User's Manual

Bluetooth Adapter

(Bluetooth adapter for a glucometer)

BA-400 Bluetooth Low Energy

Version 0.80

(Dec. 08. 2017)

H3 SYSTEM

HUMAN · HEALTH · HOME CARE COMPANY

USA-Federal Communications Commission (FCC)

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 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. If not installed and used in accordance with the instructions, it 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 tuning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the distance between the equipment and the receiver.
- Connect the equipment to outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

Caution: Exposure to Radio Frequency Radiation.

1. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter. To maintain compliance with FCC RF exposure guidelines for bodyworn operation, do not use accessories that contain metallic components.

2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

Welcome

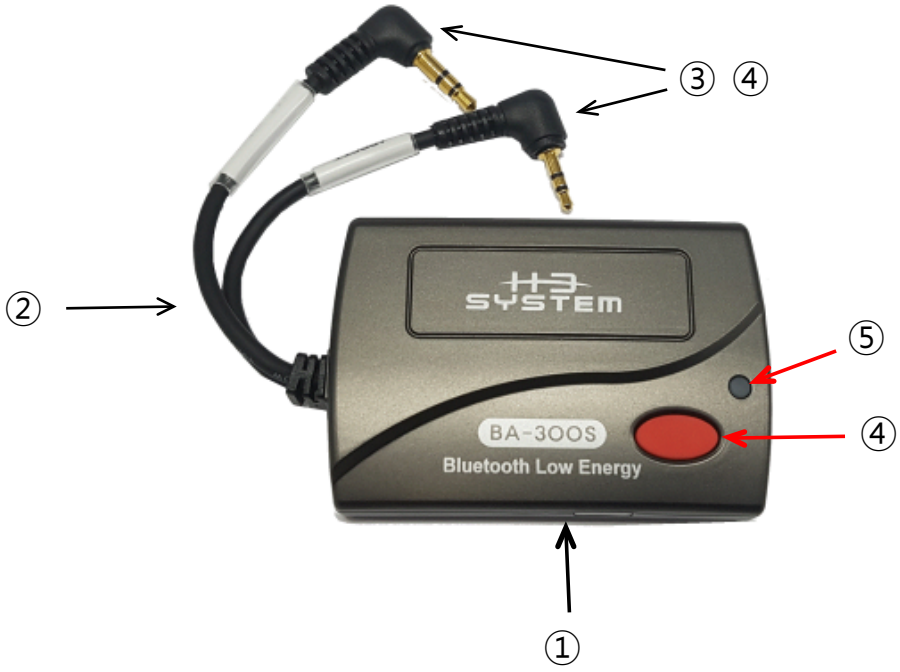
- Thank you for purchasing Bluetooth adapter (BA-400).
- The Bluetooth adapter is a data transmitter that receives readings from a glucometer and sends the readings to other devices such as a mobile phone, a gateway, etc. via Bluetooth Low Energy.
- The Bluetooth adapter can be connected to Lifescan(Johnson and Johnson), Bayer, Abbott, Roche, and Nipro's glucometers[1].

Packaging List

- Bluetooth adapter (BA-400)
- User's manual

[1] For details, please see the Specifications section.

Descriptions



① Body

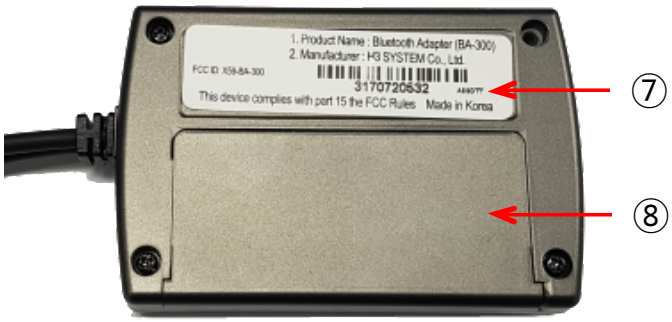
② Cable

③ Connector for J&J, Bayer, Roche and Nipro's glucometer (3.5mm)

④ Connector for Abbott's glucometer (2.5mm)

⑥ Red button: A button used for Bluetooth pairing or manual data transfer

⑧ LED: 2-color(Green and Red) LED



⑨ Label

⑩ Dry cell cover: Cover below which dry cells are put

⑪ Hidden button: A hidden button used for erasing all data including the pairing information.

