KANOMAX
The Ultimate Measurements

0.1μm Particle Counter Measurement Software for Windows

Model 3950

User Manual

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§ 1 Overview

This manual describes how to operate the 0.1 μm Particle Counter Measurement Software. This software remotely controls the 0.1 μm Particle Counter. It monitors and displays the measured data. The data can be saved in CSV format.

1) Software Specifications

Item	Details
OS	Microsoft Windows 10
Language	English, Japanese
Communication Mode	TCP/IP (wired), Serial communication

2) Operating Environments

OS	Microsoft Windows 10
Interface	Ethernet, RS-485
RAM	4 GB or more
HDD Capacity	With free space of 500 MB or more
Compatible Model	Model 3950

§ 2 Software Setup

1) Prior to the software setup, exit other programs.

Open the folder

on the CD.

According to your Windows version, open

or

on the CD.

Double-click the setup file

to display the dialog box as shown in Figure 2-1.

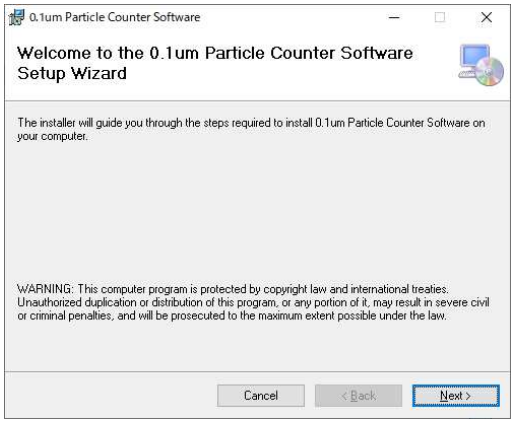


Figure 2-1 Initial Setup Dialog Box

2) Click the **Next** button to display the dialog box as shown in Figure 2-2. The default location to install is the C drive. To install into a different drive or a folder, click “Browse...” and choose the required location.

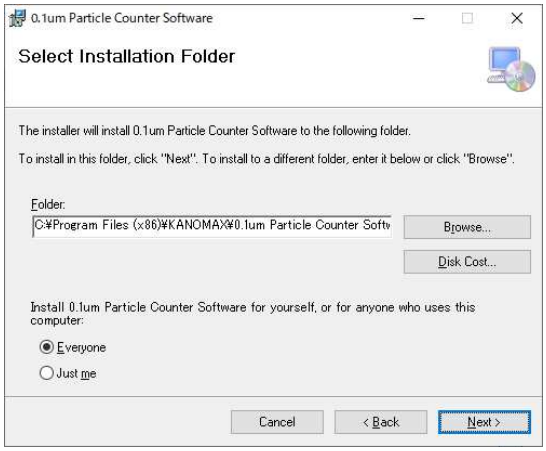


Figure 2-2 Select Installation Folder Dialog Box

3) Click the **Next** button to display the dialog box as shown in Figure 2-3.

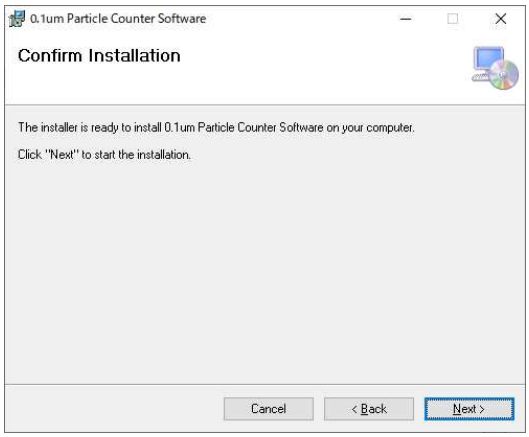


Figure 2-3 Confirmation Installation Dialog Box

4) Click the **Next** button to display the dialog box as shown in Figure 2-4.

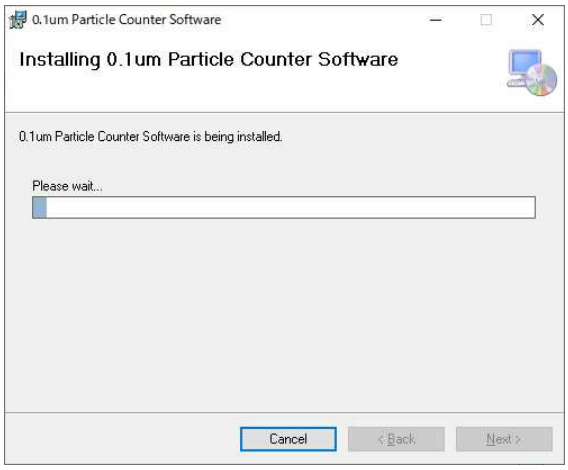


Figure 2-4 Installation progress Dialog Box

5) When the installation completed, the dialog box as shown in Figure 2-5 will appear.

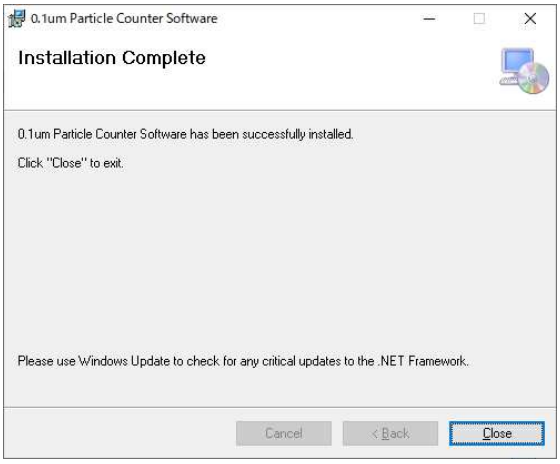


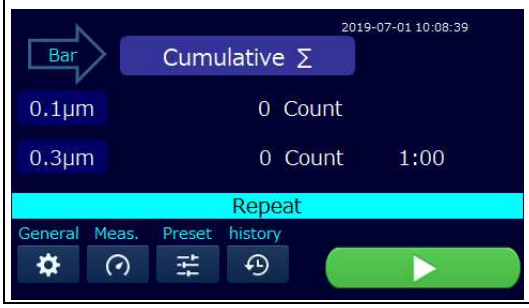
Figure 2-5 Installation Complete Dialog Box

6) Click the **Close** button to complete the setup.

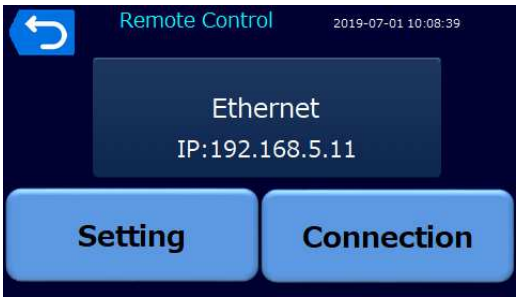
§3 Main Unit Settings

1) Settings the Main Unit Communication

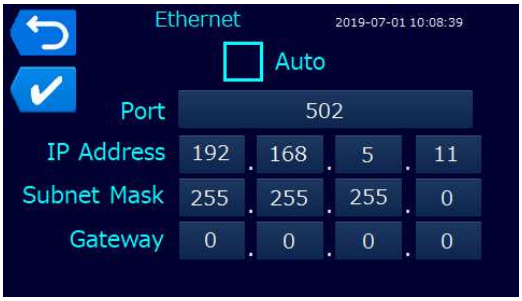
Step 1	Step 2
Turn on the Main unit to display the Main screen.	On the Main screen, tap the **Measurement Setting** button to display the Measurement Setting screen below.

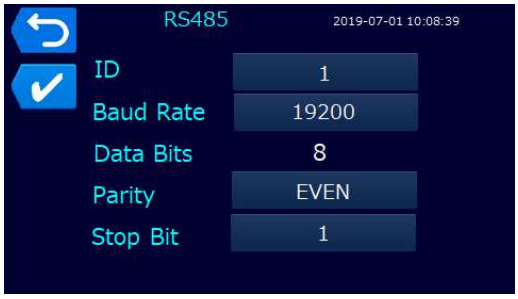


Step 3	Step 4
On the Measurement setting screen, tap the **Remote** button to display the Remote Control screen below.	On the Remote Control screen, tap the **Setting** button to display the Remote Setting screen below.

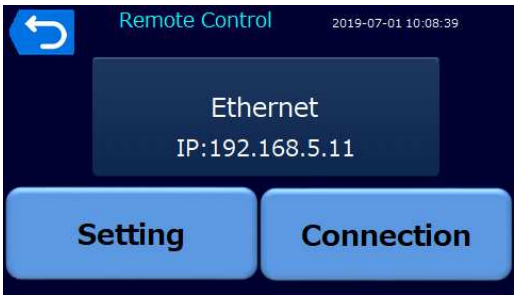
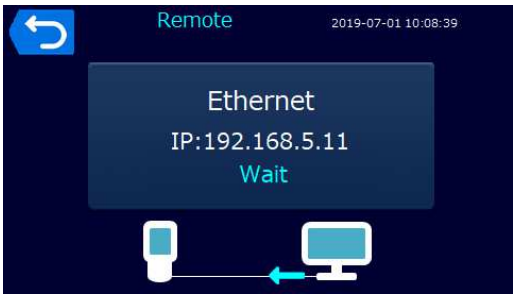


Step 5	
Choose the communication method and set communication parameters.	
Ethernet	RS485





Step 6	Step 7

Tap the ✓ button to complete the setting. To return to the previous page, tap the **Return** button. 	The **Remote** measurement screen will appear, when connecting with the **Connection** button. 

2) Connecting the Hardware

Ethernet direct connection between the main unit and the PC: Connect with a cross LAN cable as shown below.

