product. Once you have determined the size of your CART-RING, be sure to send the sizing kit back to Sky Labs Inc.

5. How to use for CART-RING

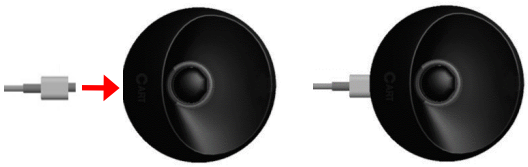
5.1. Preparation before use

1) In order to use the CART-RING safely and correctly, be sure to read this user manual before using the product.
2) CART-RING must be used in conjunction with CART BP APP (mobile application). Be sure to read the user manual of CART BP APP before use.
3) Before using the CART-RING, fully charge it using the CART-I Cradle.
4) Before wearing the CART-RING on your finger, wipe the product with a soft cloth before wearing it.

CART-RING cannot be used alone and must be used in conjunction with CART BP APP.

5.2. Charging the CART-RING

1) Connect power to the USB port of the CART-CRADLE using the USB C-Type cable.



Be sure to use a verified device that has received international certification for the charging adapter.

This product is not compatible with super-fast chargers (USB-PD) used for mobile devices or laptops. Be sure to check the type of charger before use.

Do not use a damaged cable.

Keep your child safe from CART-RING and USB cable that could choke, suffocate, or strangle.

2) Charge by fixing the CART-RING to the fixture of the CART-CRADLE.

If the LED on the CART-RING or CART-CRADLE blinks, the battery is not being charged. Check and confirm that the charging orientation is correct and charge the device.

It takes about 2 hours to fully charge the CART-RING. A fully charged Ring can be used continuously for about 48 hours.

Use an adapter with a rated voltage of 1 to 2 A. (It is best to use a mobile device charging adapter.) Otherwise, an error may occur while charging or it may take longer to fully charge the device.

The battery embedded in the CART-RING is not replaceable. The guaranteed battery life is 2 years. After 2 years of use, the battery performance becomes approximately 80%.

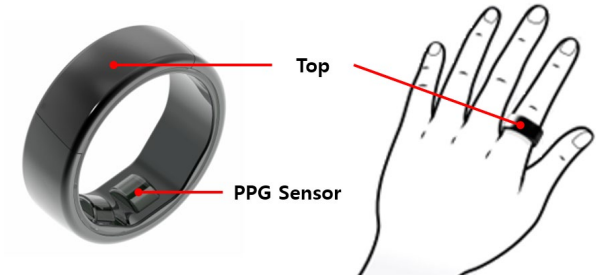
CART-RING can only be charged with CART-CRADLE. Do not use other devices to charge the CART-RING.

3) LED indicator
   - During charging, the CART-Cradle's LED lights up in red.
   - When fully charged, the LED will turn green.
   - When a charging error occurs, the LED indicator will blink red.

5.3. Wearing the CART-RING

1) Wear the CART-RING with the top placed on the back of the finger.

2) Wear the CART-RING with the sensor placed on the belly of the finger.



To choose an appropriate CART-RING size for your finger, it is recommended to use the sizing kit provided by the manufacturer. It is best to put on the Ring on a finger on the less frequently used hand, that is not the thumb or little finger. Do not wear the Ring together with other finger rings.

If you do not choose a CART-RING that fits your finger size, the accuracy of collected data cannot be guaranteed, which may result in injury or a blood-flow disorder.

If the product temperature increases during use, stop using it.

If the finger area around the CART-RING sensor turns red or skin irritation is experienced in that area, immediately remove the Ring. If the symptom persists for more than a couple of days after removing the Ring, consult a dermatologist.

3) LED indicator

- In case of malfunction, the LED of the PPG sensor of the CART-RING does not turn off and remains red.

5.4. Bluetooth (BLE) Connection

1) Connect CART-RING and Bluetooth of CART BP APP to measure.

2) For smooth communication, the distance between the CART-RING and the mobile device must be kept within 2m.

The maximum BLE communication distance between CART-RING and mobile device is 2m. For smooth use, keep the CART-RING close to your mobile device.

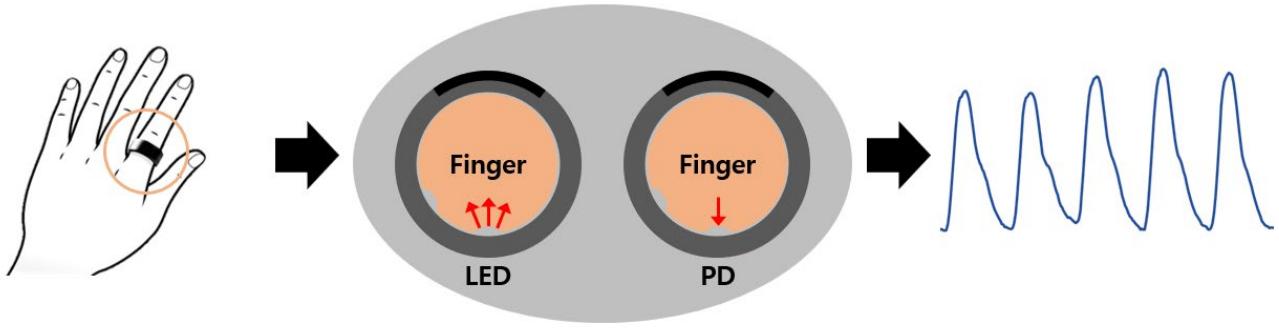
5.5. PPG Measurement

1) The PPG signal is collected using the PPG sensor of CART-RING.

2) During Self-Check, the patient collects PPG signals intermittently by manipulating the mobile application.

3) During Periodic Spot Measurement, PPG signals are automatically collected without patient intervention.

4) CART-RING collects PPG signals and can measure Pulse Rate and Blood Pressure.



PPG signals are also collected during sleep. Wear your CART-RING even when you sleep for healthcare while you sleep.

Factors affecting the accuracy are as follows. Do not use the product in the applicable environment.

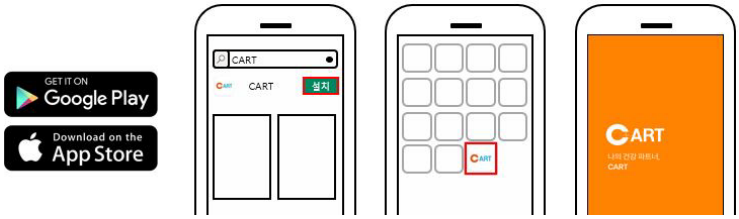
- Exposure to excessive ambient light
- Low skin perfusion (the amount of blood passing through the blood vessels is small)
- Use of blood vessel dye, such as indocyanine or methylene blue
- A permanent or temporary change to the skin, such as a tattoo
- Moving the body during measurement
- High level of difunctional hemoglobin, such as carboxy hemoglobin or methemoglobin
- High bilirubin level
- Use of the product together with a high-frequency electric device
- Connection of a blood pressure cuff or catheter to the arm on which the CART-RING is worn
- Severe hypotension, severe vasoconstriction, severe anemia, severe hypothermia, or heart attack shock
- Artery occlusion in the area where the CART-RING is put on
- Venous congestion or venous pulse

6. How to use for CART BP APP

6.1. Preparation before use

To ensure safe and correct use of the product, please read this user guide before using the product.