How to Use

1. [Preparation]
   - Insert batteries.

     Open the cell cover to place AAA 1.5V 2 EA while checking the polarity (+,-) and then close the cover.
   - Connect the cable to a glucometer.

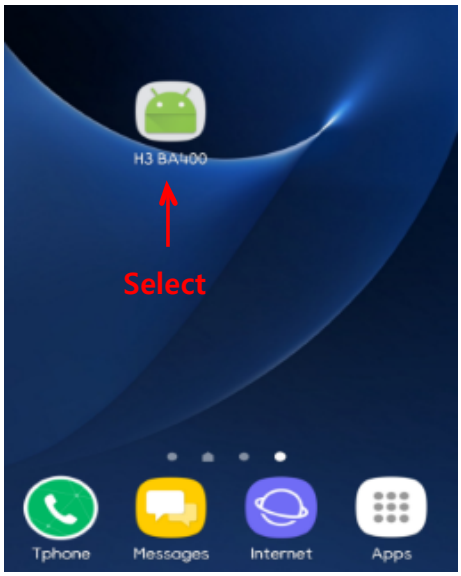
2. **[Bluetooth pairing and glucometer model configuration]**

   A. Bluetooth pairing is an authentication process between a Bluetooth adapter and a target device that readings are supposed to be sent to.
   - The following procedure should be performed to pair the Bluetooth adapter with a NEW target device.
   - If Bluetooth pairing fails, the latest pairing info is preserved. And the Bluetooth adapter can send readings to the latest paired device.
   - *If you try to pair with the latest paired device again, it's recommended to delete the pairing information on both sides. Use the Hidden button for BA400.*
   - Besides the pairing mode, the adapter will not respond to a connection request not coming from the paired device.
   - The detailed steps are as follows:
     ① Delete the current pairing information of BA-400 using the hidden button. For the other side, it's recommended to delete the pairing information about BA-400 if exists.
     ② Let BA-400 be pairing mode by pressing and holding the Red button for more than 7 seconds until the RED LED turns ON.
     ③ When the LED turns RED, the Bluetooth adapter is at pairing standby mode. The adapter will advertise with the Bluetooth name "BA400_(Model)_(BT address: the last 6 characters)." For example, "BA400_JnJ_123ABC".
     ④ Perform "Device search" on the target device and find a device named as "BA400_(Model)_(BT address)."
     ⑤ Pair the target device with the BA-400.

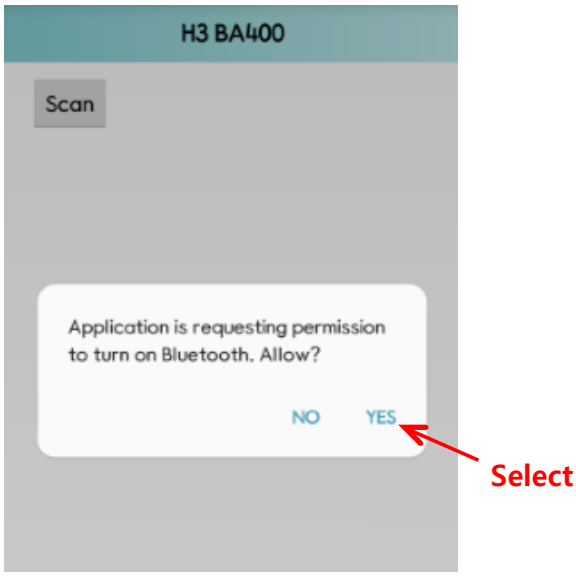
⑥ If the pairing succeeds, the Green LED blinks three(3) times. If fails, the Red LED blinks five(5) times.