Remote setting>Ethernet	Communication Parameters
	Port number : 502 IP address : 192.168.5.11 Subnet mask : 255.255.255.0 Default gateway : 0.0.0.0

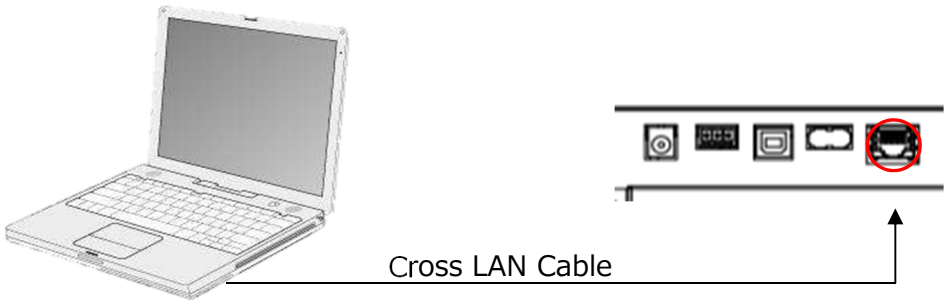
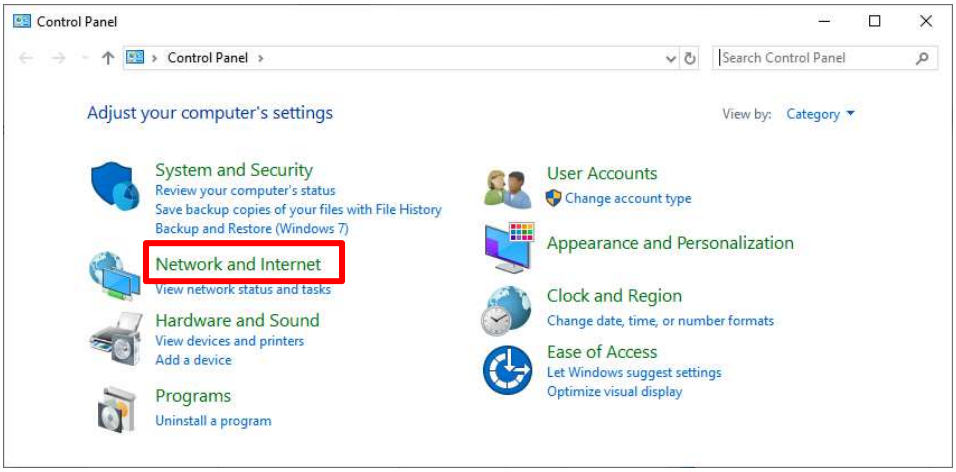


Figure 3-1

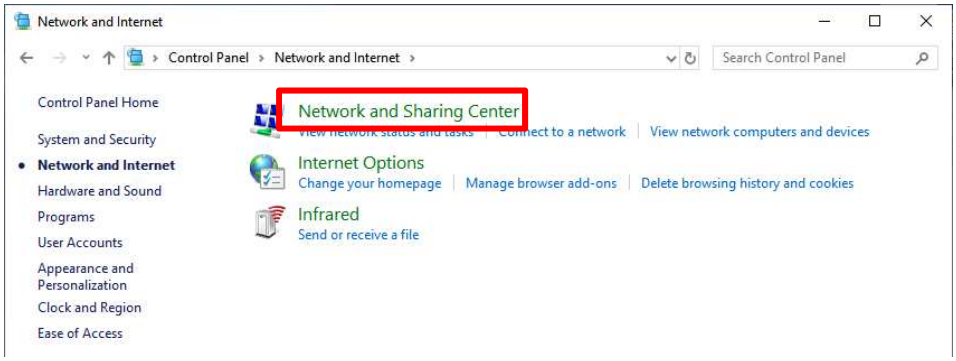
If you connect the main unit and PC directly, you need to change the IP address of the PC.

1) Open the **Control Panel**.

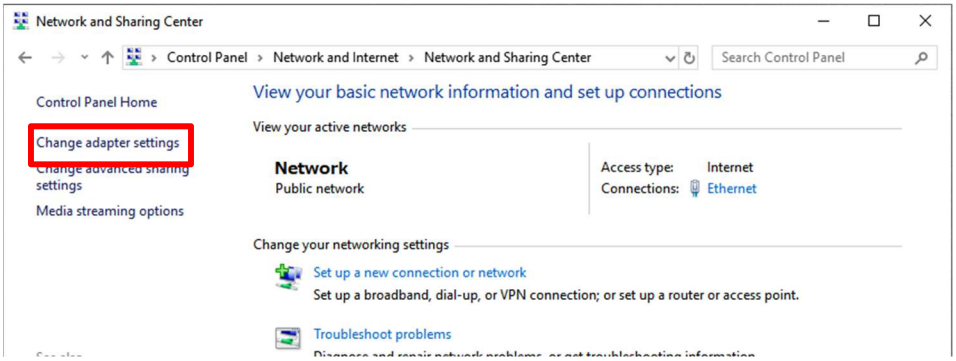
2) Click the **Network and Internet**.



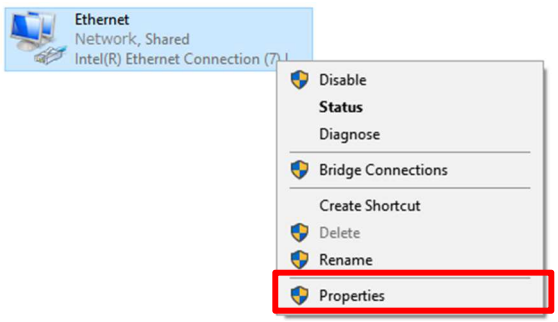
3) Click the **Network and Sharing Center**.



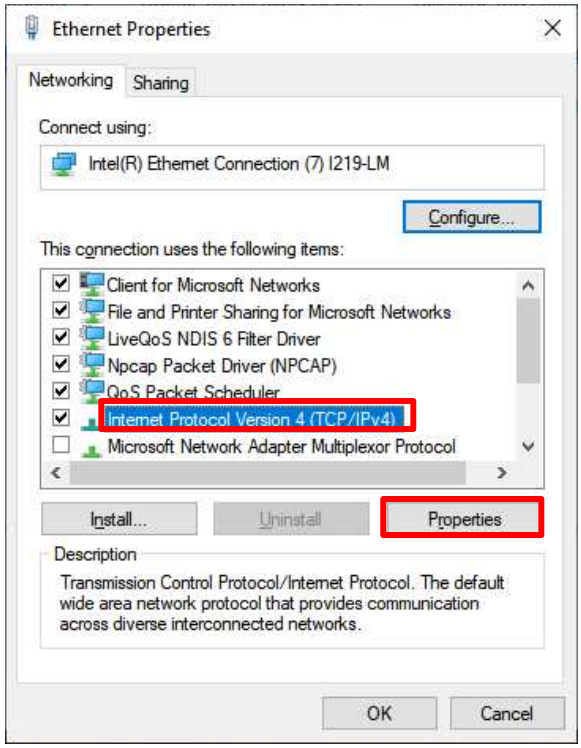
4) Click the **Change adapter settings**.



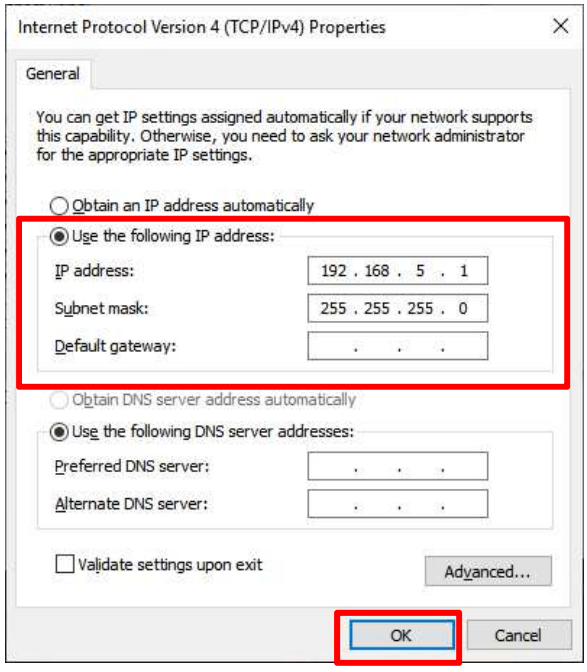
5) Right-click the **Ethernet** icon, and click the **Properties**.



6) Select the **Internet Protocol Version 4 (TCP / IPv4)** and click the **Properties**.



7) Select the **Use the following IP address**. Enter "192.168.5.1" in the **IP address**, "225.255.255.0" in the **Subnet mask**, and click the **OK**.



8) Close all the windows you opened.

Ethernet connection using LAN network: Using LAN cables to connect as shown in Figure 3-2, Figure 3-3.

Remote setting>Ethernet	Communication Parameters
Auto ☑ :Checked	Obtain IP address, subnet mask, and gateway from the network automatically.
Auto ☐ :No check	Enter the IP address, subnet mask, and gateway.

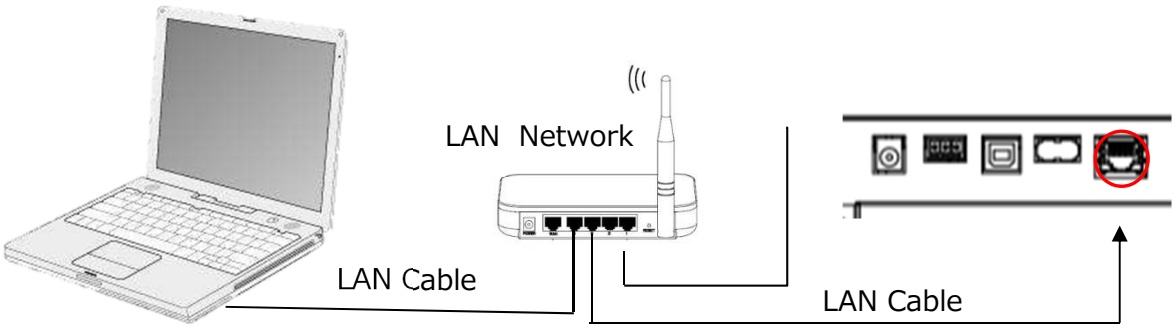


Figure 3-2 1-Device connection

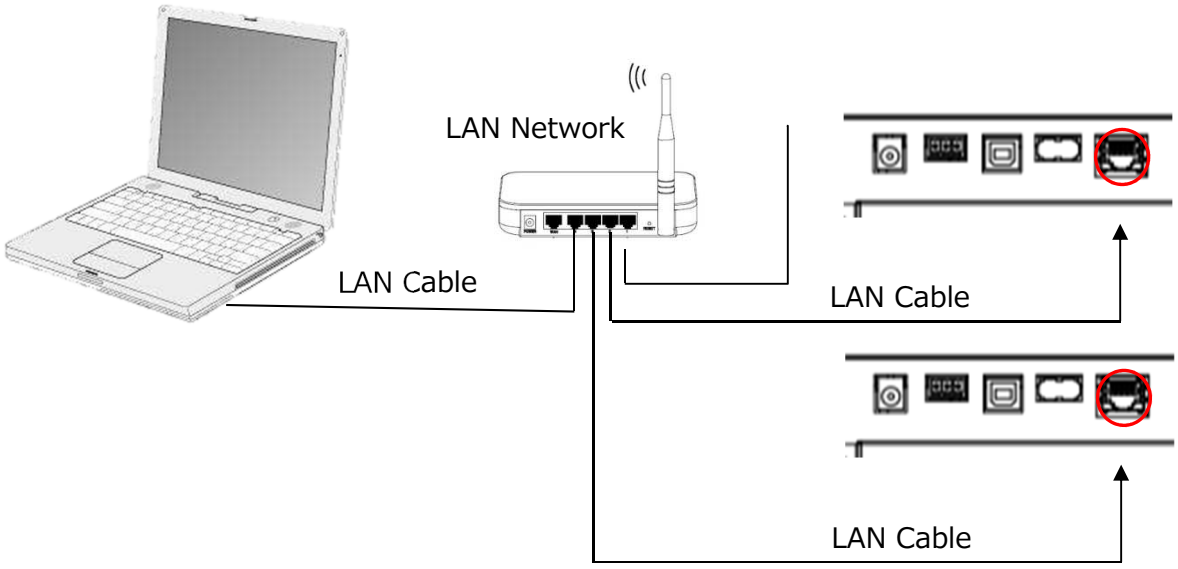


Figure 3-3 2 or more Device connection

RS-485: If the PC does not have RS-485 communication port, use a 2-wire USB-RS485 converter.

