



Instruction Manual

MT-10A

Control Software

Thank you for purchasing this KYOWA product.

Read this instruction manual carefully in order to make full use of the product.

Use this product only as described in this instruction manual.

This instruction manual only describes how to operate the control software.

For information on hardware, refer to the hardware instruction manual.

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Kyowa is not to be held responsible for any injury or damage that occurs through use of this control software.

Business use only

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NOTATIONS USED IN THE INSTRUCTION MANUAL

Precautions and reference information for handling are indicated using the following notations.



Important precautions and useful reference information for handling are listed below.

NOTATION IN THIS MANUAL

This manual uses the following notation for related products.

The MT-100A series is collectively referred to as “This product”.

The MT-100A receiver of the MT-100A series is referred to as the “Receiver”.

The MT-101A-S transmitter of the MT-100A series is referred to as the “Transmitter”.

The MT-10A control software for the MT-100A series is referred to as the “This software”.

Text references

Menus, tabs, and buttons on this software are enclosed in square brackets.

Example: [OK] button.

Text referenced from an instruction manual is indicated in double quotation marks.

Example: Refer to "NOTATIONS USED IN THE INSTRUCTION MANUAL" for information on notations.

IMPORTANT: CONFIGURATION SETTINGS FOR USING THIS SOFTWARE



- The following PC settings (states) may prevent this software from operating normally.
 - The PC is configured to start a screensaver.
 - The PC is configured to operate a power-saving function, such as system standby.
 - The PC is configured to start an application such as virus check software on a schedule.
 - The PC is being accessed over a network. Or, the PC is accessing a network.
- Do not use other software while this software is in use.
- When using this software, please set the font size as follows:
 - For Windows 11: Right-click on the desktop, select [Display settings] from the pop-up menu, and set [Scale] under [Scale and layout] to 100%.

1. Overview

This software is a program used to set up and operate the Receiver and the Transmitter.

This manual explains the setup and operation methods of this software. For the receiver and transmitter, please refer to the separate "MT-100A Series INSTRUCTION MANUAL Hardware Edition".

1-1. Setup

This section describes how to install and uninstall this software.



Login with administrator privileges to install or uninstall this software.

1-1-1. Installation

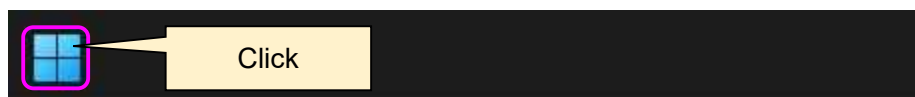
This section explains how to install the software.

- (1) Double-click SetupMT10A****.exe to run the installer.
- (2) The installer will start, so follow the on-screen instructions to complete the installation.

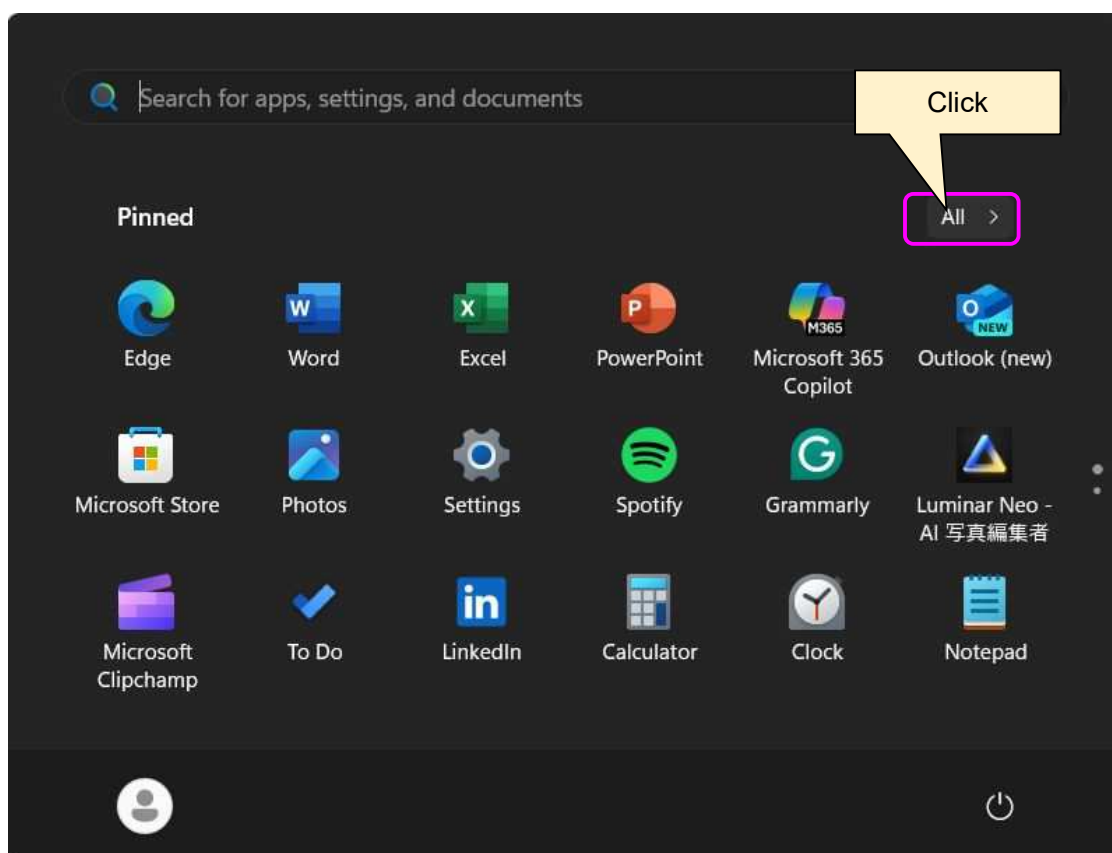
1-1-2. Uninstallation

This section explains how to uninstall the software.

(1) Click the [Start] button on the taskbar.



(2) Click [All apps] in the Start menu.



(3) Find MT-10A in the list that appears.

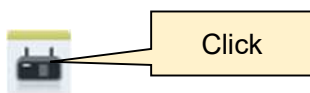
(4) Right-click MT-10A and select [Uninstall].

1-2. Startup and Exit

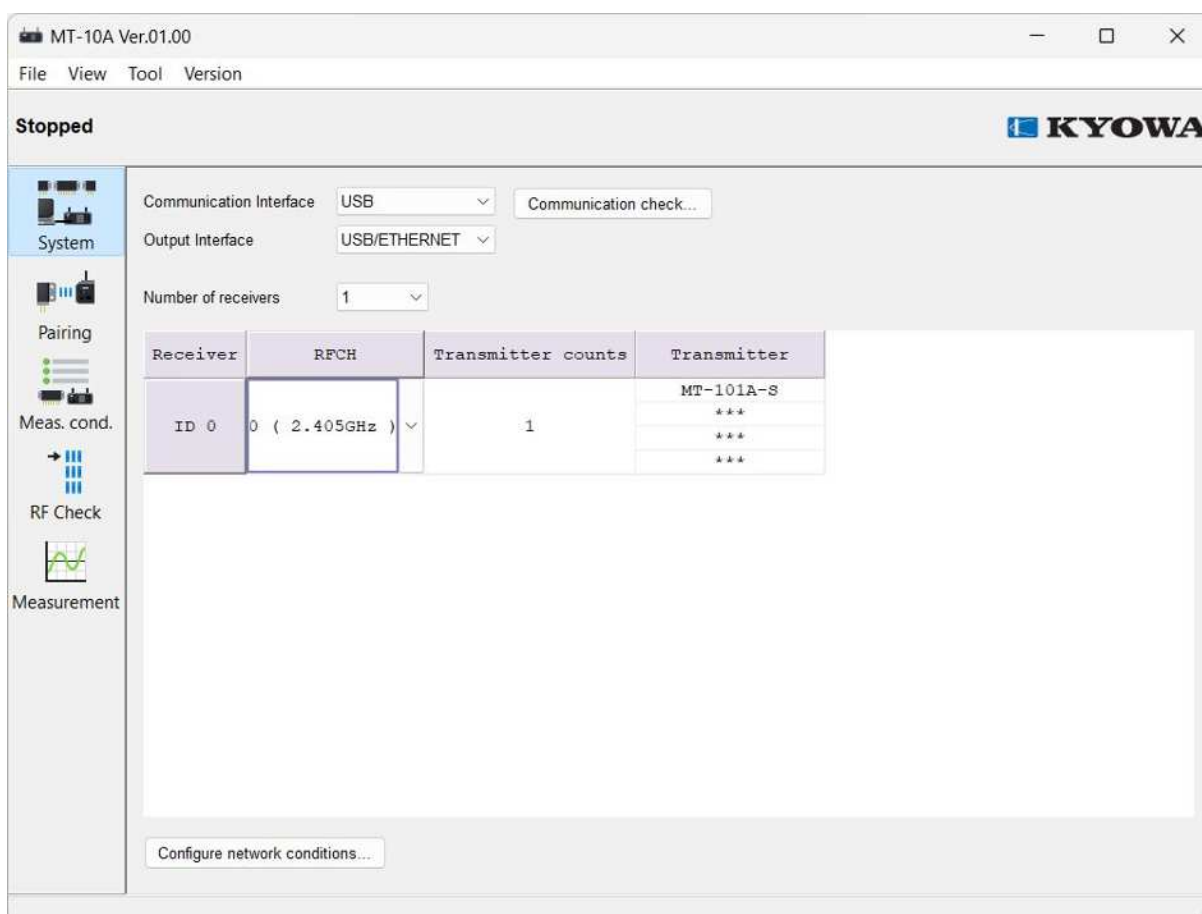
This section describes how to start and exit the software.

Startup

- (1) Click the Windows key and then click the MT-10A icon from the Start menu to launch the software.

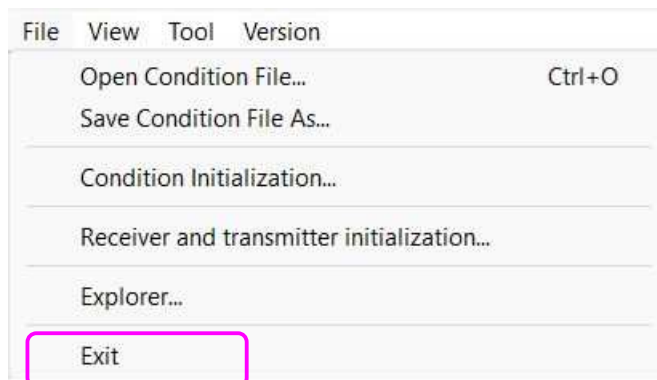


- (2) The main window will be displayed.



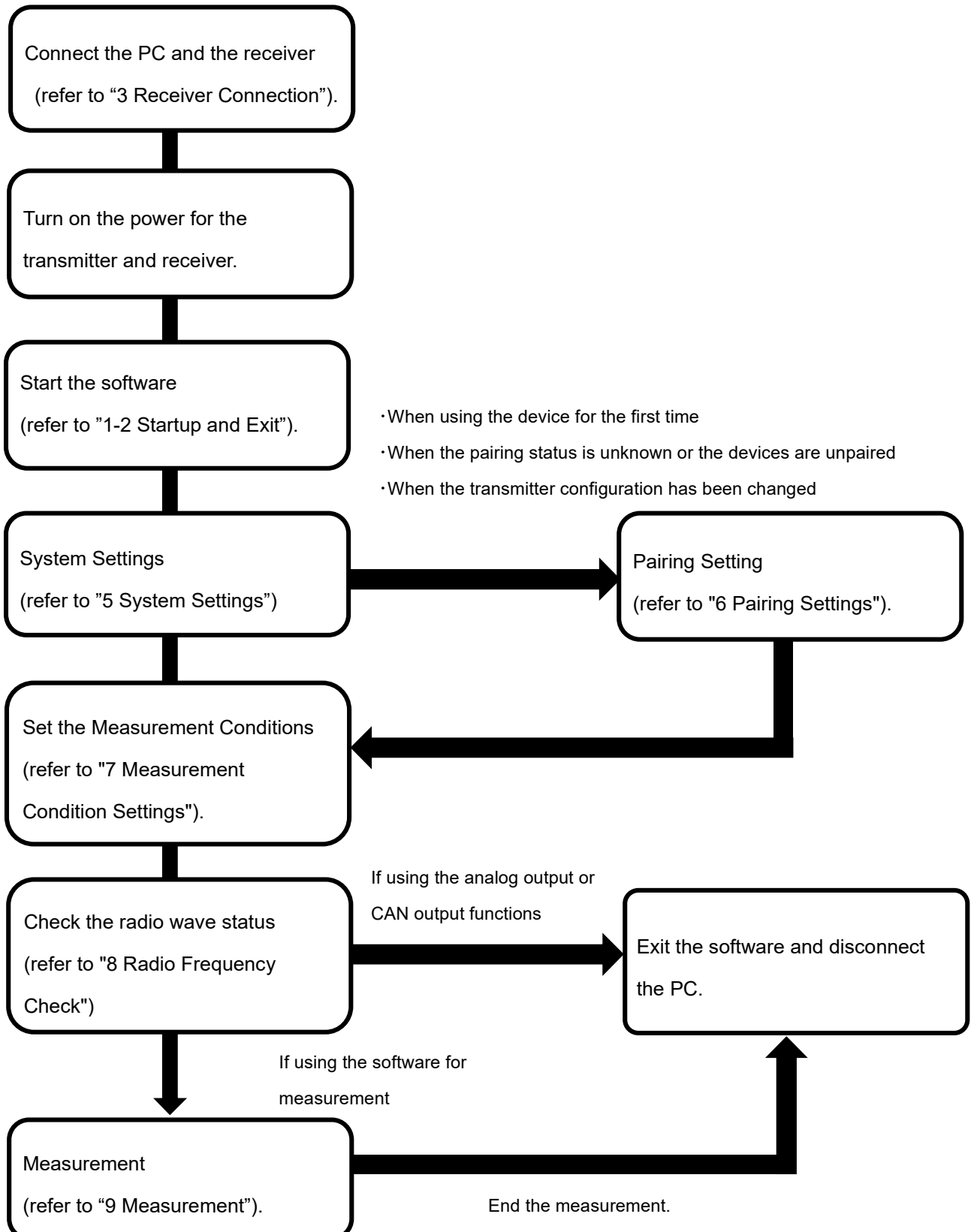
Exit

To exit the software, select [File] - [Exit] from the main menu.



2. Basic Operations

Here are the basic operation steps:



3. Receiver Connection

This section describes how to connect the PC and the receiver.

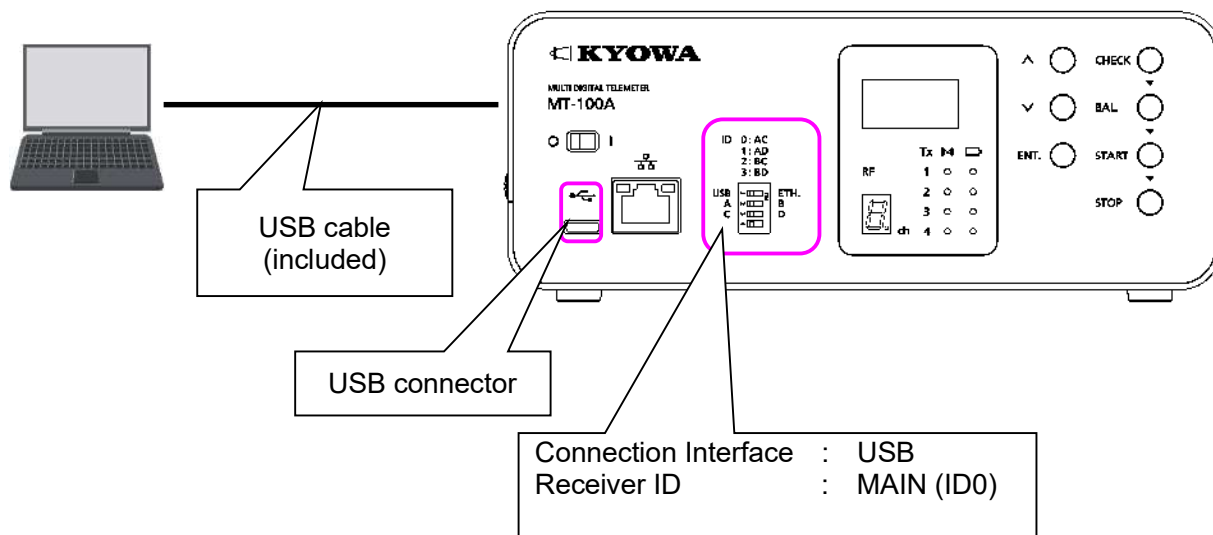


- The LAN communication between the PC and the receiver uses communication port 34450. When communicating through a router or firewall, ensure that this port is not blocked.
- While it's possible to use an Ethernet connection within a regular company network, it is recommended to use a network with only the PC and receiver for security and operational stability.
- Use a Category 5 compliant straight-through LAN cable for the connection between the PC and the receiver.
- The MT-100A series USB driver must be installed on the PC to control the device via USB.

3-1. Single-Unit Connection

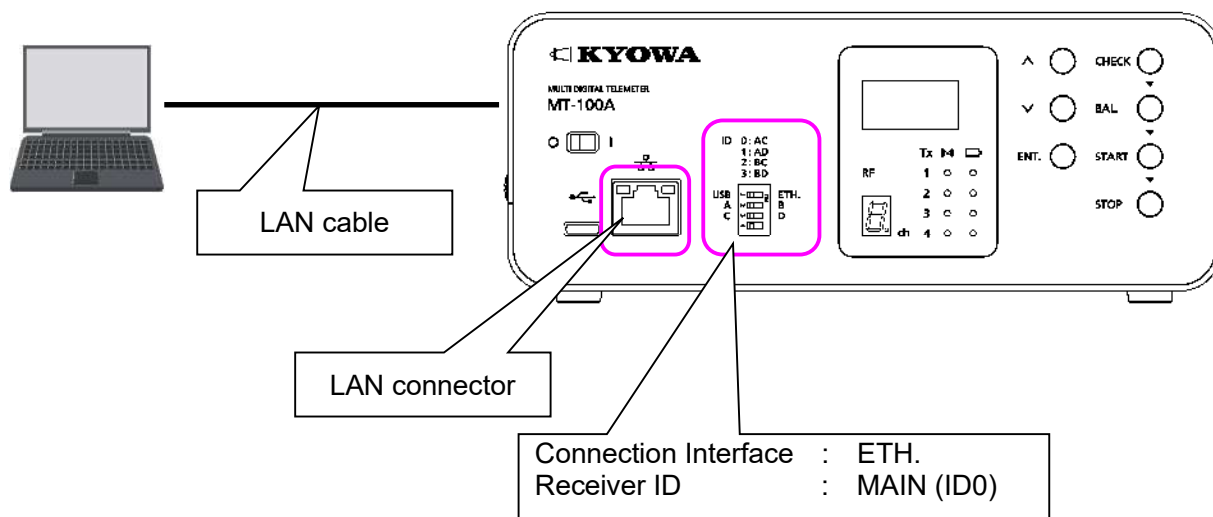
3-1-1. USB Connection

Use the included USB cable to connect the PC and the receiver.



3-1-2. Ethernet Connection

Use a LAN cable to connect the PC and the receiver.

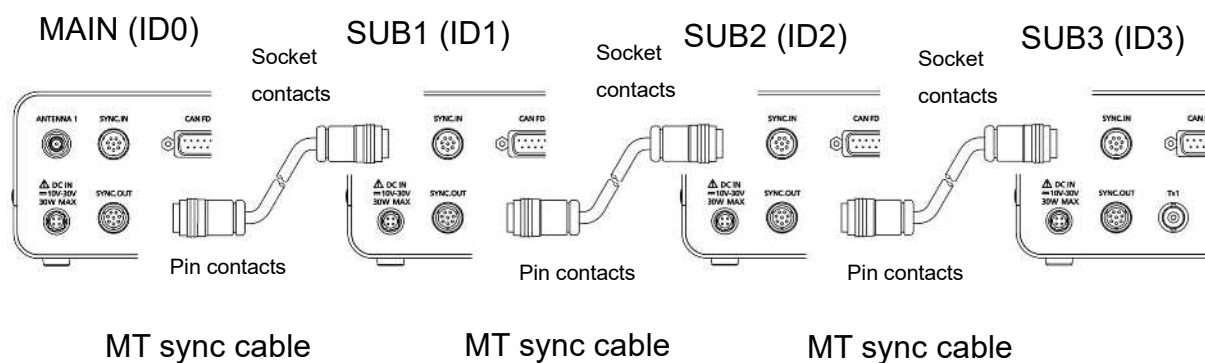


3-2. Synchronous Operation

Synchronous operation allows you to measure using multiple receivers and transmitters, with a maximum of 16 channels (4 channels x 4 units).

An optional MT sync cable is required for this.

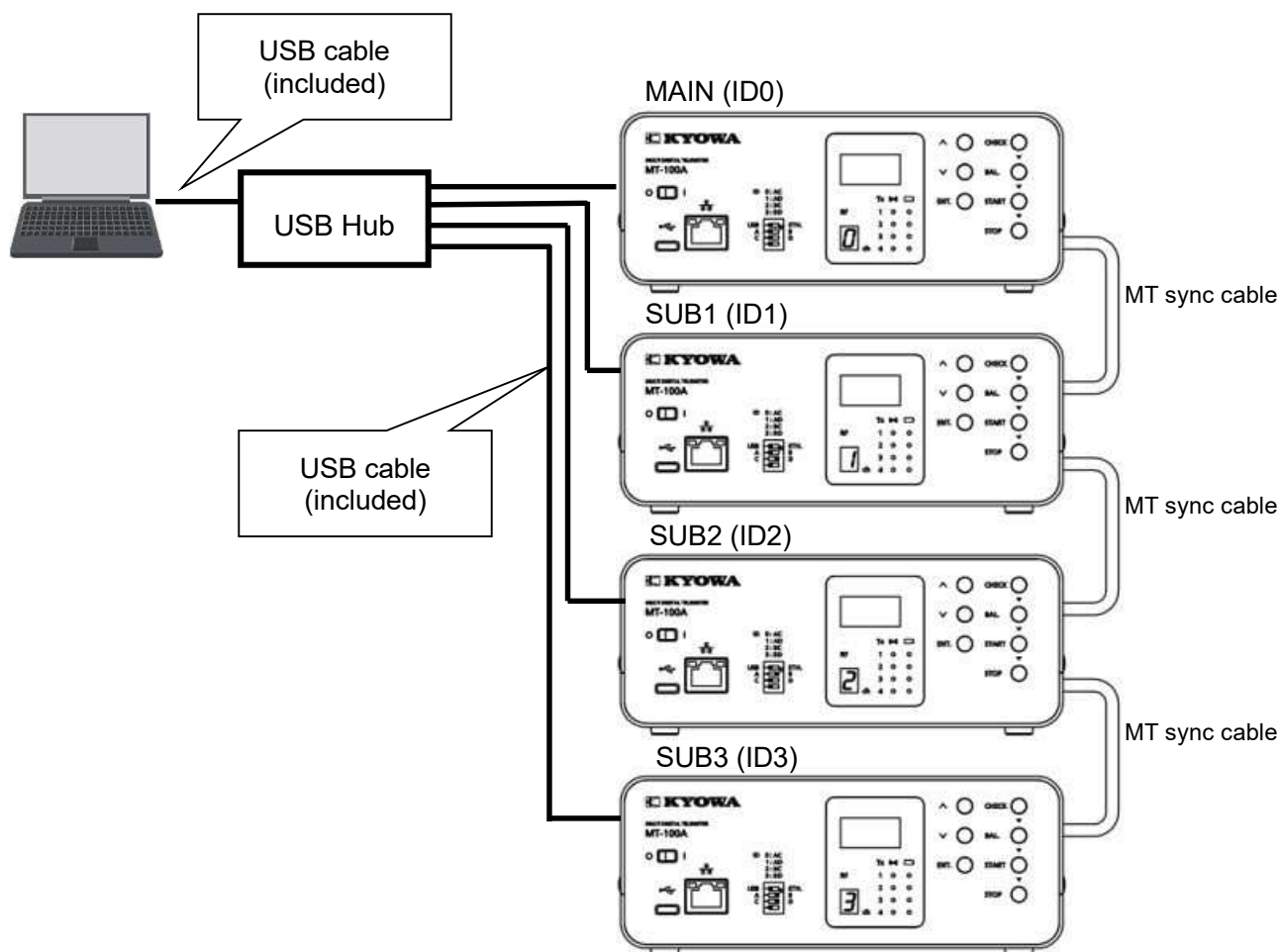
- (1) Use the receiver setting switches on each receiver to assign them as MAIN (ID0) or SUB (ID1-3).
- (2) Connect the pin contact side of the MT sync cable to the SYNC.OUT connector of the MAIN (ID0) unit.
- (3) Connect the socket contact side of the MT sync cable to the SYNC.IN connector of SUB1 (ID1).
- (4) If necessary, use the MT sync cable to connect the SYNC.IN and SYNC.OUT connectors of SUB2 (ID2) and SUB3 (ID3) in the same manner.



3-2-1. USB Connection

All receivers in synchronous operation should be connected to the PC via a USB hub using the included USB cables.

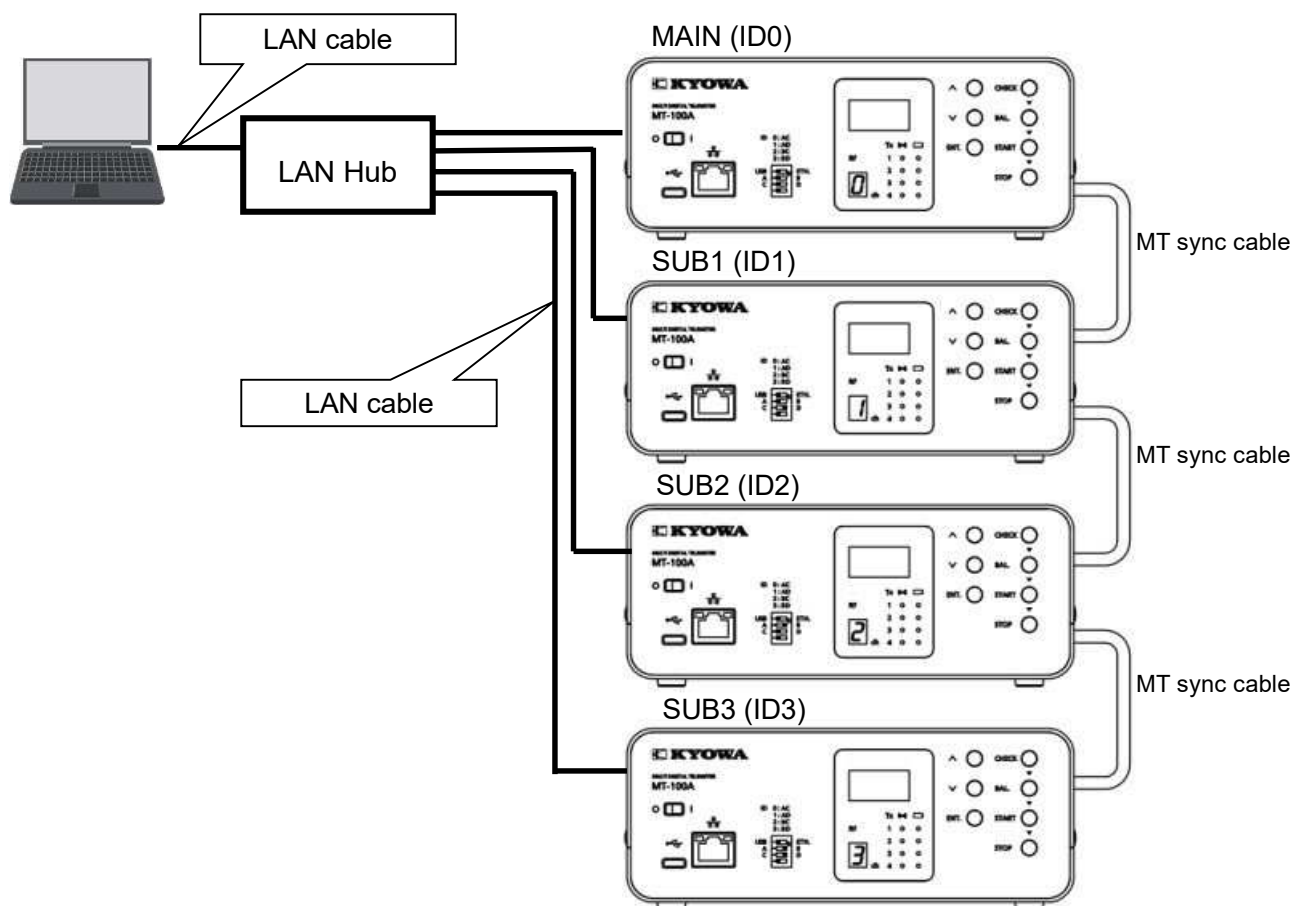
Set the connection interface to USB for all synchronously connected receivers.