Sample procedure of Bluetooth pairing BA-400 with smartphone

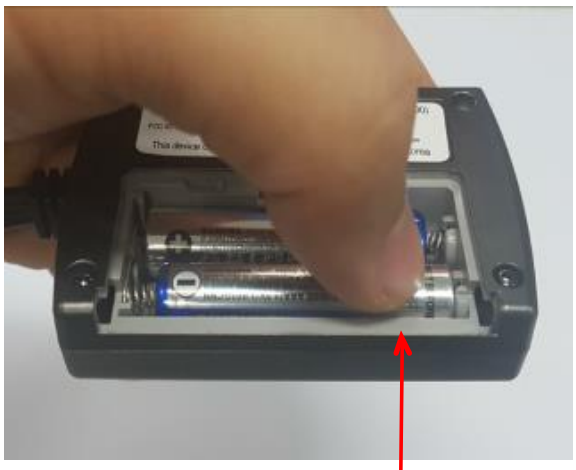
1. Download ‘BA-400’ app and run it.



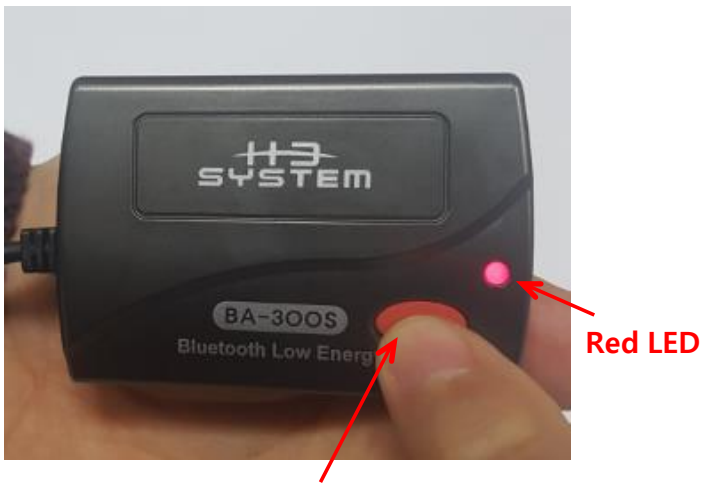
2. Select ‘YES’ to turn ON Bluetooth.



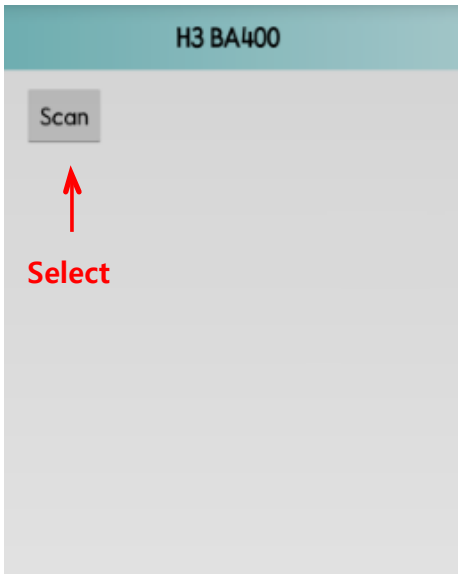
3. Please insert 2 AAA batteries into the device.



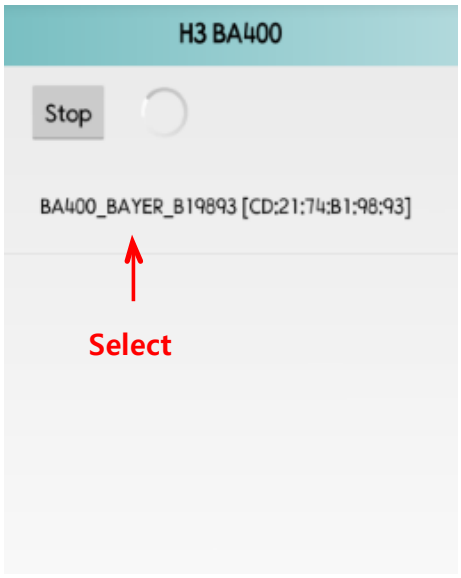
4. Press and hold the Red button until Red LED is ON.