Remote Setting > RS485	Communication parameters
Enter or select.	Enter the ID. Baud rate: 9600, 19200, or 38400 Parity: none, even, or odd Stop bit: 1 or 2

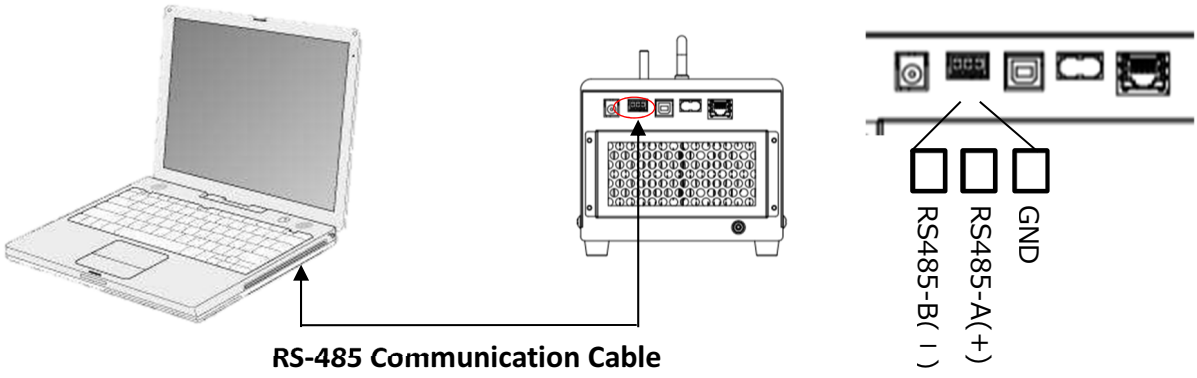


Figure 3-4　1-Device connection

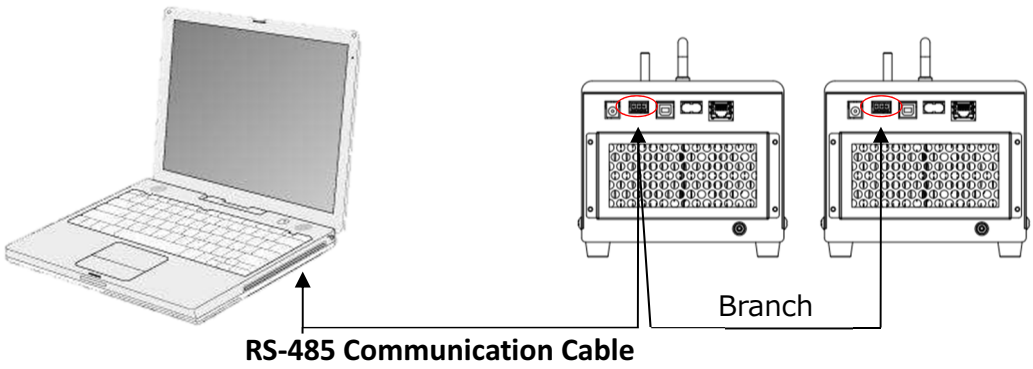


Figure 3-5　2 or more Device connection

§4 Using the Software

4.1 Starting the software (the Main Screen)

Click the icon on the start-menu

to start the software. The main screen appears as shown in Figure 4-1.

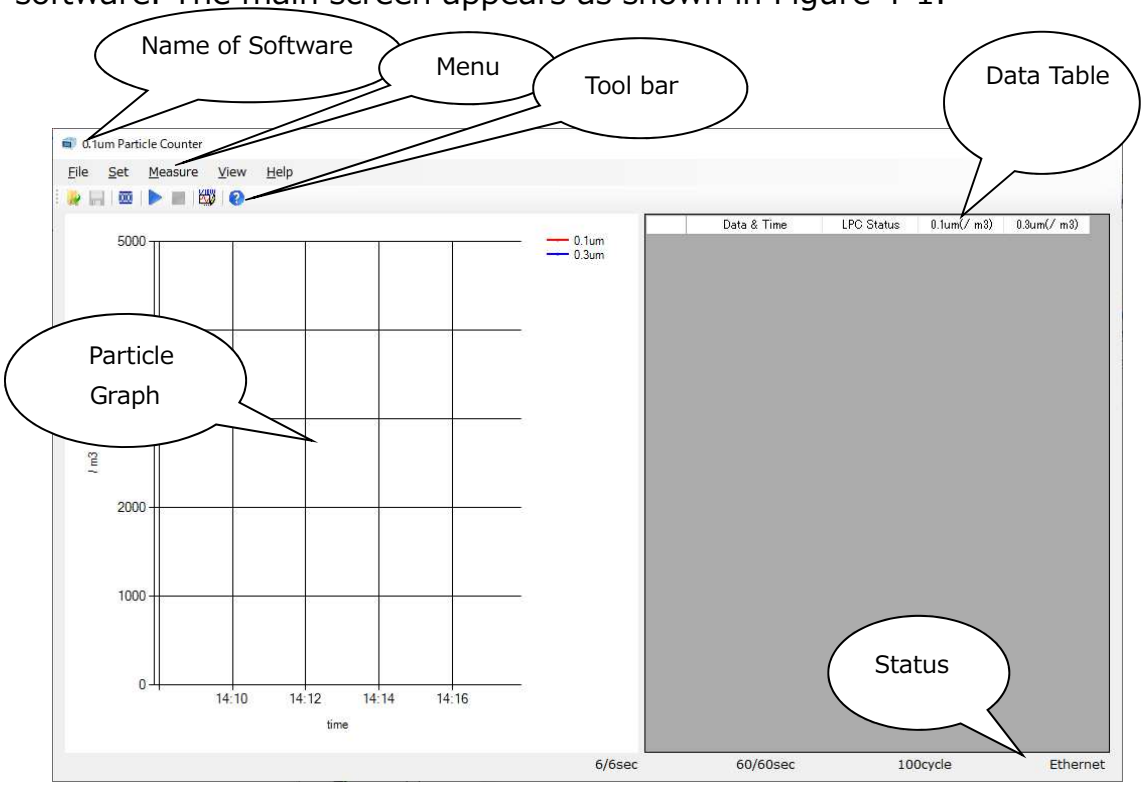


Figure 4-1 Main Screen

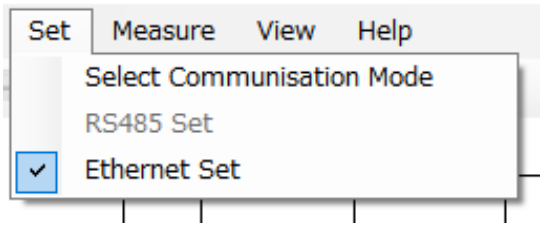
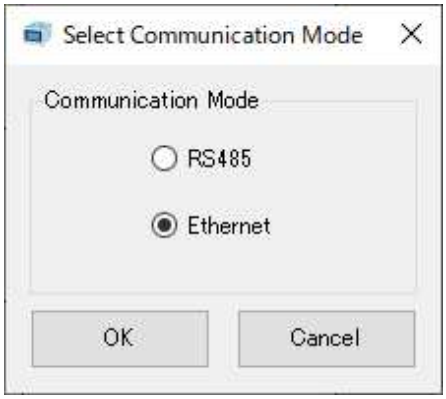
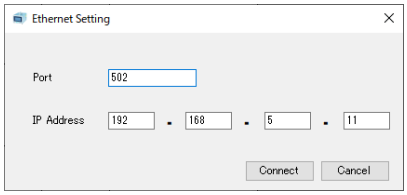
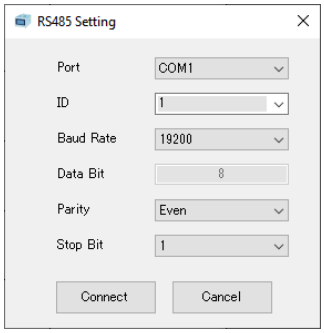
Item	Details
Particle graph	Shows the value of the particle count
Data table	Shows the measurement data of particles
Status	(Contents in the table blow.)

Item	Details
Measurement status	Sampling, Waiting
Measurement parameter	Sampling time, Interval time, Repeat count
Communication mode	Ethernet, RS485

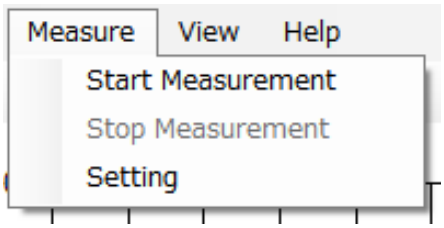
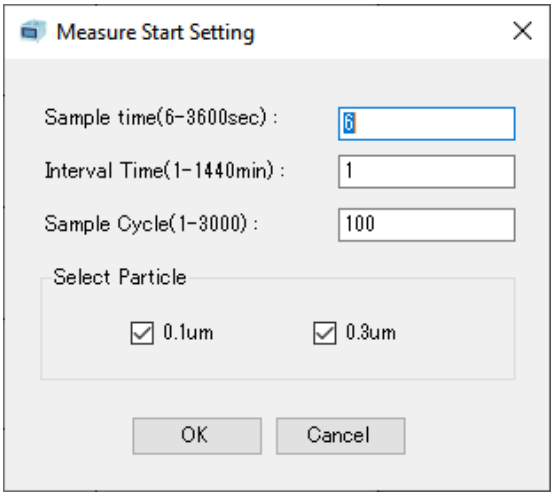
Open the Main screen. While holding down the **Ctrl** key, press the **D** key on the keyboard to display the Data Display Software: Measurement Screen (Chapter 10). For details, please refer to Chapter 10.

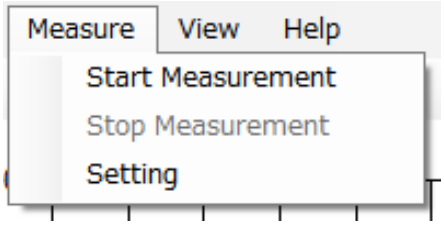
4.2 Measurement procedures

1) Configure the communication mode setting.

<table>
<tr><th>STEP1</th><th>STEP2</th></tr>
<tr><td>Click the Select Communication Mode on the Set menu.
 
</td><td>Select the Communication Mode.
 
</td></tr>
<tr><th colspan="2">STEP3</th><th>STEP4</th></tr>
<tr><td>Ethernet</td><td>RS485</td><td rowspan="2">While the remote control of the 0.1μm Particle Counter. is on the stand-by, click the OK button to connect.</td></tr>
<tr><td>Set the IP address of the 0.1 μm Particle Counter.
 
</td><td>Set the communication parameters.
 
</td></tr>
</table>

2) Start a measurement.

STEP1	STEP2
Click the **Setting** in the Measure menu. 	Set the parameters in the Measure Start Setting. 

STEP3
Click the **Start Measurement** on the Measure menu to start a measurement. 

§5 File

Use this menu to open the existing data files, save the data files, and close the applications.

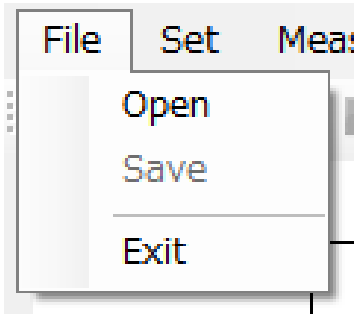


Figure 5-1 File Menu

5.1 Open

Open the data files（*.CSV）to display a particle graph and particle data.

On the File Menu (Fig. 5-1), click Open Ctrl+O to display the Opening Data File Dialog Box as shown in Figure 5-2.

