U-WAVEPAK-BM

User's Manual

Please read this "User's Manual" before use to ensure correct use.

After reading, be sure to keep it in a place where you can read it anytime.

Mitutoyo

Notice: Please make sure to confirm the following before installation

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Notice: U-WAVE-TCB/U-WAVE-TMB, U-WAVEPAK-BM

-This application operates on Android 7.0 or later and iOS 12.0 or later.

-This application can use the Bluetooth function that comes with the device.

　　※　When using the Bluetooth function, the Android terminal needs the access right of the location information.

-This application and U-WAVE-TCB/U-WAVE-TMB do not guarantee the connection with all Bluetooth apparatuses.

-During Bluetooth communication is always exhausted to the battery of U-WAVE-TCB/U-WAVE-TMB. Please Disconnect Bluetooth communication when not in use.

　　※　This application has been confirmed to work with Android 7.0 and iOS 12.0.

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Table of Contents

1. Installation

Download "U-WAVEPAK-BM" from the application store (Google Store, App Store) and install it.

2. Starting "U-WAVEPAK-BM"

① Tap 'U-WAVEPAK-BM' to start the application.

② Enable access to location information.

　　*According to Google's specifications, the Android OS requires permission to access location information during Bluetooth communication.

③ After checking the terms of use, please agree by clicking the consent button at the bottom of the screen.

down

Scroll
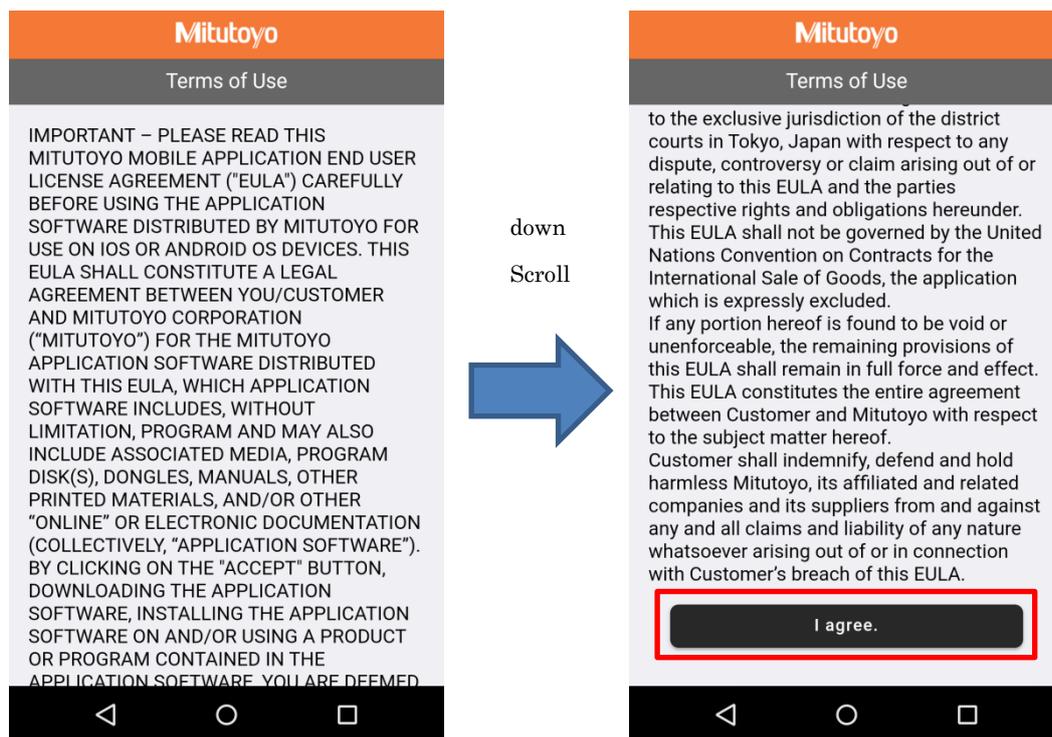
④ The activation is complete when the following screen appears.
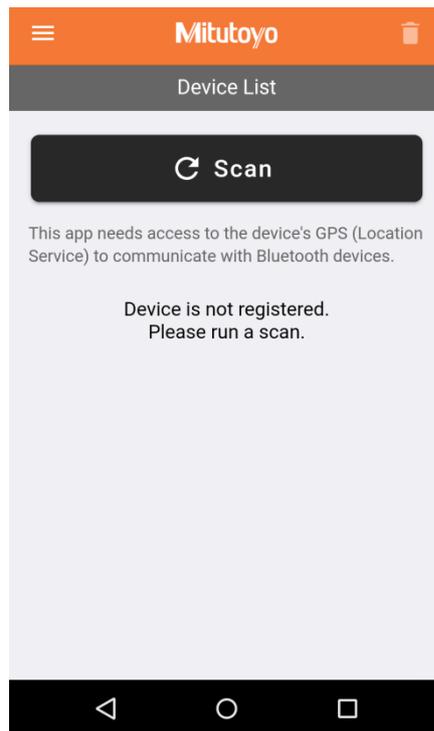
3. Screen Description

Tap the upper left of the start-up screen to select items on the display screen.
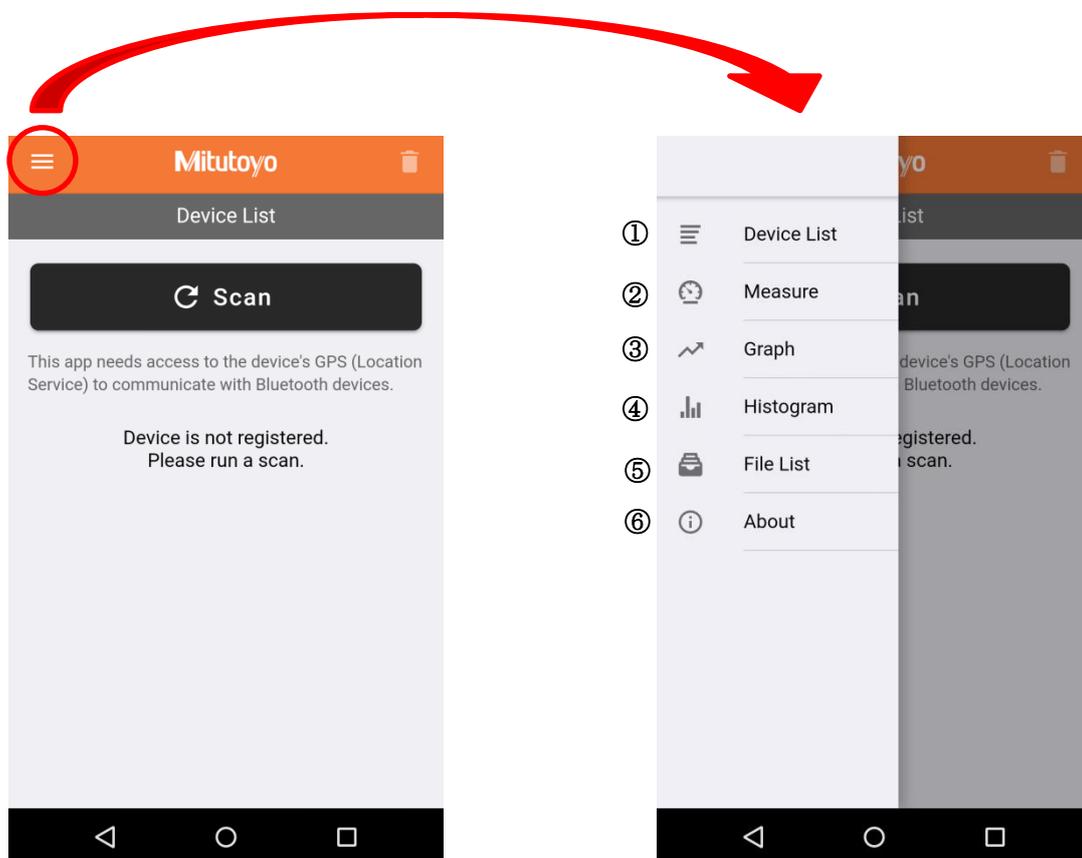
① **Device List**

You can register and delete U-WAVE-TCB/U-WAVE-TMB, confirm connection, and set devices.

② **Measure**

You can display received measurements, request data, and reset data.

③ **Graph**

The measurement data log can be displayed graphically.

④ **Histogram**

The measurement data log can be displayed as a histogram.

⑤ **File List**

You can display the measurement data log file. You can delete and share files.

⑥ **About**

You can check the version of the application and change the decimal point display.

4. How To

4.1. How to Register U-WAVE-TCB/U-WAVE-TMB

This section explains how to connect U-WAVEPAK-BM and U-WAVE-TCB/U-WAVE-TMB via Bluetooth.
You can register up to 3 of U-WAVE-TCB/U-WAVE-TMB.