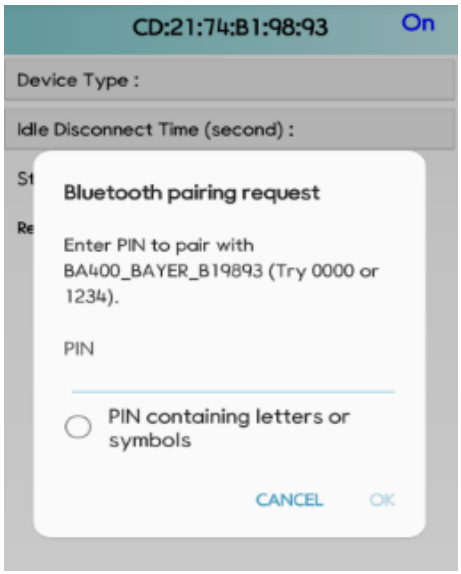
5. Press ‘Scan’ button.



6. Select the device from your smartphone.

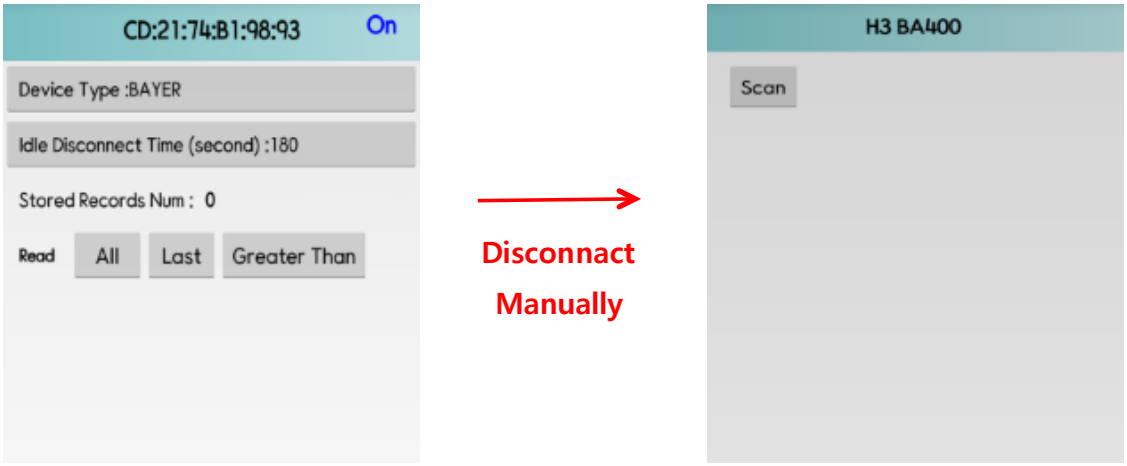


7. Insert PIN number provided by H3.



8. If the pairing is successful, GREEN LED turns ON.

9. After successful pairing, the below ‘connected’ screen will appear on your smartphone.
Please disconnect manually by using your smartphone’s back key or closing the application.