（Using the button on the toolbar or the **Ctrl** key + the **O** key on the keyboard are also allowed to access the dialog box in Fig. 5-2.）

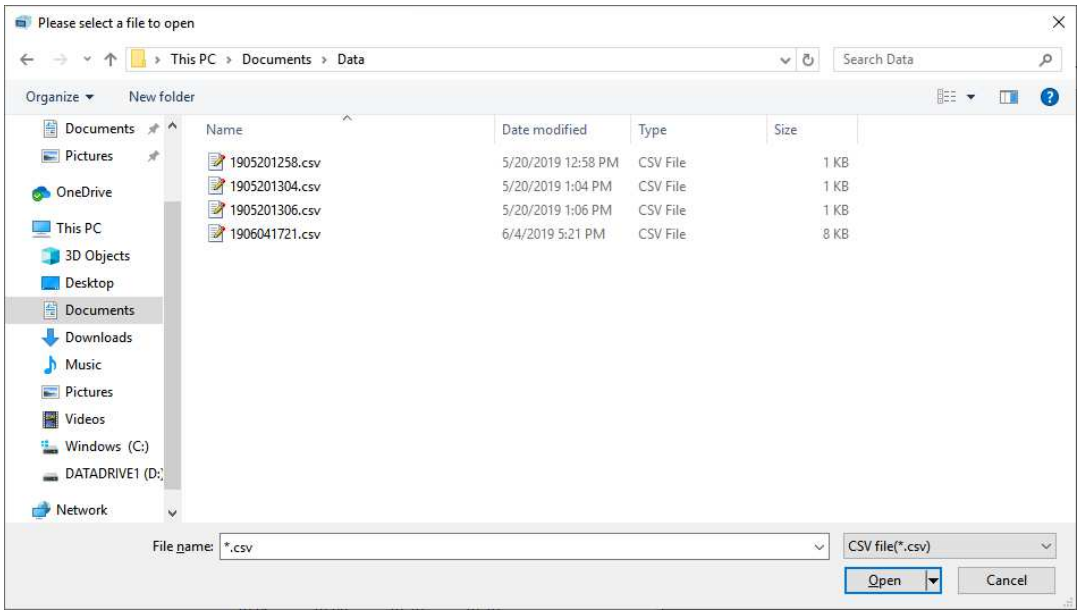


Figure 5-2 Opening Data File Dialog Box

Open : Opens the data file.

Cancel : Cancels the command.

5.2 Save

Use this menu to save the measured data and the measurement parameters (*.CSV formats).

On the File Menu (Fig. 5-1), click Save Ctrl+S to open the Save As Dialog Box as shown in Figure 5-3.

(Using the button on the toolbar or the **Ctrl** key + the **S** key on the keyboard are also allowed to access the dialog box in Fig. 5-3.

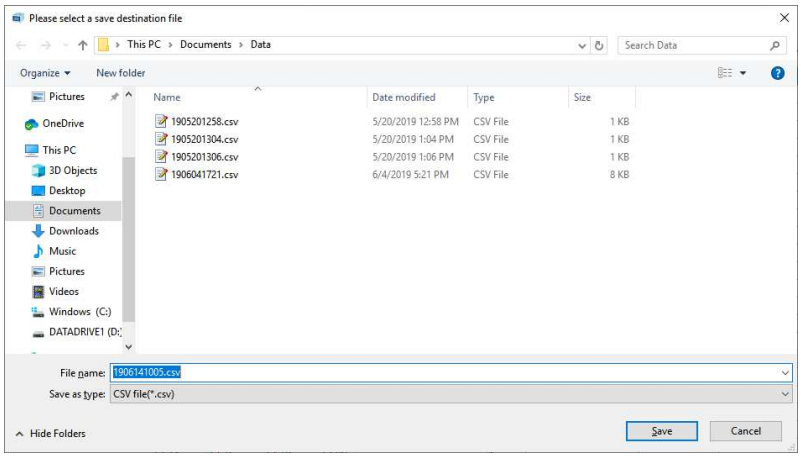


Figure 5-3 Save As Dialog Box

Save : Saves the data file.

Cancel : Cancels the command.

5.3 Exit

On the File Menu (Fig. 5-1), click the **Exit** button to complete.

§6 Setting

Use this menu to set the communication mode and the communication parameters. Select the measurement mode before starting a measurement.

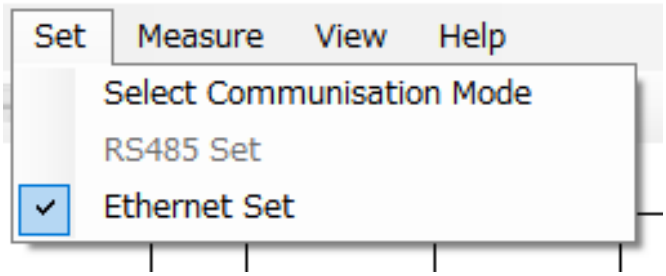


Figure 6-1 Setup Menu

6.1 Selecting the communication mode

On the Setup Menu (Fig. 6-1), click the **Select Communication Mode** to open the Select Communication Mode Dialog Box as shown in the Figure 6-2.

(Using the button on the tool bar is also allowed to access the dialog box in Fig. 6-2.)

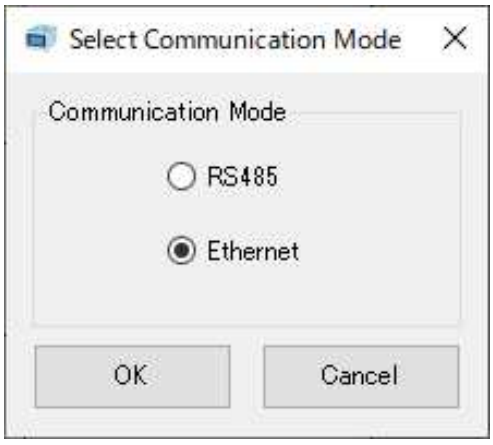


Figure 6-2 Select Communication Mode Dialog Box

Choose Ethernet or RS485.

OK : Shows the parameter setting screen on the selected communication mode.

Cancel : Cancels the command.

6.2 Setting the IP address

Using with the LAN cable, connect the PC and the 0.1μm Particle Counter.

Ethernet

On the Setup Menu (Fig. 6-1), click the **Ethernet Set** to display the Ethernet Setting Dialog Box as shown in Figure 6-3.

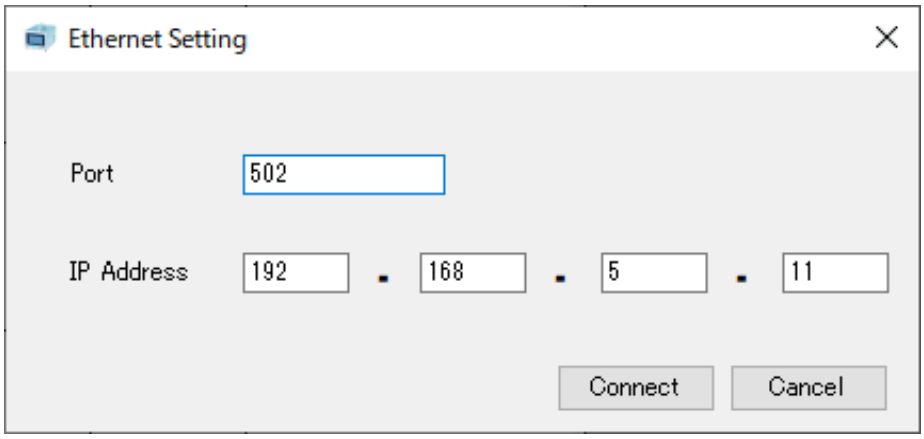


Figure 6-3 Ethernet Setting Dialog Box

1) Parameter settings

Enter the port number and the IP address set on the 0.1μm Particle Counter main unit.

2) Button functions

Connect : Saves the parameters and connects. When the connection completed, the **success** message will be displayed. When the connection is failure, a **failure** message will be displayed. If a connection error occurs, check the connection status.

Cancel : Cancels the command.

6.3 RS-485 Setting

On the Setup Menu (Fig. 6-1), click the **RS485 Set** to open the RS 485 Setting Dialog Box as shown in Figure 6-4.

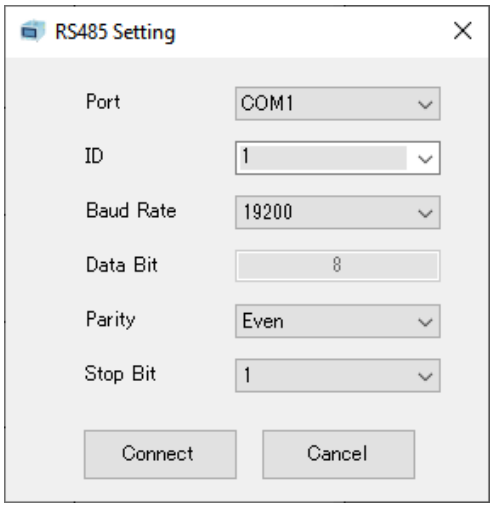


Figure 6-4 RS485 Setting Dialog Box

Note: When setting the port, be sure to confirm the communication port connected to the main device and the PC.

1) Parameter settings

Enter the communication parameters set on the 0.1 μm Particle Counter main unit.

Item	Details	Remarks
Port	COM1, COM2 ⋯ COM255	Selectable
ID	1, 2, 3 ⋯ 247	Input possible
Baud rate	9600, 19200, 38400	Selectable
Parity	None, Even, Odd	Selectable
Data bit	8	Fixed
Stop bit	1 or 2	Selectable

2) Button functions

Connect : Saves the parameters and opens the port. When the port is connected properly, the success message will appear. When a port error occurs, a failure message will appear. If a connection error occurs, check the connection status.

Cancel : Cancels the command.

§ 7 Setting the Measurement Parameters and Start Measurement

Use this menu to set the measurement parameters, start a measurement, and stop a measurement.

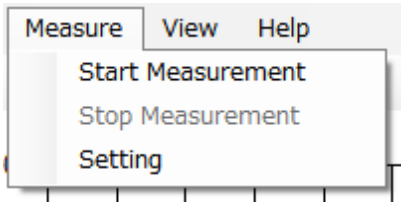


Figure 7-1 Measure Menu

7.1 Setting the measurement parameters

Click the **Setting** on the Measurement Menu to display the Measure Parameter Set Dialog Box as shown in Figure 7-2.

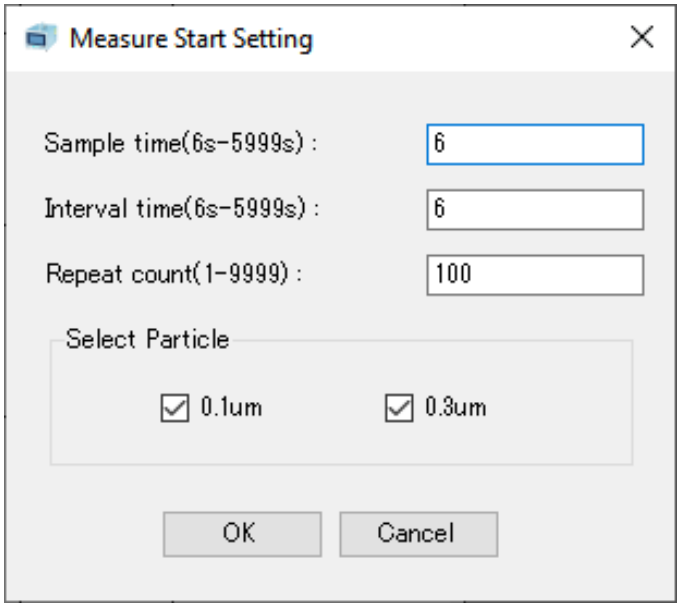


Figure 7-2 Measure Parameter Set Dialog Box

1) Parameter Settings

Item	Details	Remarks
Sample time	6 to 5999 seconds	Possible to Input
Interval time	6 to 5999 seconds	Possible to Input
Sample cycle	1 to 9999 pcs.	Possible to Input
Size distribution	0.1 μm, 0.3 μm	Selectable

2) Button functions

OK : Saves the measurement parameters.