① Turn on the power of the measuring instrument to which U-WAVE-TCB/U-WAVE-TMB.

② Change the display of the application to "Device List" and tap "Scan".
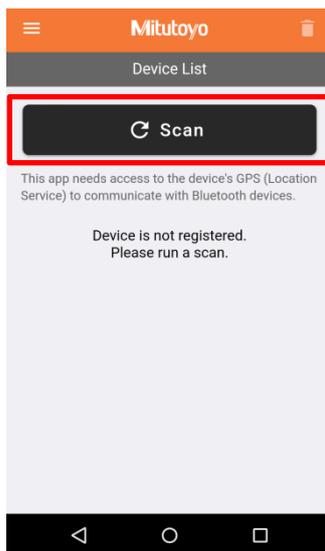
③ When the following screen appears, press the DATA button (orange) of U-WAVE-TCB/U-WAVE-TMB.
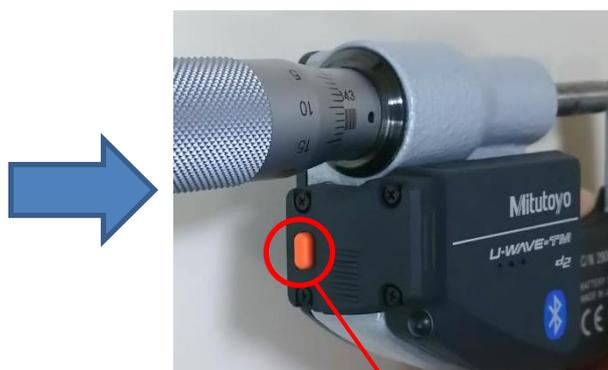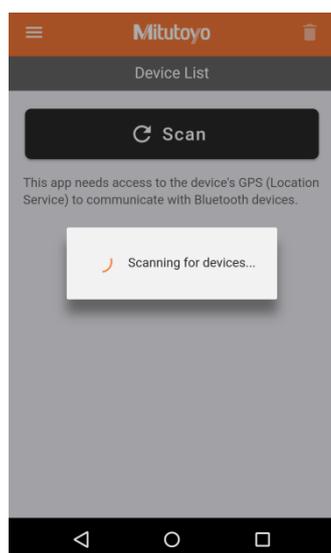
Press the button

Tips

-If you press the DATA button of U-WAVE-TCB/U-WAVE-TMB, the LED will flash orange.
-Scanning continues for 15 seconds. Shows all U-WAVEs detected during the scan.

④ Make sure the device ID is displayed on the application screen.

Tap "Save" of the device ID you want to register, and when "Connecting" is displayed, press the DATA button of U-WAVE-TCB/U-WAVE-TMB again.

Press the button
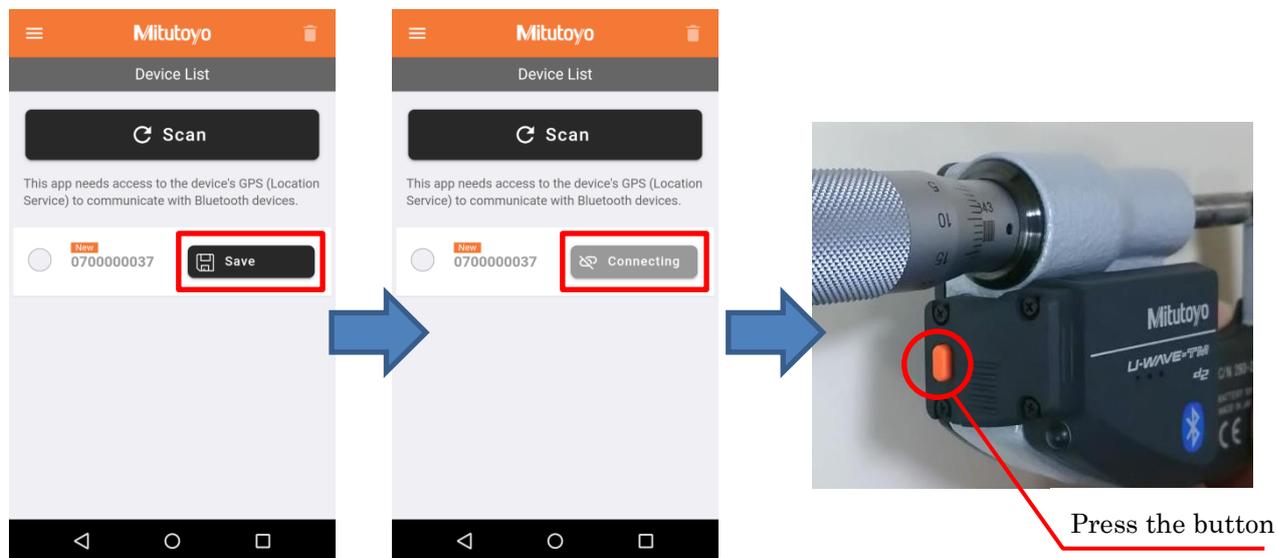
⑤ When the display of the application turns orange "Connected", the connection is completed.
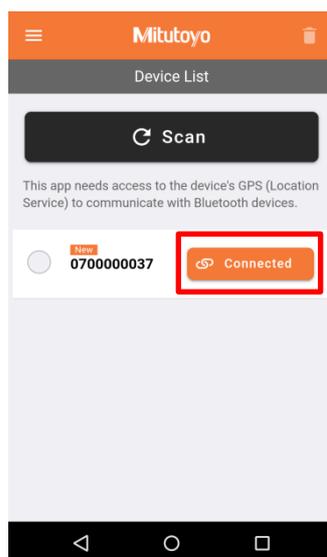
*The U-WAVE-TCB/U-WAVE-TMB LED lights green when the connection is complete. Also, the buzzer sounds when the type is buzzer.

Caution

-If you connect directly to the OS of your smartphone or tablet, the device ID does not appear in the
　application. Disconnect from the OS before registering.

-In case of iOS, the following dialog may be displayed according to the specification of Apple.
　Select "Return" to use the application. If you select "pairing", please deregister the device from the
　OS setting screen and register again with the application.

Bluetooth Pairing Request
"0700000037" would like to pair with
your iPhone.

Cancel　　　　Pair
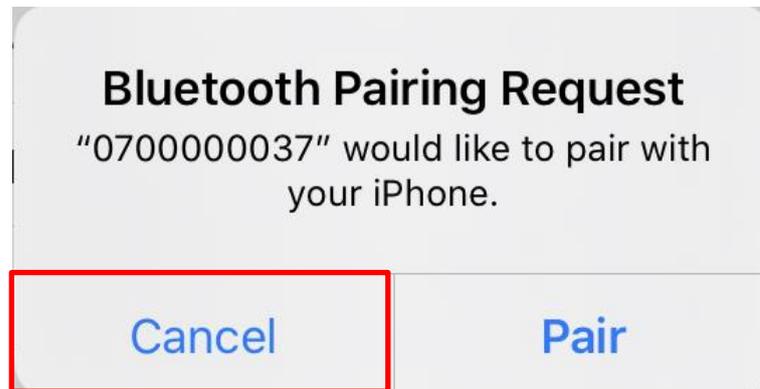
<u>4.2. Measurement data acquisition method</u>
This section explains how to send and view measurement data.
Please check the tips for changing the decimal point display.

① Method for transmitting measurement data
When the DATA button (orange) is pressed, the U-WAVE-TCB/U-WAVE-TMB transmits the measured value displayed on the measuring instrument.

If the transmission is successful, the LED flashes green. The buzzer sounds twice for the buzzer type.
If transmission fails, the LED flashes red. The buzzer sounds once for the buzzer type.