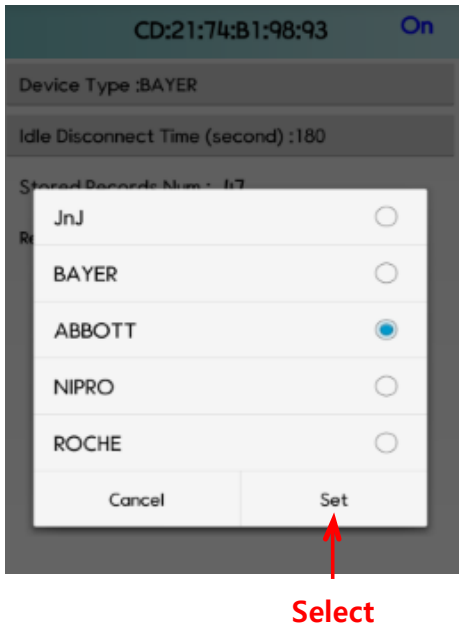


Connected **Disconnected**

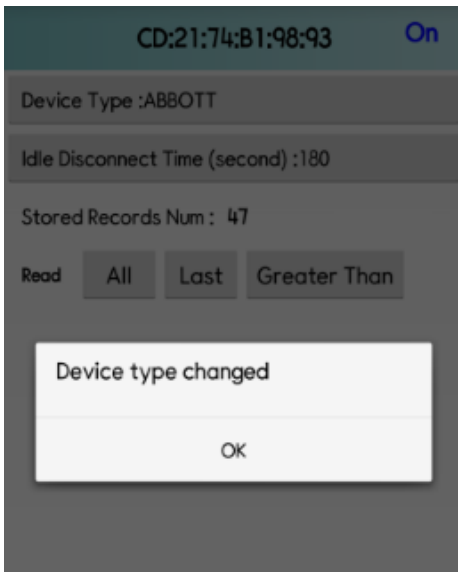
- Glucometer model configuration process is a process to specify the glucometer model to be used. This process can follow the pairing process.
- Prior to regular use, the glucometer model must be assigned to the adapter.
- While being connected, set the glucometer model with configuration tools such as H3App.
- The default glucometer is Lifescan(Johnson and Johnson)
- If a different glucometer is connected to the adapter, the readings cannot be transferred. And battery power consumption may be large.
- The sample sequence with H3App is as follows:
  ① Once connected, the device information will be shown on your smartphone application (For example: ‘Device Type: J&J’).
  ② Choose the glucometer of your choice from ‘Device Type’ and disconnect BA-400 manually by using your smartphone’s back key or closing the application.

1. Select ‘Device Type’ from your smartphone.

2. Choose the glucometer brand and select ‘set’.



3. Select ‘OK’ button.



4. The new ‘Device Type’ will appear on screen.

3. [Automatic data transfer]

- Take a reading with blood glucose meter connected to a Bluetooth adapter, BA-400.
- The adapter will wake up and start downloading readings stored in the glucometer. At the wake-up, you can see "- - -" on the glucometer display.
- The measured data is automatically transmitted to the paired target device such as a mobile phone, a gateway, etc.
- If the data transmission succeeds, the Green LED blinks three(3) times and if fails, the Red LED blinks five(5) times.
- The detailed steps are as follows:
  - ① Take a reading with the glucometer connected to the adapter.
  - ② After measurement, the adapter will wake up automatically and start downloading readings from the glucometer. At this step, you can see "- - -" on the glucometer display. And the BA-400's LED blinks GREEN.
  - ③ After completion of the download, the adapter will show green LED blink twice for success and red LED blink twice for failure.
  - ④ For success, the adapter will start advertising with the GREEN LED's blinking
  - ⑤ The pre-paired device, such as a smart phone, can connect to the adapter. (The adapter will not respond to the other device's connection request.)
  - ⑥ After connection is established, the paired device can receive glucose readings from the adapter based on the BLE glucose monitor profile. For this step, the BA-400's LED turns on and keeps GREEN.
  - ⑦ The paired device is strongly recommended to memorize the readings that it received recently so that the paired device can download only the readings newly taken and un-received.
- *For LifeScan(Johnson and Johnson)'s glucometers, it may take more than 10 seconds for the first data transmission.*
- *For OneTouch Ultra, the GREEN LED keeps blinking until the glucometer shuts off after data transfer.*