3-2-2. Ethernet Connection

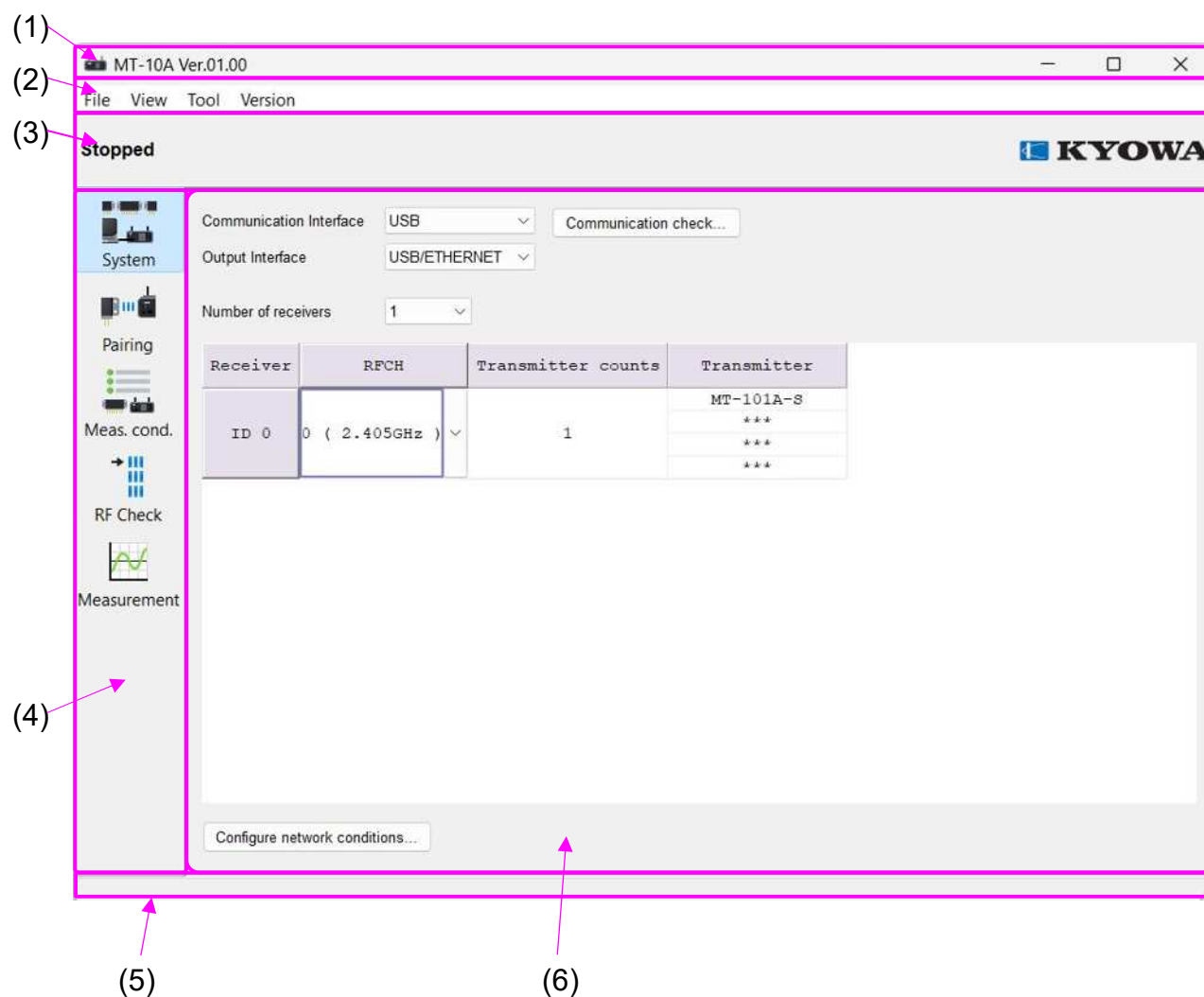
All receivers in synchronous operation should be connected to the PC via a LAN hub using LAN cables.

Set the connection interface to ETH. for all synchronously connected receivers.



4. Main Window

This section describes the main window.



(1) Title Bar: Displays the application name and version.

(2) Menu Bar: Lists the functions of the software.

(3) Measurement Status Bar:

Displays the current measurement status.

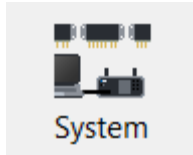
Stopped: Not performing a measurement.

Measuring: Performing a measurement.

Saving: Performing a measurement and saving data to a file.

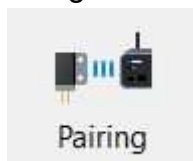
- (4) Toolbar:** Displays the contents of the display area as icons.
Clicking an icon switches the screen in the display area.

System:



Displays a screen for setting the communication interface, output interface, and the number of connected receivers and transmitters.

Pairing:



Displays a screen for performing pairing between the receiver and transmitter.

Meas. cond.:



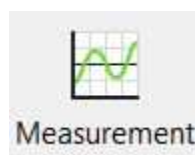
Displays a screen for setting measurement conditions.

RF Check:



Displays a screen for checking the Wireless communication status and changing the radio frequency channel between the receiver and transmitter.

Measurement:



Displays a screen for performing measurement operations.

- (5) Status Bar:** Displays the details of menu operations.

- (6) Display Area:** Displays the screen selected by the toolbar.

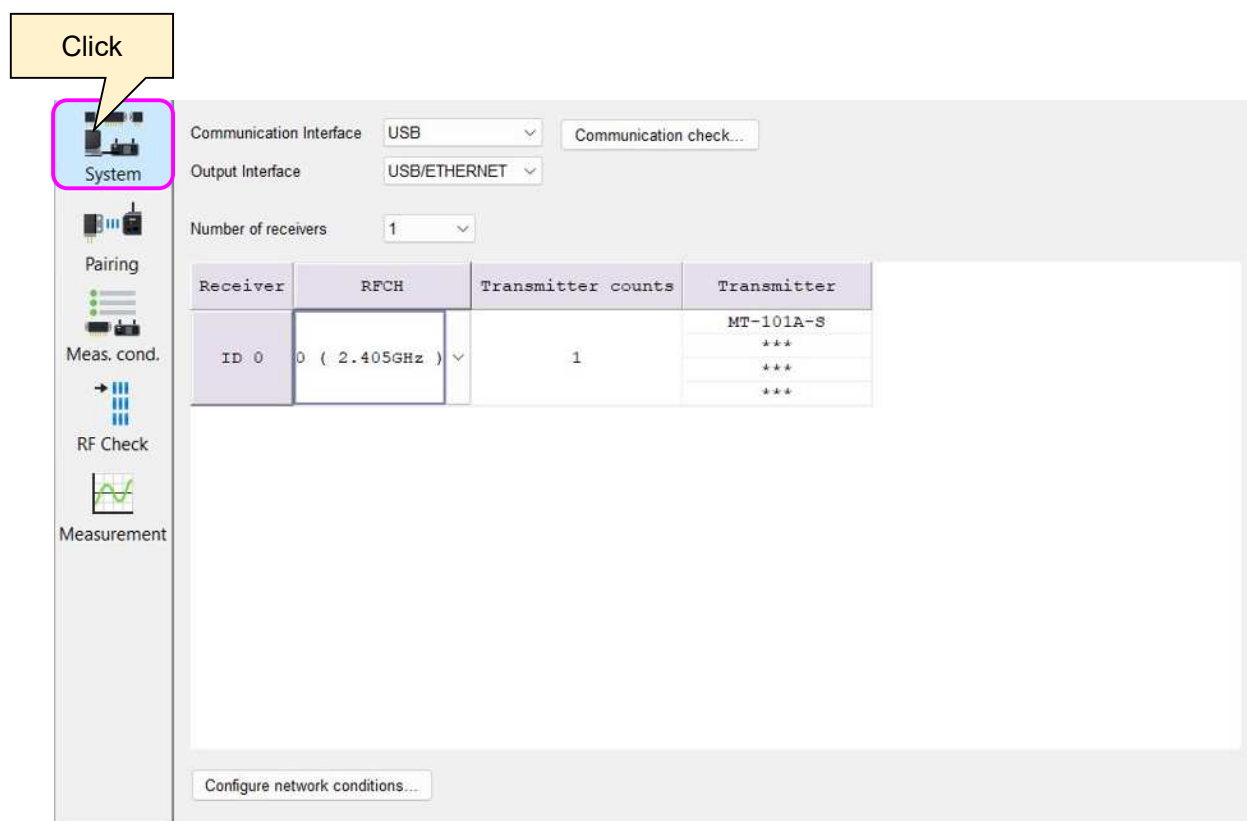


- [View] menu, the toolbar, status bar, and measurement status bar will be displayed when you turn their checkmarks ON and hidden when you turn them OFF.
- The content of the display area can also be switched from the menu.

5. System Settings

The System Settings screen is used to you configure the communication interface, output interface, and the number of connected receivers and transmitters.

To view this screen, select the System icon on the toolbar.



5-1. Interface, and Device Configuration Settings

This section describes how to set the communication interface, output interface, and the number of connected receivers and transmitters.

The screenshot shows a software configuration window. At the top, there are three settings: 'Communication Interface' set to 'USB', 'Output Interface' set to 'USB/ETHERNET', and 'Number of receivers' set to '1'. A 'Communication check...' button is next to the first dropdown. Below these is a table with four columns: 'Receiver', 'RFCH', 'Transmitter counts', and 'Transmitter'.

Receiver	RFCH	Transmitter counts	Transmitter
ID 0	0 (2.405GHz)	1	MT-101A-S

■ Communication Interface:

Select the interface to connect the PC and the receiver.

USB: Select this for a USB connection.

ETHERNET: Select this for a LAN connection.



The communication interface on the software must match the connection interface on the receiver.

■ Output Interface:

Select how to output measurement data.

Analog Output: Select this to use the analog output function.

USB/ETHERNET: Select this to perform measurement operations with this software.

CAN Output: Select this to use the CAN output function.

■ Device Configuration:

Set the number of receivers and transmitters to be controlled.

(1) Select the number of receivers to be controlled.

Receiver	RFCH	Transmitter counts	Transmitter
ID 0	0 (2.405GHz)	1	MT-101A-S *** *** ***

(2) For Ethernet connections, enter the receiver's IP address.

Double-clicking or pressing the [SPACE] key on the item you want to enter will enable input.

Receiver	IP address	RFCH	Transmitter counts	Transmitter
ID 0	192.168.70.100	0 (2.405GHz)	1	MT-101A-S *** *** ***

(3) Select the radio frequency CH.

Receiver	IP address	RFCH	Transmitter counts	Transmitter
ID 0	192.168.70.100	0 (2.405GHz)	1	MT-101A-S *** *** ***

(4) Select the number of transmitters to connect.

Receiver	IP address	RFCH	Transmitter counts	Transmitter
ID 0	192.168.70.100	0 (2.405GHz)	1	MT-101A-S *** *** ***

0

1

2

3

4

(5) For synchronous operation, repeat steps (2)-(4).

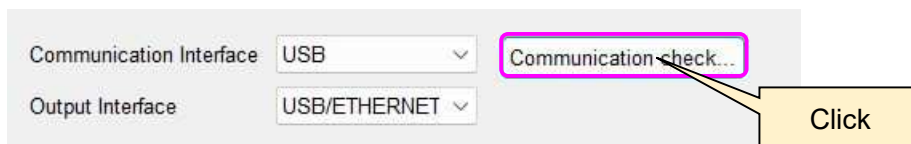


The IP address field is only displayed for Ethernet connections.

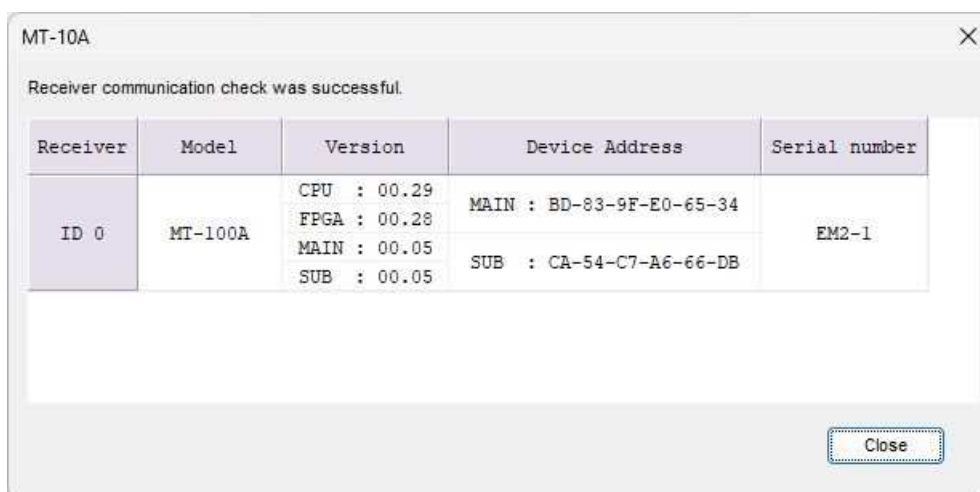
■ Communication Check:

After configuring the devices, you can test whether the PC is communicating correctly with the receiver by connecting to it.

(1) Click the [Communication check] button.



(2) If the connection is successful, a window will display the receiver's model, version, device address, and serial number.





- If the communication between the PC and receiver is not working correctly, check the following:
 - The receiver is powered on.
 - The ID number in the device configuration matches the receiver's ID number.
 - For USB connections, check that the USB cable is connected and the USB driver is installed correctly.
 - For Ethernet connections, check that the LAN cable is connected and the network conditions of the PC and receiver are set correctly.
- The communication check performs a test to see if the PC and receiver can communicate correctly. This function does not check the wireless communication between the receiver and the transmitter.

5-2. Receiver Network Condition Settings

For an Ethernet connection, you must set the receiver's network conditions in advance. This is done on the [Network Condition Settings] screen.



- If you are using an existing network, consult with the network administrator for IP address settings.
- The IP addresses for the PC and each receiver must be different to avoid duplication.
- If other PCs or devices are connected to the network, check their IP addresses and set different values to avoid duplication.
- The receiver's factory default network conditions are:

IP address	192.168.70.100
Subnet mask	255.255.255.0
Default gateway	0.0.0.0

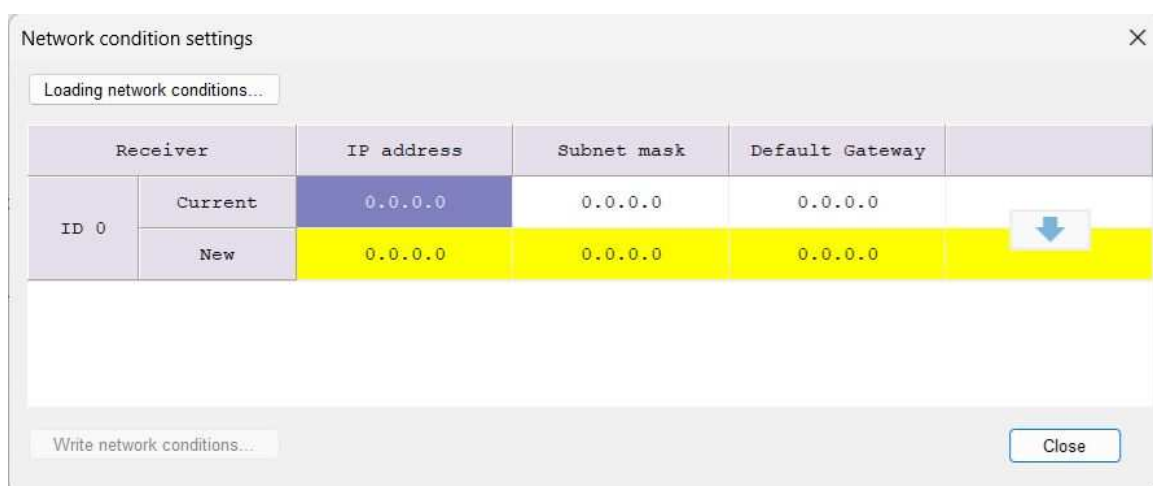
5-2-1. Setting Network Conditions via USB Connection

(1) Set the communication interface to USB and select the number of receivers.

(2) Click the [Configure network conditions] button.

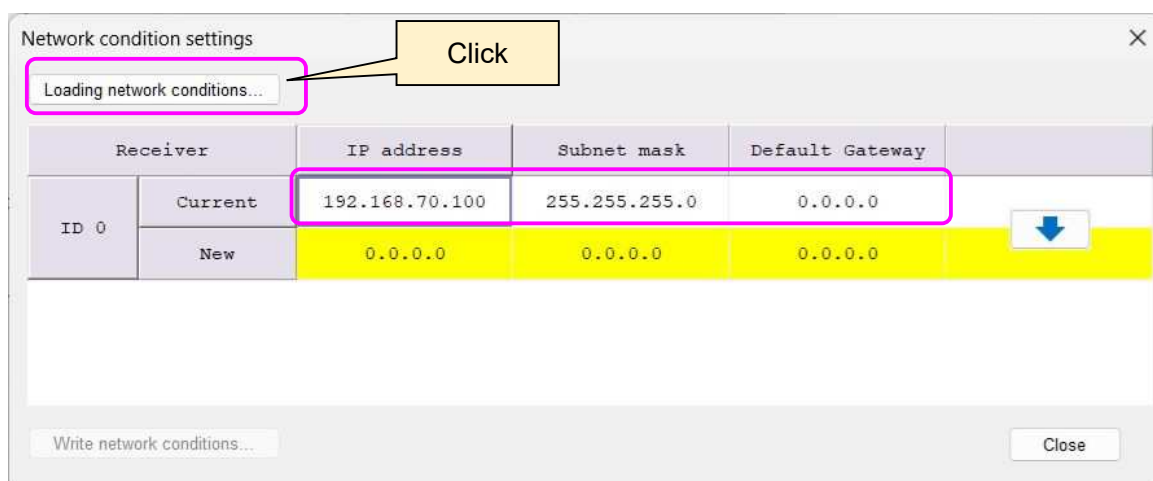


(3) The [Network condition settings] window will appear.

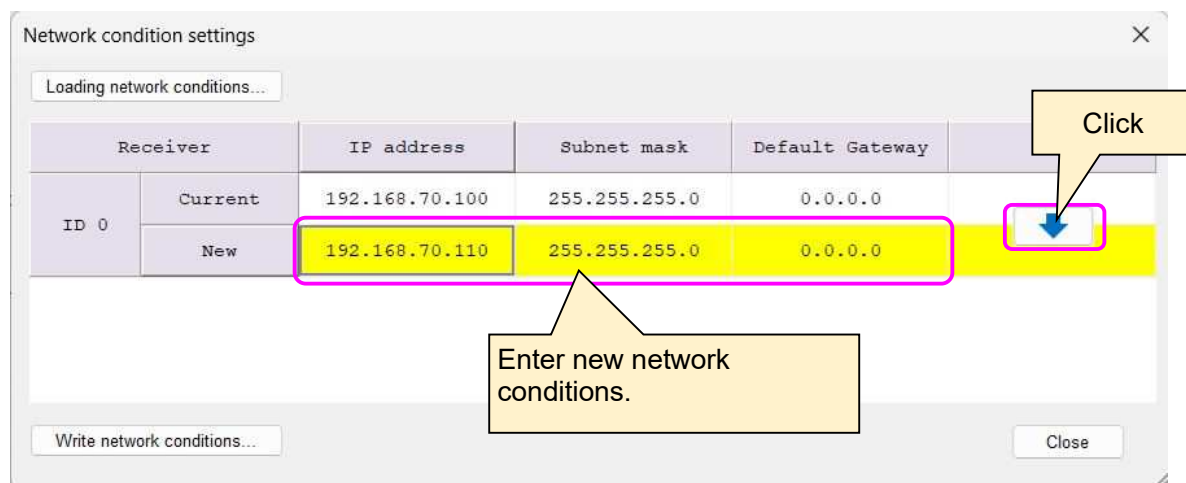


(4) Connect all receivers whose network conditions you want to set to the PC.

(5) Click the [Loading network conditions] button to display the current network conditions of all connected receivers.



- (6) Click the down arrow button to copy the [Current Conditions] to the [New Conditions] field. Enter the new network conditions for each receiver in the [New Conditions] field.



- (7) Click the [Write network conditions] button to write the new network conditions to all connected receivers.



- (8) Disconnect and restart all connected receivers.

5-2-2. Setting Network Conditions via Ethernet Connection

(1) Set the communication interface to ETHERNET and select the number of receivers.

(2) Click the [Configure network conditions] button.



(3) The [Network condition settings] window will appear.

The "Network condition settings" window displays a table with the following data:

Receiver		IP address	Subnet mask	Default Gateway	
ID 0	Current	192.168.70.100	255.255.255.0	0.0.0.0	Change...
	New	192.168.70.100	255.255.255.0	0.0.0.0	

Buttons: "Loading network conditions...", "Close".

(4) Connect all receivers whose network conditions you want to set to the PC.

(5) Enter the current IP address of each receiver in the [Current Conditions] field.

Enter the new network conditions in the [New Conditions] field and click the [Change] button.

The "Network condition settings" window is shown with annotations:

- "Enter the current IP address." points to the "Current" IP address field (192.168.70.100).
- "Enter new network conditions." points to the "New" IP address field (192.168.70.110) and the "New" Subnet mask field (255.255.255.0).
- "Click" points to the "Change..." button.

Receiver		IP addr	Subnet mask	Default Gateway	
ID 0	Current	192.168.70.100	255.255.255.0	0.0.0.0	Change...
	New	192.168.70.110	255.255.255.0	0.0.0.0	

(6) The [Network Condition Change] window will be displayed.

Click the [Change Network condition] button to change the network conditions.

Network condition changes

Change MT-100A (ID 0) network conditions online.

Input the current IP address of the MT-100A (ID 0) and press the [Change network condition] button.

IP address ont the current MT-100A (ID 0)

192 . 168 . 70 . 100

Network Condition after the Change

IP address	192.168.70.110
Subnet mask	255.255.255.0
Default Gateway	0.0.0.0

Change network condition... Close

(7) The changed network conditions will be effective after restarting the receiver.

(8) To set network conditions for another receiver, repeat steps (5)-(7).

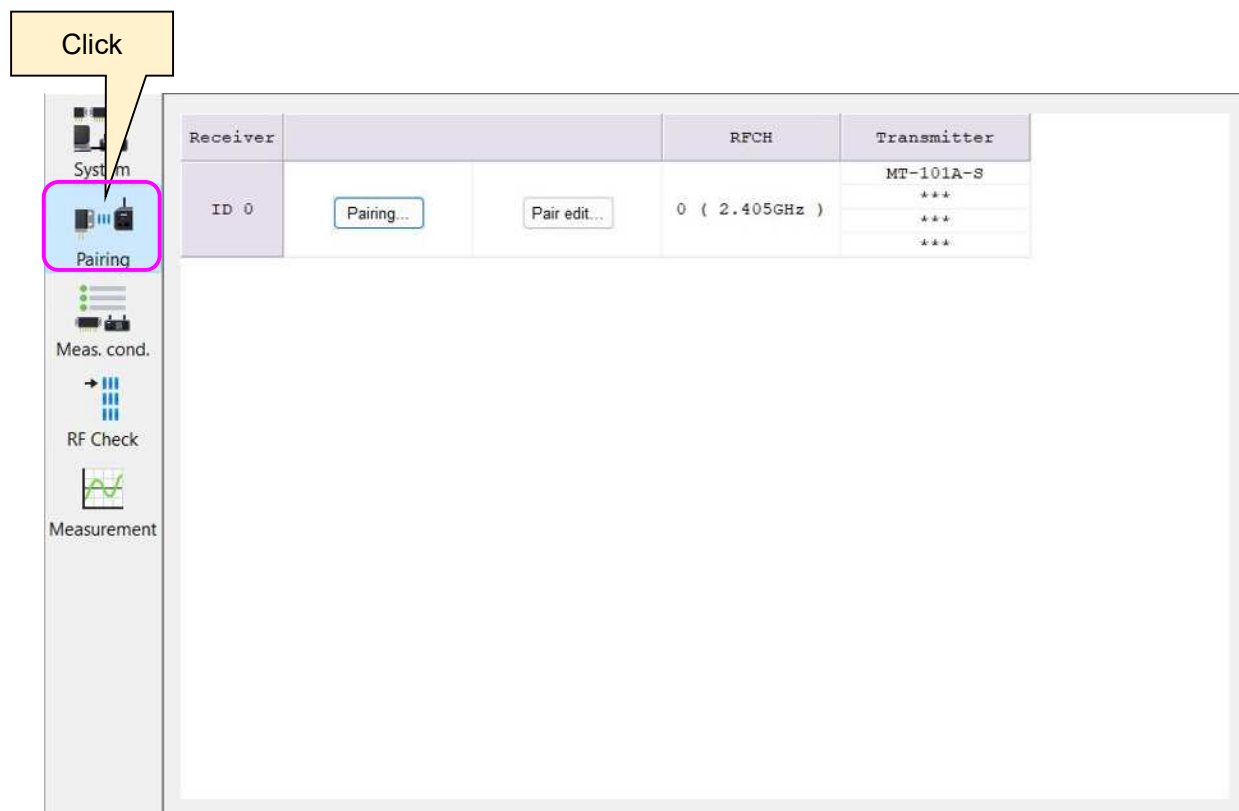


If an Ethernet connection is available, you can click the [Loading network Conditions] button to load the network conditions of all connected receivers. This removes the need to manually enter the current IP address of the receiver.

6. Pairing Settings

The Pairing Settings screen is used to perform the necessary pairing for wireless communication between the receiver and transmitter.

To display this screen, select the Pairing icon on the toolbar.





- When you use the product for the first time, you must perform the pairing settings.
- Transmitter searching and pairing/editing are performed via wireless communication. If it does not work well, checking the antenna placement or changing the radio frequency CH may improve communication stability. For details, refer to the separate “MT-100A Series INSTRUCTION MANUAL Hardware Edition”.
- Pairing/editing may fail if the wireless communication is unstable, so it is recommended to perform these settings before installing the transmitter.
- When performing pairing/editing, turn on the power only for the target transmitter.

6-1. Pairing

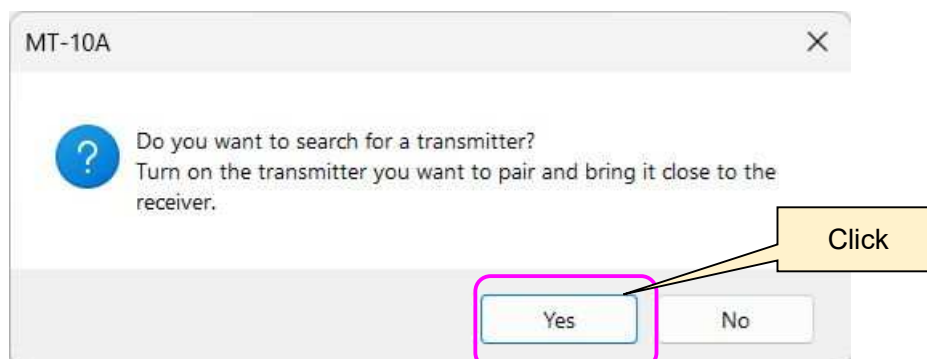
This performs the necessary pairing for wireless communication between the receiver and transmitter.