② Reading method of measurement data
The measurement data sent from U-WAVE-TCB/U-WAVE-TMB can be viewed on the "Measure" screen.
Tap the upper left of the application screen and tap "Measure".
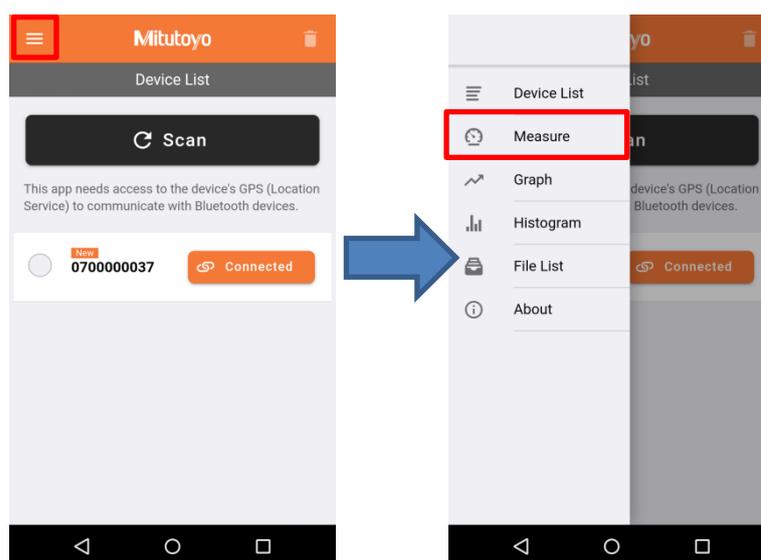
The measurement data is displayed on the following screen and is displayed when the measurement data is received.
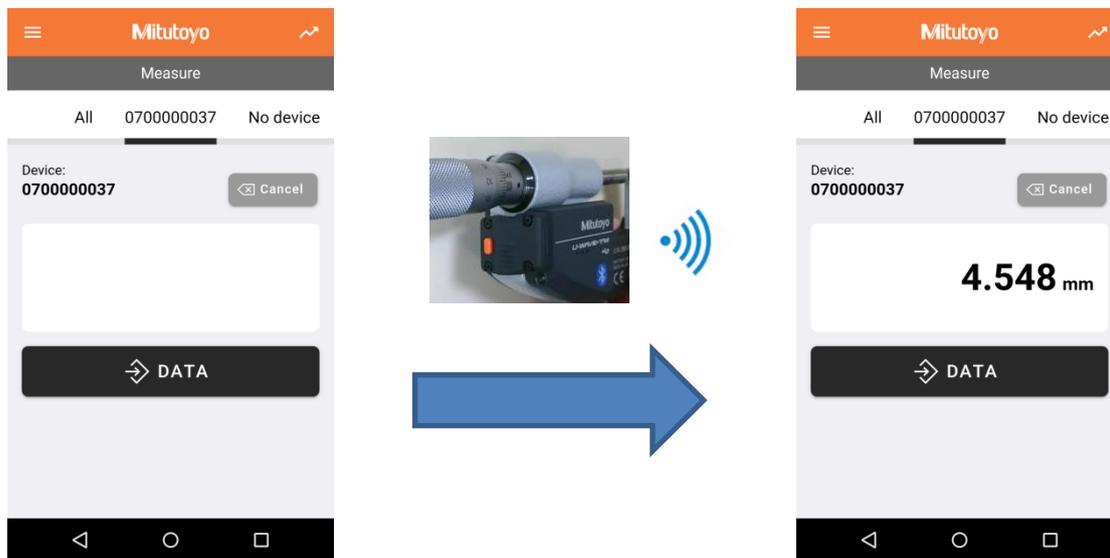
When multiple U-WAVE-TCB/U-WAVE-TMB are connected to the app, you can check the measurement values of all devices on the "All" screen. If no device is registered, "No connected device" is displayed.

Registration Device 1

Registration Device 2

Registration Device 3
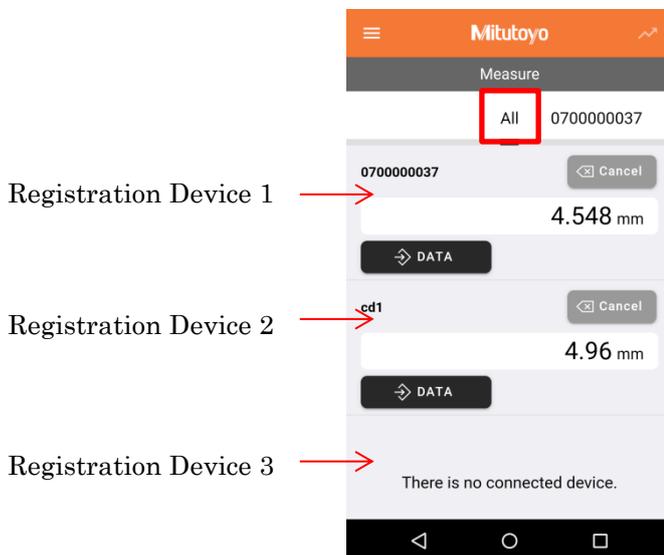
<u>Tips</u>

The display of the decimal point can be changed as follows.

① Tap the upper left of the application screen and select "About".
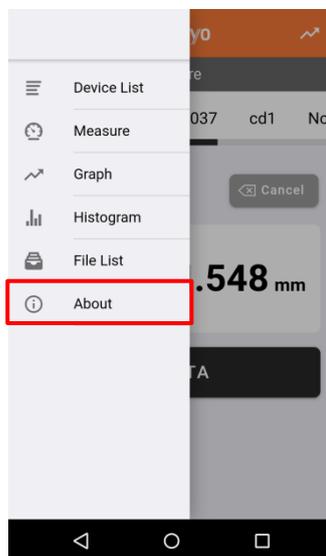
② Select the format of decimal point display in "Switching decimal point display", and tap "Update".
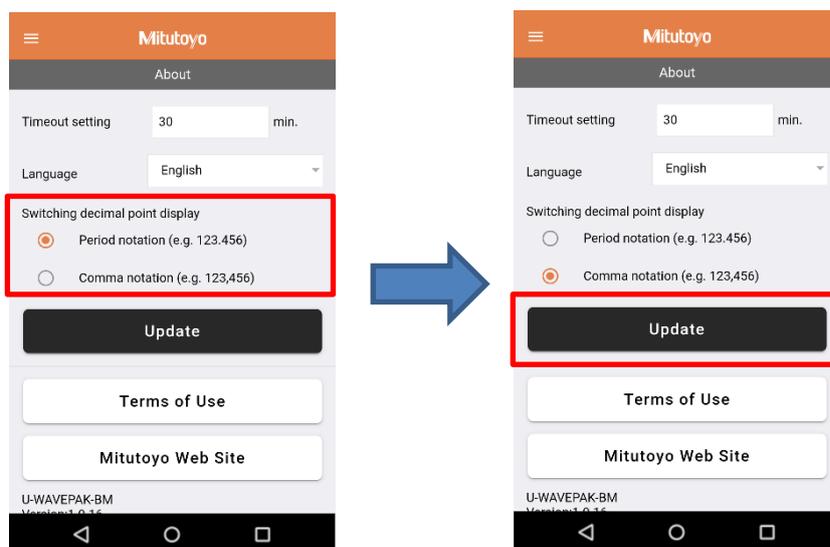
③ The display of the decimal point will be changed as shown below.
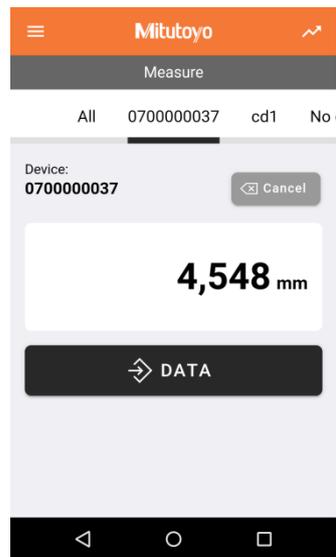
4.3. Setting Device Information (Device Name, Tolerance Determination)

You can set the device name, tolerance judgment and memo for the device registered in the application.

*It is set only by the application. It is not set to the transmitter.

① Tap the upper left of the screen and select "Device List".
② Tap the device ID to set the device information.
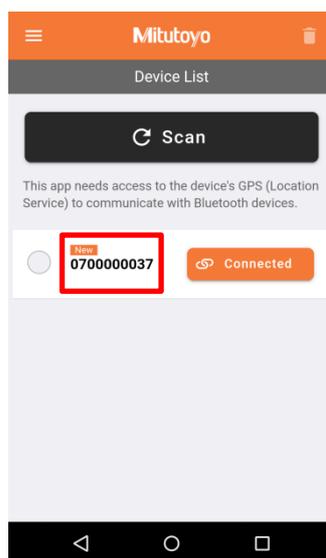
③ The following setting screen appears.

Device Name
The device name can be set.
Up to 20 characters
Half-width alphanumeric characters

Device ID
Display the device ID.

Nominal Value
The nominal value can be set.

Upper Limit
Lower Limit
The tolerances can be set.

Memo
Memo can be set.