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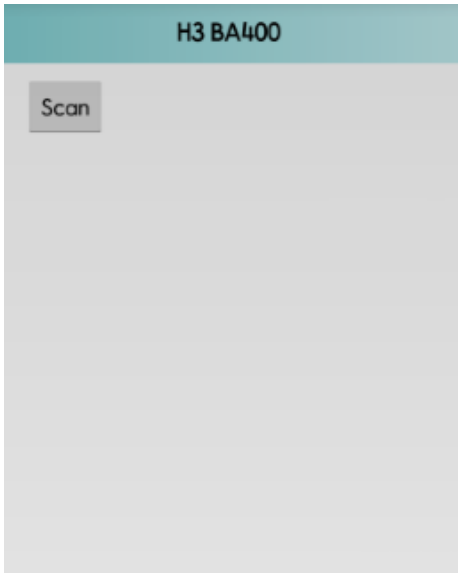
- Notes
  - Only normal readings and control solution readings will be transmitted. Erroneous readings will not be transmitted.
  - "HI" and "LO" readings will be transmitted as the highest and the lowest values, respectively. For example, 600 mg/dl and 20 mg/dl.
  - If data download from the glucometer succeeds but Bluetooth communication fails, then the downloaded readings are stored in the adapter and the readings can be transferred to the target device at the next successful Bluetooth communication.

  For some glucometers, the automatic data transfer described above is not supported. For those meters, please use manual data transfer or automatic wake-up mode described later

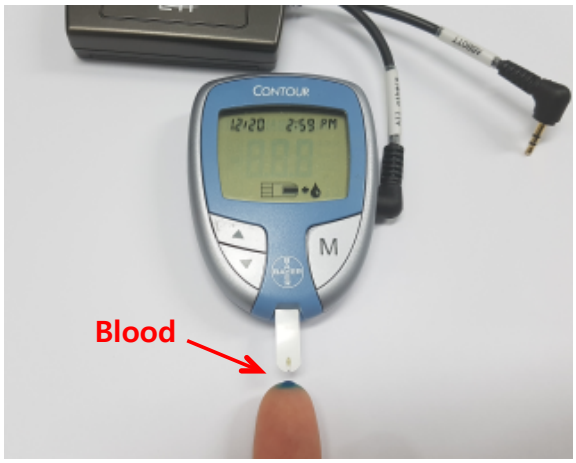
Sample procedure of automatic data transmission with BA-400 and smartphone

1. If the device is already connected, 'Disconnect'.



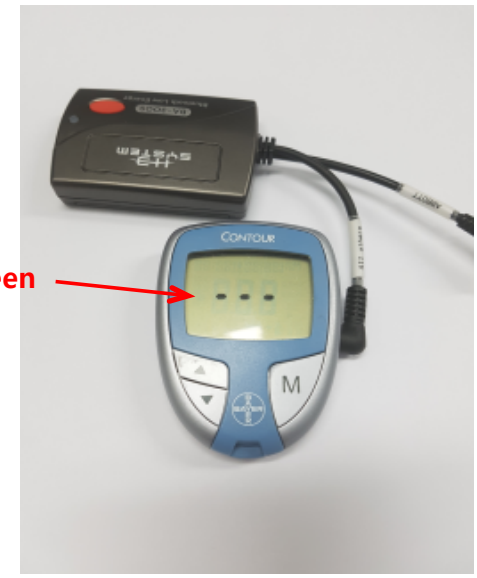
2. Connect BA-400's cable with a glucometer.