(1) Place the receiver and transmitter to be paired within 50 cm of each other.

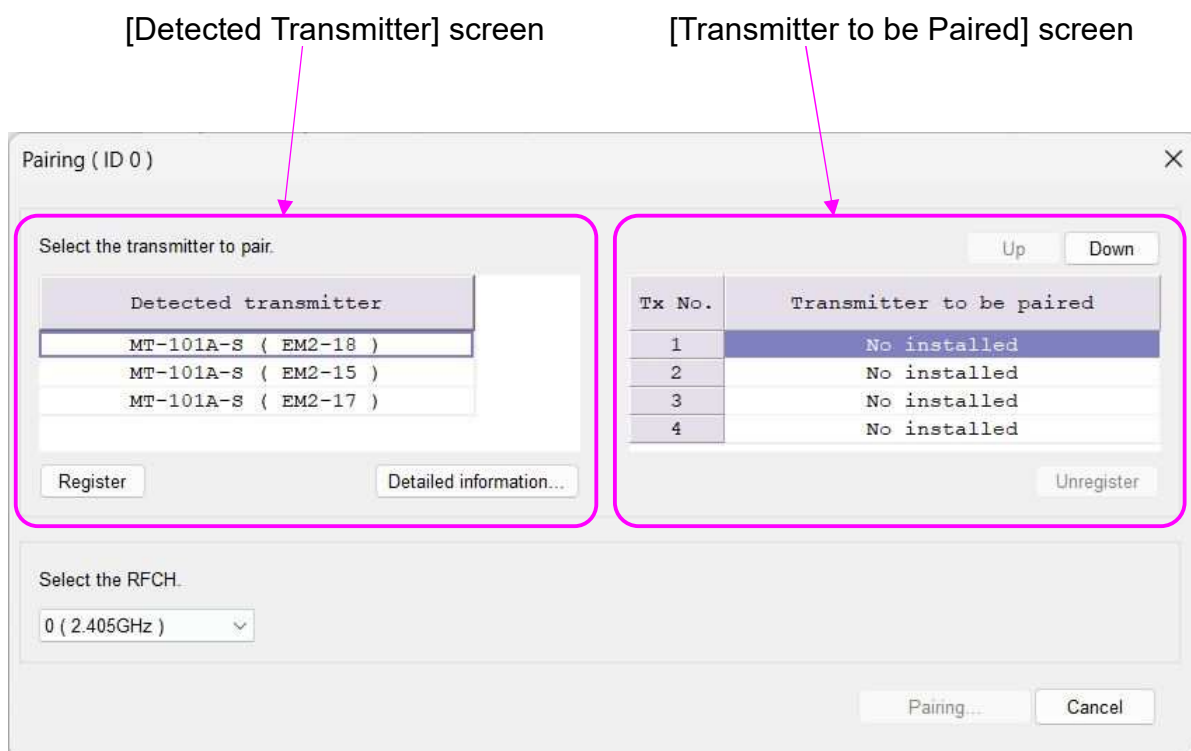
(2) Click the [Pairing] button for the receiver.



(3) A message will appear, and you should click [Yes].



(4) The [Pairing] window will be displayed.



[Detected transmitter] screen:

Displays the transmitters detected by the search.

The serial number of the transmitter is shown in parentheses.

[Register] button: Registers the selected transmitter to the cursor position on the [Transmitter to be paired] screen.

[Details] button: Displays detailed information about the transmitters.

[Transmitter to be paired] screen:

Displays the transmitters that will be paired.

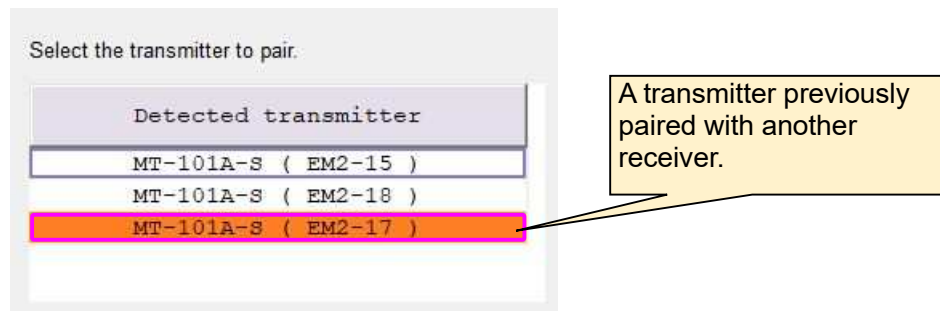
The serial number of the transmitter is shown in parentheses.

[Up/Down] buttons: Moves the selected transmitter up or down.

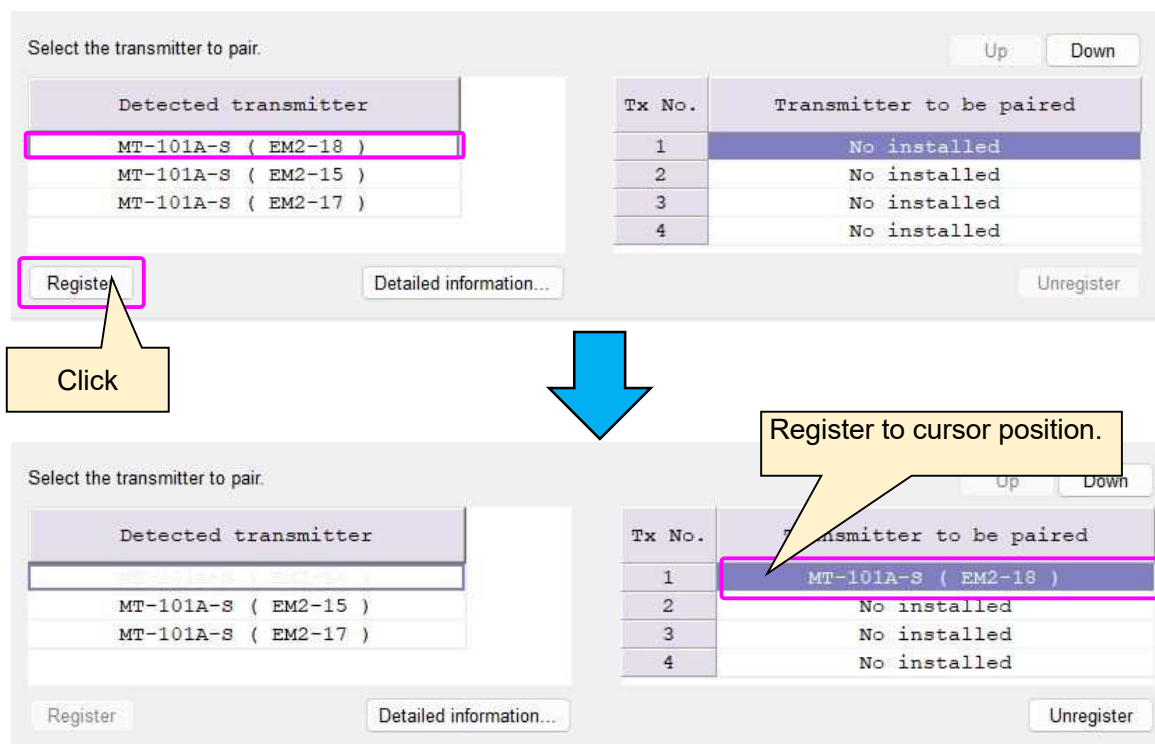
[Remove] button: Deletes the selected transmitter from the [Transmitters to be Paired] screen.



Transmitters with an orange background on the [Detected transmitter] screen were previously paired with another receiver.



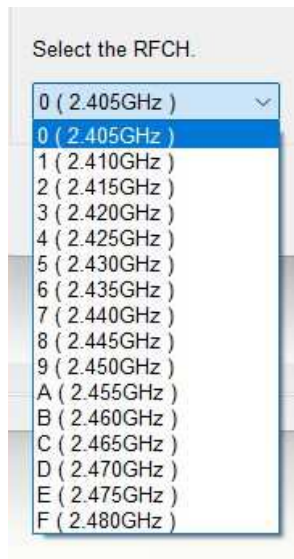
- (5) Select the transmitter you want to pair from the [Detected transmitter] screen and click the [Register] button. The selected transmitter will be registered at the cursor position on the [Transmitter to be paired] screen.



Transmitters must be registered in numerical sequence starting from Tx1. For example, if a transmitter is not registered in Tx2, pairing cannot be performed.

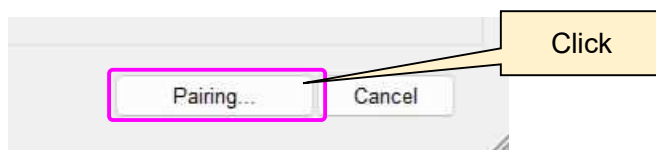
Tx No.	Transmitter to be paired
1	MT-101A-S (EM2-18)
2	No installed
3	MT-101A-S (EM2-15)
4	No installed

(6) Select the radio frequency CH.

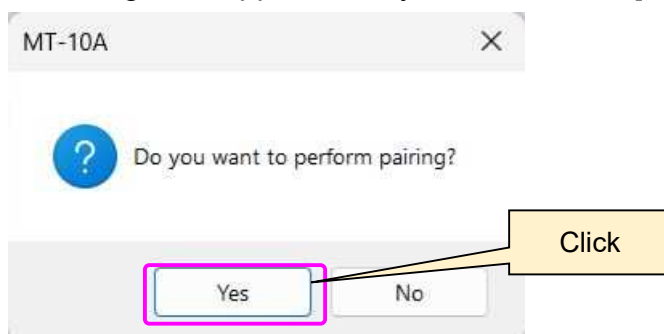


- If you have multiple receivers, do not use the same radio frequency CH, as this can cause interference and communication errors.
- This product operates in the 2.4 GHz band, and other devices in the same band (e.g., wireless LAN, Bluetooth®) can cause interference. In this case, changing the radio frequency CH may improve communication stability.

(7) Click the [Pairing] button.



(8) A message will appear, and you should click [Yes].



(9) Pairing will be executed, and the [Pairing] window will close.

(10) The paired transmitter will be displayed on the [Pairing] screen.



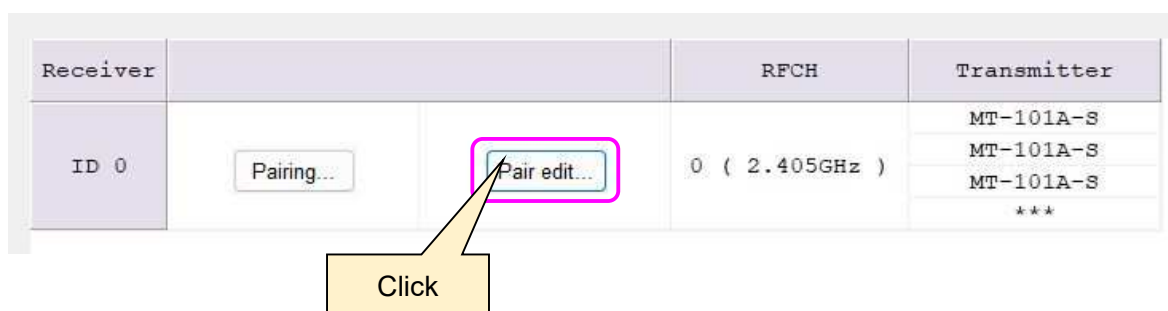
(11) To set up another pair (receiver and transmitter), repeat steps (1)-(10).

6-2. Pair Editing

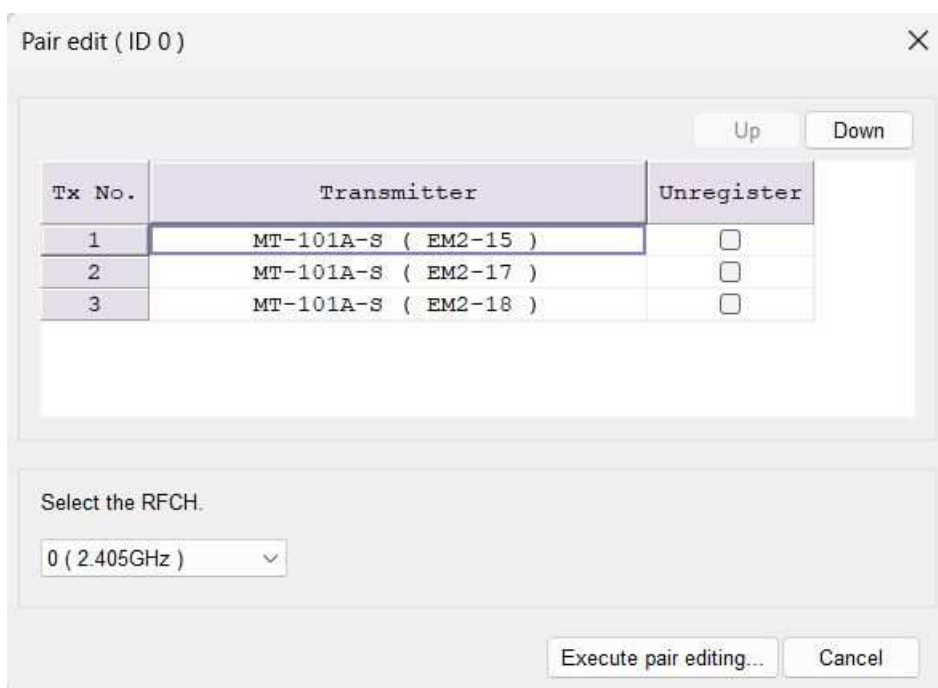
Pair editing is used to reorder paired transmitters or change the radio frequency CH after pairing has been set.

(1) Place the receiver and transmitter to be paired within 50 cm of each other.

(2) Click the [Pair edit] button for the receiver.



(3) The [Pair edit] window will be displayed.



- (4) To reorder the transmitters, select the target transmitter and click the [Up/Down] buttons to move it.

Example, Move MT-101A-S (EM2-15) to Tx3.

The diagram illustrates the process of moving a transmitter from its current position to a new position using the Up/Down buttons. It consists of three sequential screenshots of a pairing settings interface, connected by blue arrows indicating the flow of the process.

Initial State (Top Screenshot):

Tx No.	Transmitter	Unregister
1	MT-101A-S (EM2-15)	☐
2	MT-101A-S (EM2-17)	☐
3	MT-101A-S (EM2-18)	☐

Buttons: Up, Down (highlighted with a pink box and a yellow callout box labeled "Click").

Intermediate State (Middle Screenshot):

Tx No.	Transmitter	Unregister
1	MT-101A-S (EM2-17)	☐
2	MT-101A-S (EM2-15)	☒
3	MT-101A-S (EM2-18)	☐

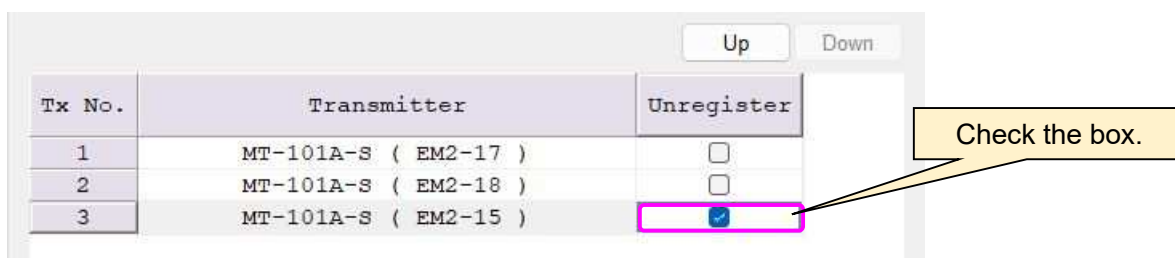
Buttons: Up, Down (highlighted with a pink box and a yellow callout box labeled "Click").

Final State (Bottom Screenshot):

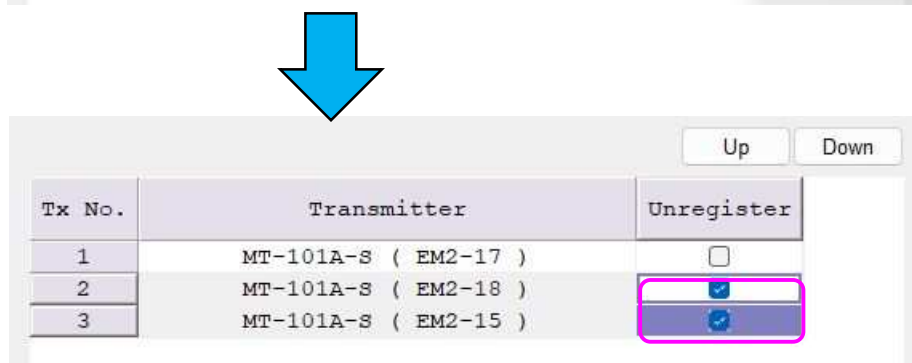
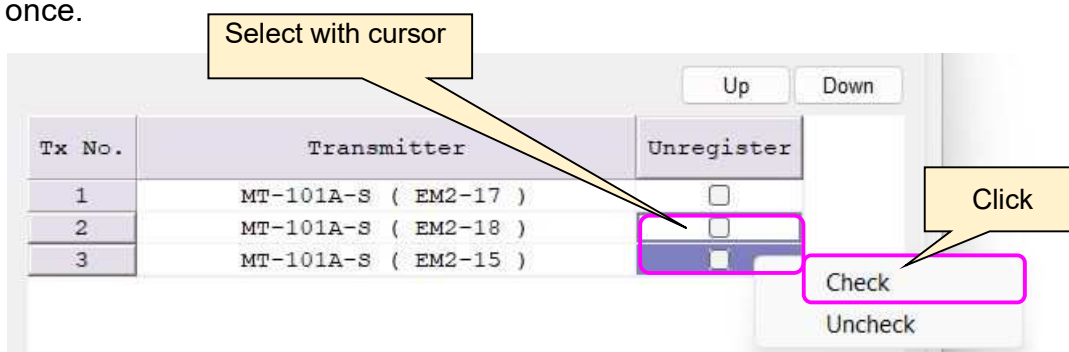
Tx No.	Transmitter	Unregister
1	MT-101A-S (EM2-17)	☐
2	MT-101A-S (EM2-18)	☐
3	MT-101A-S (EM2-15)	☒

Buttons: Up, Down (highlighted with a pink box and a yellow callout box labeled "Move to Tx3 position.").

(5) To unpair a transmitter, check the box in the [Unregister] column.

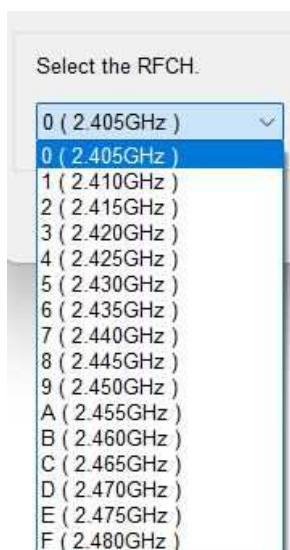


You can select the transmitters to remove and right-click to check all boxes at once.

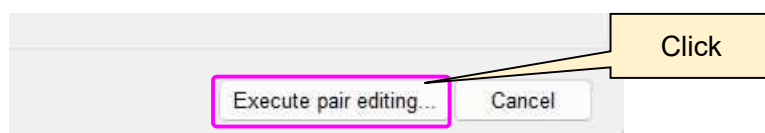


Not all transmitter pairs can be unpaired.

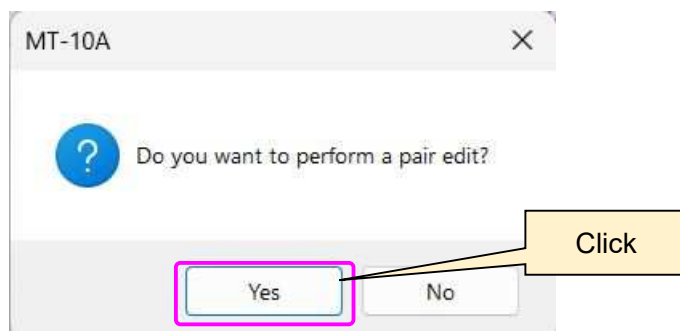
(6) To change the radio frequency CH, select a new one.



(7) Click the [Execute pair editing] button.



(8) A message will appear, and you should click [Yes].



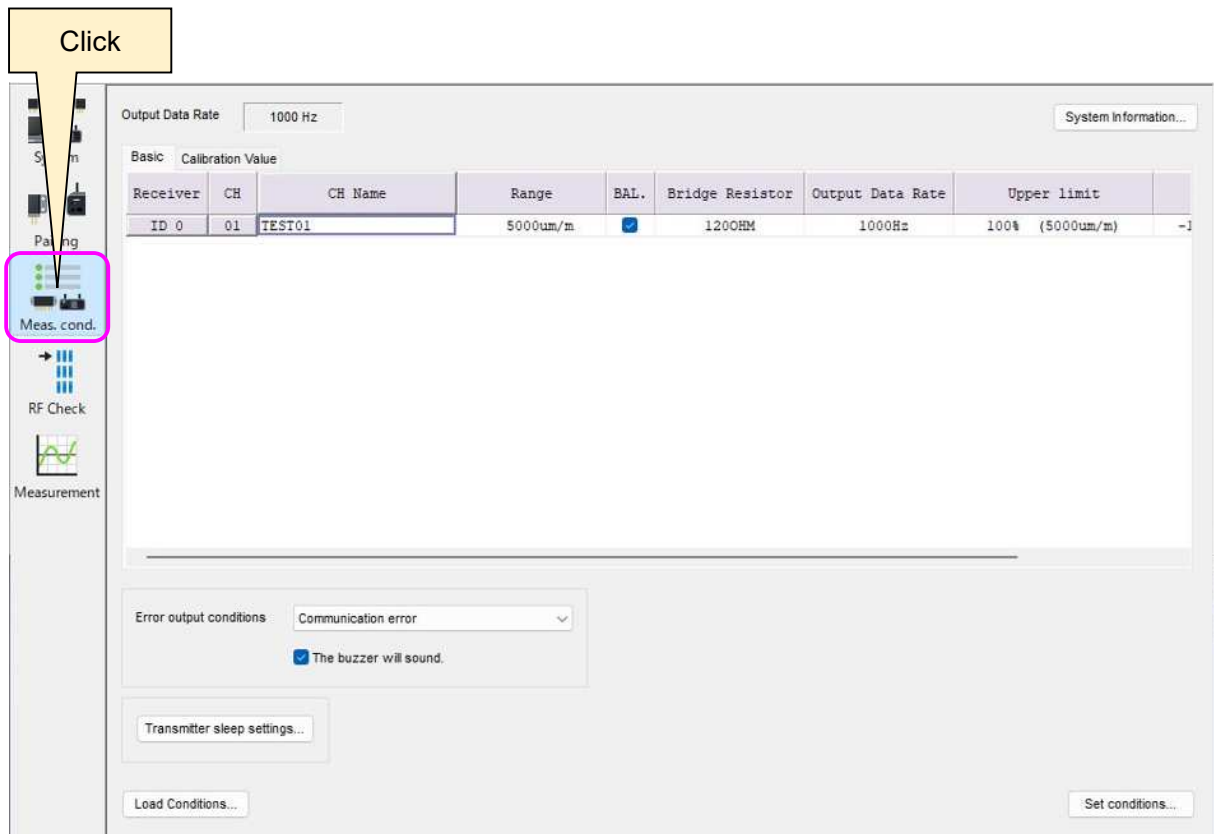
(9) Pair editing will be executed, and the [Pair edit] window will close.

(10) To edit another pair, repeat steps (1)-(9).

7. Measurement Condition Settings

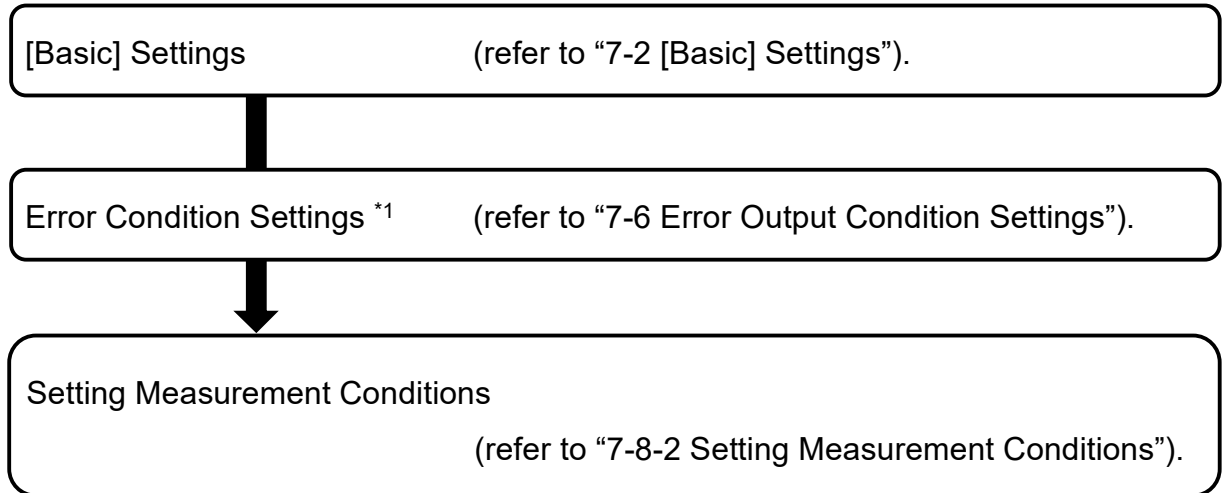
The Measurement Condition Settings screen is where you set the measurement conditions.

To display this screen, select the Meas. cond. icon on the toolbar.