④ Tap the blank of "Device Name" to enter the device name setting.
  Please enter only Harf-width alphanumeric characters within 20 characters.
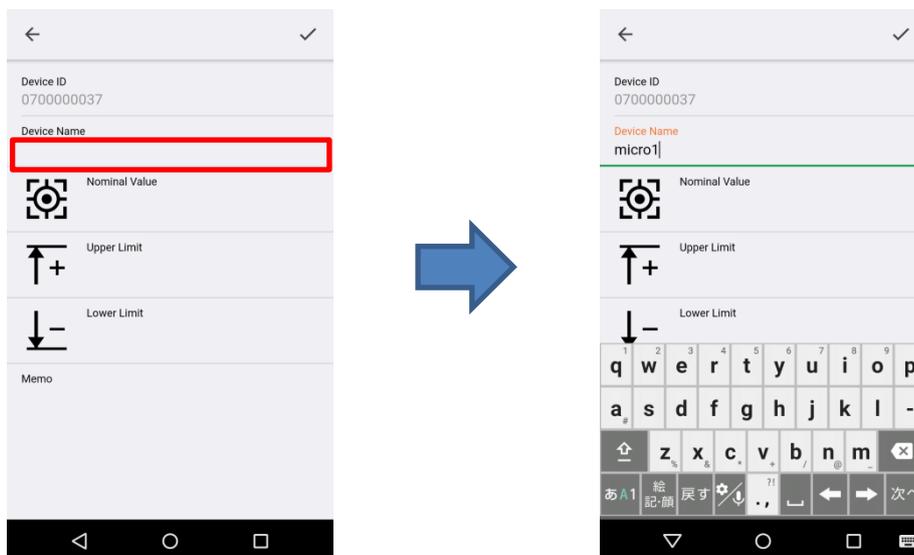
⑤ Tap the blank field of "Nominal Value" to enter the nominal value setting.
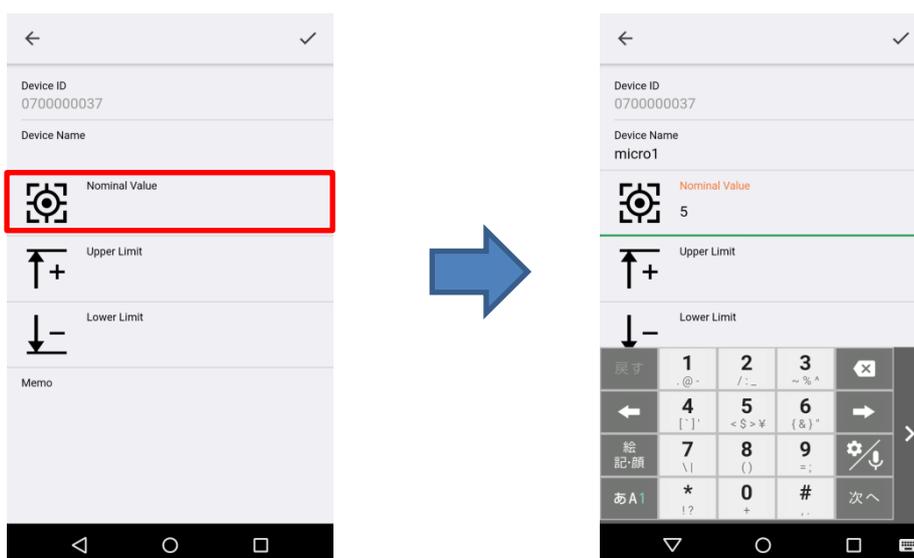
⑥ Tap the blanks "Upper Limit" and "Lower Limit" to enter the tolerance setting.
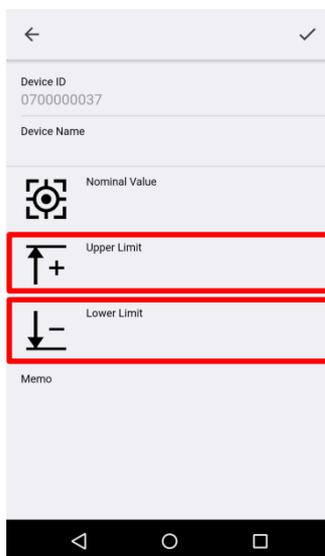
Setting ± 0.2	Setting + 0.3/+ 0.1

⑦ Tap the blank space of "Memo" to enter the memo setting.
　You can enter up to 256 Full width characters. (No restricted characters)
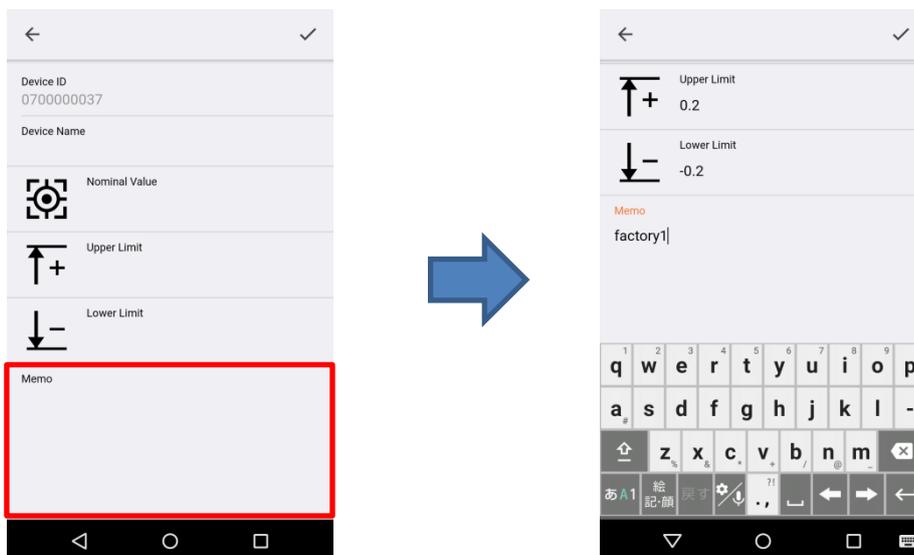
⑧ After entering the setting, tap "✔" in the upper right of the screen to complete the setting.
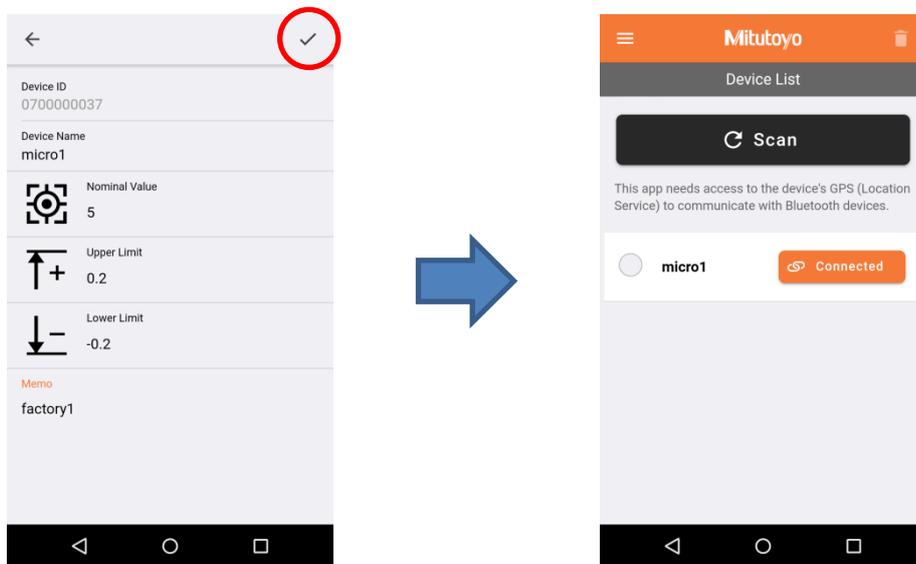
The screen displayed in "Measure" changes when tolerance settings are made.
They are displayed in green when they are within the tolerance range and in red when they are outside the tolerance range.
If you have registered multiple entries, you can check them all on the "All" screen.
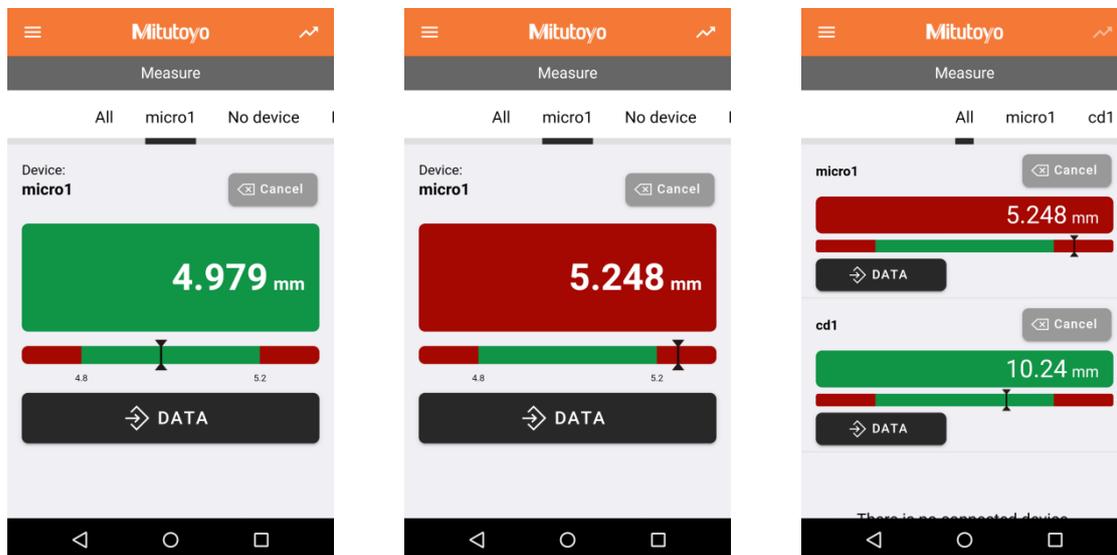
4.4. Graph Display

There are two types of graph display: "real-time display" and "Graph display of measurement data log".