Cancel : Cancels the command.

7.2 Start measurement

On the Measure Menu (Fig. 7-1), click the **Start Measurement** .
(Using the ▶button is also the same function with the above.)

Measurement window

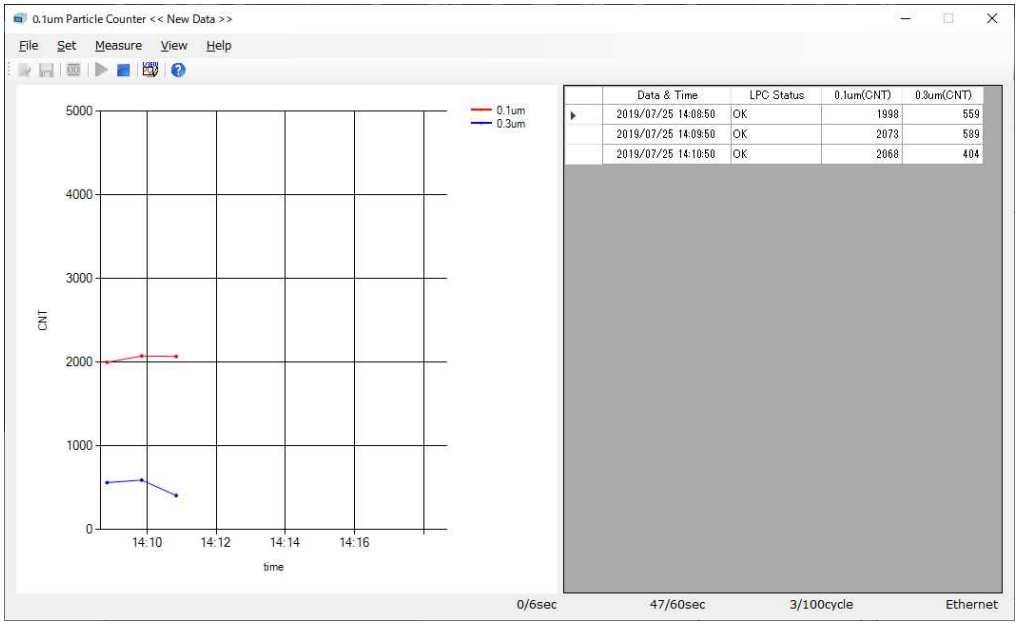


Figure 7-3 Measurement Window

7.3 Stop measurement

On the Measure Menu (Fig. 7-1), click the **Stop Measurement** to display the Confirm Message Dialog Box as shown in Figure 7-4.

(Using the button on the tool bar is allowed to access the dialog box in Fig. 7-4.)

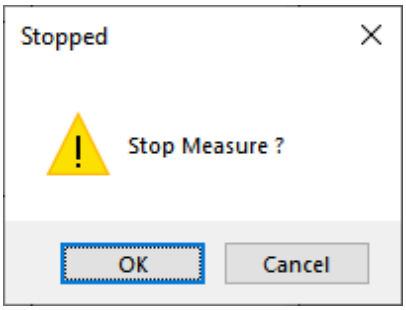


Figure 7-4 Confirm Message Dialog Box

OK : Stops the measurement.

Cancel : Cancels the command.

§8 View

Use this menu to set the particle graph.

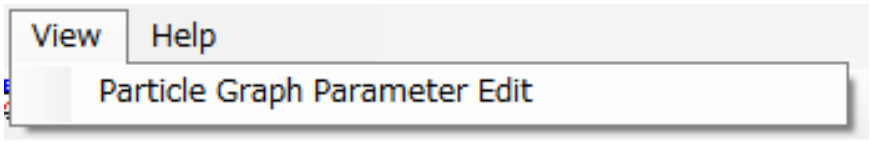


Figure 8-1 View Menu

8.1 Setting the parameter in the particle graph

Click the **Particle Graph Parameter Edit** on the View Menu (Fig. 8-1) to display the Particle Graph Parameter Edit Dialog Box as shown in Figure 8-2.

(Using the button on the toolbar is also allowed to access the dialog box in Fig. 8-2.)

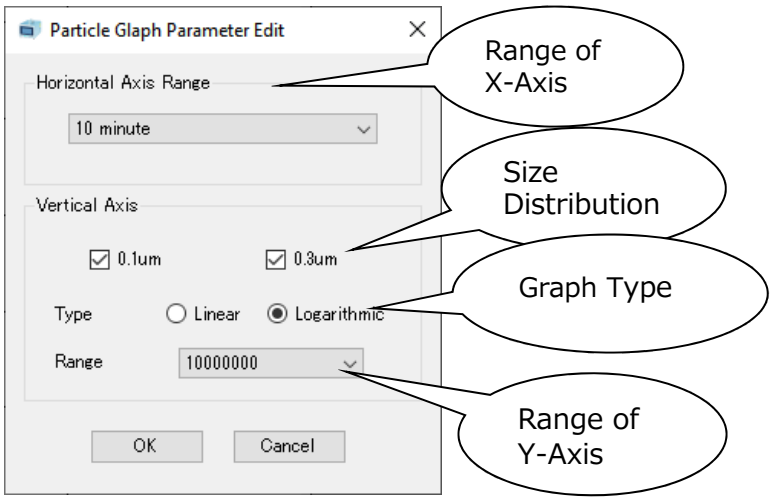


Figure 8-2 Particle Graph Parameter Edit Dialog Box

1) Parameters

Item	Details	Remarks
Range of X-axis	1, 2, 3, 4, 5, 10, 20, 30, 40, 50, 60 minutes	Selectable
	3, 6, 12, 18, 24 hours	
	0, 20, 30 days	
Size distribution	0.1 μm, 0.3 μm	Selectable
Graph type	Linear graph, Logarithmic graph	Selectable
Range of Y-axis	10,20,50,100, … 1.00E+9	Selectable

2) Button functions

: Saves the graph parameters.

: Cancels the command.

§ 9 Help

Use this menu to display the software title and version information.

Figure 9-1 Help Menu

9.1 About

Click the **About** on the Help Menu (Fig. 9-1) to display the About (version information) as shown in Figure 9-2.

Figure 9-2 About (Version information)

§ 1 0　Data Display Software: Measurement Screen

10.1 Data Display Software: Measurement Screen

Display the Main Screen (Fig. 4-1 in Chapter 4). While holding down the **Ctrl** key, press the **D** key on the keyboard. Perform a measurement on the same screen with the Main screen of the 0.1μm Particle Counter. main unit. The Data Software: Measurement Screen as shown in Figure 10-1 will appear.

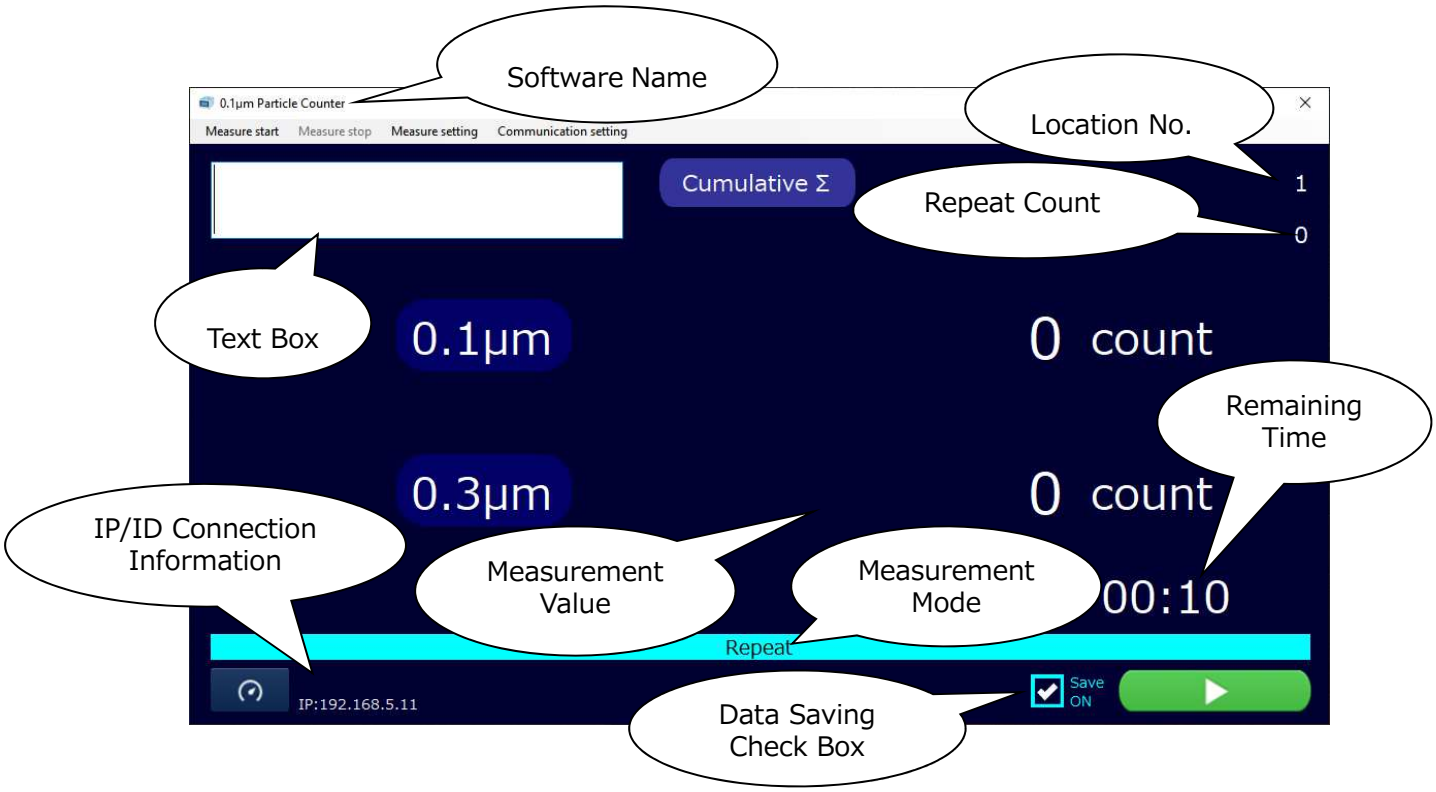


Figure 10-1 Data Display Software: Measurement Screen (1-Device Connection)

1) Parameters

Item	Details
Measurement Value	Particle measurement data
Location No.	Setting location (No.)
Repeat Count	Count up to the number of times of a set repeat count
Remaining Time	Remaining time to the next step
Measurement Mode	Display a set measurement mode
Text Box	(Optional) Input texts up to 500 characters.
Data Saving Check Box	Indicate whether or not the measured data saving is required.
IP/ID Connection Information	For Ethernet connection, IP information is displayed. For RS485 connection, ID information is displayed.