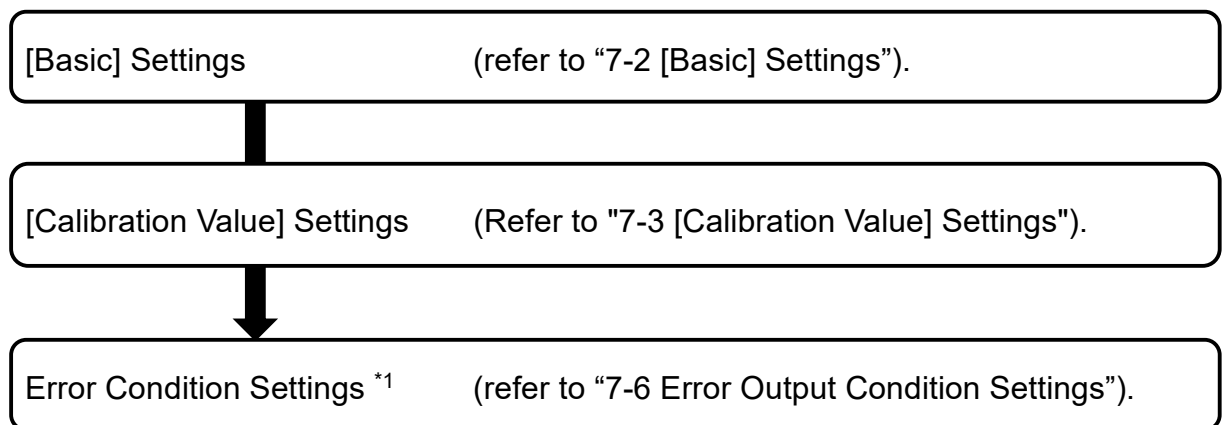


7-1. Setting Procedure

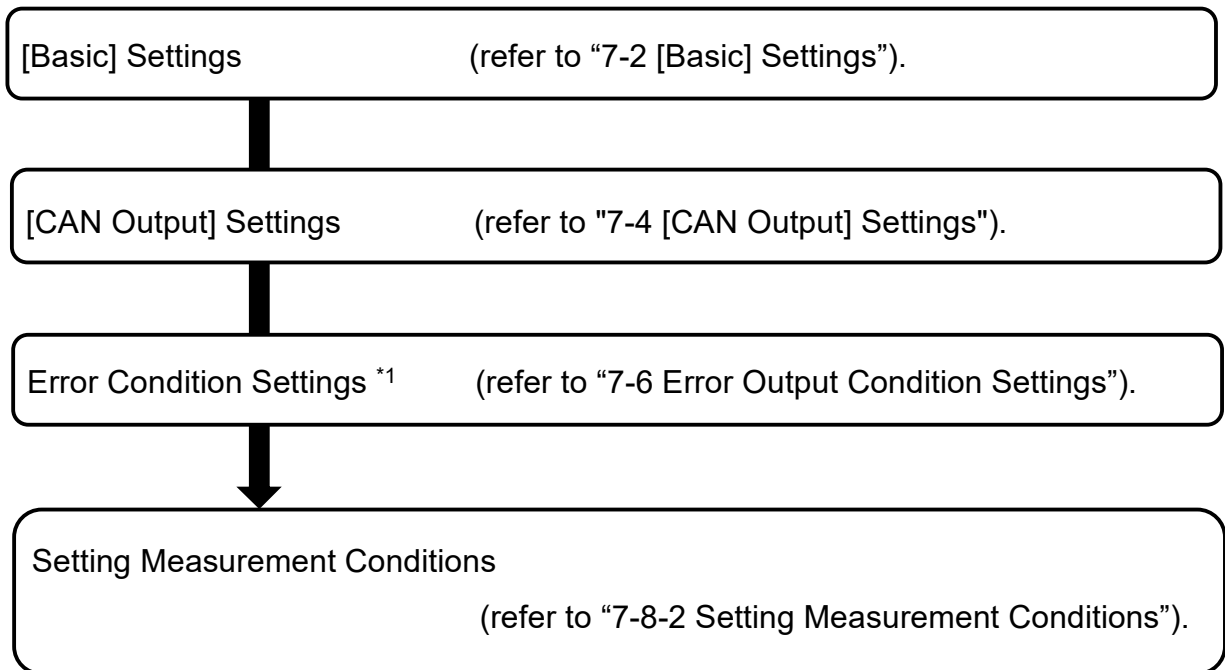
■ When using the analog output function:



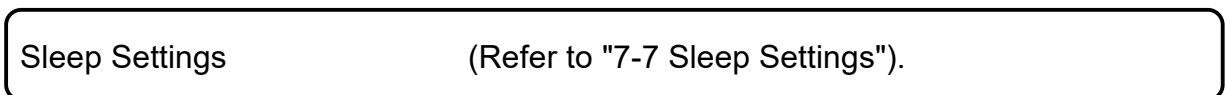
■ When performing measurement with this software:



*1 When outputting an error signal.

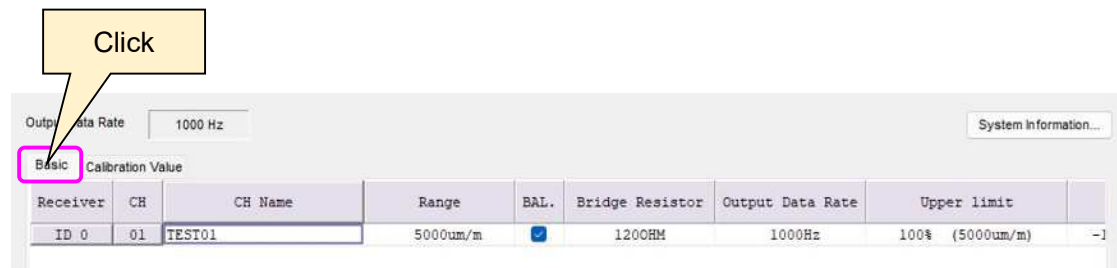
■ When using the CAN output function:

*1 When outputting an error signal.

■ When putting the transmitter into sleep mode:

7-2. [Basic] Settings

This is where you set the basic conditions for each channel (Tx).



The measurement ON/OFF for channels (Tx) cannot be set.
Unpair any transmitters you are not measuring.

■ Receiver:

Displays the receiver ID.

■ CH:

Displays the channel number.

(This is displayed when the output interface is set to USB/ETHERNET).

The software assigns transmitters to channels as follows:

Transmitter	MT-10A CH
Receiver ID 0 Tx 1-4	CH01-04
Receiver ID 1 Tx 1-4	CH05-08
Receiver ID 2 Tx 1-4	CH09-12
Receiver ID 3 Tx 1-4	CH13-16

■Tx No.:

Displays the transmitter number.

(This is displayed when the output interface is set to [Analog Output] or [CAN Output]).

■CH Name:

Enter a comment string of up to 40 single-byte characters (20 double-byte characters).

Double-click or press the [SPACE] key on the field to enable input.

(This is displayed when the output interface is set to [USB/ETHERNET]).

■Range:

Select a range.

The options depend on the selected transmitter.

Transmitter Model	Range selection
MT-101A-S	1000 $\mu\text{m}/\text{m}$
	2500 $\mu\text{m}/\text{m}$
	5000 $\mu\text{m}/\text{m}$
	10000 $\mu\text{m}/\text{m}$
	25000 $\mu\text{m}/\text{m}$
	50000 $\mu\text{m}/\text{m}$

■BAL.:

Check the box to perform balance adjustment for a channel (Tx).

■Bridge Resistance:

Enter the bridge resistance value to be used (setting range: 120-1000 OHM).

■ Output Data Rate:

Select the output data rate.

The selectable output data rate varies depending on the number of connected transmitters.

The number of connected transmitters	The selectable output data rate (Hz)
1	50, 100, 500, 1000, 2000, 4000, 8000
2	50, 100, 500, 1000, 2000, 4000
3 - 4	50, 100, 500, 1000, 2000

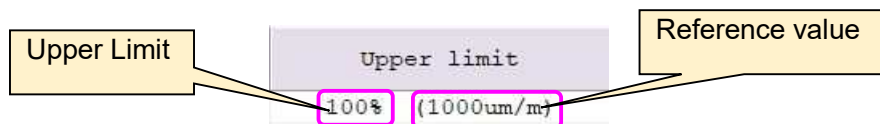
The maximum value of the output data rate for a channel (Tx) will be the system's overall output data rate.

Basic		Calibration Value			
Receiver	CH	Range	BAL.	Bridge Resistor	Output Data Rate
ID 0	01	1000um/m	☒	120OHM	1000Hz
	02	1000um/m	☒	120OHM	2000Hz
	03	1000um/m	☒	120OHM	50Hz
	04	1000um/m	☒	120OHM	50Hz

■ Upper Limit:

Set the upper limit as a percentage of the range value (setting range: -100 to 100%). By setting the upper and lower limits, you can be notified when the measurement data for each CH (Tx) falls outside the reference data range. When the measurement data for a CH (Tx) exceeds the upper limit, the number will be displayed in red on the [Measurement] screen graph.

Double-click or press the [SPACE] key on the field to enable input. You can also change the value using the spin button control.



■ Lower Limit:

Set the lower limit (setting range: -100 to 100%). The setting method is the same as for the upper limit.



The values in parentheses for the upper and lower limits are displayed as a reference.

When the output interface is set to USB/ETHERNET:

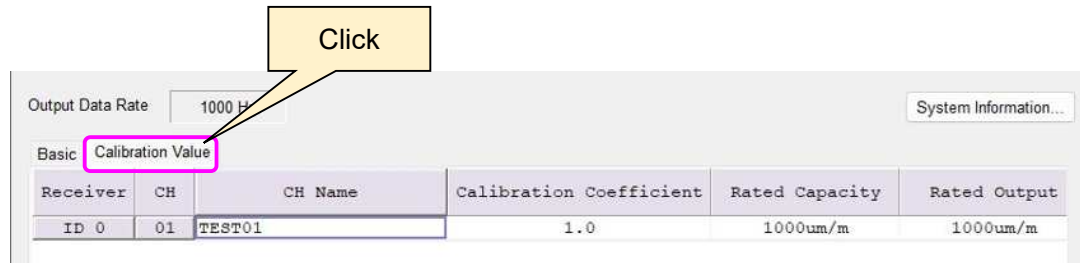
Displays the physical quantity (Range value x Calibration Coefficient + Offset) as a reference value.

When the output interface is set to Analog Output or CAN Output:

Displays the range value as a reference value.

7-3. [Calibration Value] Settings

This is where you set the calibration coefficient and offset values for each channel.



This screen can be displayed when the output interface is set to USB/ETHERNET.

■ Calibration Coefficient:

Enter a calibration coefficient to be multiplied by the measurement data (setting range: $-1e8$ to $-1e-8$, $1e-8$ to $1e8$).

When the calibration coefficient is changed, the rated capacity will automatically change.

■ Rated Capacity:

Enter the rated capacity of the input sensor along with the rated output (setting range: $-1e8$ to $-1e-8$, $1e-8$ to $1e8$).

When the rated capacity is changed, the calibration coefficient will automatically change.

■ Rated Output:

Enter the rated output of the input sensor along with the rated capacity.

When the rated output is changed, the calibration coefficient and rated output (mV/V) will automatically change.

■ Rated Output (mV/V):

Enter the rated output of the input sensor.

When the rated output (mV/V) is changed, the calibration coefficient and rated output will automatically change.

■ Offset:

Enter the offset in physical quantity (the value multiplied by the calibration coefficient) (setting range: -1e8 to -1e-8, 0, 1e-8 to 1e8).



- When the calibration coefficient and offset are set, the measurement data is converted to a physical quantity using the following formula:

Measurement Data (physical quantity) = Measurement Data x Calibration Coefficient + Offset.

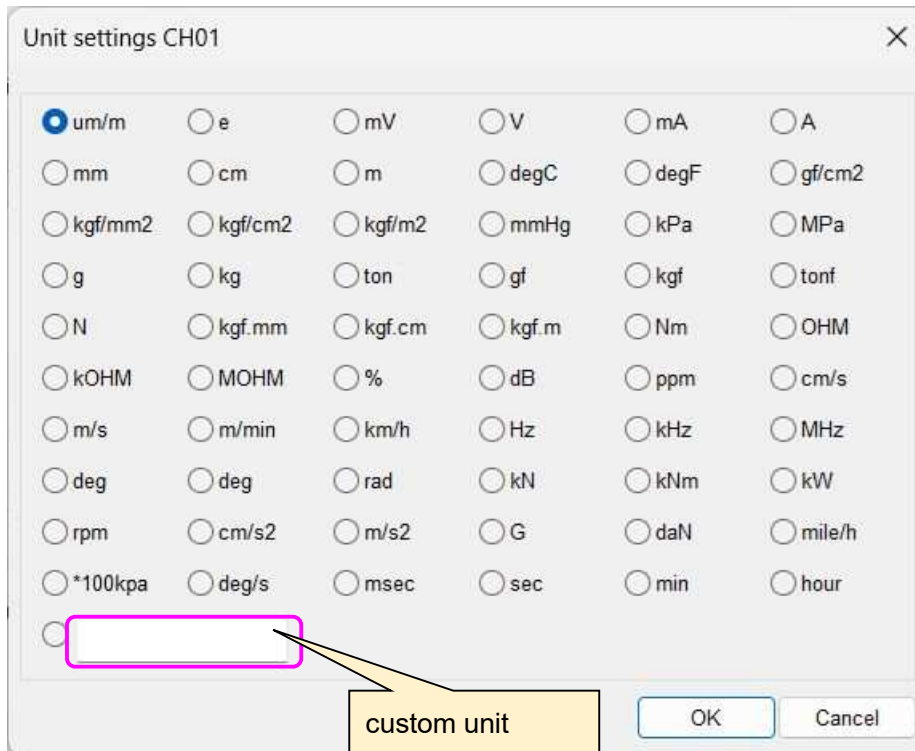
- The calibration coefficient is calculated by dividing the rated capacity by the rated output:

Calibration Coefficient = Rated Capacity / Rated Output.

■ Unit:

Select the physical quantity unit corresponding to the input sensor.

Double-click or press the [SPACE] key on the field to display the [Unit Settings] window, then select the unit.



If the desired unit is not available, you can register a custom unit of up to 10 single-byte characters per channel.

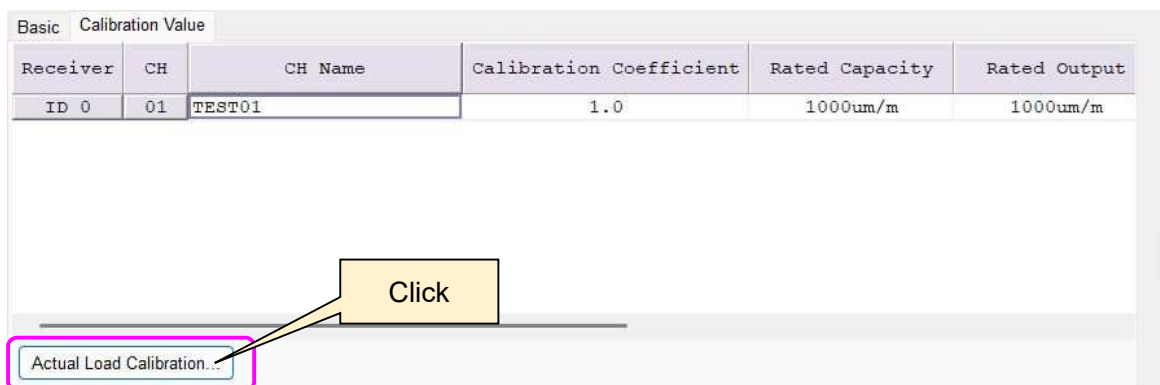
■ Number of Digits:

Select the number of decimal places for the numerical display (setting range: 0-5).

7-3-1. Actual Load Calibration

Actual load calibration is a method of calibration by applying an external actual load and a corresponding rated value. Performing actual load calibration allows you to obtain a calibration coefficient calculated from the results.

(1) Click the [Actual Load Calibration] button.



(2) The [Actual Load Calibration] window will appear.



■BAL.:

Check this box to include the CH (Tx) in the balancing operation.

■Result:

Displays the result of the balancing.

■Calibration:

Check this box to include the CH in the actual load calibration.

■ Rated Value:

Enter the rated value corresponding to the input when performing actual load calibration (setting range: -1e8 to -1e-8, 1e-8 to 1e8).

■ Unit:

Select the unit for the rated value.

■ Rated Meas. Value:

Displays the rated measurement value obtained from the actual load measurement.

■ ZERO Meas. Value:

Displays the ZERO measurement value obtained from the ZERO measurement.

■ Calibration Coefficient:

Displays the calibration coefficient calculated from the rated value, rated measurement value, and ZERO measurement value.



The calibration coefficient is calculated using the following formula:

Calibration Coefficient

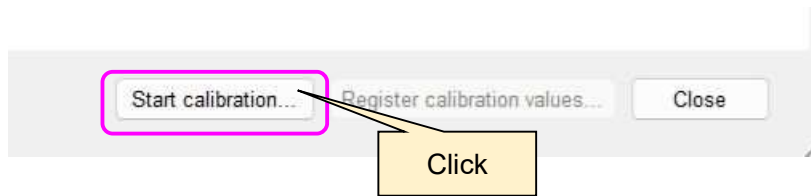
= Rated Value / (Rated Measurement Value - ZERO Measurement Value).

If the calculation result is 0 (out of range), the calibration coefficient will be 1.

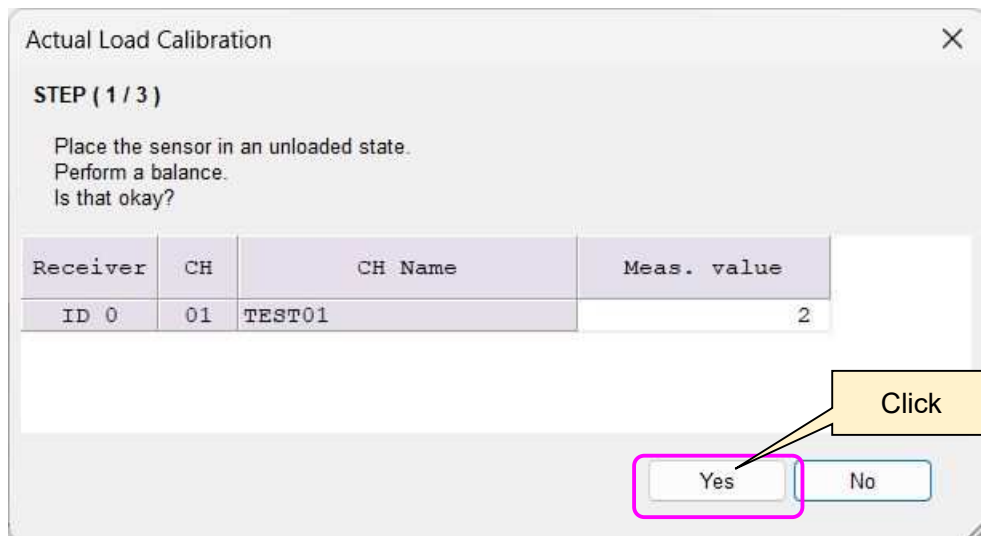
- (3) For each CH, set the BAL. checkbox, the Calibration checkbox, enter the rated value, and select the unit.

Receiver	CH	CH Name	BAL.	Result	Calibration	Rated value	Unit
ID 0	01	TEST01	☒		☒	1.0	kN

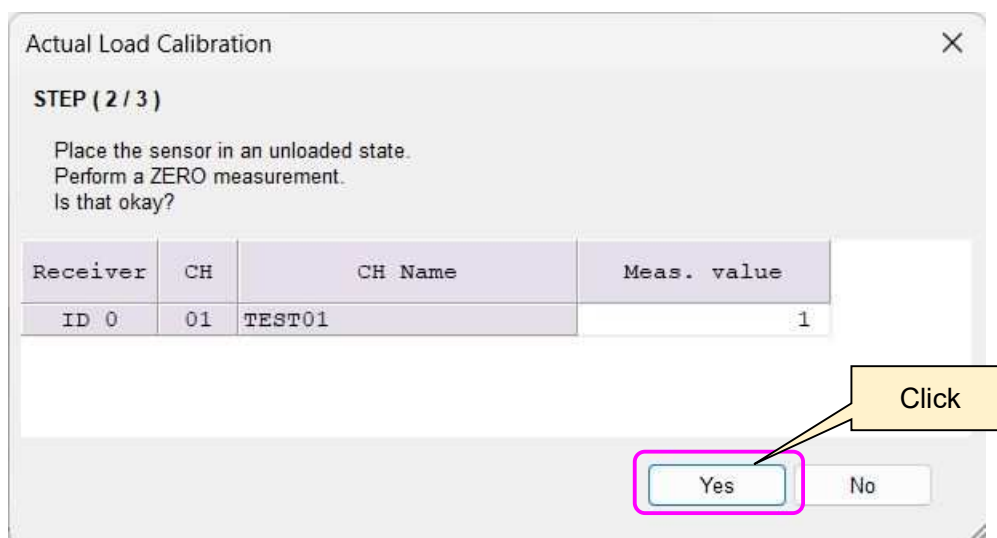
(4) Click the [Start calibration] button to begin the calibration value measurement.



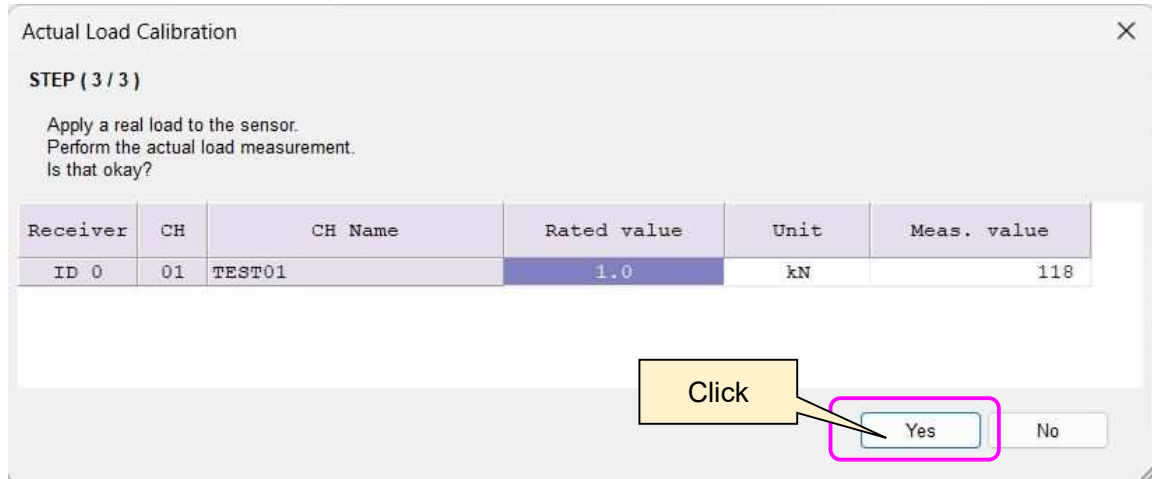
(5) The [Actual Load Calibration STEP 1] window will appear. Set each sensor to a no-load state and click [Yes].



(6) Next, the [Actual Load Calibration STEP 2] window will appear. Keep each sensor in a no-load state and click [Yes] to perform the ZERO measurement.



- (7) Next, the [Actual Load Calibration STEP 3] window will appear. Apply the actual load (rated value load) to each sensor and click [Yes] to perform the actual load measurement.



The measured value during actual load calibration is a moving average of 1 second, measured at an output rate of 100Hz.

- (8) After the calibration value measurement is complete, the results will be displayed in the Result, Rated Measurement Value, ZERO Measurement Value, and Calibration Coefficient fields of the [Actual Load Calibration] window.

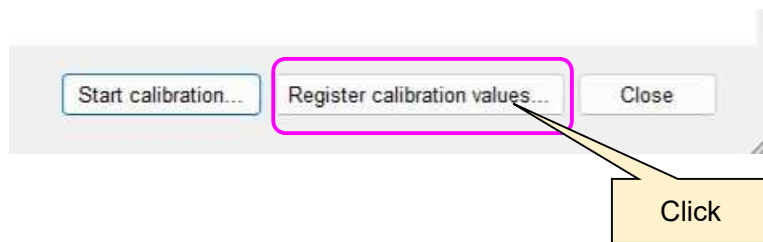
Result	Calibration	Rated value	Unit	Rated Meas. value	ZERO Meas. value	Calibration Coefficient
OK	☒	1.0	kN	118	2	0.00862069



You can change the Calibration, Rated Value, Unit, Rated Measurement Value, and ZERO Measurement Value fields after the measurement is complete.

Changing the Rated Value, Rated Measurement Value, or ZERO Measurement Value will update the Calibration Coefficient.

- (9) Click the [Register calibration value] button to close the [Actual Load Calibration] window.



- (10) The calibration coefficient, rated capacity (rated value), and unit will be registered on the [Calibration Value] screen.

Basic		Calibration Value					
Receiver	CH	Calibration Coefficient	Rated Capacity	Rated Output	Rated Output (mV/V)	Offset	Unit
ID 0	01	0.00862069	1.0kN	116um/m	0.058	0.0	kN



The values are registered only for the CHs that have the [Calibration] checkbox checked in the [Actual Load Calibration] window.

7-4. [CAN Output] Settings

This is where you set the CAN output conditions for the transmitter.



This screen can be displayed when the output interface is set to CAN Output.

■Receiver:

Displays the receiver ID.

■Tx No.:

Displays the transmitter number.

■Format:

Select the message format to be output (CAN Standard, CAN Extended, CAN FD Standard, CAN FD Extended).

■Communication Speed (kbps):

Select the communication speed for CAN and CAN FD (1000, 800, 500, 250, 125, 100, 83.3, 62.5, 50, 33.3, 25, 20, 10).

■ CAN FD Data Bit Rate:

CAN FD has a function called Bit Rate Switch, which allows the data section to be transmitted at a higher speed. Select this communication speed. The CAN FD data bit rate and communication speed have limited combinations (see the table below). If using CAN only (CAN Standard or CAN Extended), select OFF as the CAN FD data bit rate is not used.

Communication Speed [kbps]	CAN FD Data Bit Rate [Mbps]
1000, 800	2, 1, OFF
500, 250	5, 4, 2, 1, 0.5, OFF
125	2, 1, 0.5, OFF
100, 83.3, 62.5	1, 0.5, OFF
50, 33.3	0.5, OFF
25, 20, 10	OFF

■ Termination Resistor:

Select OFF or ON for the termination resistor.



A 120 OHM termination resistor is required at both ends of a CAN bus.
This product has a built-in function to turn the 120 OHM termination resistor ON/OFF.
If this product is placed at both ends of the CAN bus, turn on the terminator.

■Timestamp counter:

Set the Message ID for the timestamp counter in hexadecimal.

This setting is not required when using CAN FD (CAN FD Standard or CAN FD Extended).

■Message ID:

Set the Message ID for each Tx in hexadecimal.

When using CAN FD (CAN FD Standard or CAN FD Extended), you only need to set the Message ID for Tx1.



- Do not set duplicate Message IDs, as this will prevent normal communication.
- The setting range for Message IDs depends on the format.

CAN Standard, CAN FD Standard:

0x0 - 0x7FF(11bits)

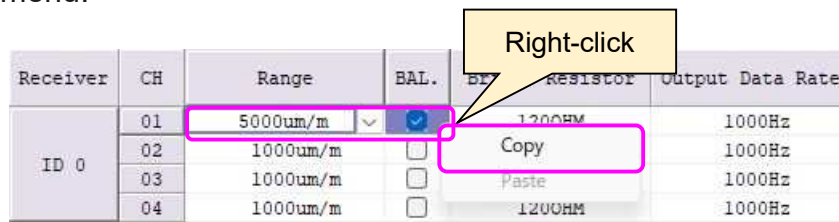
CAN Extended, CAN FD Extended:

0x0 - 0x1FFFFFFF(29bits)

7-5. Copying and Pasting Settings

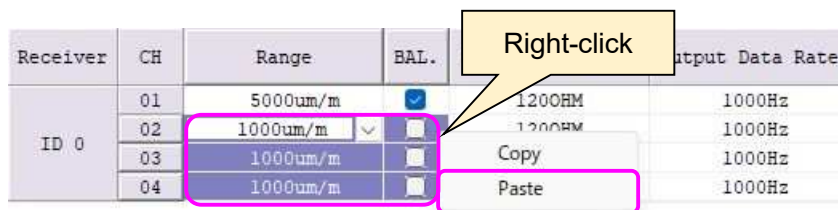
In the [Basic], [Calibration Value], [Actual Load Calibration], and [CAN Output] screens, it is possible to copy the contents of items and paste them to items for another channel (Tx). Below is an example of copying and pasting on the [Basic] screen.

- (1) Drag the source items with the mouse, right-click, and select [Copy] from the pop-up menu.



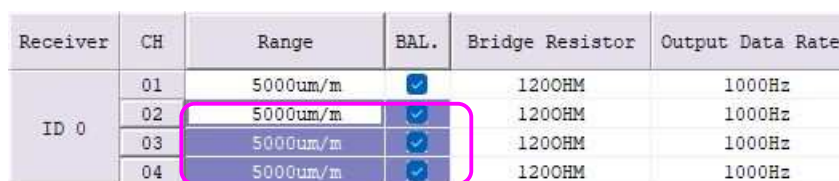
Receiver	CH	Range	BAL.	Bridge Resistor	Output Data Rate
ID 0	01	5000um/m	☒	1200HM	1000Hz
	02	1000um/m	☐	1200HM	1000Hz
	03	1000um/m	☐	1200HM	1000Hz
	04	1000um/m	☐	1200HM	1000Hz

- (2) Drag the destination range, right-click, and select [Paste] from the pop-up menu.