■Real-time display
Tap the upper right on the "Measure" screen. A plot is added when measurement data is received.
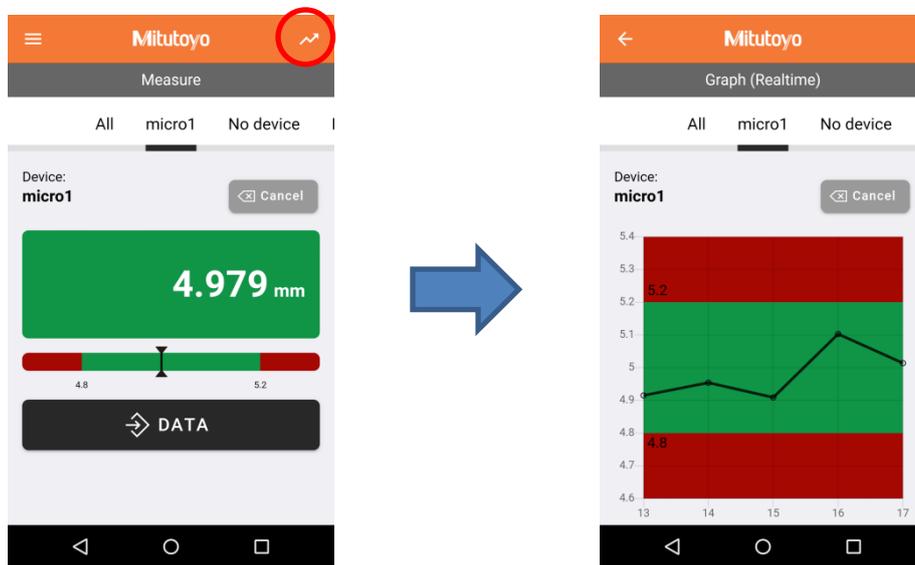
■Graph display of measurement data log
① Tap the upper left of the display screen and tap "Graph".
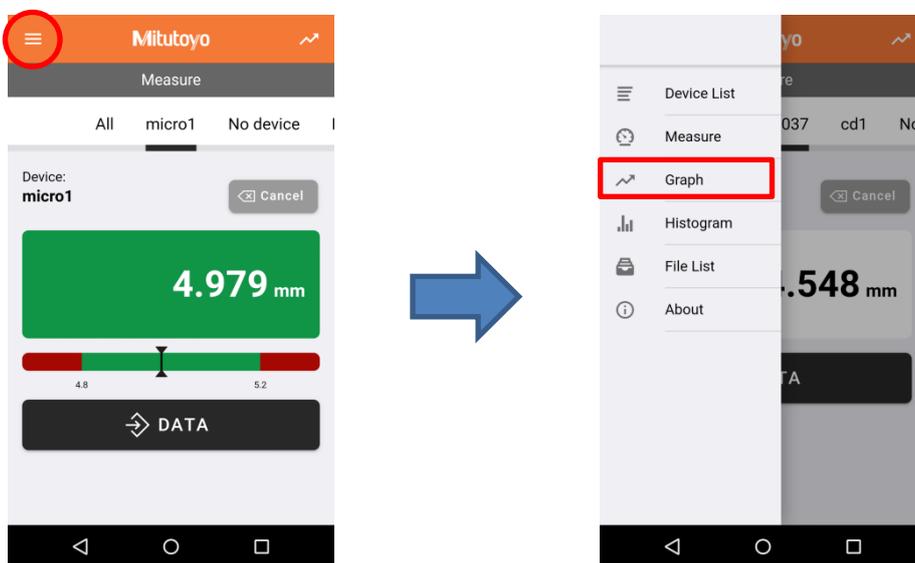
② When the "Graph" screen appears, tap "Select Device Name" and select the device you want to graph.
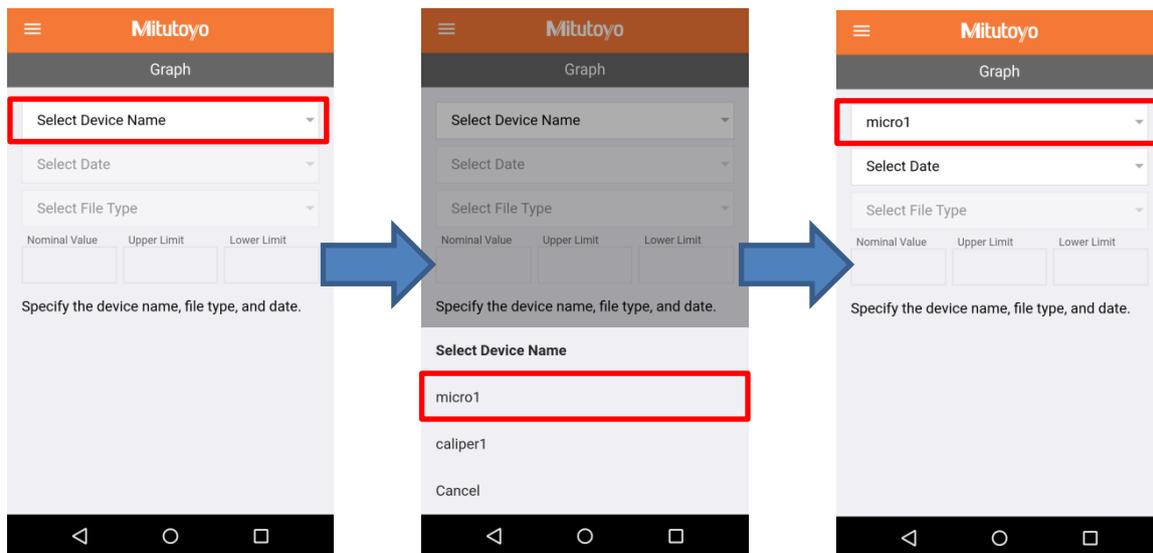
③ Tap "Select Date" and select the date of the measurement data log you want to graph.
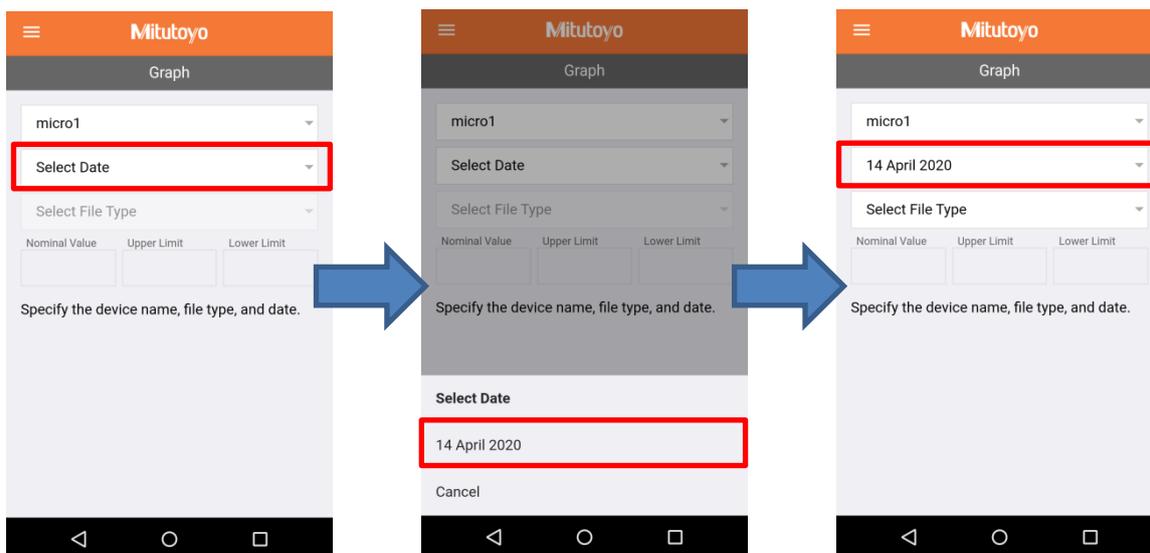
④ Tap "Select File Type" to select a file. Select a file to display the graph.
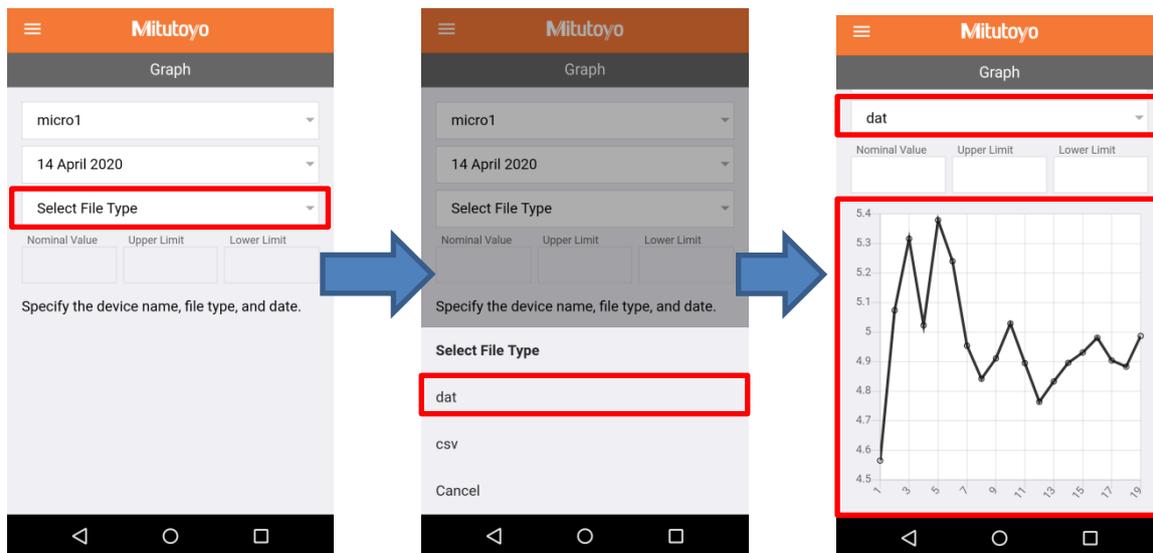
Enter "Nominal Value", "Upper Limit", or "Lower Limit" and the tolerance range will be displayed on the graph.