6.2. Install CART BP APP (Download the application)

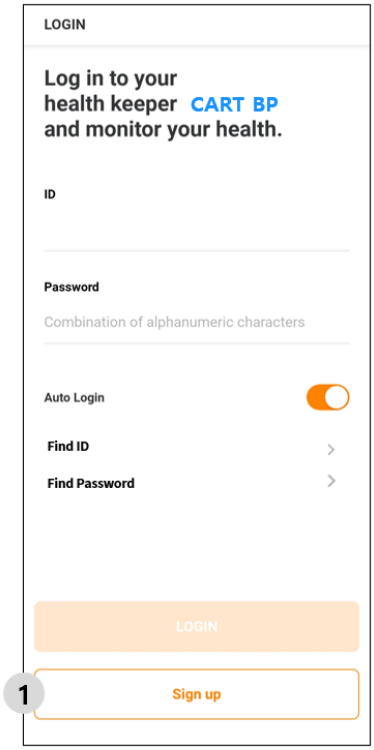


1) Download the application CART BP APP from the App Store or Google Play on your mobile.

2) Tap the icon of the installed CART BP APP and proceed to login or sign up.

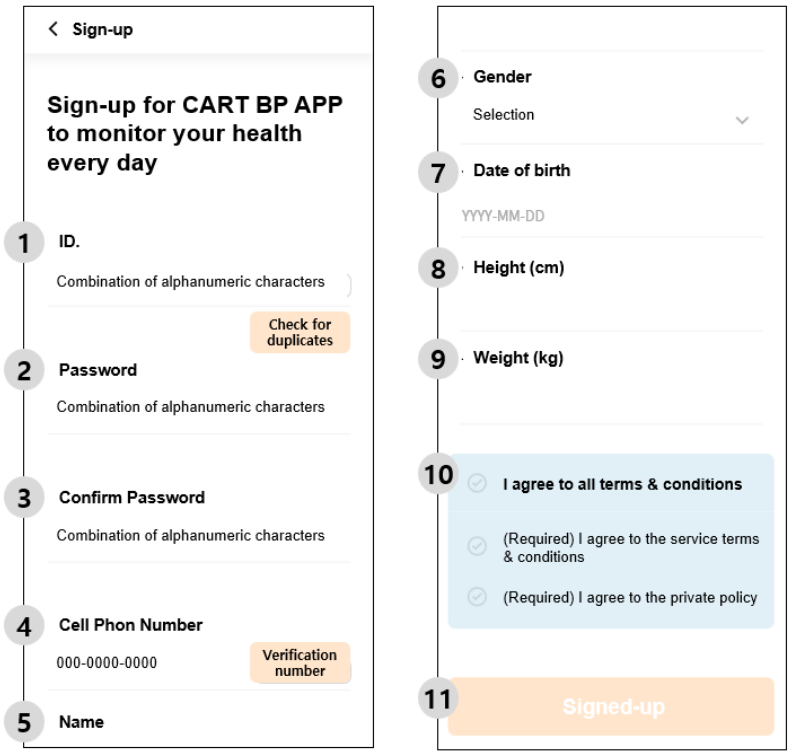
6.3. Sign up & Login

6.3.1. Sign up



No.	Name	Description.
1	Sign up	If you don't have an account, click the "Sign up" button to sign up.

6.3.2. Fill out the sign-up form



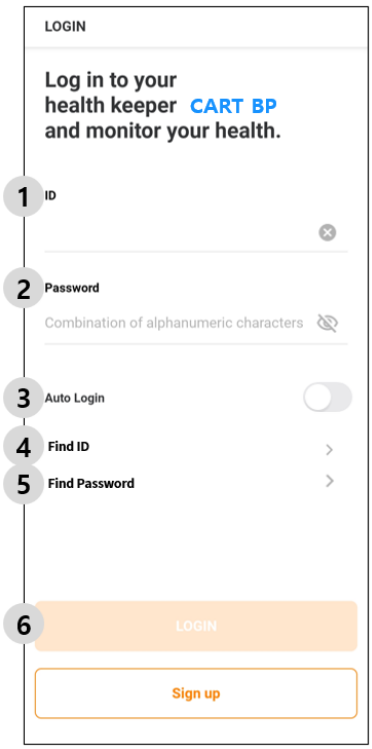
No.	Name		Description.
1	ID	ID	Tap the "ID" field, and enter your own email address to use
		Check for duplicates	Tap the "Check for duplicates" button to check for duplicate IDs
2	Password		Tap the "Password" field, and enter the password you want to use
3	Confirm password		Tap the "Confirm password" field, and re-enter the password you set
4	Cell phones Number	Cell phone number	Tap the "Mobile number" field, and enter your mobile number
		Verification number	Tap the "Get verification number" button to verify your identity using the verification number sent to your phone.
5	Name		Tap the "Name" field, and enter your name
6	Gender		Tap the "Gender" field, and select your gender
7	Date of birth		Tap the "Date of Birth" field, and select your birth date
8	Height		Tap the "Height" field and enter your height in centimeters
9	Weight		Tap the "Weight" field and enter your weight in kilograms
10	Accept Terms		Check the "Terms of Service" and "Privacy Policy" boxes in the Accept Terms layout
11	Signed up		Tap the "Sign up" button, and complete your registration

Users of this product must comply with applicable laws, including healthcare and privacy laws, in their use.

Users who have not verified their identity will not be able to sign up. Complete your identity verification with cell phone verification.

Set the password to at least 10 characters and no more than 20 characters, including "uppercase, lowercase, and numbers" for security.