3. Take a reading with the glucometer.



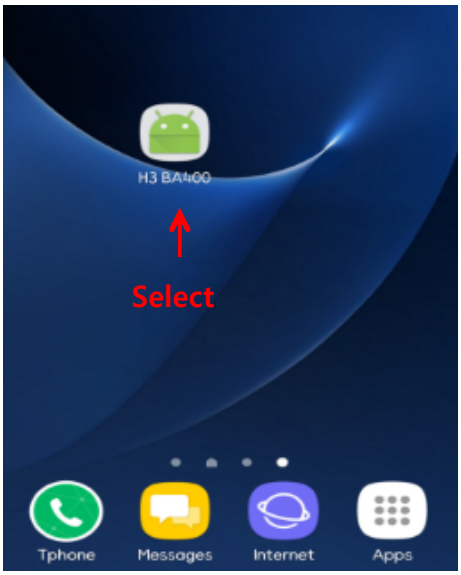
4. Remove the strip from the glucometer.

5. '- - -' will appear on your glucometer screen.

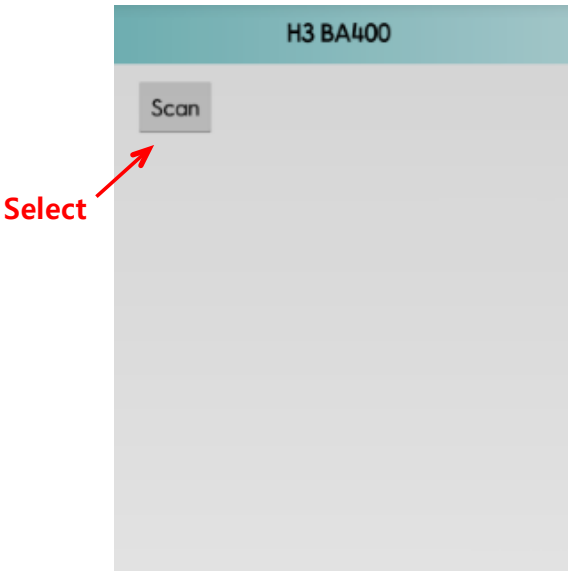


6. Wait until 'Green LED' blinks.

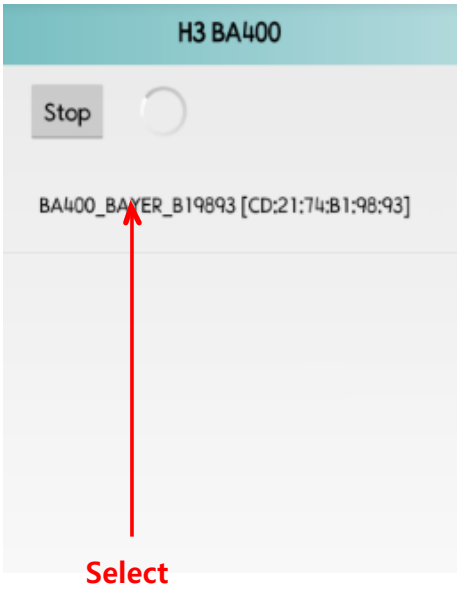
7. Open ‘BA-400’ app from your smartphone.



8. Press ‘Scan’ button



9. Select the device from your smartphone



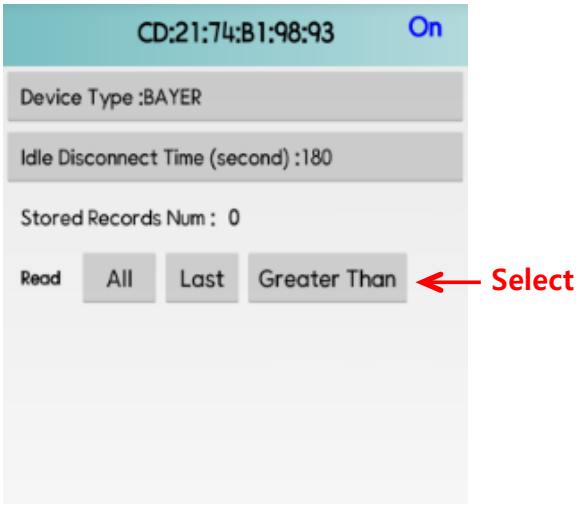
10. BA-400’s Green LED turns ON.