Receiver	CH	Range	BAL.	Bridge Resistor	Output Data Rate
ID 0	01	5000um/m	☒	1200HM	1000Hz
	02	1000um/m	☐	1200HM	1000Hz
	03	1000um/m	☐	1200HM	1000Hz
	04	1000um/m	☐	1200HM	1000Hz

- (3) The contents of the source items will be set in the destination range.



Receiver	CH	Range	BAL.	Bridge Resistor	Output Data Rate
ID 0	01	5000um/m	☒	1200HM	1000Hz
	02	5000um/m	☒	1200HM	1000Hz
	03	5000um/m	☒	1200HM	1000Hz
	04	5000um/m	☒	1200HM	1000Hz

7-6. Error Output Condition Settings

When an error occurs during measurement, an error signal is output from the error output connector on the back of the receiver.

Here you set the conditions for this error output.

The screenshot shows a software window titled 'Error output conditions'. Inside, there is a dropdown menu currently displaying 'Communication error'. Below the dropdown, there is a checkbox that is checked, with the text 'The buzzer will sound.' next to it.

■ Error Output Conditions:

Select the condition for error output.

- | | |
|---|---|
| Communication Error: | Outputs an error if a communication error occurs during measurement. |
| Threshold Error: | Outputs an error if the measurement data exceeds the upper limit or falls below the lower limit. |
| Both Communication Error and Threshold Error: | Outputs an error if a communication error occurs or if the measurement data exceeds the upper limit or falls below the lower limit. |

■ Buzzer:

Set whether to sound a buzzer at the same time as the error output.

Check the box to activate the buzzer.

7-7. Sleep Settings

This feature allows you to put the transmitter into sleep mode to reduce battery consumption.

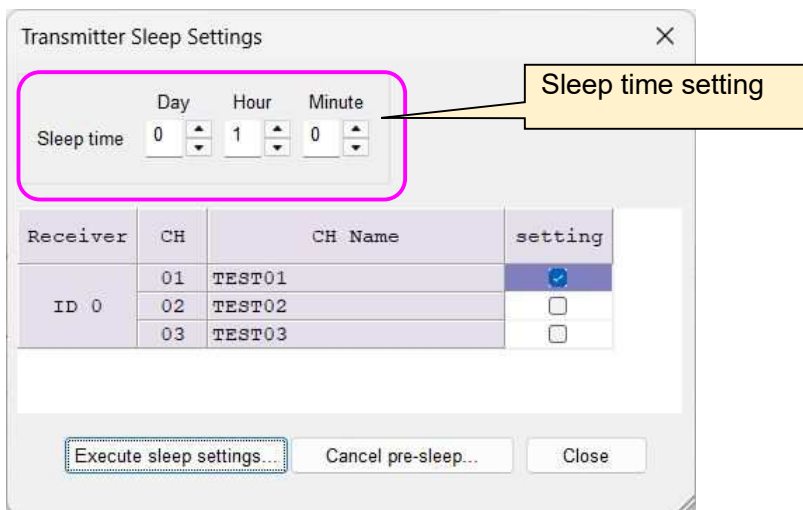
Sleep mode is canceled when the set sleep time has elapsed.

(1) Click the [Transmitter sleep settings] button.



(2) The [Transmitter Sleep Settings] window will appear, where you can set the sleep time.

The setting range is from 30 minutes to 10 days.

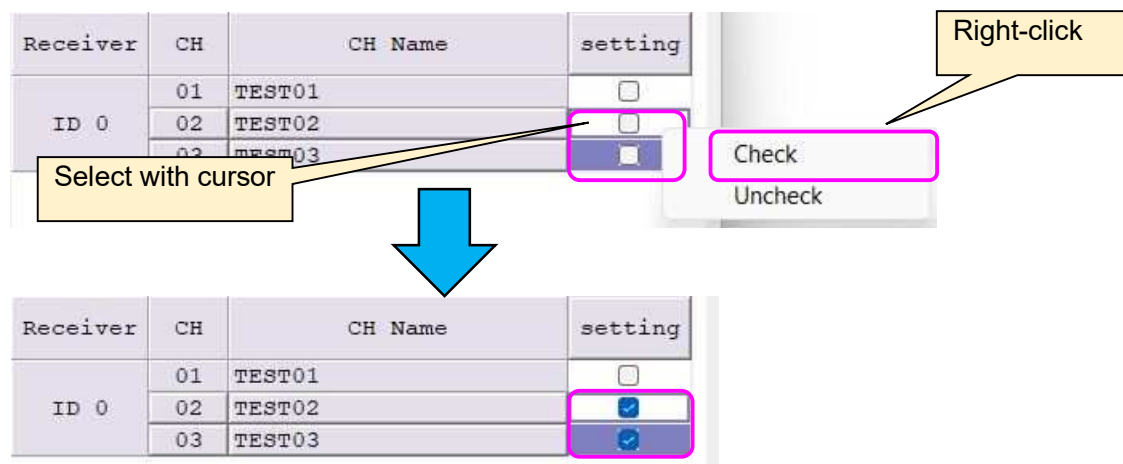


(3) Check the box for the target transmitter.

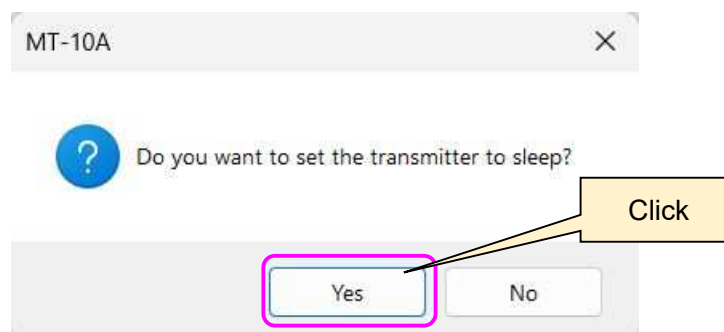
Receiver	CH	CH Name	setting
ID 0	01	TEST01	☒
	02	TEST02	☒
	03	TEST03	☒

After selecting the target transmitters with the cursor, right-click to display a pop-up menu.

This menu allows the checkmarks for all selected transmitters to be turned on at once.

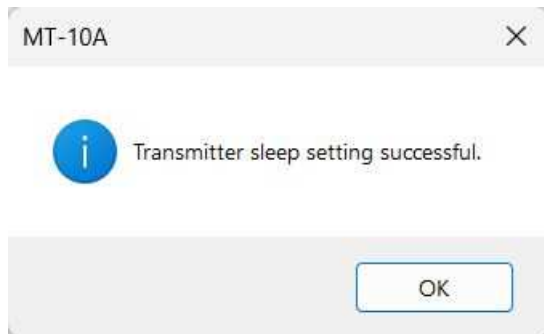


(4) Clicking the [Execute sleep settings] button will display a message, and you should click [Yes] to proceed.



(5) The sleep setting will be applied to the target transmitter.

A message [Transmitter sleep setting was successful.] will appear if it is successful.



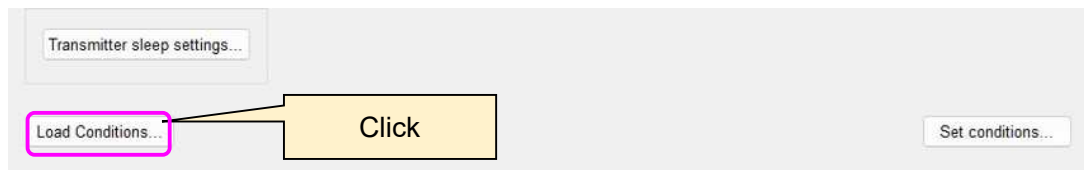
- Sleep settings are applied to all selected transmitters at once.
- When in sleep mode, the transmitter cannot be operated until the set time has elapsed. To operate the transmitter during sleep, you must restart its power.
- Executing the sleep setting puts the transmitter into a pre-sleep state. After a certain period in this state, it transitions to sleep mode. The transmitter's status can be identified by the status LED.
- By performing a "Cancel pre-sleep" on a transmitter in the pre-sleep mode, you can cancel the sleep process and return it to the standby mode.

7-8. Others

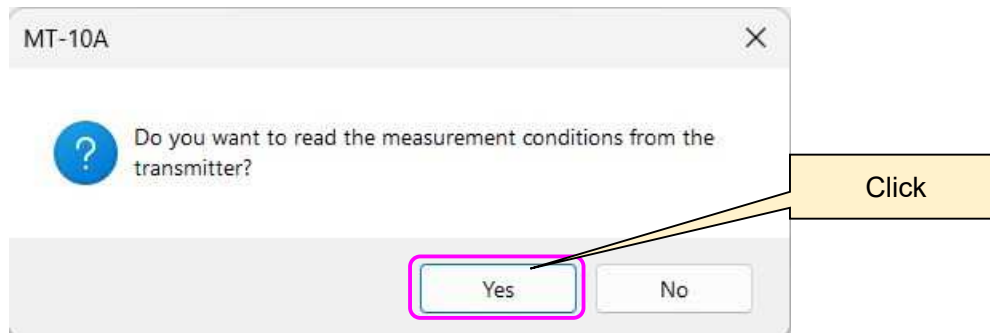
7-8-1. Loading Measurement Conditions

Loads measurement conditions from the receiver and transmitter.

(1) Click the [Load Conditions] button.



(2) A message will appear. Click [Yes].

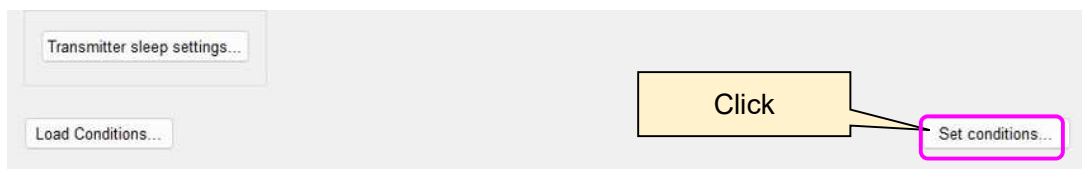


(3) The measurement conditions will be loaded from the receiver and transmitter and reflected in the software.

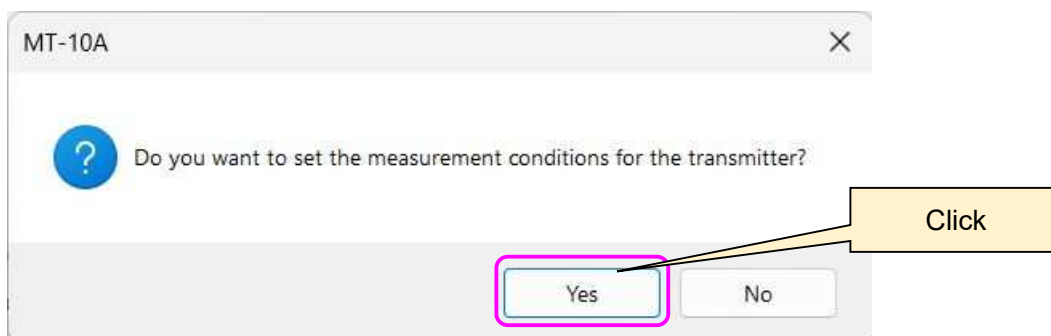
7-8-2. Setting Measurement Conditions

Sets measurement conditions on the receiver and transmitter.

(1) Click the [Set Conditions] button.



(2) A message will appear. Click [Yes].

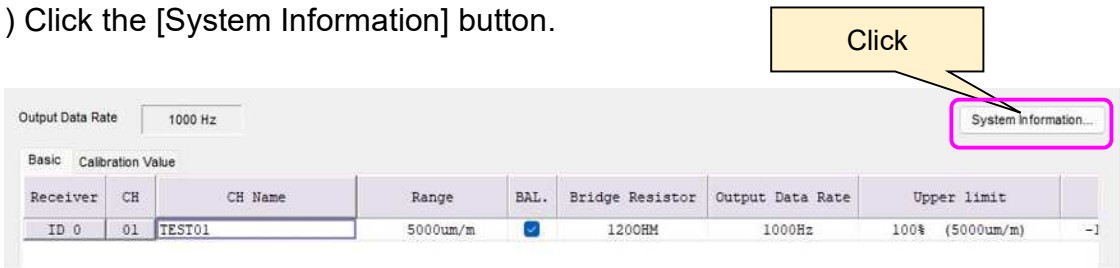


(3) The measurement conditions will be set on the receiver and transmitter.

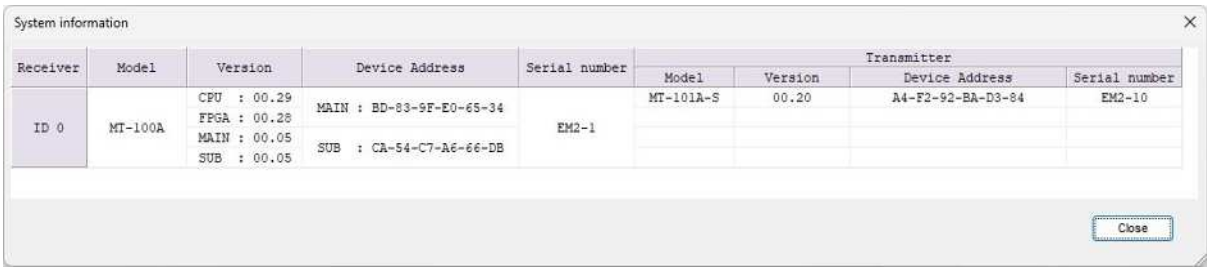
7-8-3. Displaying System Information

Loads and displays the system information of the receiver and transmitter.

(1) Click the [System Information] button.



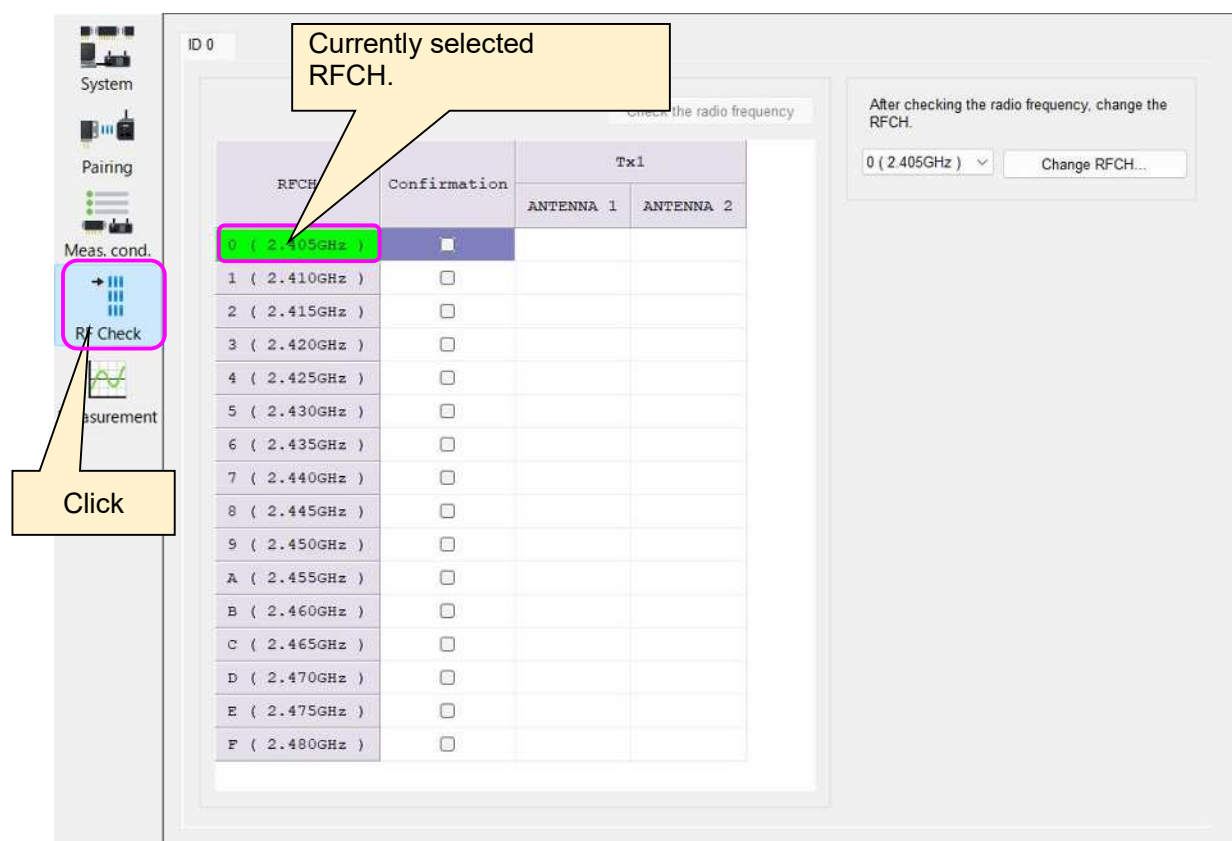
(2) The [System Information] window will be displayed, showing the model, version, device address, and serial number for both the receiver and each transmitter.



8. Radio Frequency Check

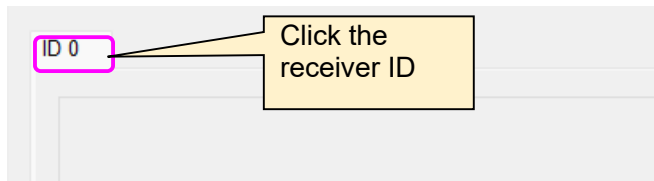
The RF Check screen is used to check the communication status between the receiver and transmitter and to change the radio frequency CH.

To display this screen, select the RF Check icon on the toolbar.



The currently selected radio frequency CH is displayed with a green background.

(1) Select the receiver.

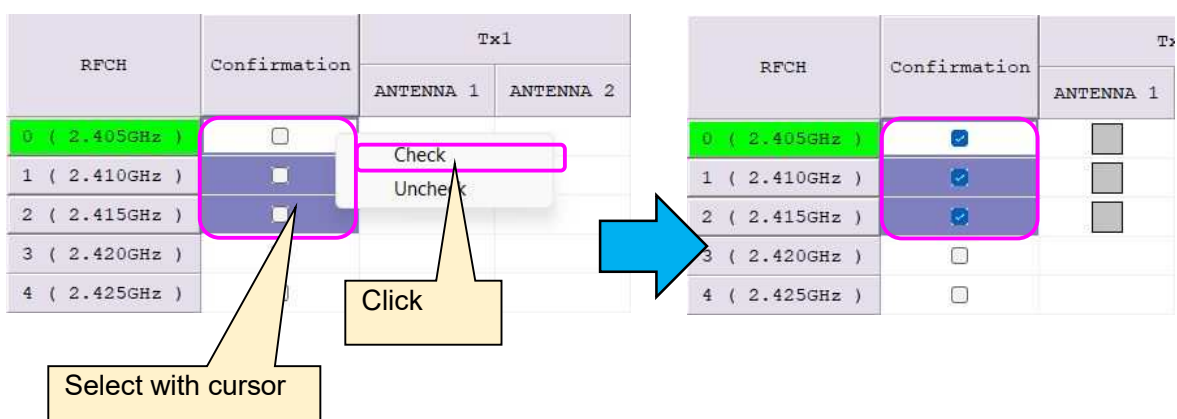


(2) Check the box for the radio frequency CH you want to check.

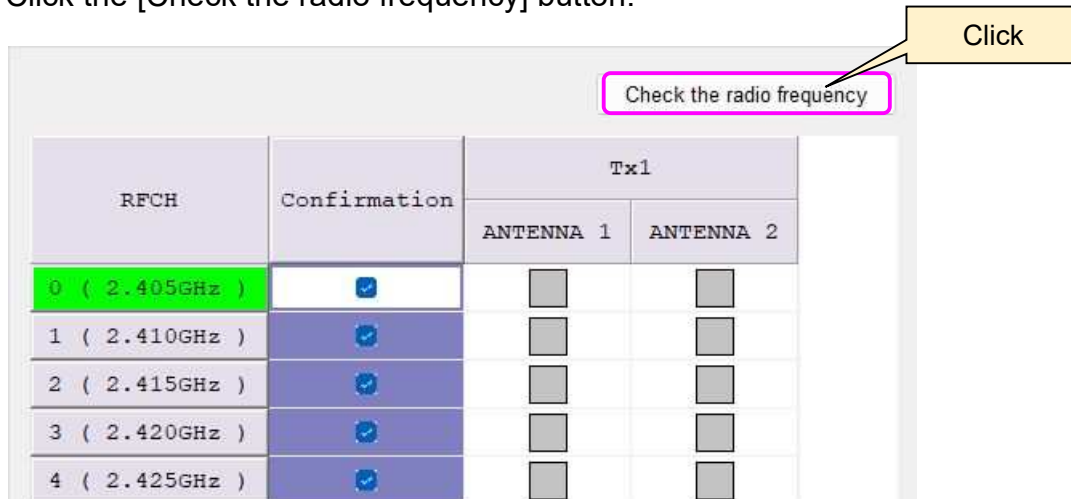
RFCH	Confirmation	Tx1	
		ANTENNA 1	ANTENNA 2
0 (2.405GHz)	☒	☐	☐
1 (2.410GHz)	☒	☐	☐
2 (2.415GHz)	☒	☐	☐
3 (2.420GHz)	☒	☐	☐
4 (2.425GHz)	☒	☐	☐
5 (2.430GHz)	☒	☐	☐
6 (2.435GHz)	☒	☐	☐
7 (2.440GHz)	☒	☐	☐
8 (2.445GHz)	☒	☐	☐
9 (2.450GHz)	☒	☐	☐
A (2.455GHz)	☒	☐	☐
B (2.460GHz)	☒	☐	☐
C (2.465GHz)	☒	☐	☐
D (2.470GHz)	☒	☐	☐
E (2.475GHz)	☒	☐	☐
F (2.480GHz)	☒	☐	☐

Check the box.

After selecting the target radio frequency CHs with the cursor, right-click to display a pop-up menu. This menu allows the checkmarks for all selected transmitters to be turned on at once.



(3) Click the [Check the radio frequency] button.



(4) The communication test will be performed, and the results will be displayed as the radio wave status.

RFCH	Confirmation	Tx1	
		ANTENNA 1	ANTENNA 2
0 (2.405GHz)			
1 (2.410GHz)			
2 (2.415GHz)			
3 (2.420GHz)			
4 (2.425GHz)			
5 (2.430GHz)			
6 (2.435GHz)			
7 (2.440GHz)			
8 (2.445GHz)			
9 (2.450GHz)			
A (2.455GHz)			
B (2.460GHz)			
C (2.465GHz)			
D (2.470GHz)			
E (2.475GHz)			
F (2.480GHz)			

The status is displayed in four levels:

- Good
- Medium
- Weak
- No Signal (which could indicate low reception level or interference).



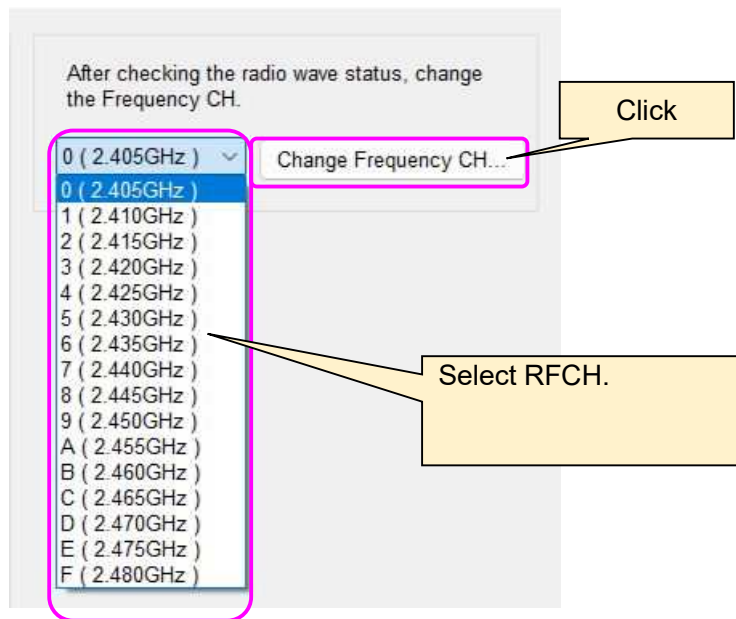
- Performing a radio wave status check can cause radio interference to other pairs in the same space.

Exclude the radio frequency CHs used by other pairs.

- Use the radio wave status check when selecting the radio frequency CH or installation location.

Because the status is displayed separately for ANTENNA 1 and ANTENNA 2, you can also use this feature to select the installation location for each antenna when using a receiver extension cable.

- (5) To change the radio frequency CH, select a new one and click the [Change RFCH] button.



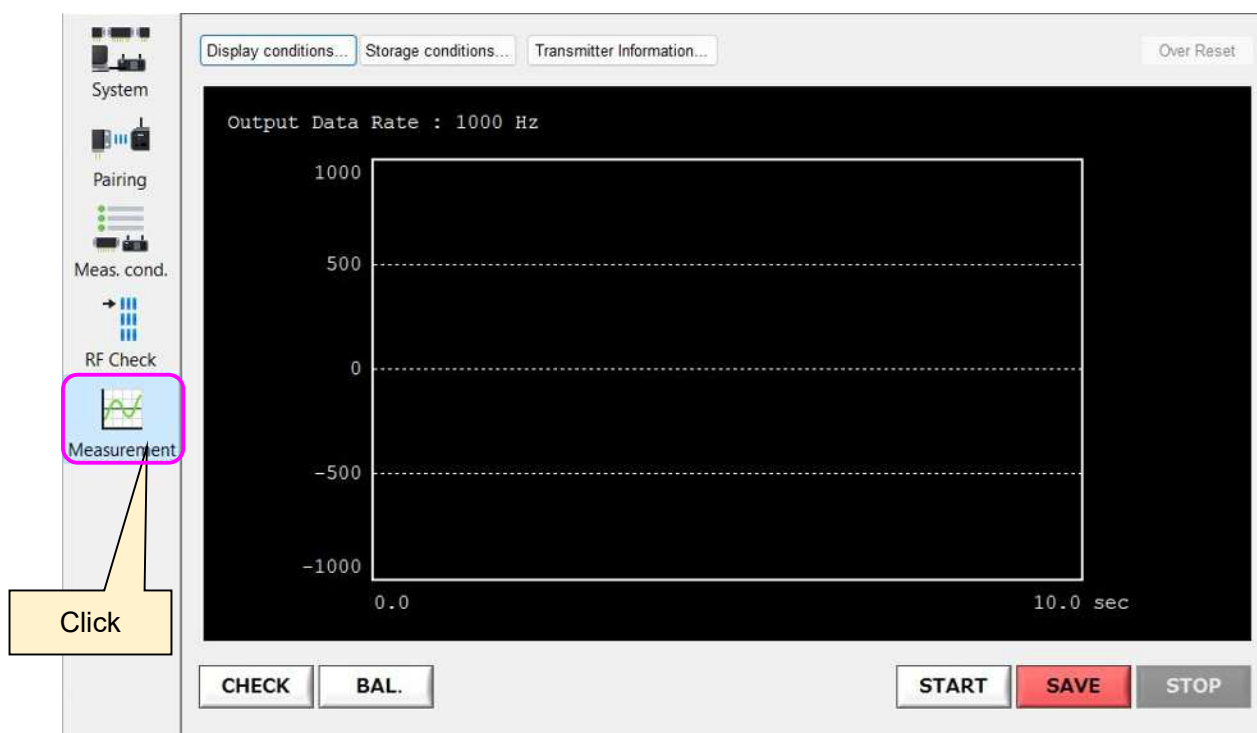
- Changing to a radio frequency CH used by another pair in the same space can cause radio interference and communication failure. Avoid using CHs already in use by other pairs.
- Due to environmental factors, some radio frequency CHs may have weaker radio waves than others. It is recommended to check the radio wave status of the target radio frequency CH before changing it.