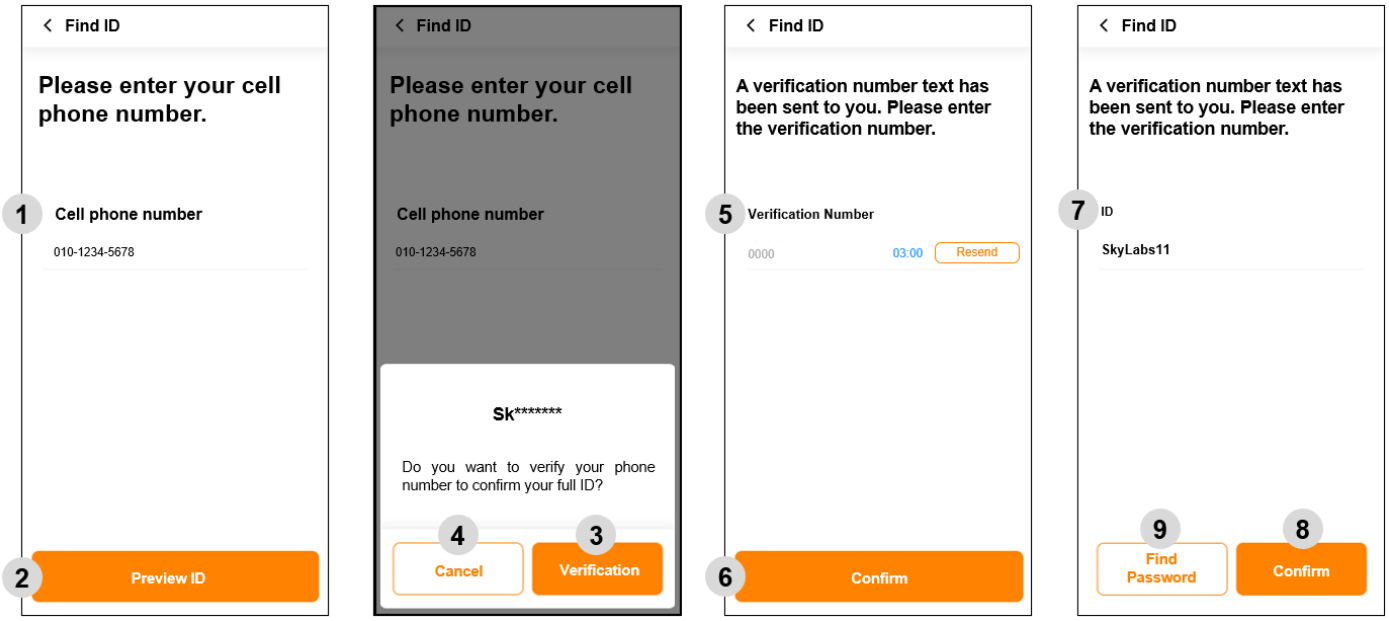
6.3.3. LOGIN



No.	Name	Description.
1	ID	Tap the "ID" field and enter the email ID of the registered user
2	Password	Tap the "Password" field, and enter the password of the subscribed user
3	Automatic login	Slide the "Auto sign in" button to the right to enable it
4	Find ID	Tap the "Find ID" button and follow the steps to check your registered ID
5	Find password	Tap the "Find password" button and follow the steps to set a new password
6	LOGIN	Tap the “LOGIN” button, and login to the application

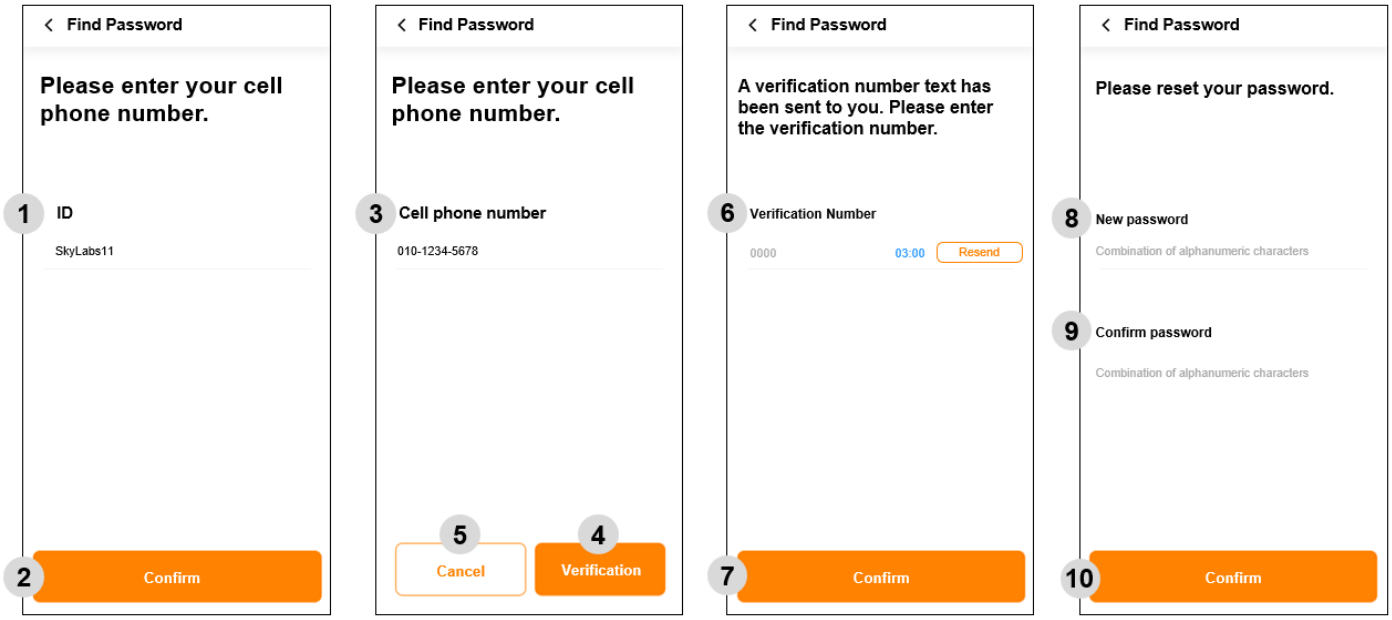
6.4. Find ID and Find Password

6.4.1. Find ID



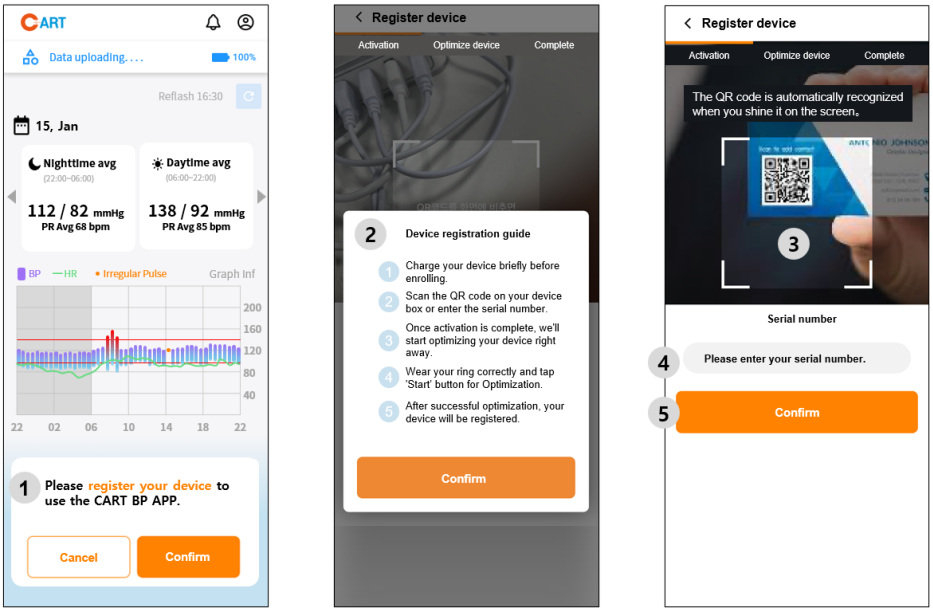
No.	Name		Description.
1	Cell phone number		Tap the "Cell phone number" field, and enter the subscribed user's cell phone number
2	Preview ID		Tap the "Preview ID" button to see some of the ID of registered users
3	Verification number		Tap the "Verification number" button to receive a verification number on your phone to verify your identity.
4	Cancel		Tap the "Cancel" button to cancel Find ID
5	Authentication	Verification number	Tap the "Verification number" field and enter the verification number sent to your phone
		Resend	If the verification number is invalid, tap the "Resend" button and receive the verification number again.
6	Confirm		Tap the "Confirm" button to complete verification
7	ID		The username of the login user appears on the screen
8	Confirm		Tap the "Confirm" button to finish finding your ID
9	Find password		Tap the "Find password" button to go to the forgot password screen