Tips

・You can change the scale of the graph by pinching in and pinching out.

4.5. Histogram display

The acquired measurement data log can be displayed in a histogram.

① Tap the upper left of the display screen and tap "Histogram".
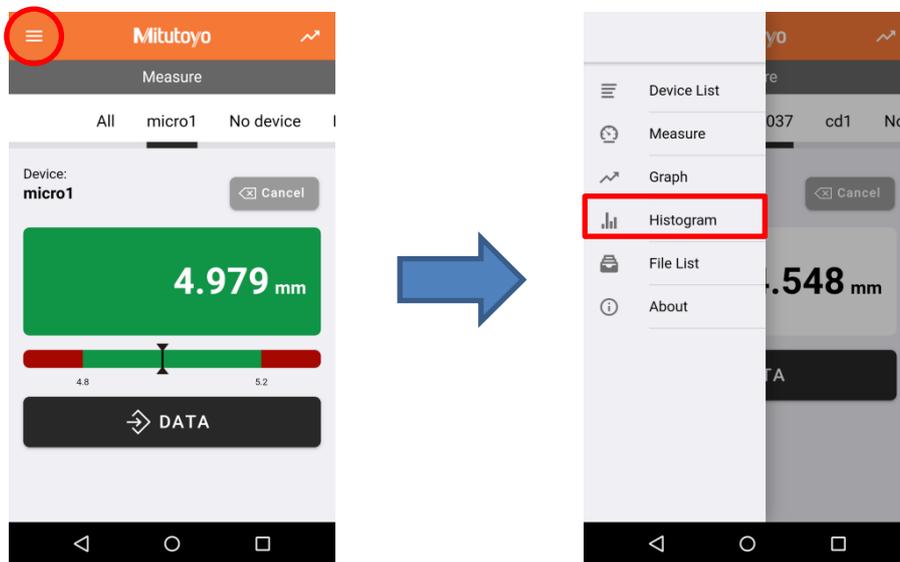
② When the "Histogram" screen appears, tap "Select Device Name" and select the device for which you want to display the histogram.

③ Tap "Select Data" and select the date of the measurement data log for which you want to display the histogram.
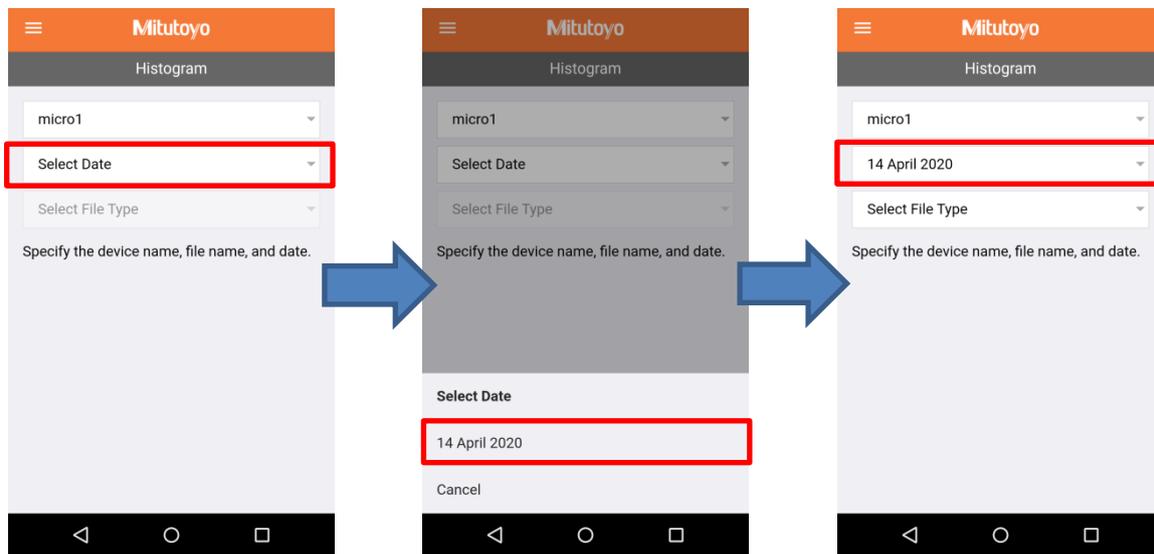
④ Tap "Select File Type" to select a file. Select to display the histogram.
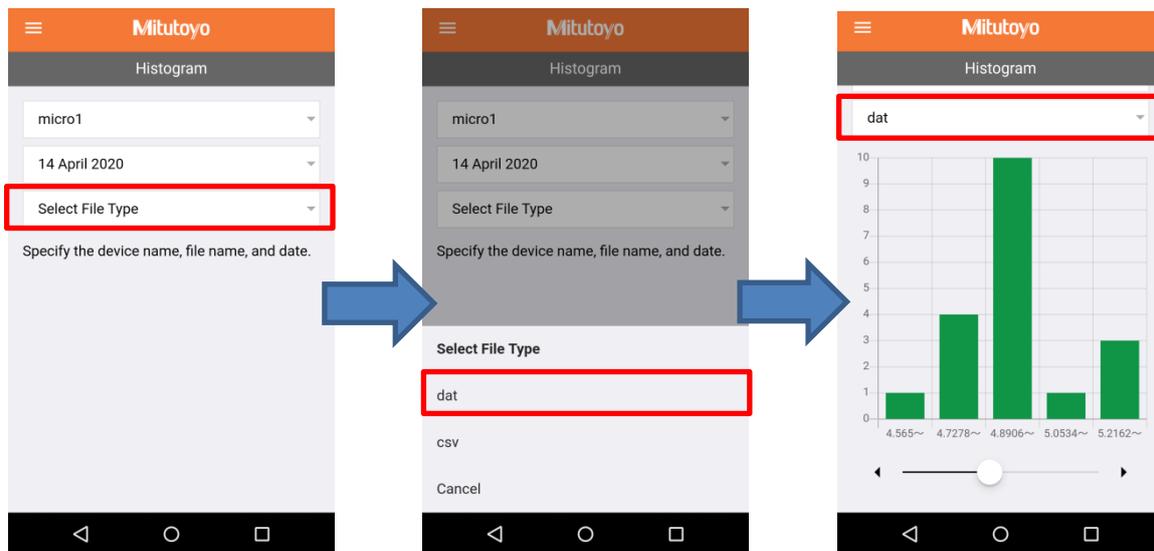
Tips

・You can change the bins (X Axis) in the bar at the bottom of the histogram.
・The histogram bins can be displayed in up to 10 segments.
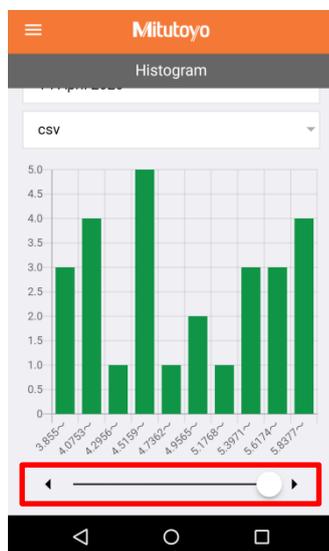
4.6. File List

You can check the log file of the data measured by the application. You can also share and delete files.