- (6) To check the radio wave status or change the radio frequency CH for another receiver, repeat steps (1)-(5).

9. Measurement

The Measurement screen is where you can monitor, save, and perform other measurement operations on your data.

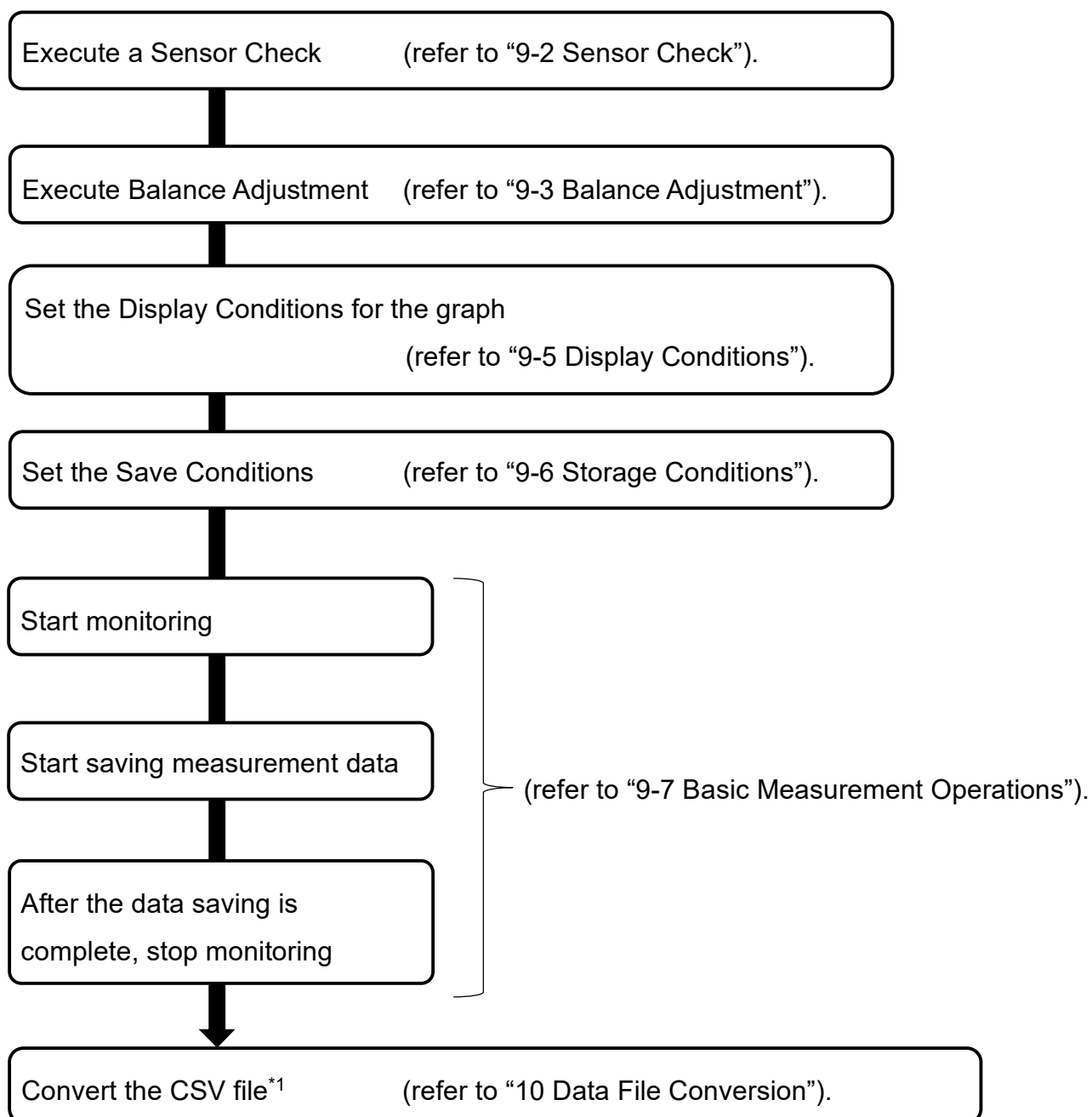
To display this screen, select the Measurement icon on the toolbar.



This screen can only be displayed when the measurement data output method is USB/ETHERNET.

9-1. Measurement Procedure

The basic measurement procedure is as follows:



*1 To view saved measurement data using commercially available software, you can follow these general steps.

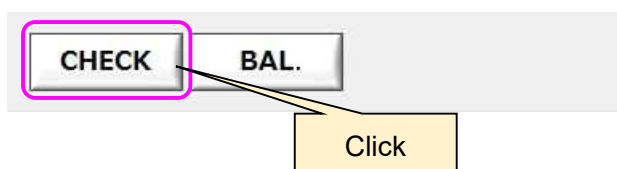
9-2. Sensor Check

Performs a simple check of the sensor's bridge circuit.

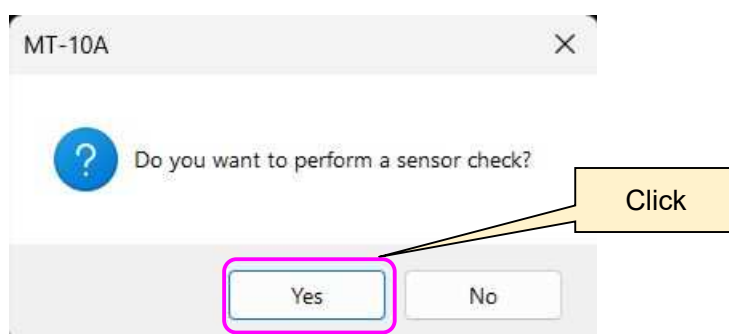


- The sensor check uses the set bridge resistance value to make a judgment.
If the actual sensor's bridge resistance differs from the set value, it may not be able to make a correct judgment.
Please refer to the [Basic] settings in the [Meas. cond.] screen for how to set the bridge resistance value.
- Perform the sensor check with no load on the sensor if possible.
If the connected sensor has an output, the check may fail.

(1) While stopped, click the [CHECK] button.



(2) A message will appear, and you should click [Yes].



(3) After the sensor check is executed, the results for each channel will be displayed.

Check result				
Receiver	CH	CH Name	Sensor check result	Resistance value
ID 0	01	TEST01	OK	123 OHM
	02	TEST02	Resistance value NG	342 OHM
	03	TEST03	OK	123 OHM

Close

Result	Content
OK	Sensor check successful.
Resistance NG	Sensor check failed.
Communication Error	A Wireless communication error occurred.
Function OFF	Not a target for sensor check.

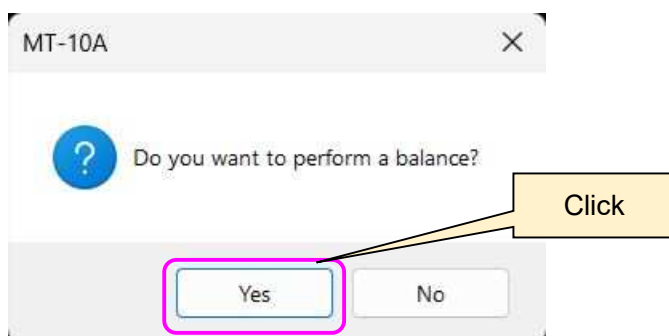
9-3. Balance Adjustment

This function performs a balance adjustment.

(1) While stopped, click the [BAL.] button.



(2) A message will appear, and you should click [Yes].



- (3) After the balance adjustment is executed, the results for each channel will be displayed.

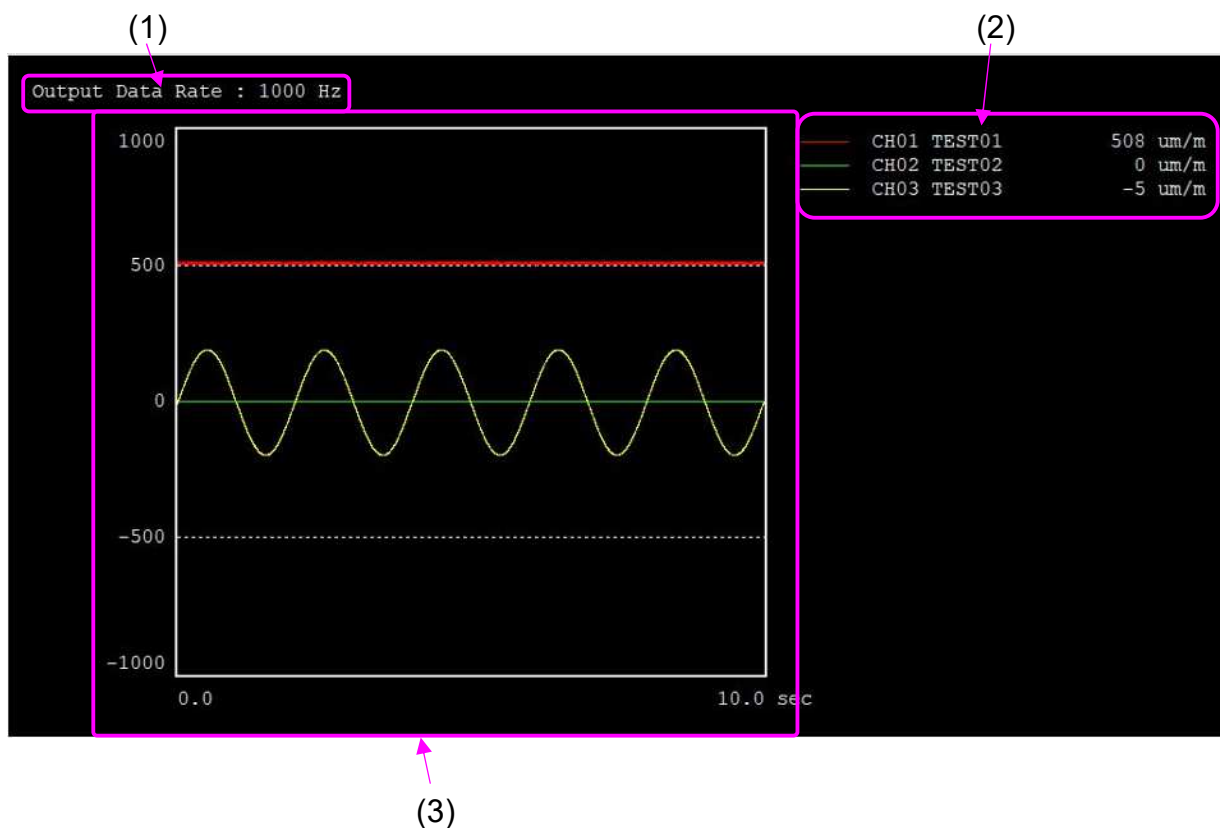
Balance result			
Receiver	CH	CH Name	Balance Result
ID 0	01	TEST01	OK
	02	TEST02	NG
	03	TEST03	OK

Close

Result	Content
OK	Balance successful.
NG	Balance failed.
Communication Error	A Wireless communication error occurred.
Function OFF	Not a target for balance adjustment.

9-4. Graph

The time-series graph displays the measurement data in physical quantities.



- (1) Output Data Rate:** Displays the system's overall output data rate.
- (2) Legend:** Displays the graph's line color, CH No., CH name, measured data, and unit.
- (3) Data Display Area:** This is the area where the measurement data is displayed in a graph.

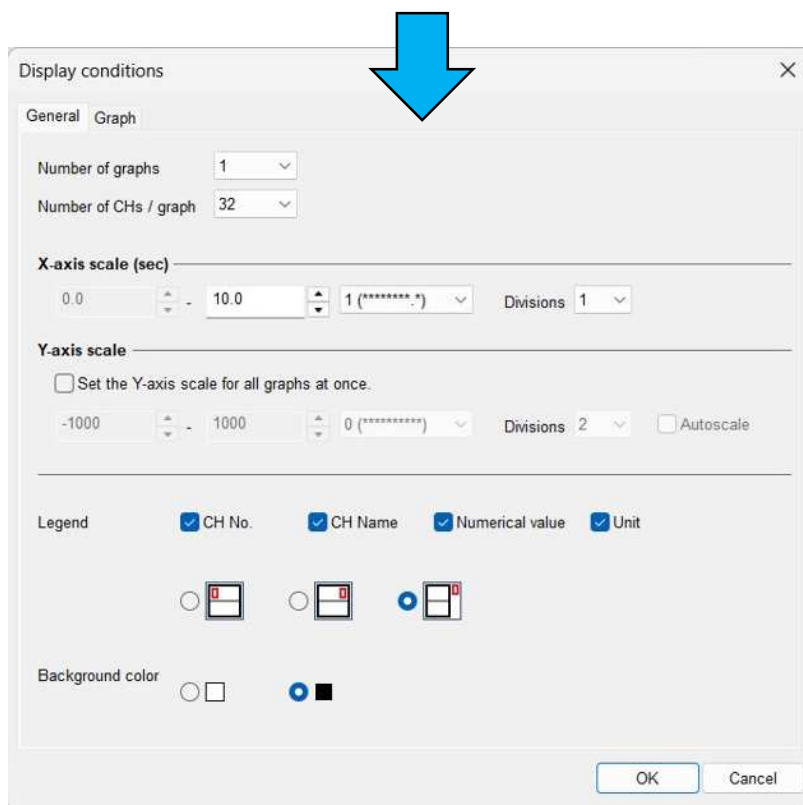


Even if a PC meets the operating environment specifications, operation is not guaranteed on all models. If errors occur when displaying a large number of CHs or data points due to PC performance, please reduce the number of CHs or data points.

9-5. Display Conditions

This section describes how to set the graph display conditions.

Clicking the [Display Conditions] button or Double-clicking the graph display area will open the [Display conditions] window.



9-5-1. [General] Tab

Click the [General] tab.

Click

General Graph

Number of graphs 1

Number of CHs / graph 32

X-axis scale (sec)

0.0 - 10.0 1 (*****.*) Divisions 1

Y-axis scale

☐ Set the Y-axis scale for all graphs at once.

-1000 - 1000 0 (*****.) Divisions 2 ☐ Autoscale

Legend

☒ CH No. ☒ CH Name ☒ Numerical value ☒ Unit

☐  ☐  ☒ 

Background color

☐  ☒ 

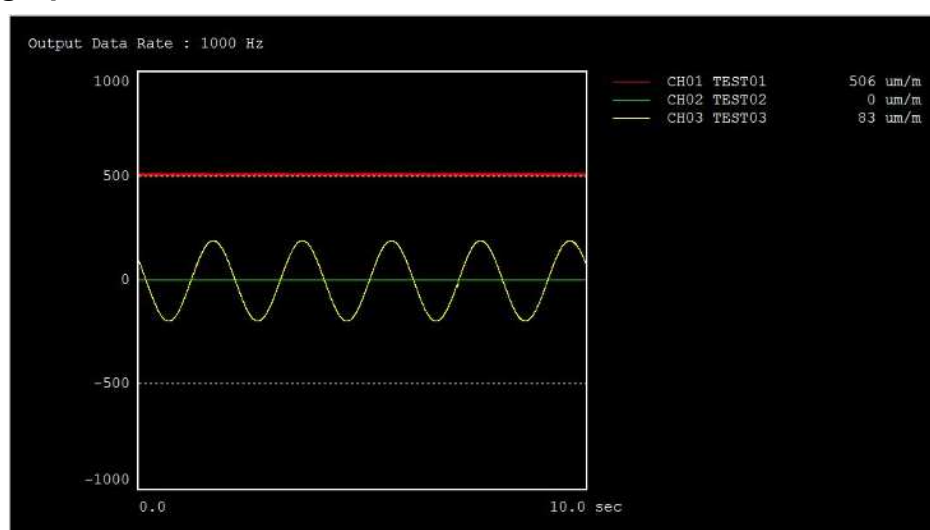
■ Number of Graphs:

Sets the number of graphs to display in the display area (setting range: 1-4).

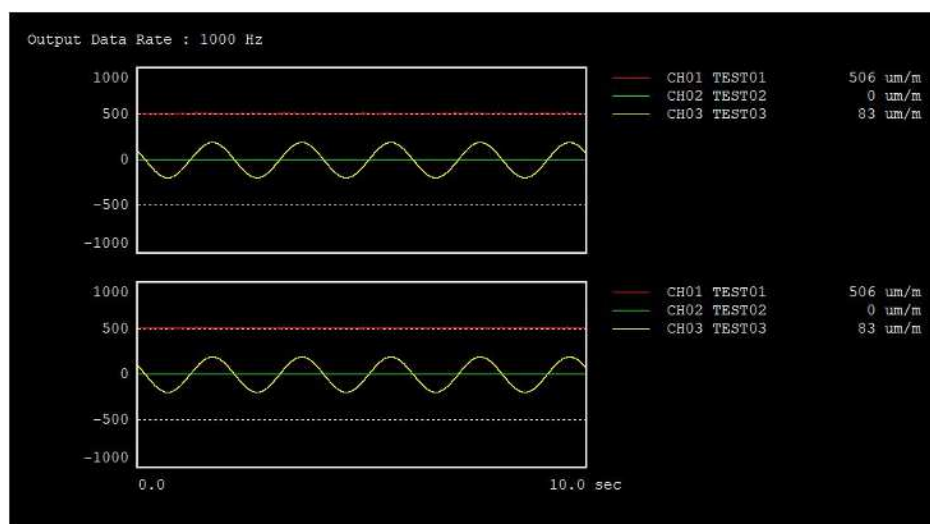
Changing the number of graphs modifies the [Graph] tab.



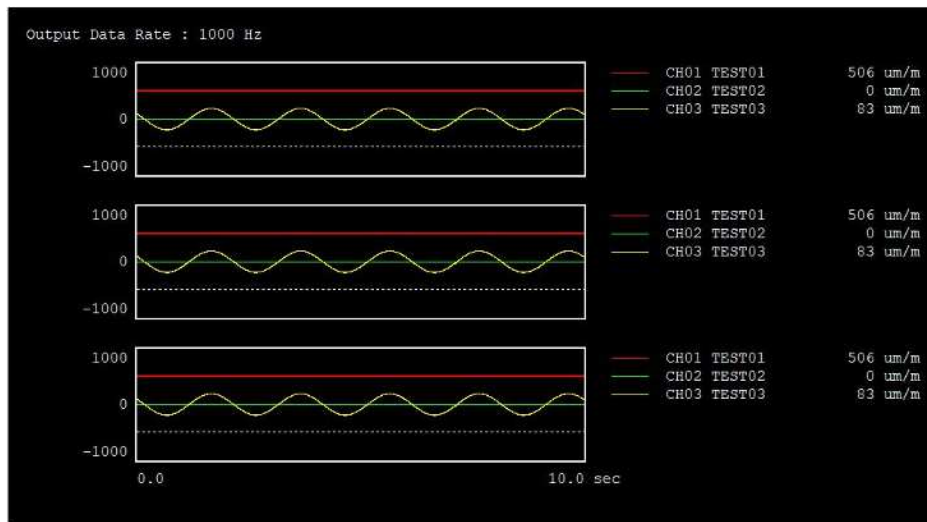
1graph



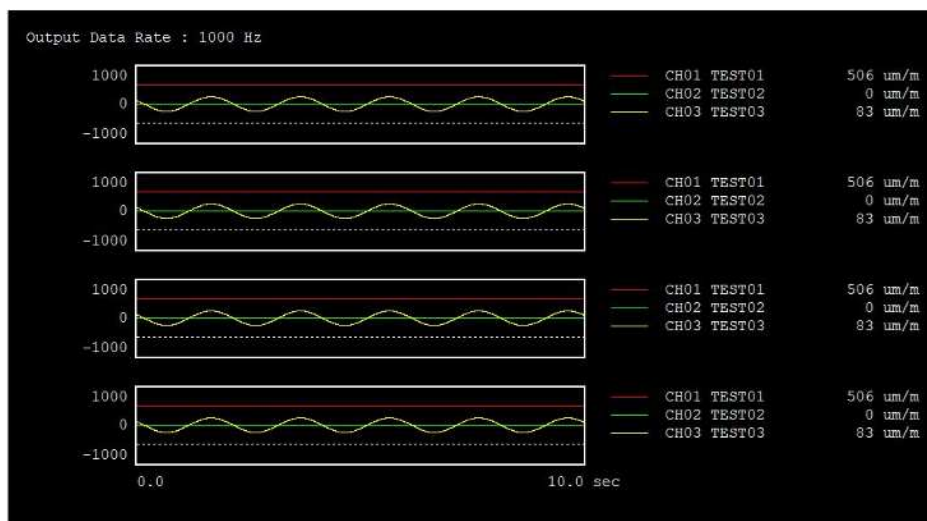
2graph



3graph



4graph

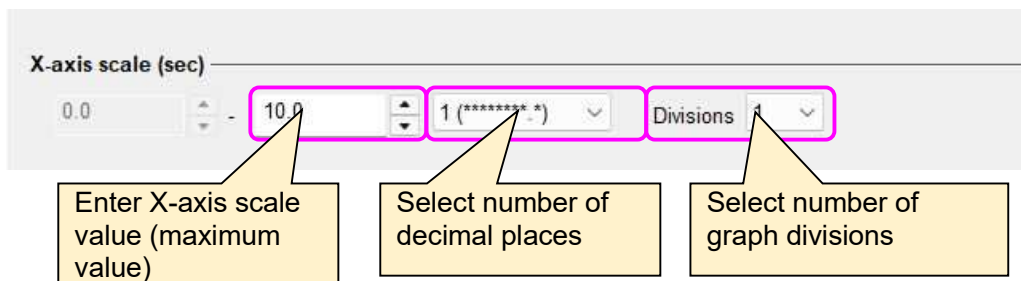


■ Number of Channels per Graph:

Sets the number of channels to display in one graph (setting range: 1 to 32 / number of graphs).

■ X-axis Scale (sec):

Sets the scale value, decimal places (0-5), and number of divisions (1-12) for the X-axis.

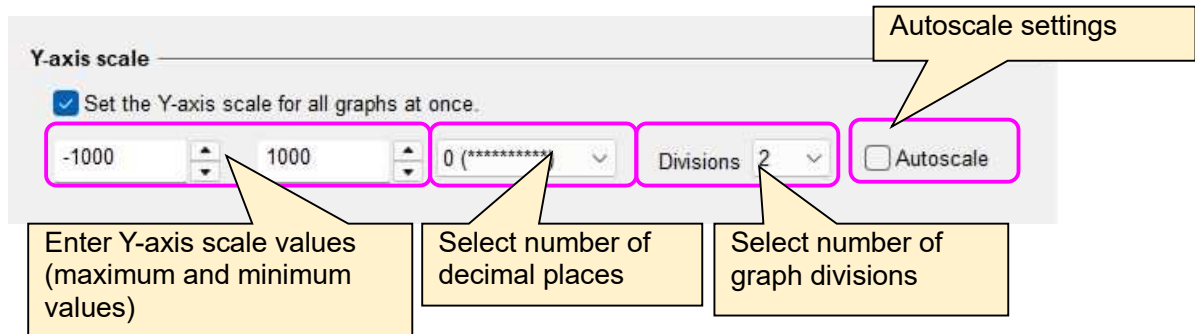


- The minimum X-axis scale value is fixed at 0 and cannot be entered.
- The X-axis can display a maximum of the latest 50,000 data points.
- On the graph, the X-axis scale value can be edited by Double-clicking the scale value.



■ Y-axis Scale:

Sets the scale value, decimal places (0-5), number of divisions (1-12), and auto-scaling for the Y-axis.

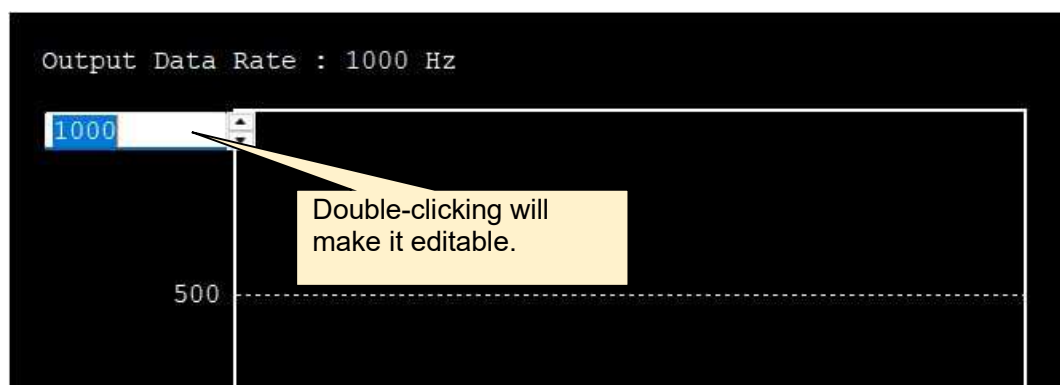


You can set the Y-axis scale for each graph individually by unchecking the [Set Y-axis scale for all graphs at once.] checkbox.

When the auto-scale checkbox is ON, the scale values will be automatically set to 1, 2, or 5 steps to match the displayed data.



On the graph, the Y-axis scale value can be edited by Double-clicking the scale value.



■Legends(Items):

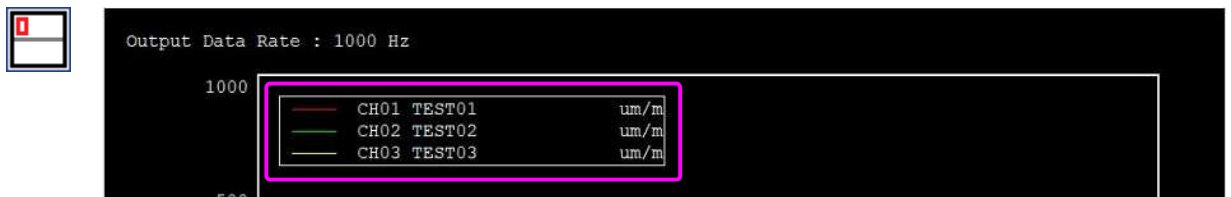
Set the display/hide status of legend items (CH No., CH name, value, unit).

Check the box for the items you wish to display.

■Legends(position):

Set the display position of the legend.

Inside the graph, right side:



Inside the graph, on the left side:



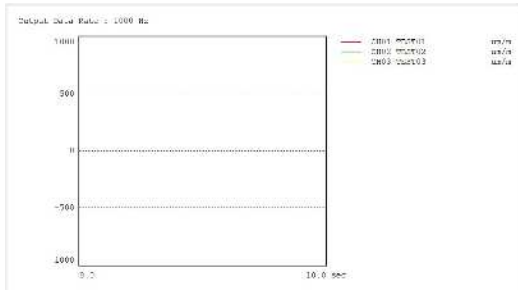
Outside the graph, on the left side:



■ Background color

Set the background color of the graph.

- ☐ white



- ☒ black

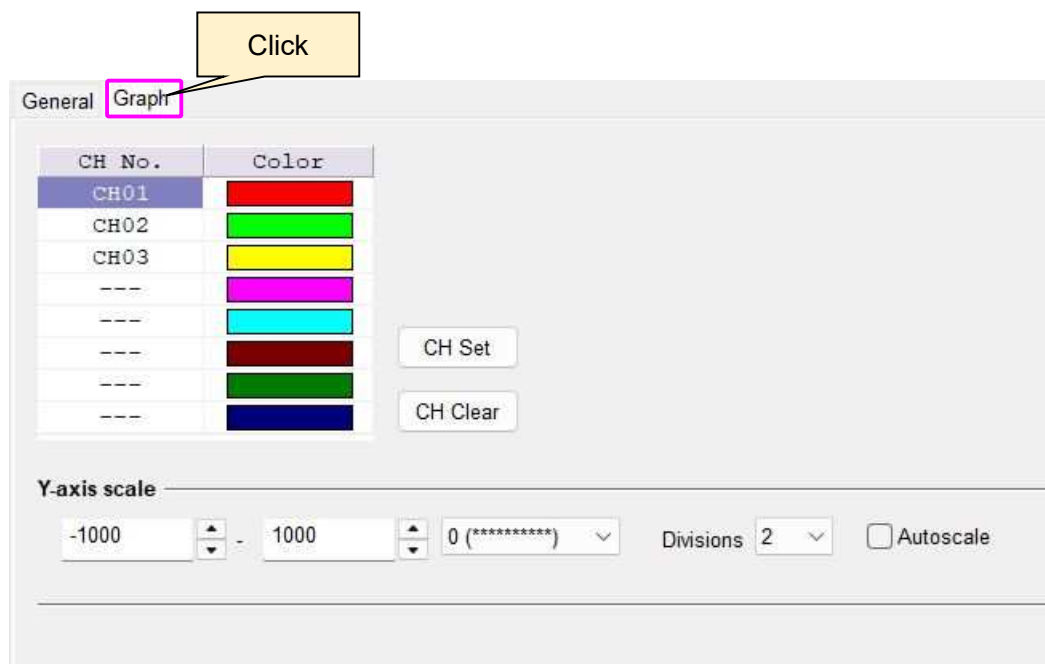


9-5-2. [Graph] Tab

Set the display conditions for each graph.