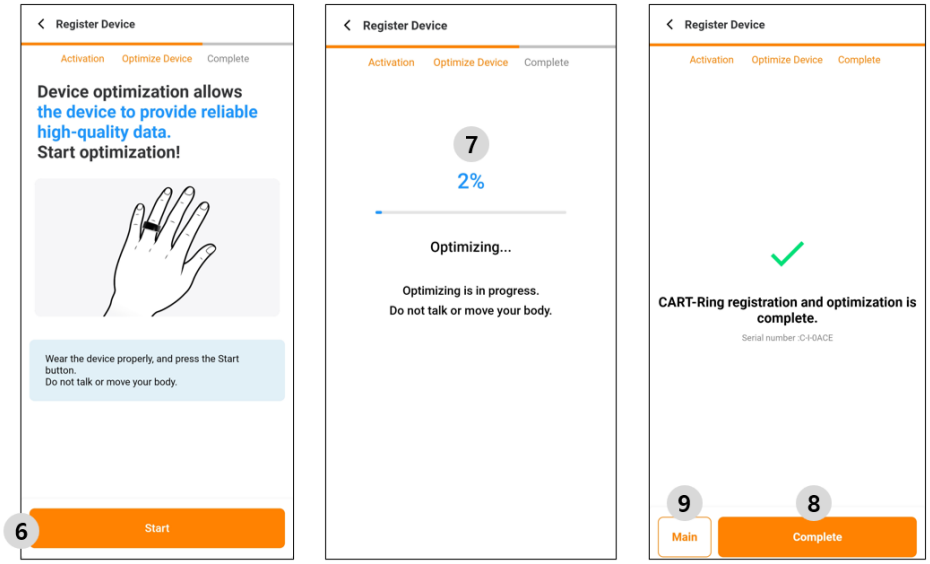
6.4.2. Find Password



No.	Name		Description.
1	ID		Tap the "ID" field and enter the username of the registered user
2	Confirm		Tap the "Confirm" button to move to the next step
3	Cell phone number		Tap the "Mobile phone number" field, and enter the subscribed user's cell phone number
4	Verification		Tap the "Verification" button to receive a verification number on your cell phone to verify your identity.
5	Cancel		Tap the "Cancel" button to cancel Find ID
6	Authentication	Verification number	Tap the "Verification number" field and enter the verification number sent to your phone
		Resend	If the verification number is invalid, tap the "Resend" button and receive the verification number again.
7	Confirm		Tap the "Confirm" button to move to the next step
8	New password		Tap the "New password" field and enter a new password
9	Confirm password		Tap the "Confirm password" field, and enter the password you set again
10	Confirm		Tap the "Confirm" button to complete the password change