2) Button functions

Measure start : Starts measurements in all connected devices.

Measure stop : Stops measurements in all connected devices.

Measure setting : Displays the Mode Selection Screen (Chapter 12).

Communication setting : Displays the Select Communication Mode Dialog Box (Chapter 11).

Cumulative Σ : Switches readings that represent each device between Cumulative Σ and Differential Δ .

: Starts/Stops measurements in each device.

: Displays the Mode Selection Screen (Chapter 12) of the device that the screen with this icon shows.

The layout of the Measurement Screen depends on how many devices (up to four devices) are connected. Checking the check box on the screens of **11.2 Setting the IP address** or **11.3 Setting RS-485** (Chapter 11. Communication Settings) allows you to designate the number of device to be connected.

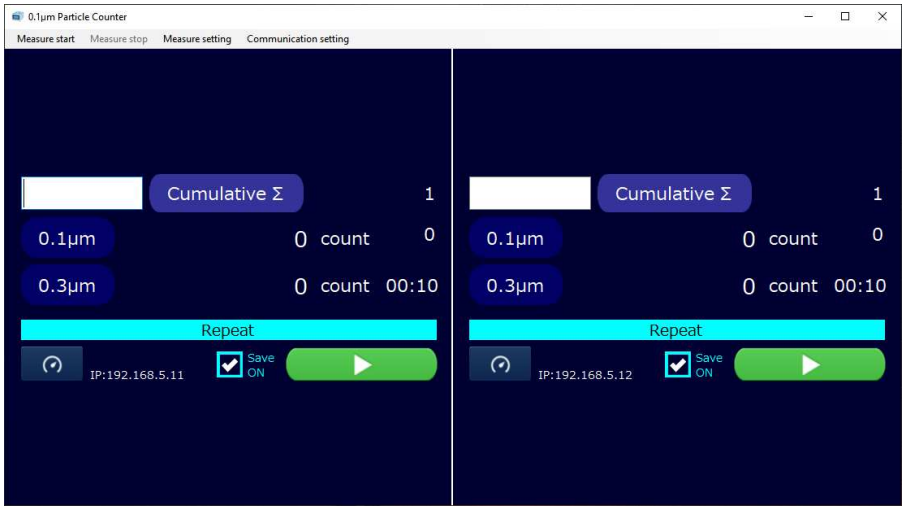


Figure 10-2 Data Display Software: Measurement Screen (2-Device Connection)

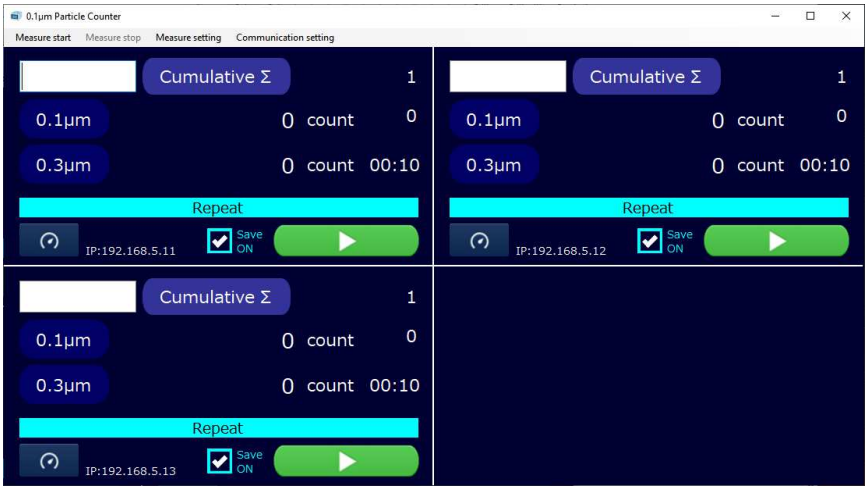


Figure 10-3 Data Display Software: Measurement Screen (3-Device Connection)

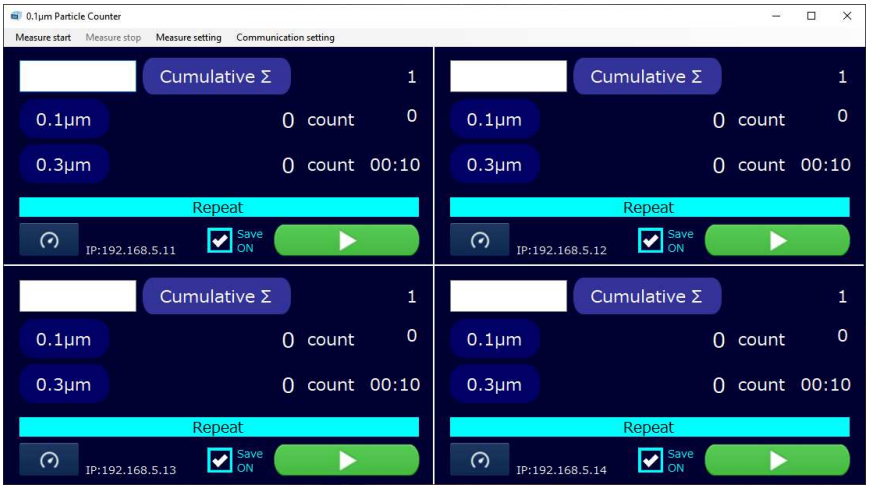


Figure 10-4 Data Display Software: Measurement Screen (4-Device Connection)

Display the Data Display Software: Measurement Screen. While holding down the **Ctrl** key, press the **D** key on the keyboard to display the Main Screen (Fig. 4-1 in Chapter 4). For the operation of the Main Screen, please refer to Chapter 4.

§ 1 1　Communication Settings

In this chapter, set communication modes, communication parameters and the number of device to be connected.

Select the measurement mode before starting a measurement.

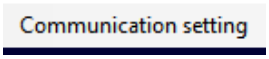


Figure 11-1 Communication Setting Button

11.1 Selecting the communication mode

Click the Communication Setting Button on the Measurement Screen to display the Select Communication Mode Dialog Box as shown in Figure 11-2.

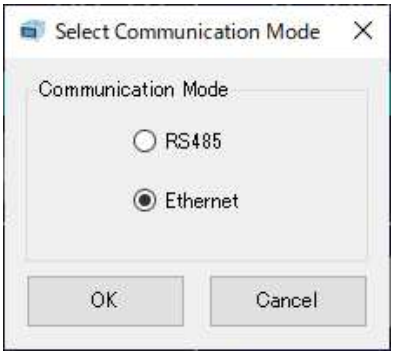


Figure 11-2 Select Communication Mode Dialog Box

Choose Ethernet or RS485.

OK : Shows the parameter setting screen on the selected communication mode.

Cancel : Cancels the command.

11.2 Setting the IP address

Using with the LAN cable, connect the PC and the 0.1μm Particle Counter.

Ethernet

On the Setup Menu (Fig. 11-2), click the **Ethernet Set** to display the Ethernet Setting Dialog Box as shown in Figure 11-3.

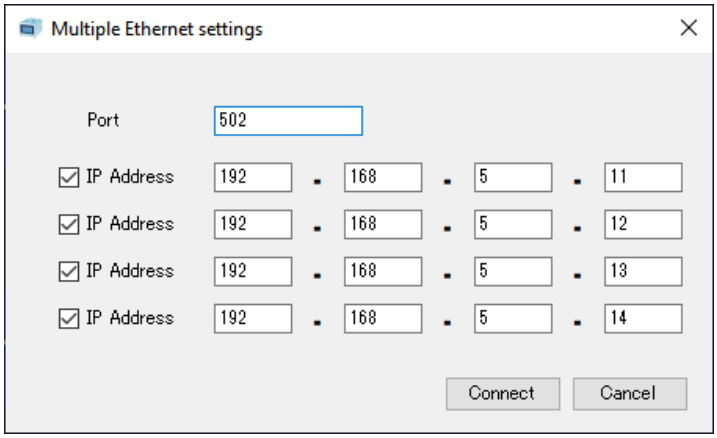


Figure 11-3 Ethernet Setting Dialog Box

1) Setting Parameter

Checking the check box of the IP Address allows you to enter IP address.

Check the check box to meet the number of device to be connected.

Enter the port number and the IP address set on the 0.1μm Particle Counter main unit.

2) Button functions

Connect : Saves the parameters and connects. When the connection completed, the **success** message will be displayed. When the connection is failure, a **failure** message will be displayed. If a connection error occurs, check the connection status.

Cancel : Cancels the command.

11.3 Setting RS-485

On the Setup Menu (Fig. 11-2), click the **RS485 Set** to open the RS 485 Setting Dialog Box as shown in Figure 11-4.

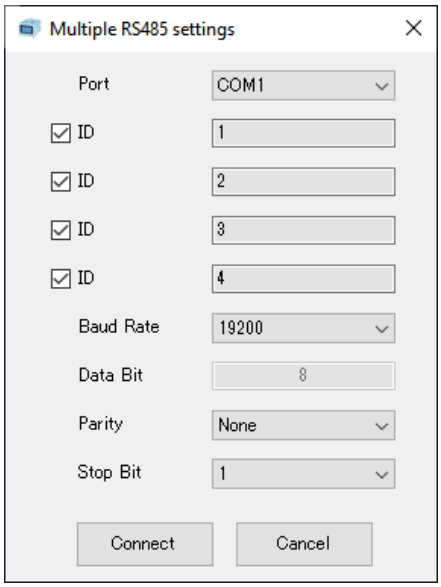


Figure 11-4 RS485 Setting Dialog Box

Note: When setting the port, be sure to confirm the communication port connected to the main device and the PC.

1) Parameter settings

Checking the check box of the ID allows you to enter ID.

Check the check box to meet the number of device to be connected.

Enter the communication parameters set on the 0.1 μm Particle Counter main unit.

Item	Details	Remarks
Port	COM1, COM2 … COM255	Selectable
ID	1, 2, 3 … 247	Input possible
Baud rate	9600, 19200, 38400	Selectable
Parity	None, Even, Odd	Selectable
Data bit	8	Fixed
Stop bit	1 or 2	Selectable

2) Button functions

Connect : Saves the parameters and opens the port. When the port is connected properly, the success message will appear. When a port error occurs, a failure message will appear. If a connection error occurs, check the connection status.

Cancel : Cancels the command.

§ 1 2 Measurement Settings

Configure each parameter in the measurement mode.

Figure 12-1 Measurement Setting Button

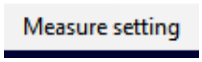


Figure 12-2 Batch Processing Measure Setting Button

12.1 Measurement Mode Selection Screen

Click the Individual Processing Measurement Setting Button (Fig. 12-1) or the Batch Processing Measure Setting Button (Fig. 12-2) on the Measurement Screen to display the Mode Selection Screen as shown in Figure 12-3.

When clicking the Individual Processing Measurement Setting Button, IP/ID information will be displayed as a window-name as shown in Figure 12-4.