① Tap the upper left of the display screen and select "File List".
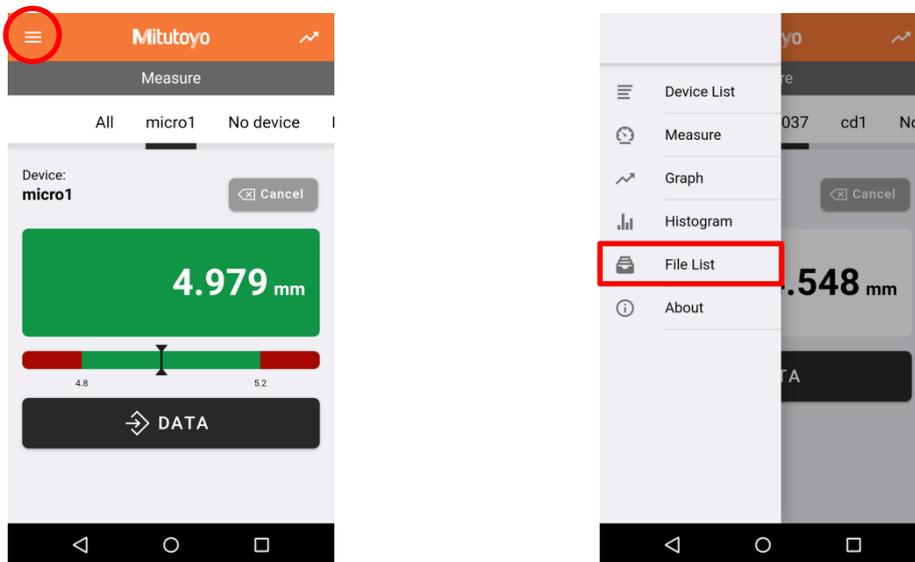
② A file list appears. Each part is described below.

Search
You can select a file format and device name to narrow down the log file.

Select All
You can select all log files.

File List
The log file is displayed.
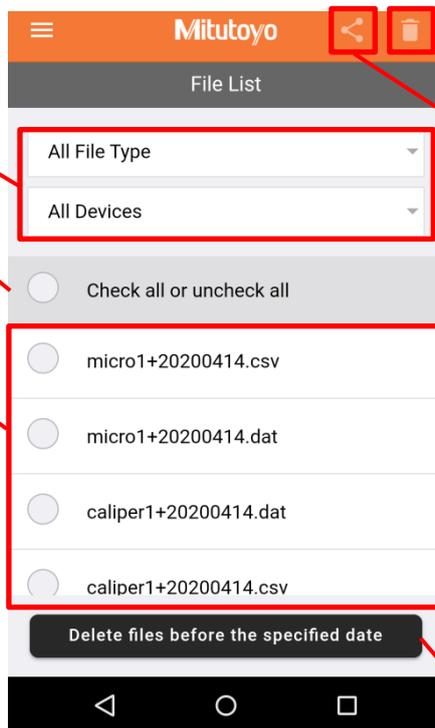
Delete File
You can delete the selected log file.

Sharing files
You can share the selected log file.

Deleting files (Date)
You can delete data that is earlier than the date you enter.

Tips

-The measurement data log file is created in "Date + Device Name". Changing the device name creates a new file.

-The date is in the format "YYYYMMDD".

-The "csv" file is saved in the form of double quotes for strings and commas for delimiters.

  File format:

Line 1 (Header):

#, "[Device ID]", "[Device Name]",, "[Nominal Value]", "[Lower Limit]", "[Upper Limit]", "[memo]"

Lines after (Data):

[measured value] , [tolerance judgment result] , [YYYY/MM/DD hh: mm]

*When the decimal point of the measurement value is [,], it is a double quotation enclosure.

4.7. Other Features

4.7.1 How to Display "About"

Tap the upper left of the display screen and select "About" to display the following screen.

The components are described below.

Recall reception time setting
You can set the time for automatic reconnection when the transmitter is disconnected.
If it times out, connect manually.
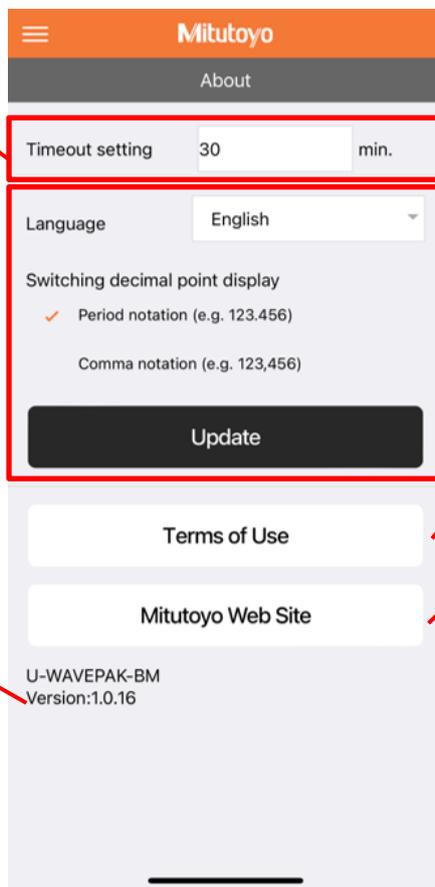
Language and Toggle Decimal Point
You can change language, the decimal point display.

Terms of Use
You can see the terms of use.

Mitutoyo website
Mitutoyo's website opens.

Version information
The version of this application is displayed.

4.7.2 How to switch Language

This section explains how to switch the language of the application.

① Tap the upper left corner of the application screen and tap "About".
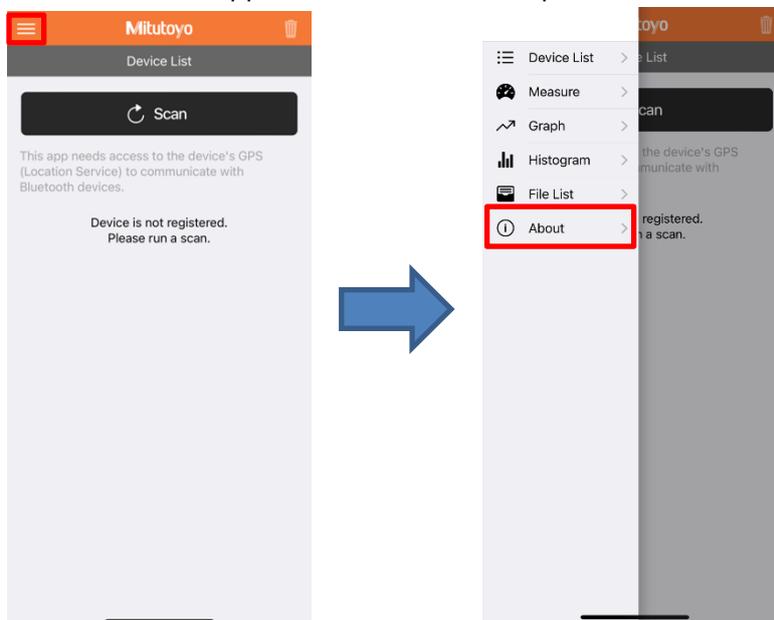
② (If "Language" is English) Tap English, and select "Deutsch" from the choices.
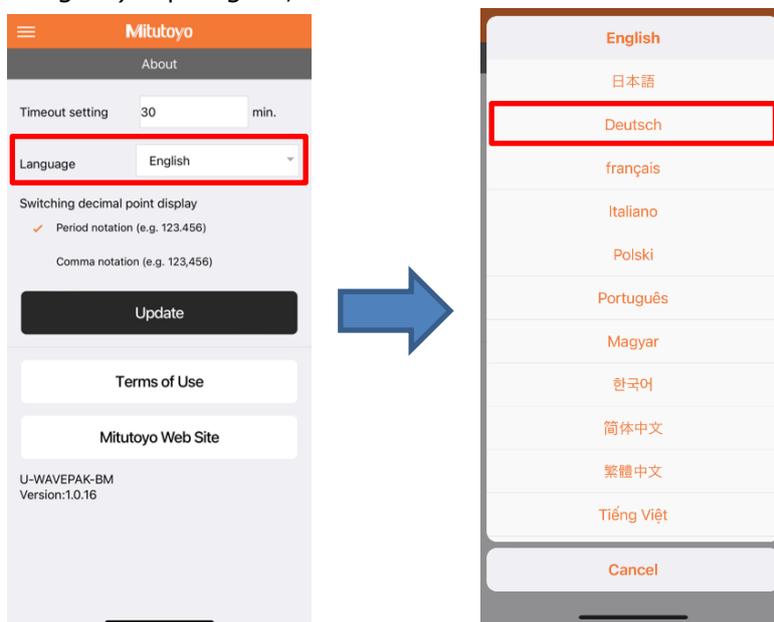
③ Confirm that the language is the one you wish to change,
and tap "Update". (if "Language" is English)