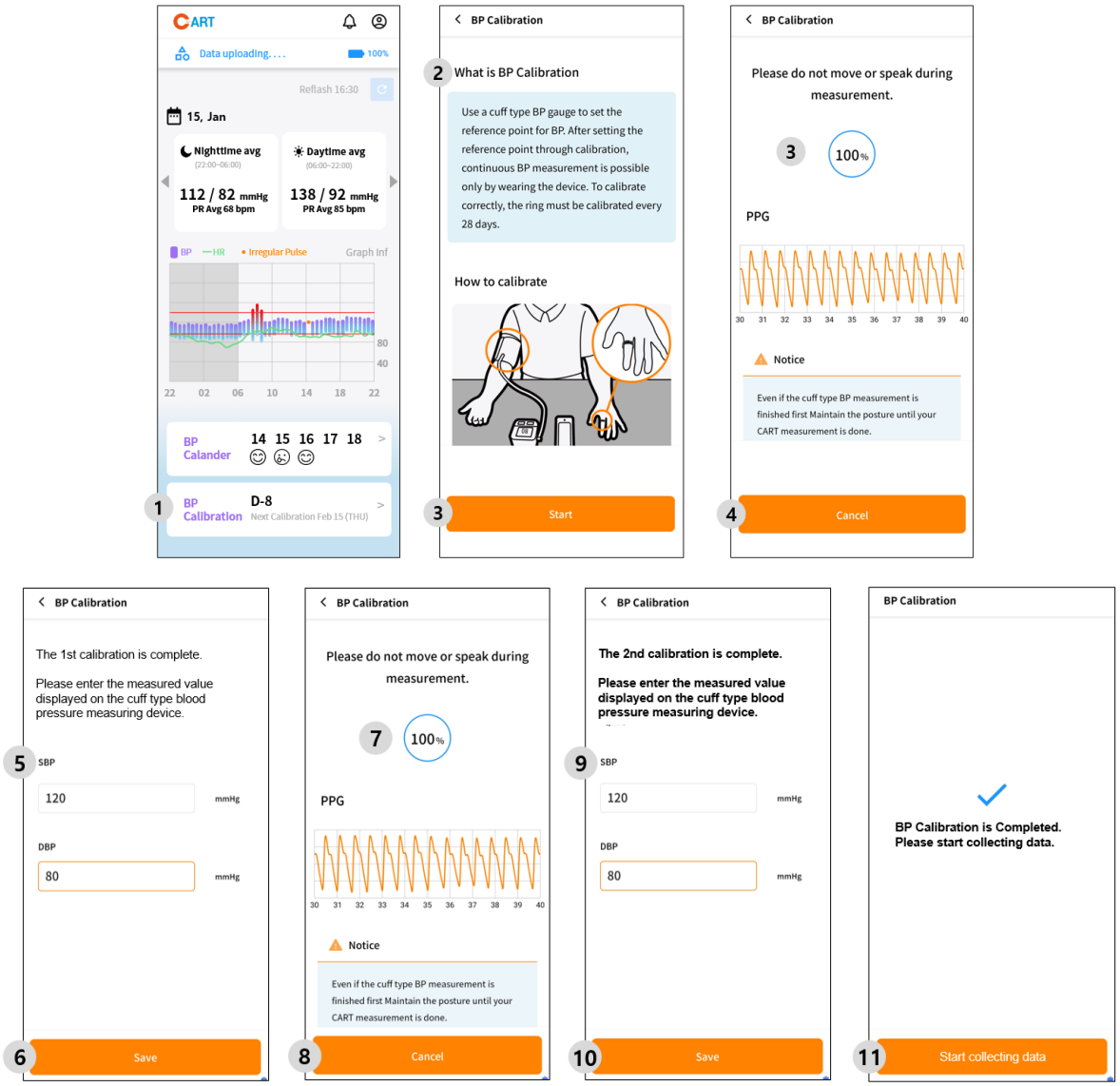
6.5. Device registration





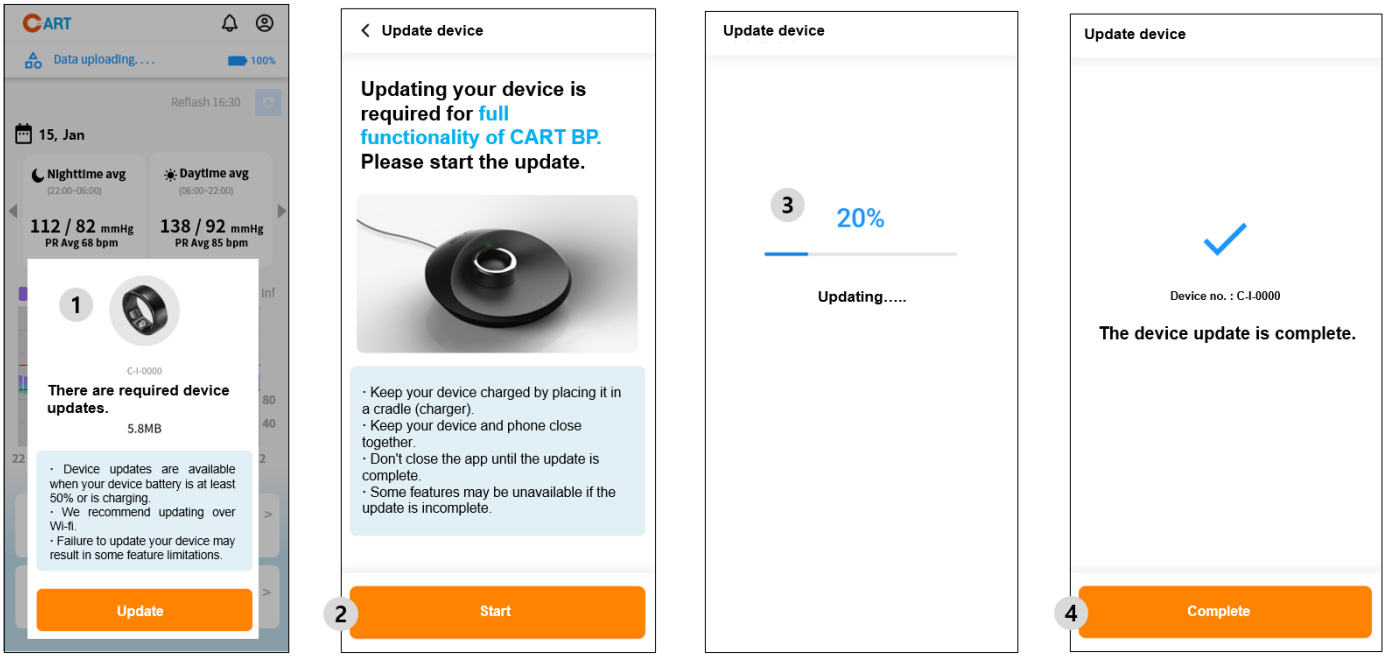
No.	Name		Description.
1	Device Activation	Confirm	Tap the "Confirm" button to move to the next step
		Cancel	Tap the "Cancel" button to unregister your device
2		Device Registration Guides	Check the device registration guide and tap the "Confirm" button to move to the next step
3		QR Code	Scan the "QR Code" to register your device
4		Serial number	Enter "serial number" to register your device
5		Confirm	Tap the "Confirm" button to move to the next step
6	Devices Optimize	Start	Tap the " Start" button to proceed with device optimization
7		Device optimization	Follow the instructions to optimize your device
8		Complete	Tap the "complete" button to complete device optimization
9		Main	Tap the "Main" button to go to the main screen after device optimization is complete

6.6. BP Calibration



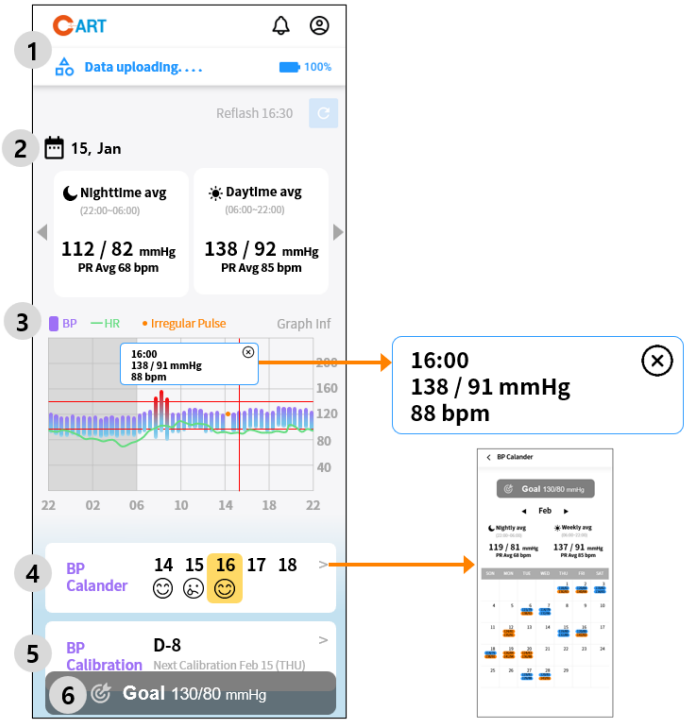
No.	Name		Description.
1	BP calibration	>	Tap the " Go " button to move to the next step
2	Blood pressure calibration guide		After reading the blood pressure calibration guide, tap the "Start" button to begin calibrating your blood pressure.
3	Primary Blood pressure calibration	Calibration screen	Check your primary blood pressure calibration progress with the Blood Pressure Calibration screen
4		Cancel	Tap the "Cancel" button to cancel blood pressure calibration
5		Enter the results	Enter the measured systolic/diastolic blood pressure values after the primary blood pressure calibration is complete.
6		Save	Tap the "Save" button to save the primary blood pressure calibration value and start the secondary calibration
7	Secondary Blood pressure calibration	Calibration screen	Check the progress of secondary blood pressure calibration with the Blood Pressure Calibration screen
8		Cancel	Tap the "Cancel" button to cancel blood pressure calibration
9		Enter the result	Enter the measured systolic/diastolic blood pressure values after the primary blood pressure calibration is complete.
10		Save	Tap the "Save" button to save the secondary blood pressure correction value
11	Started collecting data		Tap the "Start collecting data" button to collect blood pressure data