Click the [Graph] tab.

For multiple graphs, click the [Graph*] (* is the number) tab.

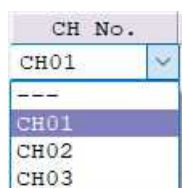


■ Display Data:

Sets the channels to display and the line colors for the graph.

Set the display CH:

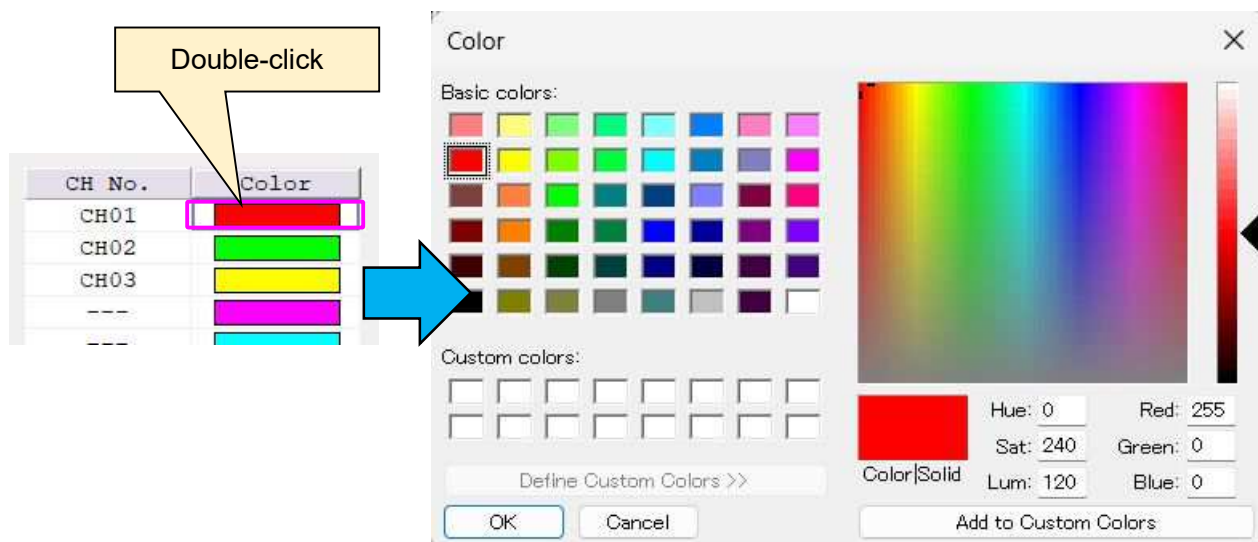
Select a CH from the display CH list.



You can automatically set the display channels by clicking the [CH Set] button or clear all channels by clicking the [CH Clear] button.

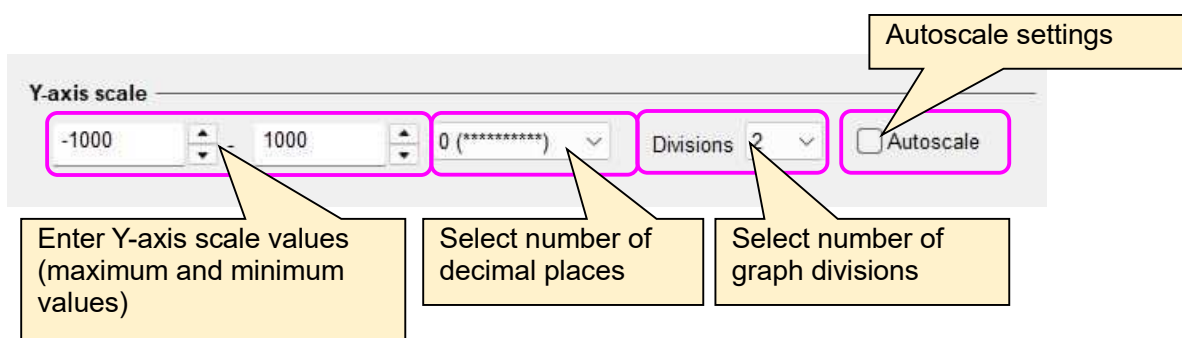
To set the line color:

Double-click on the desired line color to open the [Color Settings] window, then select your preferred color.



■ Y-axis Scale:

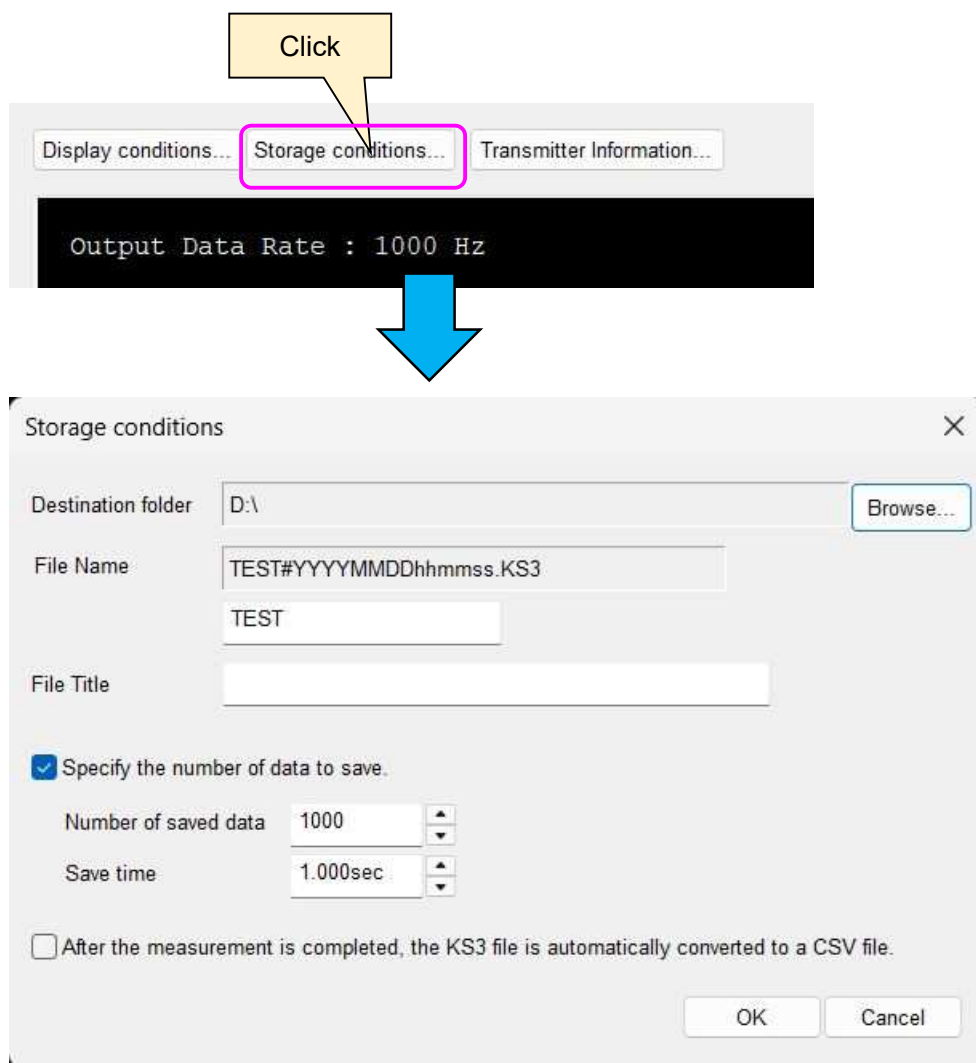
When the [Set Y-axis scale for all graphs at once.] checkbox is OFF in the [General] Tab, you can set the Y-axis scale value, the number of decimal places for the scale value (0-5), the number of graph divisions (1-12), and auto-scale ON/OFF for each individual graph.



9-6. Storage Conditions

This section describes the settings for saving data files.

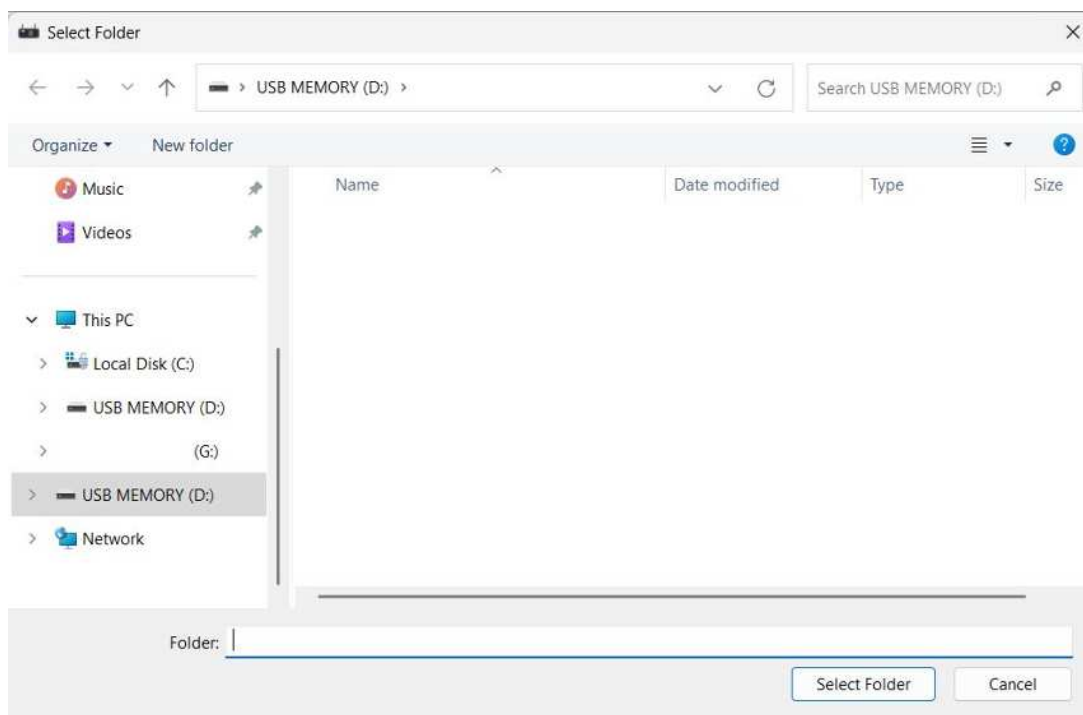
Clicking the [Storage conditions] button opens the [Storage conditions] window.



■ Destination folder:

Selects the folder to save data files.

Click the [Browse] button to display the [Select Folder] window, then choose your desired folder.



■ File Name:

Set the file name (up to 20 single-byte characters or 10 double-byte characters).



The file name will be File Label + # + Date/Time of Save Start.

Example:

If the file label is TEST and saving begins on 2026/01/01 at 07:00:00, the KS3 file name will be TEST#20260101070000.KS3.

■ File Title:

Set the file title (up to 40 single-byte characters or 20 double-byte characters).

■ Specify Number of data to save:

Check this box to save a specific number of data points per channel.

The maximum number of saved data points is 1,000,000,000 / number of measurement channels.



The maximum number of data points that can be saved varies depending on the number of measurement channels.

Maximum number of saved data points =

$1,000,000,000 / \text{Number of measurement channels.}$

■ Automatic File Conversion:

Check the box for [After the measurement is completed, the KS3 file is automatically converted to a CSV file.] to automatically convert KS3 files to CSV files after measurement ends.



- The destination folder for the converted CSV file will be the same as the destination folder for the data file.
- The file name of the converted CSV file will be the same as the source KS3 file.

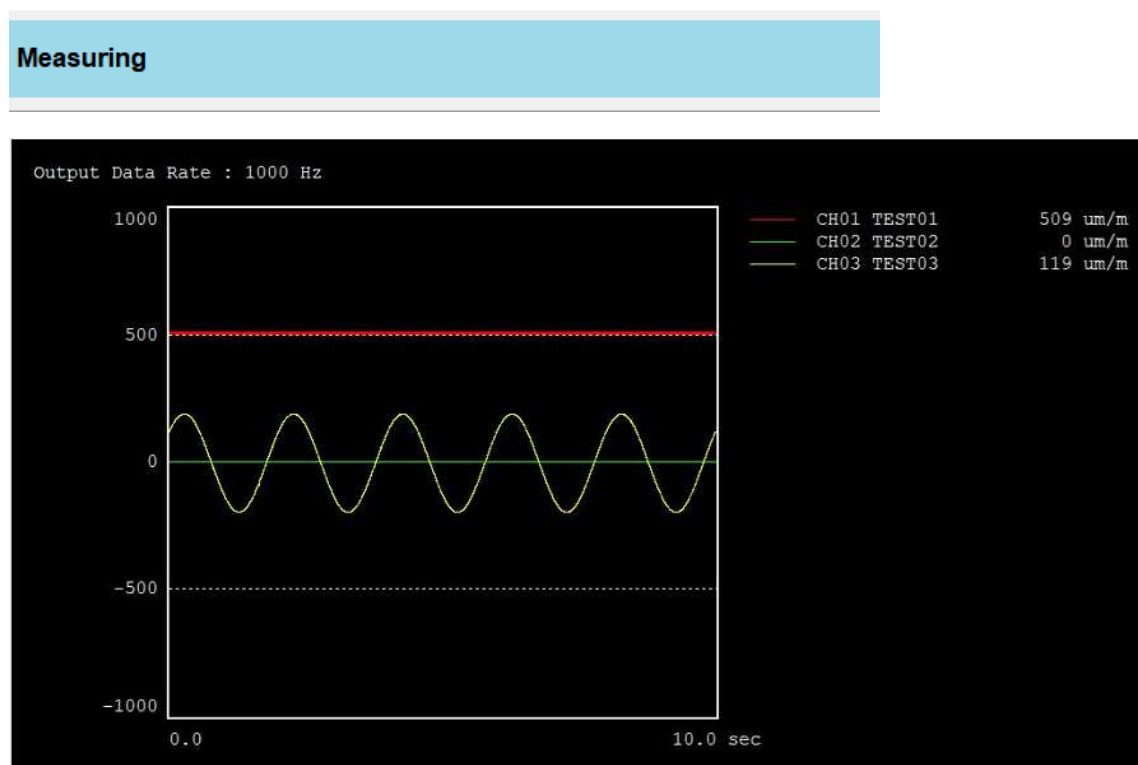
9-7. Basic Measurement Operations

This section explains the basic measurement operations.

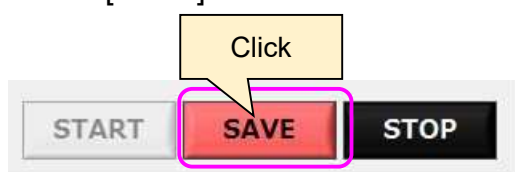
(1) While stopped, click the [START] button.



(2) The measurement status bar will change to Measuring, and the measurement data will be displayed on the graph.

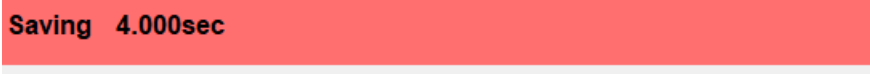


(3) Click the [SAVE] button.



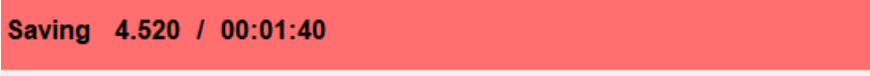
- (4) The measurement status bar will change to [Saving], and the save progress will be displayed.

If no number of data points is specified for saving, the current saving time is displayed.



Saving 4.000sec

If a number of data points is specified for saving, the current saving time and the total saving time are displayed.



Saving 4.520 / 00:01:40



If a specific number of data points is set, the measurement status will automatically change back to Measuring after saving is complete.

- (5) Click the [STOP] button to stop saving data.



- (6) The data saving will end, and the measurement status bar will change to [Measuring].



Measuring

- (7) Click the [STOP] button again.



(8) The measurement status bar will change to [Stopped].

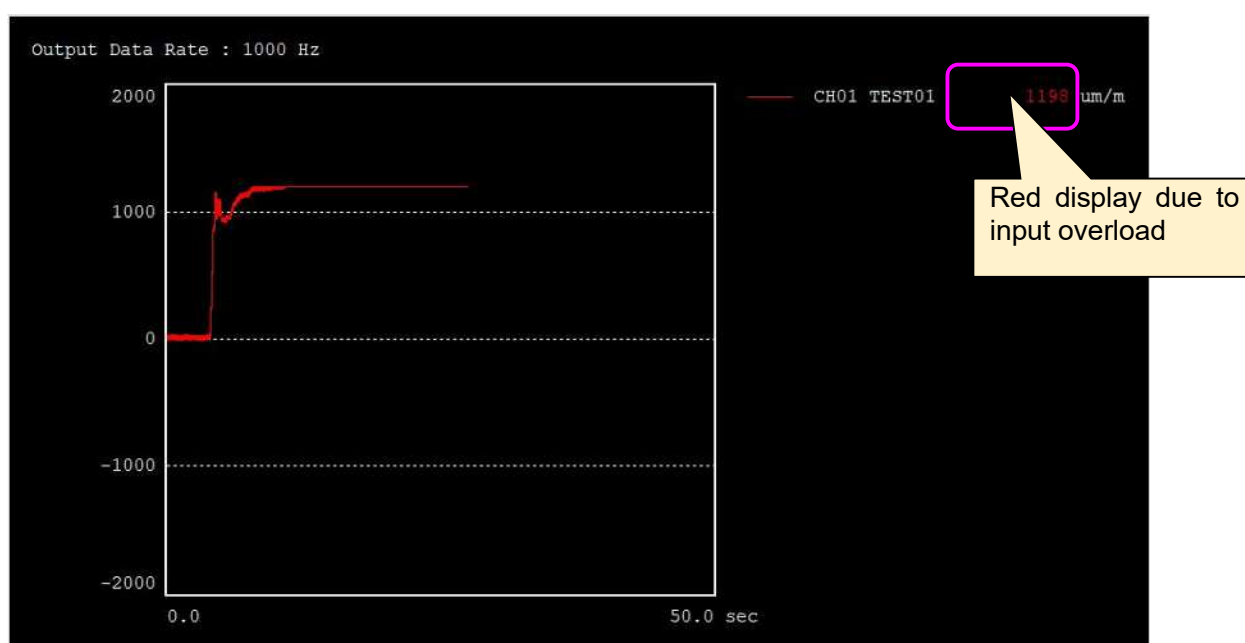
Stopped

9-8. Input Overload Display

If the measurement data exceeds the upper limit or falls below the lower limit, the numbers on the graph will turn red.

This function allows you to identify input overload for each channel.

The following is an example of an input overload display when the measurement data for CH01 exceeds the upper limit.

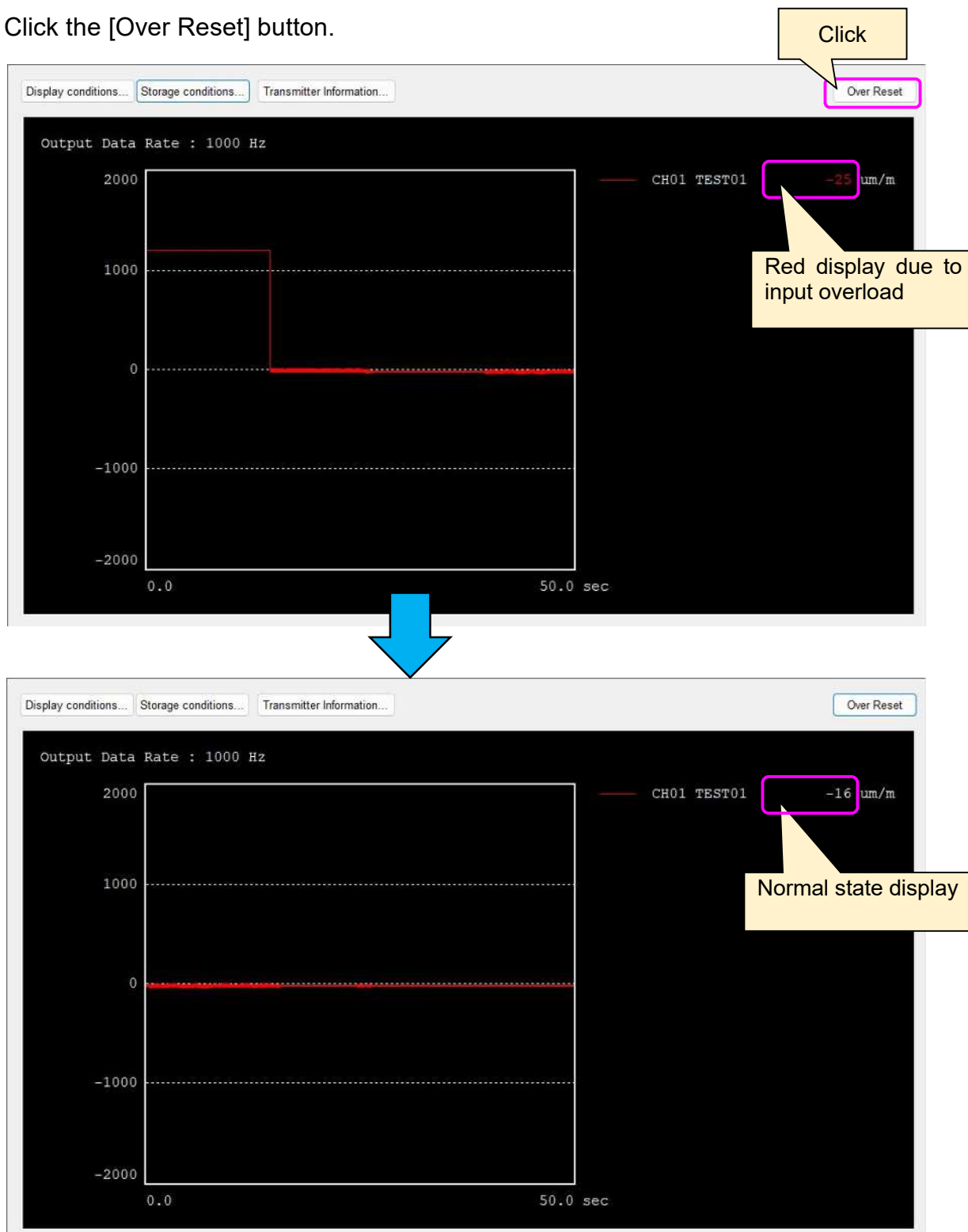


- The input overload display is reset to normal when a new measurement starts.
- You can set the upper and lower limits on the [Basic] tab of the Measurement Condition Settings screen.

■ How to Clear the Input Overload Display:

You can clear the input overload state and return to the normal state (the state before the input overload).

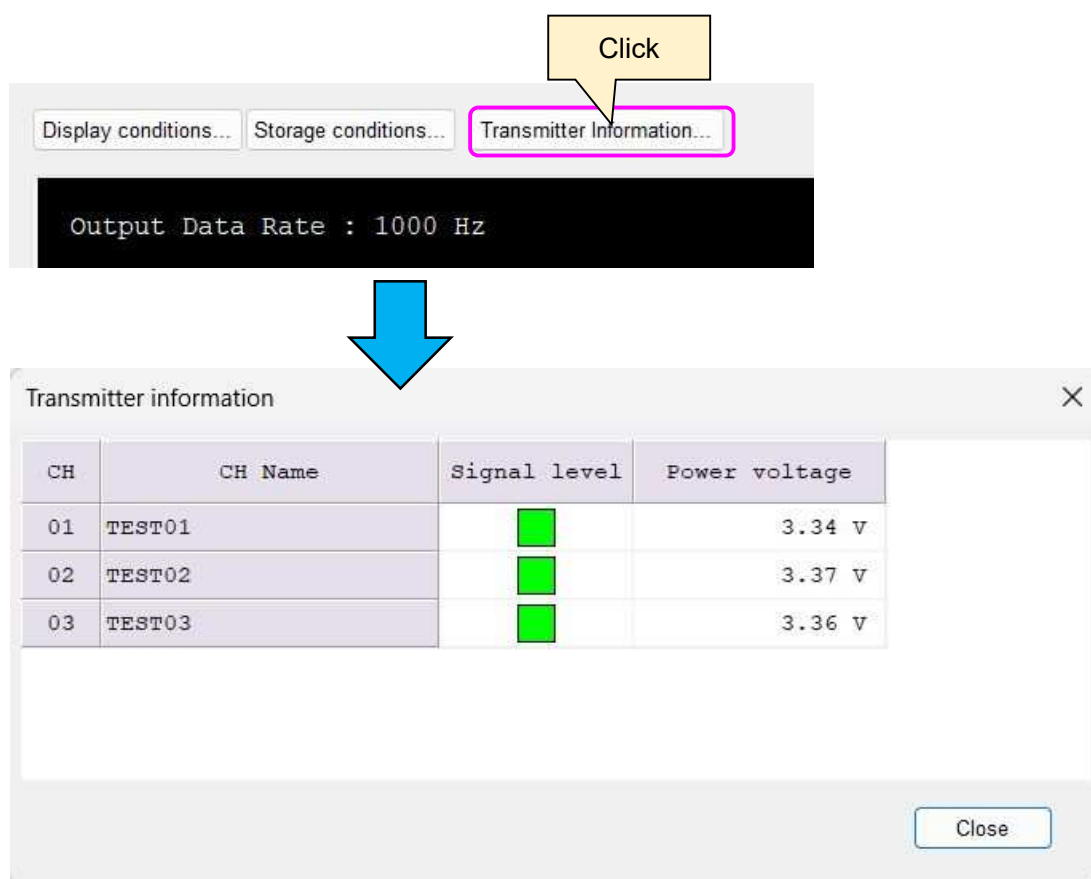
Click the [Over Reset] button.



9-9. Transmitter Information

During a measurement, you can check the radio wave level and power voltage of each transmitter.

Click the [Transmitter Information] button to display the [Transmitter Information] window.



■ Signal Level:

Displays the radio wave status of each transmitter in four levels:

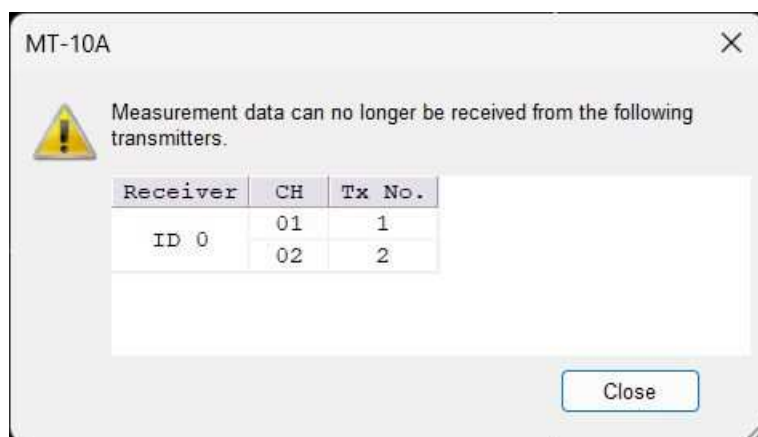
- Good
- Medium
- Weak
- No Signal

■ Power Voltage:

Displays the Power voltage of each transmitter.