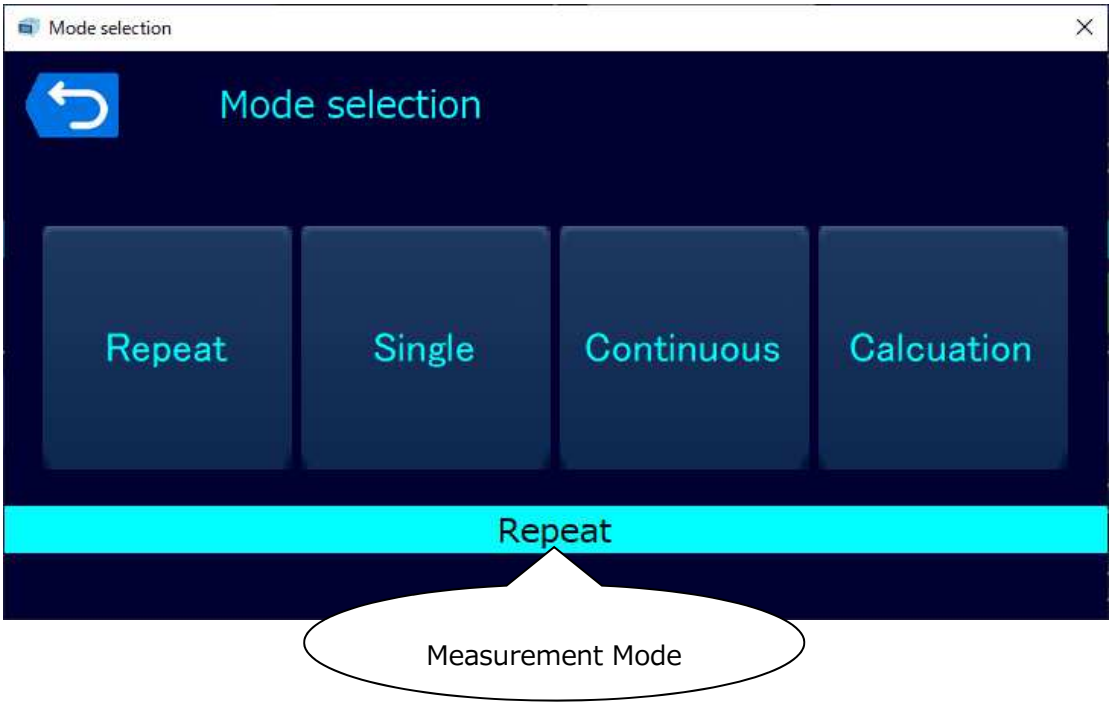
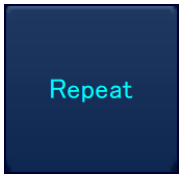


Figure 12-3 Mode Selection Screen

Figure 12-4 Display of Window-Name
When Clicking Individual Processing Measurement Setting Button

1) Button functions



: Use this button to display the screen to set up the Repeat mode.

: Use this button to display the screen to set up the Single mode.

: Use this button to display the screen to set up the Continuous mode.

: Use this button to display the screen to the Calculation mode.

: Use this button to close the current screen.

12.2 Measurement Mode

When the Mode Selecting Screen (Fig. 12-3) is displayed by clicking the Individual Processing Measurement Setting Button (Fig. 12-1), IP or ID information will be displayed as a window-name.

In this case, only measurement modes in the screen that applies can be set.

When the Mode Selecting Screen is displayed by clicking the Batch Processing Measure Setting Button (Fig. 12-2), measurement modes in all the screens can be set.

1) Repeat Mode

Click the **Repeat** button on the Mode Selection Screen (Fig. 11-3) to display the Repeat Mode as shown in Figure 12-5.

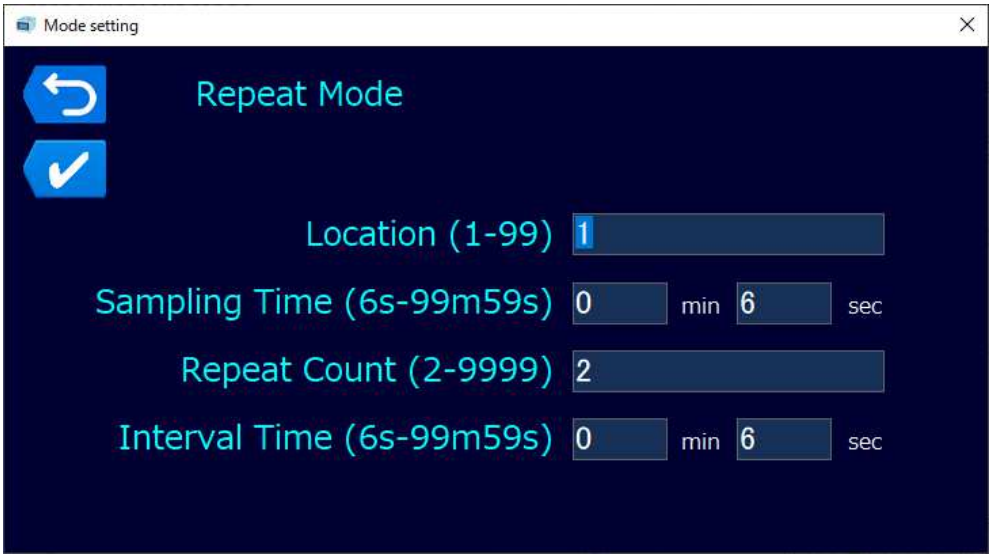


Figure 12-5 Repeat Mode

1-1) Parameter Settings

Item	Details	Remarks
Location	1 to 99	Possible to input
Sampling Time	6 s to 99 m 59 s	Possible to input
Repeat Count	2 to 9999	Possible to input
Interval Time	6 s to 99 m 59 s	Possible to input

1-2) Button functions

: Use this button to cancel the setting and close the current window.

: Use this button to save the setting and display the Data Display Software: Measurement Screen. (Fig. 10-1)

2) Single Mode

Click the **Single** button on the Mode Selection Screen (Fig. 12-3) to display the Single Mode screen as shown in Figure 12-6.

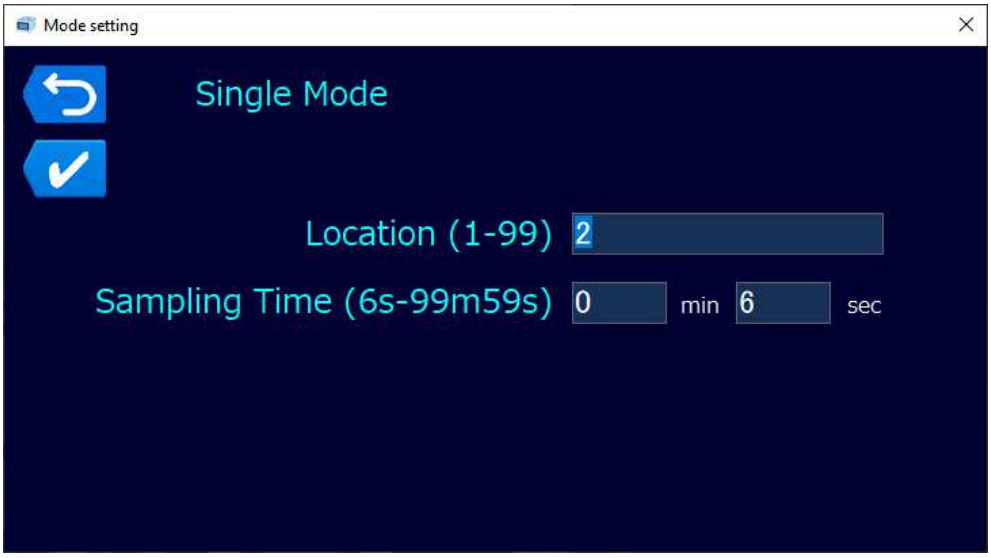


Figure 12-6 Single Mode

2-1) Parameter Settings

Item	Details	Remarks
Location	1 to 99	Possible to input
Sampling Time	6 s to 99 m 9 s	Possible to input

2-2) Button functions

: Use this button to cancel the setting and close the current screen.

: Use this button to save the setting and display the Data Display Software: Measurement Screen. (Fig. 10-1)

3) Continuous Mode

Click the **Continuous** button on the Mode Selection Screen (Fig. 12-3) to display the Continuous Mode shown in Figure 12-7.

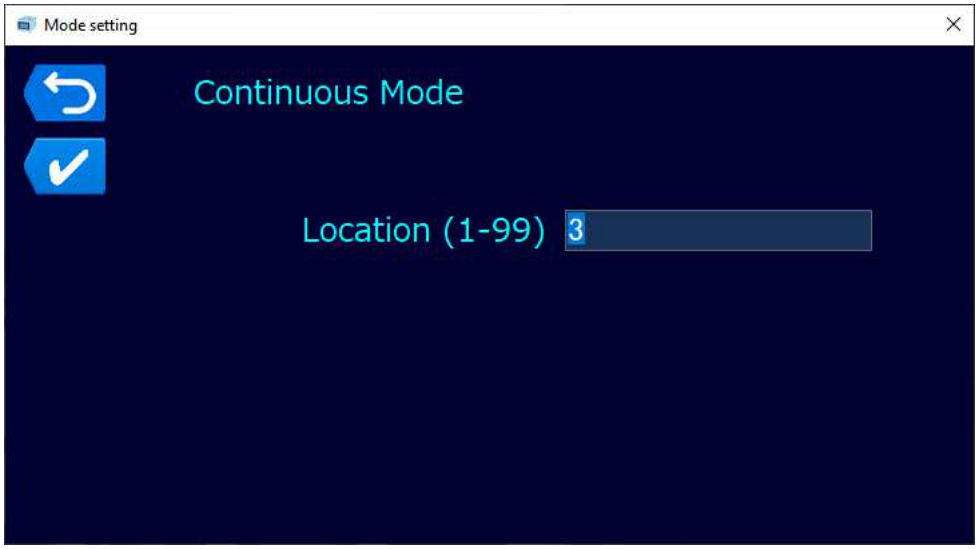


Figure 12-7 Continuous Mode

3-1) Parameter Settings

Item	Details	Remarks
Location	1 to 99	Possible to input

3-2) Button functions

: Use this button to cancel the setting and close the current screen.

: Use this button to save the setting and display the Data Display Software: Measurement Screen. (Fig. 10-1)

4) Calculation Mode

Click the **Calculation** button on the Mode Selection Screen (Fig. 12-3) to display the Calculation Mode as shown in Figure 12-8.