6.7. Update device



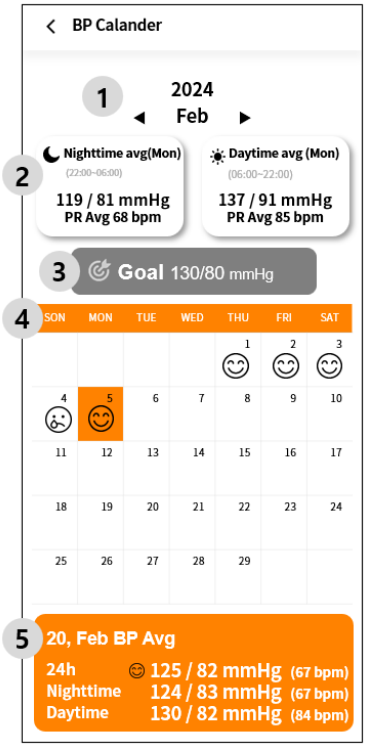
No.	Name	Description.
1	Device update popup	Tap the "Update" button and start updating your device
2	Device update guide	Check the device update guide and tap the "Start" button to proceed with the device update
3	Update device	Check progress with the Device update screen
4	Done	Tap the "Done" button and complete the device update

6.8. Main



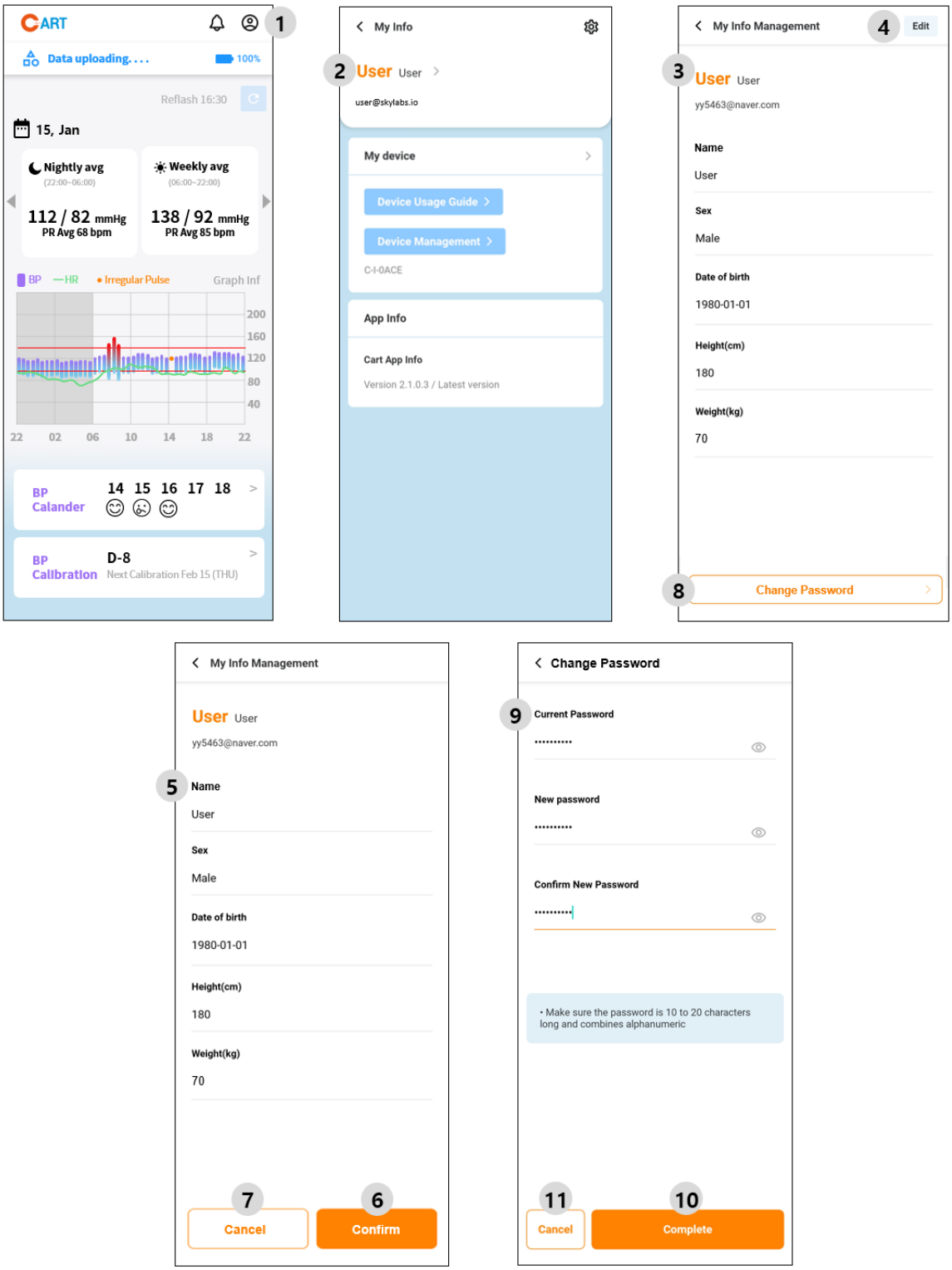
No.	Name		Description.
1	🔔		Tap the announcements icon and go to the announcements list
	👤		Tap the My Inf icon and go to the My Inf screen
	Data uploading. . . .		Data transfer status information
	100%		Battery level display
	↻		Tap the reflash icon and update the main screen information to the latest
2	Blood pressure by date	📅	Tap the calendar icon and select a date
		◀ ▶	Tap the Move button and move the date
		Nighttime average (22:00~06:00)	Show nighttime averages for selected days or time periods. (Average of systolic/diastolic blood pressure and pulse rate)
		Daytime Average (06:00~22:00)	Show daytime averages for selected days or time periods. (Average of systolic/diastolic blood pressure and pulse rate)
3	Statistical charts	BP	Chart blood pressure information for selected days or time periods
		— HR	Chart pulse rate information for a selected date or time period
		• Irregular Pulse	Chart irregular pulse wave information that occurred on a selected date or time period
4	Blood pressure calendar	😊	Show if blood pressure statistics for the day are in the normal range
		☹	Shows if the day's blood pressure statistics are outside the normal range
		>	Tap the Go button and go to the Blood Pressure Calendar screen
5	Blood pressure	Blood pressure calibration	Tap the Go button and go to the Blood Pressure Calibration screen
		>	Chart blood pressure information for selected days or time periods
6	Target blood pressure		Shows the target blood pressure set by the user