9-10. Data Reception Error Notification

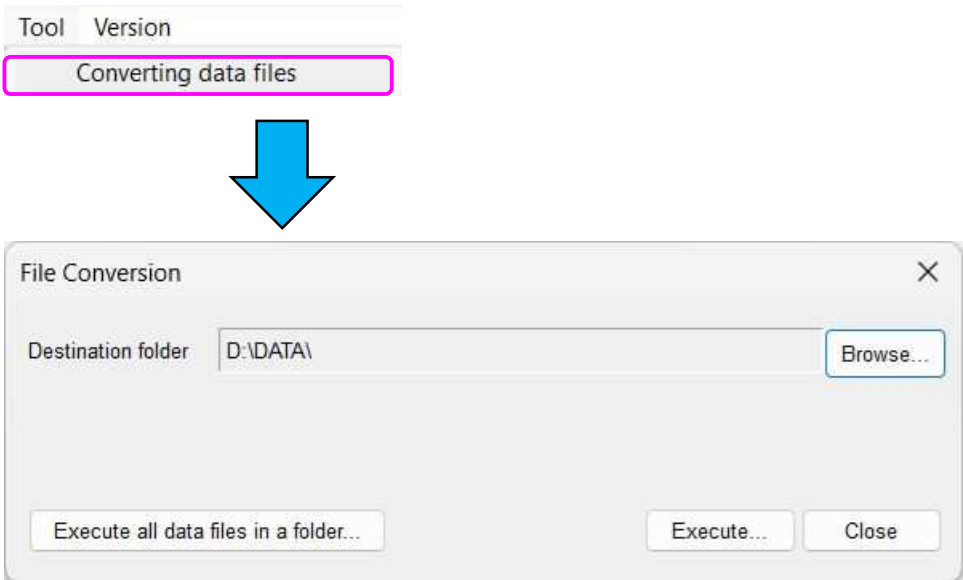
If the reception deteriorates during a measurement and data from the transmitter is not received for a certain period, an [Error Notification] window will appear to alert you of a data reception error.



You can prevent this window from appearing by unchecking the [Notify data reception error during measurement] option in the [View] menu.

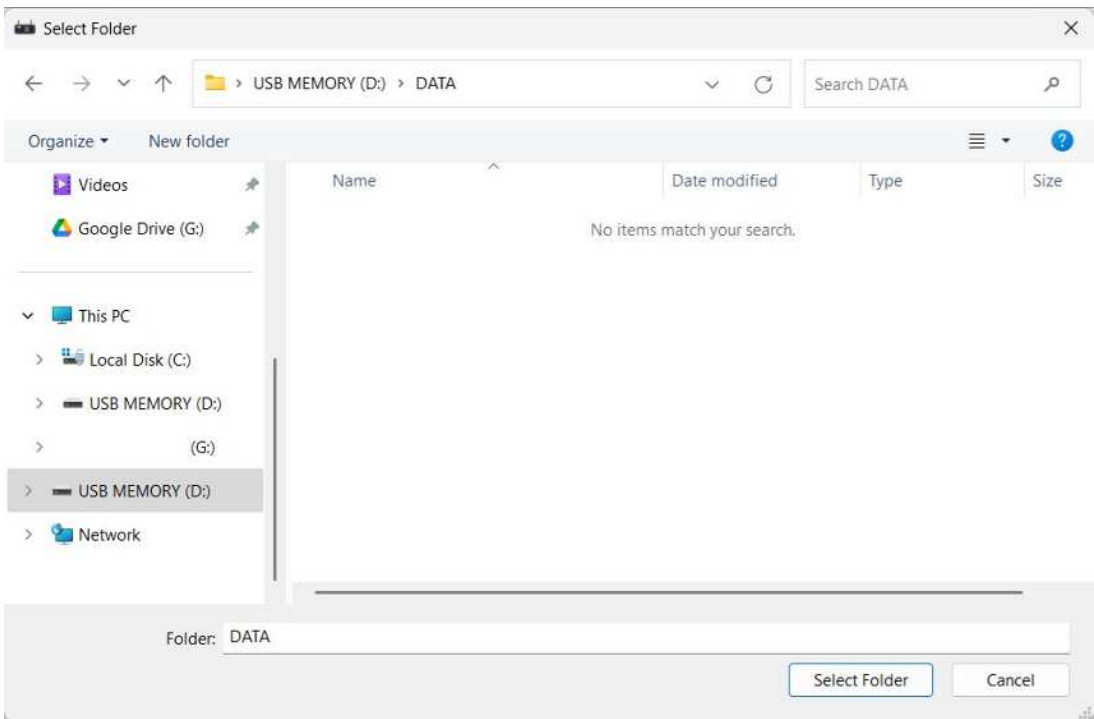
10. Data File Conversion

You can batch-convert multiple KS3 files to CSV files.
To do so, select [Tools] – [Converting data files] from the menu to display the [File Conversion] window.



■ Destination Folder:

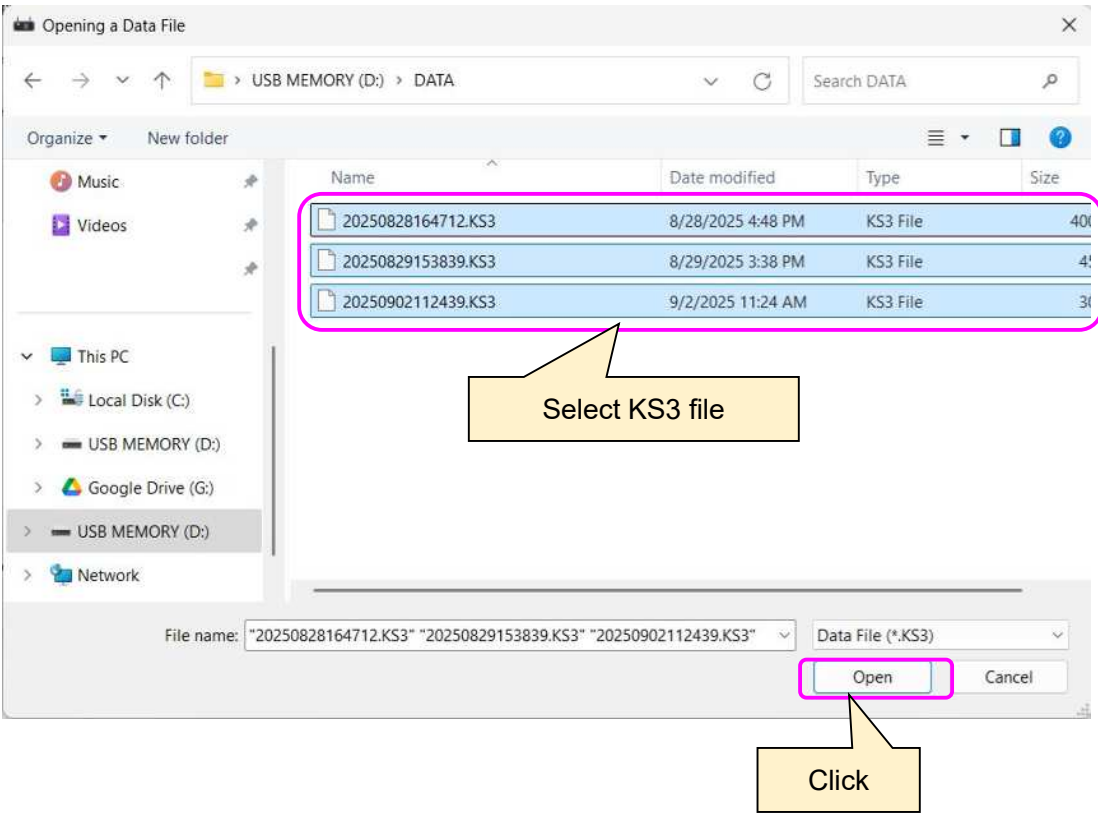
Select the destination folder for the converted CSV files. Click the [Browse] button to display the [Select Folder] window, where you can choose a folder.



■[Execute] Button:

Click the [Execute] button to display the [Opening a Data File] window.

After selecting a KS3 file, click the [Open] button to convert the selected KS3 file to a CSV file.



■ [Execute all data files in a folder] Button:

Click the [Execute all data files in a folder] button to display the [Select Folder] window, where you can select a folder.

All KS3 files in the selected folder will be converted to CSV files.



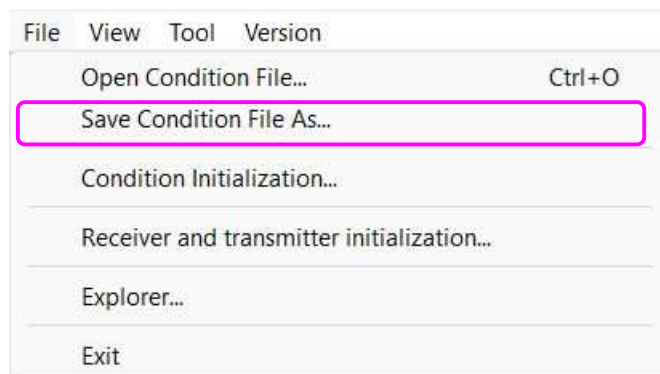
- You can also convert a KS3 file to a CSV file by dragging and dropping it into the [File Conversion] window from Explorer.
- The converted CSV file will have the same name as the original KS3 file.

11. Saving/Reading Condition Files

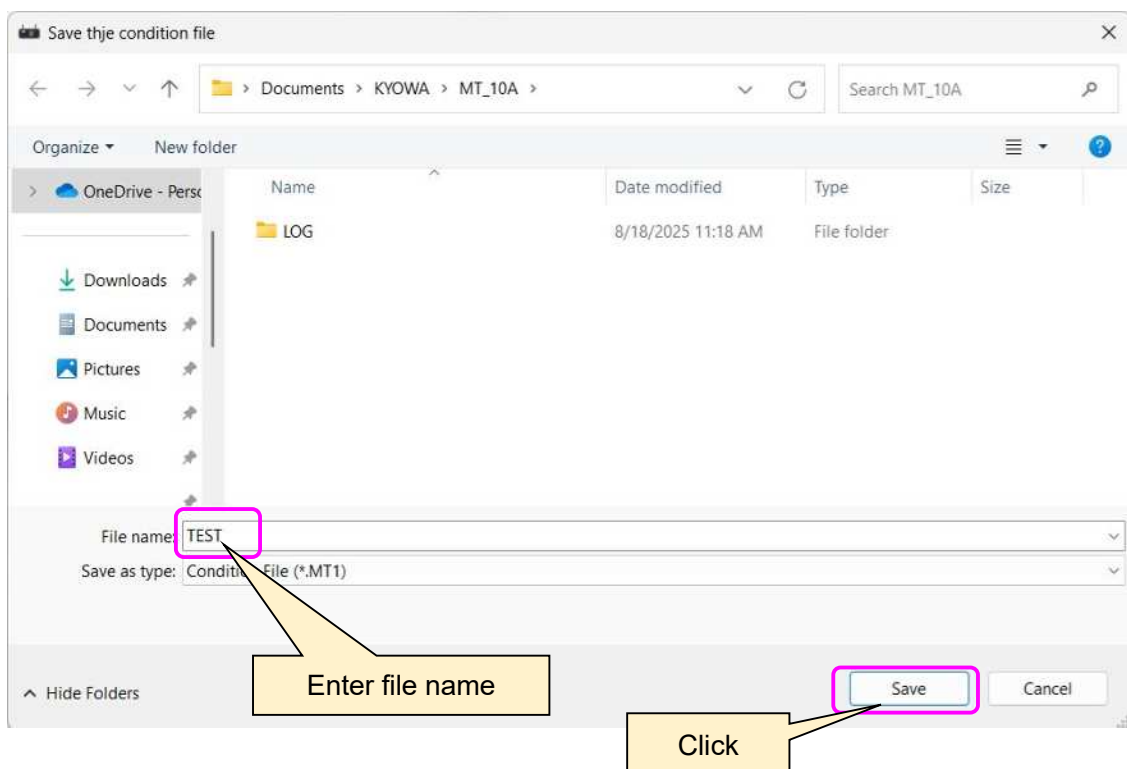
You can save measurement conditions, display conditions, and save conditions as a Condition File. By reading a pre-saved condition file, you can skip the condition settings. The file extension for a condition file is [.MT1].

11-1. Saving Condition Files

(1) Select [File] – [Save Condition File As...] from the menu.

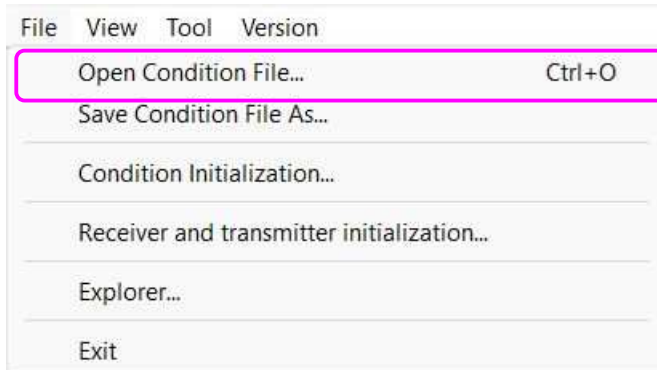


(2) A file window will appear. Enter the name for the condition file and click Save to save the file.

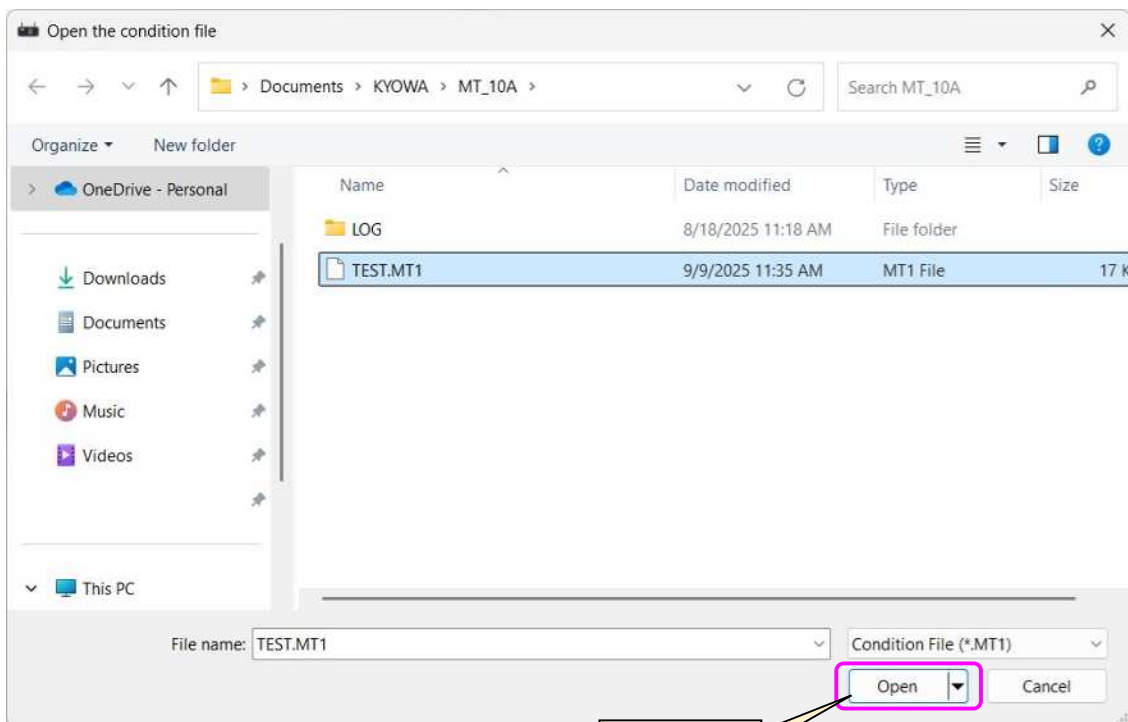


11-2. Reading Condition Files

(1) Select [File] – [Open Condition File] from the menu.



(2) A file window will appear. Select the target condition file and click Open to read the file.

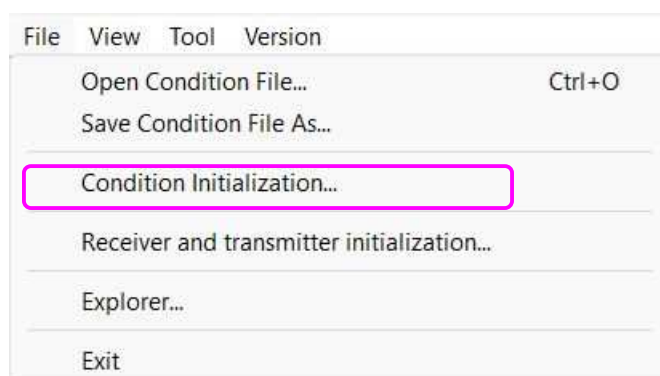


12. Initialization

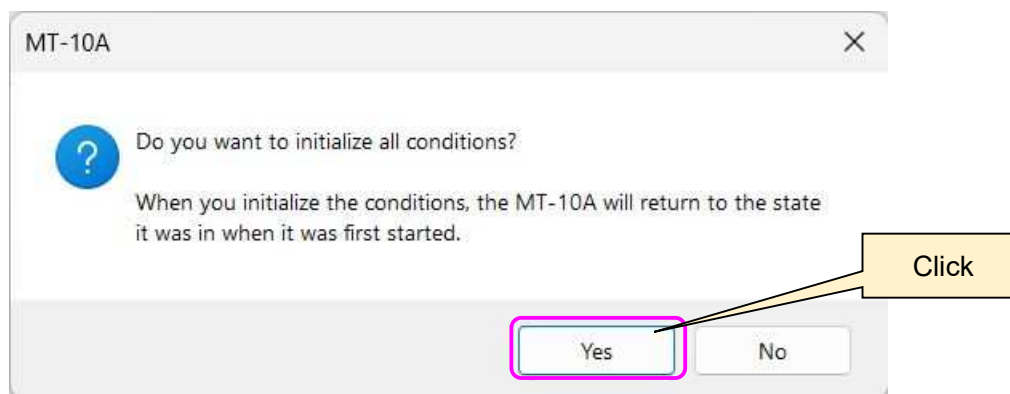
This section explains how to initialize the software and restore the receiver and transmitter to their factory default state.

12-1. Initializing the Software

(1) Select [File] – [Condition Initialization] from the menu.



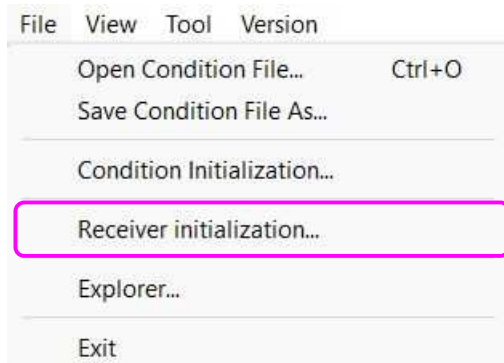
(2) A message will appear. Click Yes.



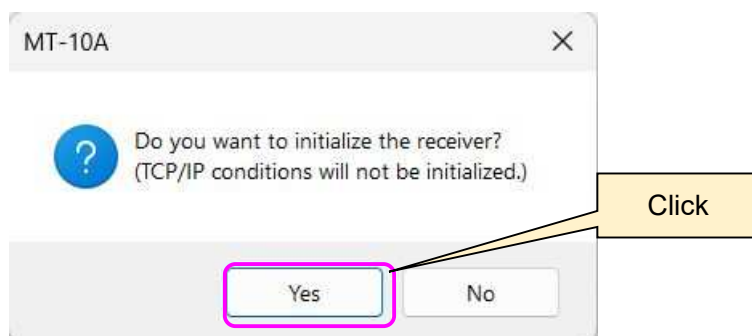
(3) The measurement conditions, display conditions, and save conditions of the software will be initialized.

12-2. Initializing the Receiver

(1) Select [File] – [Receiver Initialization] from the menu.



(2) A message will appear. Click Yes.



(3) The measurement conditions of the receiver will be initialized.



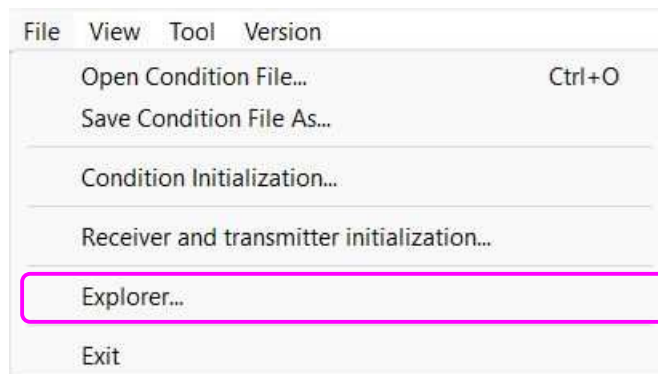
The TCP/IP conditions of the receiver are not initialized.

13. Other

13-1. Explorer

You can launch Explorer directly from the software, with the data file save folder already open. Using Explorer, you can delete saved data files or copy them to external media.

(1) Select [File] – [Explorer] from the menu.

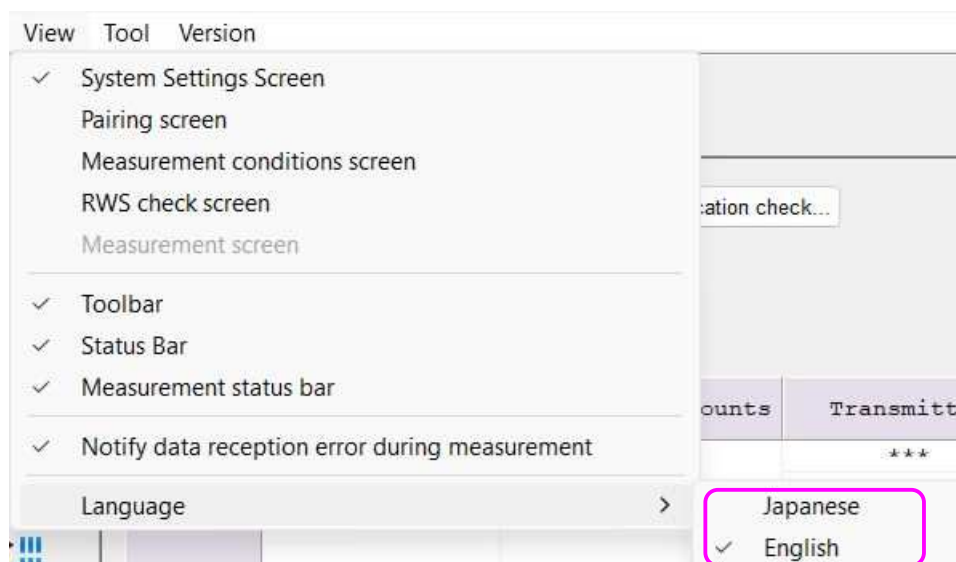


(2) Explorer will launch.

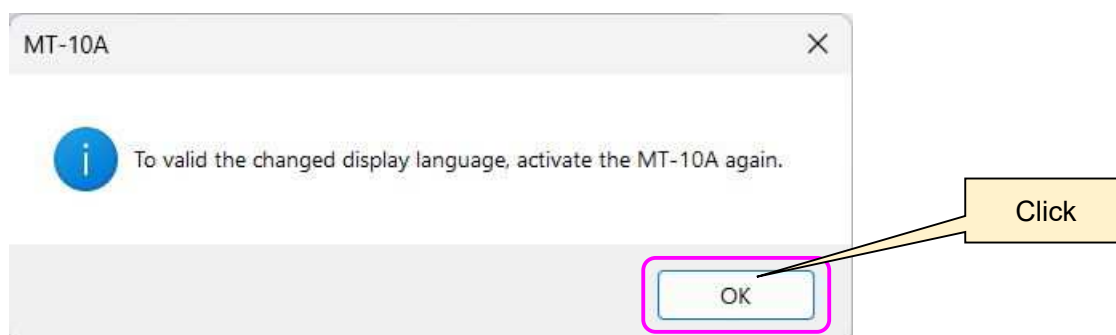
13-2. Switching Display Language

The display language of the software can be switched by following these steps.

- (1) Select the language from the [View] – [Language] menu.



- (2) A message will appear. Click OK.



- (3) Restart the software for the selected language to be displayed.

13-3. Version Information

Select [Version] – [About MT-10A] from the menu to display the version information of the software.



14. Specifications

14-1. Operating Environment

OS	Windows 11 Japanese/English, 64-bit
CPU	Intel Corei5 2GHz equivalent or higher
Memory	8GB or more
Interface	USB, LAN
Display	Resolution of 1200 x 1024 dots or higher

14-2. Software Specifications

■ Devices Controlled

Receiver	MT-100A (max. 4 units: max. 16 CH)
Transmitter	MT-101A-S (strain)

■ Settings

Overall	Radio frequency CH, network conditions, output interface, buzzer ON/OFF, error conditions during measurement, sleep time (in minutes, max. 10 days)
CH	CH name, range, balance ON/OFF, calibration coefficient, offset, unit, bridge resistance, output data rate, upper/lower limits

■ Operations

Monitor, input check, balance, over reset, saving measurement data

■ Display

Time-series graph display of measurement data, display of radio wave status and power voltage

■ Measurement Data Saving

Saves measurement data from the start of saving until the stop operation, or until the specified number of data points.

Format KS3 file

Conversion Can convert KS3 files to CSV files.

■ Condition File

Measurement conditions, display conditions, and save conditions can be saved to and read from a condition file (extension .MT1)

■ Other

Radio wave status check, actual load calibration

14-3. Limitations

The KS3 file does not save the radio frequency CH, the bridge resistance for each channel, or the output data rate for each channel.

There is no playback function for KS3 or CSV files.

Only KS3 files saved with this software can be converted.

15. Appendix

15-1. CSV File

This section describes the format of the CSV files used by this software.

```
"ID No.,""MT-100"
"Title",""
"Test Date","2025/01/01","13:00:00"
"MEAS CHs",3
"Sampling Rate(Hz)",2000
"Data Nos/CH",3720
"MEAS Time(sec)",1.86
"CH Name","test01","test02","test03"
"Range","1000um/m","1000um/m","1000um/m"
"High Pass Filter","***","***","***"
"Low Pass Filter","***","***","***"
"Low Pass(Digital)","***","***","***"
"Calibration Coefficient",1,1,1
"Offset",0,0,0
"Unit"," um/m"," um/m"," um/m"
"Time(sec)","CH1","CH2","CH3"
0.0000,-0.0742857142857143,12.517,-1198.37257142857
0.0005,-0.0742857142857143,12.517,-1198.37257142857
0.0010,-0.0742857142857143,12.517,-1198.37257142857
0.0015,-0.0742857142857143,12.517,-1198.37257142857
0.0020,-0.0742857142857143,12.517,-1198.37257142857
0.0025,-0.0742857142857143,12.517,-1198.37257142857
0.0030,-0.0742857142857143,12.517,-1198.37257142857

..... Continues below .....
```

ID No.	The ID number of the data file.
Title	The title of the data file.
Test Date	The date and time when data saving was started.
MEAS CHs	The number of measured channels.
Sampling Rate(Hz)	The sampling frequency measured (this software saves the output data rate as the sampling frequency).
Data Nos/CH	The number of data points per channel.
MEAS Time(sec)	The data save time.
CH Name	The comment for each channel.
Range	The range value for each channel.
High Pass Filter	The cutoff frequency of the high-pass filter for each channel.
Low Pass Filter	The cutoff frequency of the low-pass filter for each channel.
Low Pass(Digital)	The cutoff frequency of the digital low-pass filter for each channel.
Calibration Coefficient	The calibration coefficient for each channel.
Offset	The offset value for each channel.
Unit	The unit for each channel.
Acquired Data	The saved data (physical quantity). The data for one measurement is saved on a single line, separated by channel.