The screen will change and "Update" (if you selected "Deutsch").
It`s meaning "Einstellungen aktualisiert", will appear in the dialog box below.
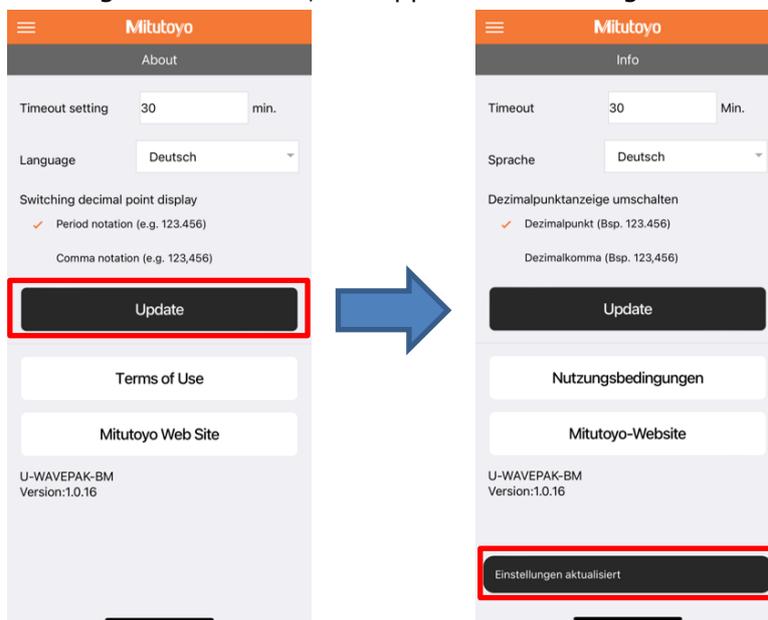
4.8. How to Disconnect and Unregister Devices

You can disconnect or unregister the device registered in the application on the "Device List" screen.

*If you do not disconnect the Bluetooth connection, the battery will always be exhausted. When not in use, disconnect the communication before storing.

■Method of disconnecting communication

Tap "Connected" (orange) to disconnect.

To reconnect, tap "Connect" and press the DATA button (orange) on the transmitter.
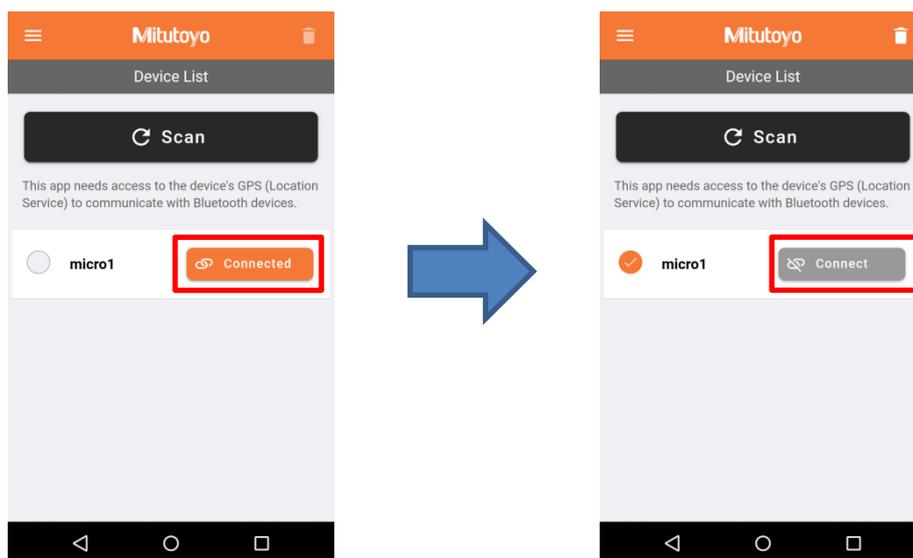
■How to unregister

Check the device you want to unregister and tap the upper right of the display screen.

Press "OK" on the confirmation screen to cancel the device registration.
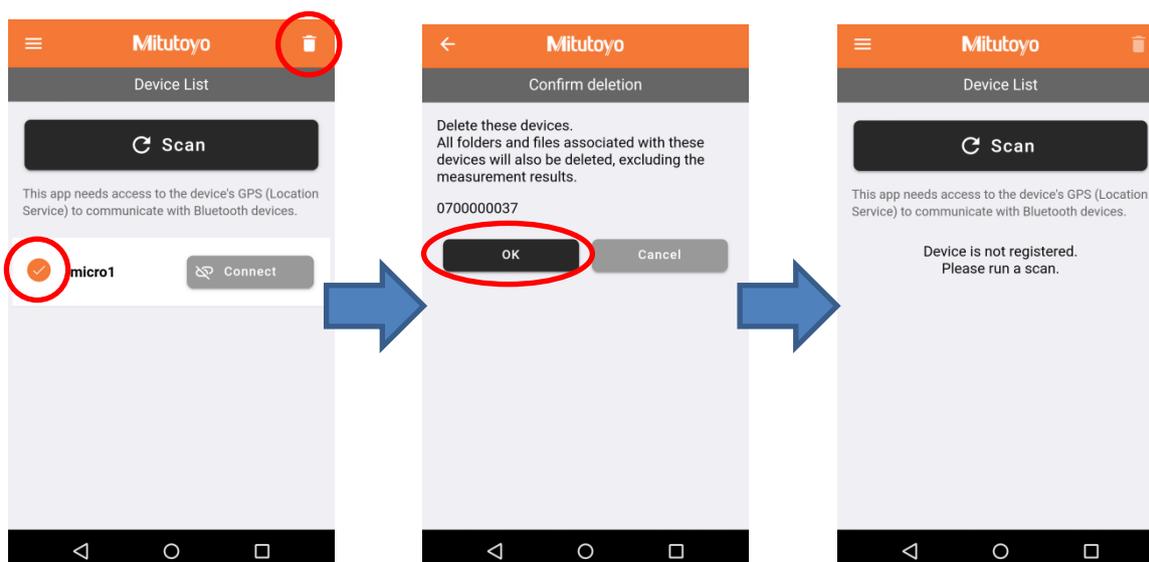
5. How to pair directly with the OS

U-WAVE-TCB/U-WAVE-TMB can be directly connected to the OS without using this application.

It is recognized as keyboard input when connected to the OS.

① On the Bluetooth setting screen of the receiving terminal, make the Bluetooth terminal searchable.
② Press the DATA button on the transmitter.
③ When "U-WAVE" appears, tap to connect.

6. Troubleshooting

■The U-WAVE-TCB/U-WAVE-TMB LED lights green, but no measurement data is displayed.

Cause   ：Connected to another terminal
Solution   ：- Disconnect from other Bluetooth receivers.
                  -Turn off the other Bluetooth receiver.

■When registering the application, the LED of U-WAVE-TCB/U-WAVE-TMB lights up in red, and you cannot "Scan".

Cause   ：The instrument is not powered on.
Solution   ：Turn on the power of the instrument.

■No measurements are displayed in the app.

Cause   ：The receiving terminal is far from the transmitter, or there is an obstruction.
Solution   ：-Shorten the distance between the receiving terminal and the transmitter.
                  -Remove obstacles

※ If troubleshooting cannot solve the problem, refer to the user's manual of the U-WAVE unit.

7 Service Network

Refer to the following URL.

https://www.mitutoyo.co.jp/eng/corporate/network/overseas/index.html