6.9. Blood Pressure Calendar



No.	Name		Description.
1	Select a date	Date	Tap Date and select the date you want to check as the year/month
		◀ ▶	Tap the Move button and move the date
2	Blood pressure by date	Nighttime average (22:00~06:00)	Show nighttime averages for the selected month (Average of systolic/diastolic blood pressure and pulse rate)
		Daytime Average (06:00~22:00)	Show daytime averages for the selected month (Average of systolic/diastolic blood pressure and pulse rate)
3	Target blood pressure		Shows the target blood pressure set by the user
4	Blood pressure calendar	☺	Blood pressure calendar shows if the day's blood pressure statistics are in the normal range
		☹	Blood pressure calendar shows if the day's blood pressure statistics are out of normal range
5	Daily blood pressure		Display blood pressure information for the selected day in the blood pressure calendar as day/night (Average of systolic/diastolic blood pressure and pulse rate)

6.10. My Information



No.	Name		Description.
1			Tap the My Inf icon and go to the My Inf screen
2	My Inf	Username	Display the names of signed-in users
		>	Tap the Go button and go to the My Inf management screen
3	User information		Show details of signed up users
4	User information	Edit	Tap the "Edit" button and edit the subscription information for your use

5	Modify	Modify	Tap each subscription and edit the user's subscription information
6		Conform	Tap the "Done" button and finish editing your membership information
7		Cancel	Tap the "Cancel" button and cancel editing your membership information
8	Change Password	Change Password	Tap the "Change password" button and edit your password
9		Current passwords	Tap the "Current password" field and enter your current password
		New password	Tap the "New password" field and enter the password you want to change
		Confirm your new password	Tap the "Confirm new password" field and re-enter the password you want to change
10		Conform	Tap the "Done" button and complete the password change
11		Cancel	Tap the "Cancel" button and cancel the password change

7. Performance Characteristics

7.1. Product Specifications

Device	Specifications		
CART-RING	Rated power		Internal power supply, lithium-polymer battery, 3.7 Vd.c.
	Radio frequency (RF)		(RX) Non-contact charging frequency: 205 kHz Frequency during operation: 2402-2480 MHz
	Ingress protection (IP) rating		IP58
	RF test temperature		-20℃ to 50℃
	Operation mode		Continuous mode
	Protection against electric shock		Internally powered equipment, BF applied part
	RF spec.		Bluetooth Low Energy (BLE), BT 5.0, distance: <2m
	PPG LED Specification	Red	660nm (IF=10mA), Optical power: Max 0.35mW
		IR	940nm (IF=10 mA), Optical power: Max 0.35mW
		Green	525nm (IF=10 mA), Optical power: Max 1.00mW
CART-CRADLE	Rated power		5 Vd.c.
	Power consumption		50 mW to 1 W
	Charging method		(TX) wireless charging / magnetic induction type / using a USB cable
	Radio frequency (RF)		(TX) non-contact charging frequency: 205 kHz (TX) operating frequency: 175.3 kHz

7.2. IT-Network

1) Privacy Policy

   Sky Labs is committed to your peace of mind—in our products and services and in how we treat your data. We comply with all laws where applicable to our handling of data, including GDPR (General Data Protection Regulation). We are committed to using your data only for the purpose of improving your health and life.

   Our privacy policy can be found at the link below.

   Privacy Policy: https://skylabs.io/privacy-policy/, https://skylabs.io/privacy-policy/cart-web/

   Terms of Service: https://skylabs.io/terms-of-service/

2) CART-RING works with mobile devices using Bluetooth 5.0 LE (Low Energy) communication.
3) CART-RING uses AES-256 encryption algorithm to safely protect user's sensitive information.
4) Firmware update of CART-RING can only be done with CART BP APP to block unauthorized access. After logging in to CART BP APP, update the firmware of CART-RING.
5) CART-RING can be used only when the authenticity of the device is verified for security. Complete device activation using CART BP APP.
6) Security Add a passcode (personal identification number [PIN]), or Touch ID (fingerprint), or Face ID recognition (if your phone supports this) to your smartphone to add a layer of security. It is important to secure your smartphone since you will be storing personal health information. Review your smartphone for information on how to add a layer of security.

7) In principle, CART-RING does not store data in the device and transmits it to CART BP APP. However, untransmitted data can be stored in the flash memory to prevent data omission in the actual use environment. Stored data is transmitted immediately when Bluetooth communication between CART-RING and CART BP APP is connected, and the storage capacity of memory is 8 M bits.

8. Operating and Storage conditions

Operating and charging temperature	5℃ to 40℃
Operating and charging humidity	10%-95%
Storage and transport temperature	-25℃ to 70℃
Storage and transport humidity	10%-95%
Operating, storage and transport atmospheric pressure	700 to 1060 hPa

⚠ When storing an opened product, do not store in extremely hot, cold, humid, wet or bright conditions.

⚠ Before using a product that has been stored for a long time, expose it to room temperature(About 20℃) for at least 1 hour before using it.

9. Disposal

This product is compliant with Directive 2012/19/ EU. Please dispose used electrical and electronic equipment (WEEE) according to national laws and regulations with electrical waste. It should not be mixed with general household waste.

10. Warranty and Limited Warranty

8.1. Manufacturer's Limited Warranty

Sky Labs warrants to you that the Product will substantially conform to its published specifications and will be free from defects in material and workmanship under normal use, for a period of one (1) year from the date of shipment or the period required by applicable consumer regulations in the country of purchase, whichever is greater.

10.2. 30-day return policy

Customers are covered by our 30-day return policy, which allows you to request a return within 30 days of receiving the item. To return an item, it must be in the same condition as when you received it, unworn or unused, and in its original packaging with tags attached. You'll also need a receipt or proof of purchase.

If you return a Product to Sky Labs in accordance with this Returns Policy, Sky Labs will refund the full purchase price and applicable taxes paid for the Product, minus shipping and handling charges, to the account used to make the original purchase. You are responsible for and must prepay all return shipping charges and assume all risk of loss or damage to the Product while in transit to Sky Labs.

To initiate a return, contact happycustomer@skylabs.io. Once your return is accepted, we'll provide you with a return shipping label and instructions on how and where to send the package. Items sent back to us without first requesting a return will not be accepted for return.

After we receive and inspect your return, we'll let you know whether or not we've authorized a refund. If your refund is approved, then you'll be automatically refunded to your original payment method. Remember that it can take some time for your bank or credit card company to process and post your refund.

If you have any questions about refunds, please feel free to contact happycustomer@skylabs.io.

10.3. Damage and Issues

Please inspect your order upon receipt and if you receive defective, damaged, or incorrect merchandise, please contact us immediately so we can assess and rectify the issue.