11. Please select one of the following options:

- **All**: Display all the readings

- **Last:** Display the last reading from smartphone.

- **Greater than:** Display the readings that are greater than the setting value.



3. [Manual data transfer]

- Press the Red button of the Bluetooth adapter while a glucometer and the adapter are being connected.
- The adapter wakes up and starts downloading data from the glucometer. At the wake-up, you can see Green LED's short flashing and "PC" on the glucometer display.
- The readings will be downloaded and the adapter connects to the target device.
- Even in the case that there is no reading in the glucometer; the adapter connects to the target device via Bluetooth.
- The others are the same as those for automatic data transfer.
- This feature can be used for troubleshooting.

5. [Automatic Wake-up Mode]

When the adapter downloads new readings from the glucometer, it tries to communicate with the target device. If it fails, it tries every 3 hours. After successful communication, it stops retry. Checking and receiving new readings are the roles of the target device.

6. [Changing the glucometer connected]

- If you want to change the glucometer with new one, disconnect the glucometer, remove batteries, press the Red button several times, wait for a while, insert batteries again, and connect the new glucometer. And try to take a reading and confirm data transmission.
- If the glucometer model is changed, you must configure the glucometer model again.
- After pairing or changing the glucometer, it is strongly recommended to do data transmission once for confirmation.

When the glucometer is changed, the entire information stored in the adapter will be initialized. For example, readings downloaded from a glucometer previously will be deleted

7. [Low battery sign and battery replacement]

- If the LED keeps blinking Red just after taking a reading or pressing the Red button, please replace the batteries with brand-new ones.

Cautions

- Be sure to carefully read the user's manual before use.
- Keep the Bluetooth adapter in a clean and dry place away from dust or corrosive gases as well as away from fires
- Do not apply any shock or vibration to the product
- Do not rub the product with inflammable such as alcohol, benzene, or acetone the can cause chemical change. Use a dry cloth to prevent the surface from being damaged.
- Do not stretch nor bend the cable by force.
- Disassembling the product is not advisable.
- Keep a Bluetooth adapter connected to a glucometer. Frequent connection and disconnection may cause damages on the connector port.
- Mis-configuration of the glucometer model may cause large battery power consumption.
- If Bluetooth communication failure continues for a long time, the oldest readings may not be transferred to the target device. The maximum storage of the adapter is 500 readings.

Troubleshooting

- If you have some troubles in data transmission, please check the below
  - Try to do "Manual data transfer" by pressing the Red button while a glucometer and the adapter are being connected.
  - Replace batteries with new ones.
  - Disconnect the glucometer, remove batteries, press the Red button several times, wait for a while, insert batteries again, and connect the glucometer again. And take a reading and confirm data transmission.
  - Configure the glucometer model again.
  - Pair again.
  - If the adapter does not work even after the above, please contact customer services.

Specifications

- Function: it automatically receives blood glucose readings from a glucometer and transmits to a pre-determined target device via Bluetooth Low Energy.
- Supported glucometer models

  ① Johnson and Johnson model: OneTouch Ultra, OneTouch Mini/Easy, and ② OneTouch Ultra2.

  ② Bayer model: Contour, Contour Next EZ, Contour XT, and Contour TS.

  ③ ③ Abbott model: Freestyle Lite, and Freestyle Freedom Lite.

  ③ Roche model: Accu-Chek Aviva Plus and Accu-Chek Performa

  ④ Nipro model: True Track, True Balance, True Result.

- Bluetooth 4.0.
- Connectivity to iPhones and Android smart phones is generally available.
- Maximum storage: 500 readings.
- Power supply: Dry cells AAA 2 EA
- Battery life: More than 1,000 tests or 3 months (For normal use)
- Size: 70 × 47 × 16 mm
- Weight (other than the batteries): 28 g

Remarks

This version instruction manual is based on the firmware version 1.0 or later.

Customer service

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Revision notes

Version	Change descriptions	Date
1.0	Initial Release	2017. 12. ??.