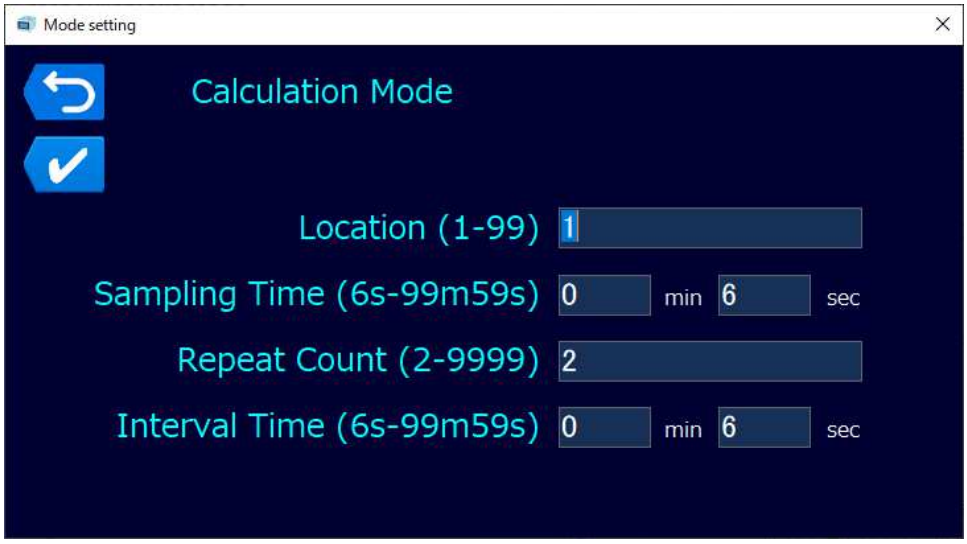


Figure 12-8 Calculation Mode

4-1) Parameter Settings

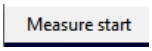
Item	Details	Remarks
Location	1 to 99	Possible to input
Sampling Time	6 s to 99 m 59 s	Possible to input
Repeat Count	2 to 9999	Possible to input
Interval Time	6 s to 99 m 59 s	Possible to input

4-2) Button functions

: Use this button to cancel the setting and close the current screen.

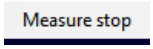
: Use this button to save the setting and display the Data Display Software: Measurement Screen. (Fig. 10-1)

12.3 Starting Measurement

Click or 

to start measurement.

12.4 Stopping Measurement

Click or 

to stop measurement.

If you have checked the Data Saving Check Box in advance and there are valid results, when the measurement is completed, or stopped by tapping the button, the File Saving Dialog Box will appear. The results can be stored. (*.CSV format)

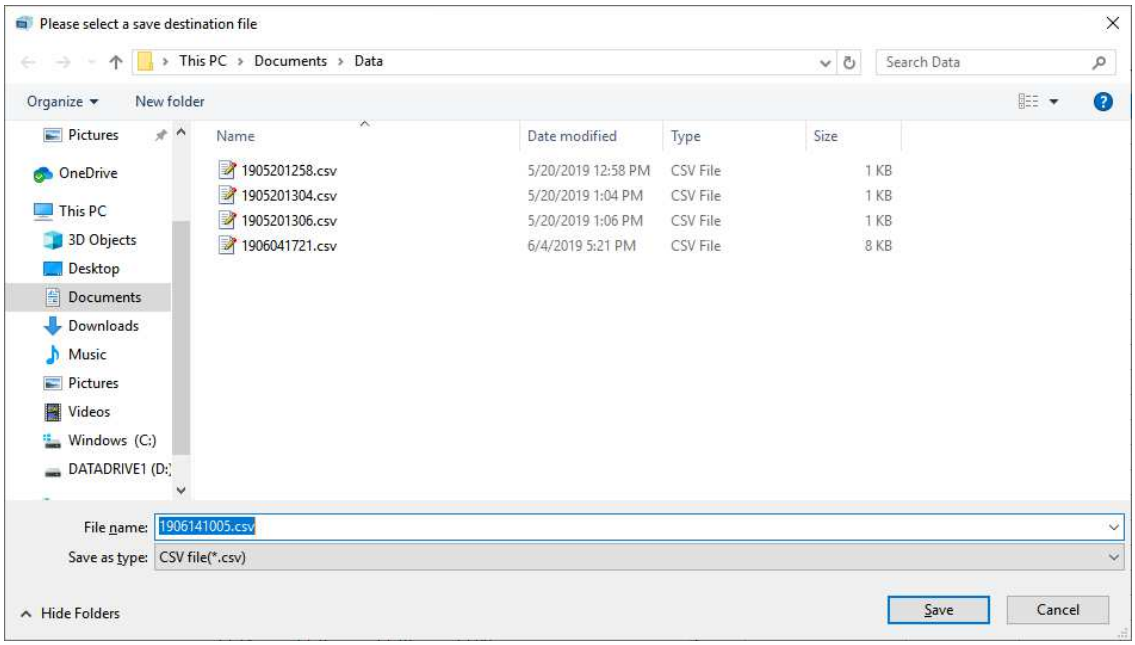
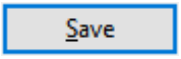
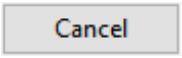


Figure 11-8 File Saving Dialog Box



: Tap this button to save data.



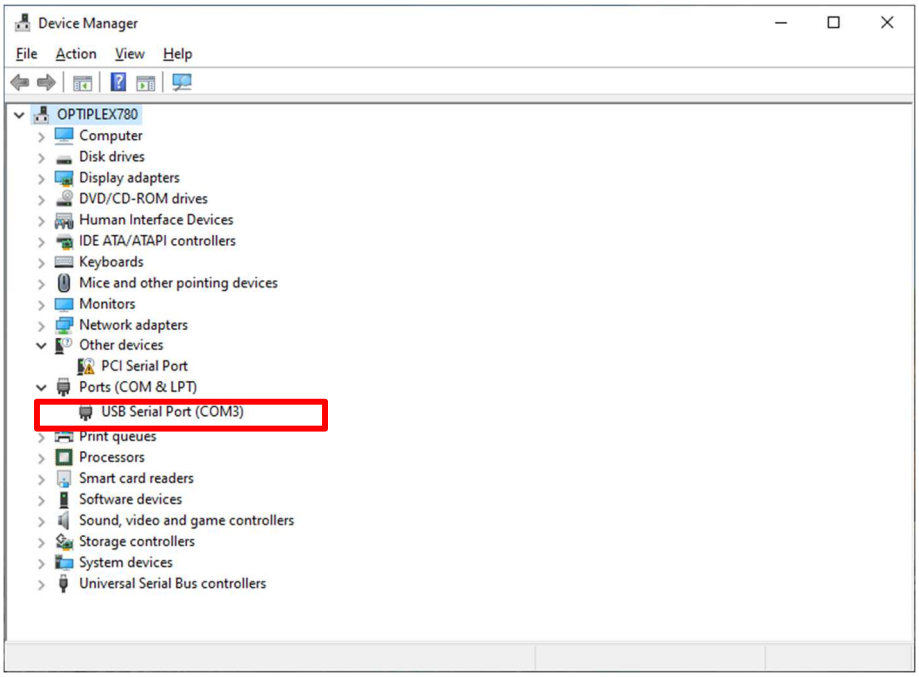
: Tap this button to cancel the current command.

§13 Troubleshooting

When using the RS485-USB conversion cable (hereinafter, the “conversion cable”), if communication errors occur repeatedly, the change of the device settings for the conversion cable can result in avoiding communication errors.

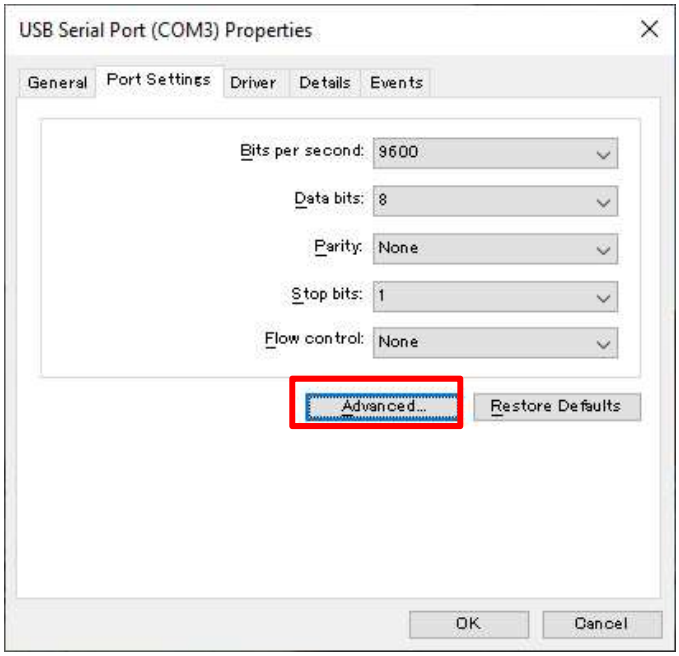
(Example) If FTDI Chip’s conversion cable is used,

・ Open the Device manager.

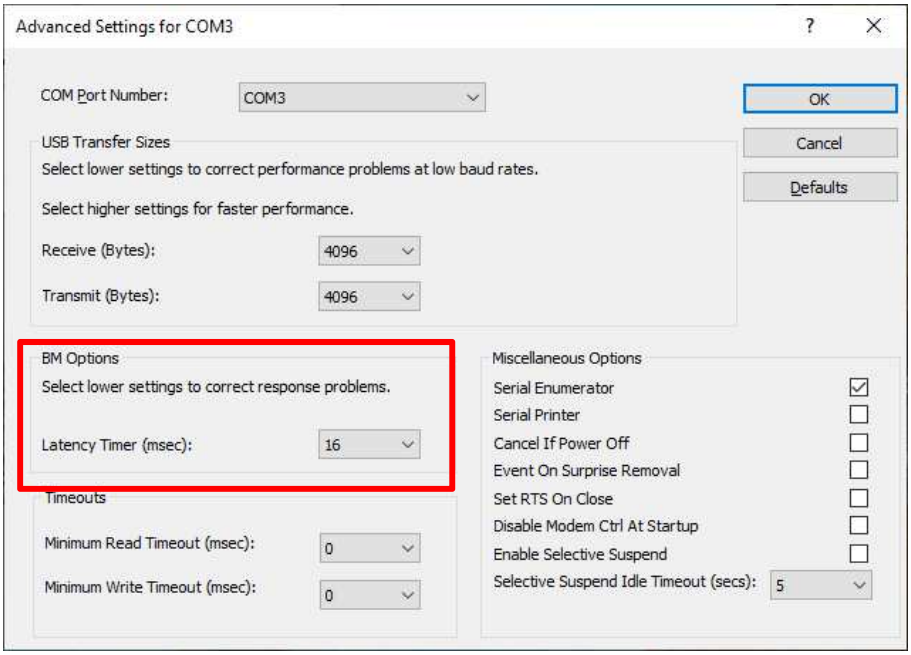


・ Expand **Port (COM and LPT)**, and right-click the **USB Serial Port (COMx)** Choose **Properties** on the menu and click **Properties**.

・ Click **Advanced** on the Port Settings.



・ When the Advanced Setting screen appears, change **Latency Timer** in the BM Options from 16msec to 1msec, then click **OK**.
Close the properties screen to complete the settings.



§1 4 Contact Information

☐ U.S.A.

KANOMAX USA, INC.
PO Box 372, 219 Route 206, Andover, NJ 07821 U.S.A.
TEL: (800)-247-8887 / (973)-786-6386
FAX: (973)-786-7586
URL: http://www.kanomax-usa.com/
E-Mail: info@kanomax-usa.com

☐ JAPAN

KANOMAX JAPAN INC.
2-1 Shimizu, Suita City, Osaka 565-0805, Japan
TEL: 81-6-6877-0183
FAX: 81-6-6879-5570
URL: http://www.kanomax.co.jp
E-Mail: sales@kanomax.co.jp

☐ CHINA

Shenyang Kano Scientific Instrument Co., Ltd.
TEL: 86-24-23846440
FAX: 86-24-23898417
URL: http://www.kanomax.com.cn/
E-mail: sales@kanomax.com.cn

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