10.4. Exceptions/non-returnable items

This limited warranty is void if

- You have used the Product in a manner inconsistent with the intended purpose or design of the Product as described in the documentation published by Sky Labs for the Product.
- Your product has changed in any way.
- You use or maintain the Product in a manner inconsistent with Sky Labs' instructions or warnings included with the Product.
- The product has been subjected to other misuse, abuse, neglect, accident, or external forces.

10.5. Exchange

If a Product is found to be defective during the warranty period, Sky Labs will replace the Product with the same or equivalent Product you purchased. The replacement Product will be warranted for the remaining warranty period of the original Product or 30 days from the date of replacement, whichever is longer. Sky Labs reserves the right to replace discontinued Products with new Products of equivalent value and functionality.

11. Storage and maintenance

11.1. Storage

1) Keep the CART-RING, CART-CRADLE, and USB CABLE separate from each other if the product will not be used for an extended period of time.
2) Fully charge it once every three months to protect the battery if you don't use it for an extended period of time.

11.2. Maintenance

1) The product must not be repaired by any means other than the maintenance listed in this chapter.
2) It is important to keep the electrodes clean by spraying with an alcohol-based disinfectant and wiping with a soft cloth as needed.
3) External visual inspection, inspect the electrodes for warping, surface damage, or corrosion.
4) Check for other forms of corruption.

⚠ Use a clean, lint-free cloth.

⚠ Don't use abrasive cleaners or materials.

⚠ Do not immerse device in water or expose it to excessive liquid.

11.3. Cleaning and disinfection

1) If the product needs to be cleaned and disinfected, clean and disinfect the exterior of the CART-RING by rubbing it with a soft cloth moderately moistened with ethyl alcohol or isopropyl alcohol (70-90%) for at least 1 minute.
2) Carefully clean and sanitize angled areas of the CART-RING, such as around the PPG sensor cap.
3) After cleaning and disinfecting, allow to dry until completely dry before using.
4) Clean the surface of your CART-RING with a soft cloth at least once a day before use.

12. Electromagnetic Compatibility

12.1. Guidelines and manufacturer's declaration – Electromagnetic emission

This product is intended to be used in specified electromagnetic conditions, as detailed below. The user must use this product in an environment that meets the following conditions.

Emission testing	Compatibility	Electromagnetic environment – Guidelines
RF emission CISPR 11	Group 1	This product uses RF energy for its internal features only. It has very low RF emissions and does not interfere with ambient electronic equipment.
RF emission CISPR 11	Class B	This product is suitable for use in any facility, including facilities connected to a low-voltage power supply network which supplies power to household facilities or household buildings.
Harmonics emission IEC 61000-3-2	A	
Voltage fluctuation IEC 61000-3-3	Complies	

12.2. Guidelines and manufacturer's declaration – Electromagnetic susceptibility

This product is intended to be used in specified electromagnetic conditions, as detailed below. The user must use this product in an environment that meets the following conditions.

Susceptibility testing	IEC 60601 Test level	Compatibility level	Electromagnetic environment – Guidelines
Electrostatic discharge (ESD) IEC 61000-4-2	±8kV Contact ±2kV, ±4kV, ±8kV, ±15kV air	±8kV contact ±15kV air	Make sure the floor is made of wood, concrete or ceramic tiles. If the floor is made of composite material, make sure the relative humidity is at least 30%.
Electrical fast transient/burst IEC61000-4-4	±2kV 100kHz repetition frequency	±2kV 100kHz repetition frequency	The main power's quality must be similar to a typical commercial or hospital environment.
Surge Line-to-line IEC 61000-4-5	±0.5kV, ±1kV	±1kV	The main power's quality must be similar to a typical commercial or hospital environment.
Surge Line-to-ground IEC 61000-4-5	±0.5kV, ±1kV, ±2kV	±2kV	
Voltage dips IEC 61000-4-11	0 % UT; 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°	0 % UT; 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°	The main power's quality must be similar to a typical commercial or hospital environment. If the product should be used continuously even during a power failure, it is recommended to use an uninterrupted power supply, such as a battery.
Voltage interruptions IEC 61000-4-11	0 % UT; 1 cycle and 70 % UT; 25/30 cycles Single phase: at 0°	0 % UT; 1 cycle and 70 % UT; 25/30 cycles Single phase: at 0°	
Magnetic field IEC 61000-4-8	30A/m	30A/m	The power-frequency magnetic field must have the general position level characteristics of the typical commercial or hospital environment.
Conducted RF IEC 61000-4-6	3V 0.15 MHz – 80MHz 6V in ISM bands between 0.15 MHz and 80MHz 80% AM at 1kHz	3V 0.15 MHz – 80MHz 6V in ISM bands Between 0.15 MHz and 80MHz 80%AM at 1 kHz	Portable or mobile RF communication equipment, including relevant cables, must not be used at a distance less than the recommended separation distance, calculated using the transmitter frequency equation, from any part of the product. $d = \left[\frac{3,5}{V_1}\right]\sqrt{P}$
Radiated RF IEC 61000-4-3	3V/m 80MHz – 2.7GHz 80% AM at 1kHz	3V/m 80MHz – 2.7GHz 80%AM at 1kHz	$d = \left[\frac{3,5}{E_1}\right]\sqrt{P}$ 80 MHz to 800 MHz $d = \left[\frac{7}{E_1}\right]\sqrt{P}$ 800 MHz to 2.7 GHz

			where P is the transmitter's maximum power rating (W), which depends on the transmitter manufacturer, and d is the recommended separation distance (M). The fixed RF transmitter's field strength, decided from a survey by the relevant electromagnetic compatibility website, must be smaller than the compatibility level for each frequency range. Interference may occur in areas around equipment that is marked with the following symbol:

13. Troubleshooting

Error	Cause	Measures to take
CART-RING does not work.	Product non-operation due to shipping mode	The product is shipped in shipping mode. Please charge using CART-CRADLE. When charging starts, shipping mode is released. If the problem is not resolved, contact the manufacturer.
The PPG sensor LED on the CART-RING does not turn off and remains red.	Device defect of CART-RING	Please recharge after leaving the CART-RING for 3 days. If the problem is not resolved, contact the manufacturer.
The LED indicator of the CART-CRADLE blinks in red.	Poor charging of CART-RING	Fixing the CART-RING to the CART-CRADLE correctly as in Section 5.2. If the problem is not resolved, contact the manufacturer.
Authentication of CART-RING does not work.	The product is not genuine from the manufacturer	If you have purchased a counterfeit product, immediately contact the place of purchase or the manufacturer.
Bluetooth connection between CART-RING and CART BP APP is not possible.	When the Bluetooth communication distance between devices is more than 2m	Keep the distance between the CART-RING and the mobile device within 2m. If the problem is not resolved, contact the manufacturer.
CART-RING's firmware cannot be updated.		

- If any of the problems above occurs persistently, please contact Sky Labs Inc. for assistance.
- Main phone number: 1599-3402
- Customer Service Center service hours: 09:00-18:00 (lunch break: 12:00-13:00)
- Website: www.skylabs.io