

INSTRUCTION MANUAL

MRS-10A

Digital Telemeter

Control Software

Thank you for purchasing KYOWA's product MRS-10A Control Software.
Read this Instruction Manual carefully in order to make full use of the high performance capabilities of the product.
Do not use the product in methods other than described in this Manual.

Generally, company names and trade names described in this Instruction Manual are trademarks or registered trademarks of the companies.

This Instruction Manual may not be copied or reproduced, in whole or part, without consent of KYOWA.

Copyright © Kyowa Electronic Instruments Co., Ltd. All rights reserved.

The contents of the Instruction Manual are subjected to change without prior notice.

We assume no responsibility whatever for any damage resulting from the use of this product.

CONTENTS

CONTENTS	1
NOTATIONS USED IN THE INSTRUCTION MANUAL	2
1.OUTLINE OF PRODUCT	3
2. SETUP	4
2-1. INSTALLATION	4
2-2. UNINSTALLATION	9
3. OPERATIONS	11
3-1. Operation flow	11
3-2. Startup procedure	12
3-3. Start	12
3-4. [Pairing settings]	18
3-5. [Transmitter settings]	22
3-6. [Frequency channel settings]	25
3-6-1. Confirm RSSI	26
3-6-2. Change Frequency CH	27
3-7. [Sleep settings]	28
3-7-1. Sleep	28
3-7-2. Tx OFF	29
3-8. [Measurement]	30
3-8-1. Balance	32
3-8-2. Check	33
3-8-3. Communication Error Handling	33
3-8-4. RSSI	34
3-9. EXIT	35
4. The installation of USB device driver	36
5.SPECIFICATIONS	39

NOTATIONS USED IN THE INSTRUCTION MANUAL

Certain notations are used as necessary to attract your attention to information that requires special care when handling the product, and to information provided for reference purposes.

Examples of Notations

NOTE

Essential precautions required when handling the product.

MEMO

Reference items required when handling the product.

IMPORTANT PRECAUTIONS WHEN USING MRS-10A

- When any of the following states are enabled on your computer, this software may not function properly:
 - Screensaver is scheduled to be activated.
 - Energy-saving features such as system standby are activated.
 - Software applications such as anti-virus programs are scheduled to be activated.
 - Computer is receiving access from the network
or the computer is accessing the network.
- About window font size
 - Select the font size Normal (small).
 - Windows 7
 - Right-click the desktop, and then click “Personalize” from the pop-up menu.
 - In [Display] window, select “Smaller - 100% (default)” and then click Apply.
 - Windows 8 and 8.1
 - Right-click the desktop, and then click “Personalize” from the pop-up menu.
 - In [Display] window, select “Smaller” and then click Apply.
 - Windows 10
 - Right-click the desktop, and then click [Display settings] from the pop-up menu.
 - Move the slider on "Change the size of text apps and other items" to 100% (Recommended).

1.OUTLINE OF PRODUCT

MRS-10A (hereinafter referred to as the Control Software) is software designed to configure and operate the MRS-111A/-E (hereinafter referred to as the Receiver) and the MRS-101A-S/SE/V (hereinafter referred to as the Transmitter.)

This manual describes ways for setting and operating the Control Software.

In the following pages, Windows 10 is used to explain the procedure.

NOTE

Some combinations cannot be used depending on the MRS-10A software Ver. and Transmitter and Receiver Firmware Ver.

Please refer to the following table during use.

○: usable ×: not usable

MRS-10A		Ver.1.00		Ver.2.00	
MRS-111A/-E		Ver.1.00	Ver.2.00	Ver.1.00	Ver.2.00
MRS-101A-S/SE	Ver.1.00	○	×	○	○
	Ver.2.00	×	×	○	○
MRS-101A-V	Ver.2.00	×	×	○	○

If already using MRS-10A Ver.1.00, uninstall Ver.1.00, upgrade to Ver.2.00, and then respecify the Transmitter and Receiver [Pairing settings].

The latest version of MRS-10A can be downloaded from our company's website.

MEMO

The MRS-10A software Ver. is displayed on the toolbar.

MEMO

The Transmitter and Receiver Firmware Ver. can be confirmed from MRS-10A.

The Receiver Firmware Ver. can be confirmed from Receiver information displayed on the [Connect] tab, and the Transmitter Firmware Ver. can be confirmed from Transmitter information displayed on the [Transmitter settings] tab.

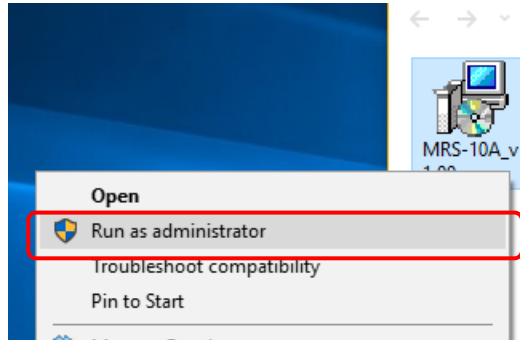
2. SETUP

2-1. INSTALLATION

Install the Control Software.

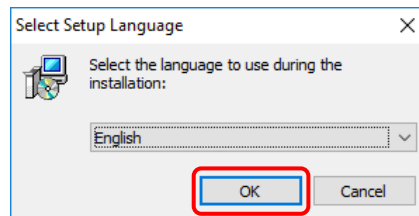
When installing updates, follow “2-2. Uninstall” to remove the old version before installing the update.

(1) Select MRS-10A_v*.**.exe in the CD-ROM included, “right-click”, and then select “Run as administrator”.

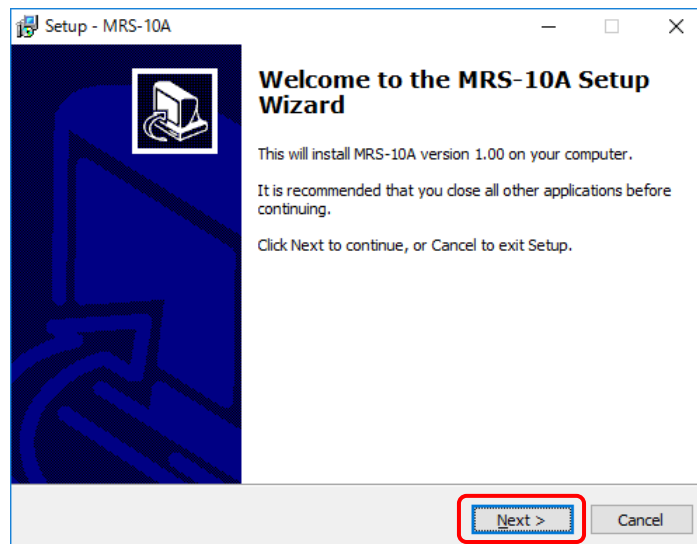


(2) When the User Account Control pop-up is displayed, click **Yes** to continue.

(3) Select the display language (English) and then click **OK**.



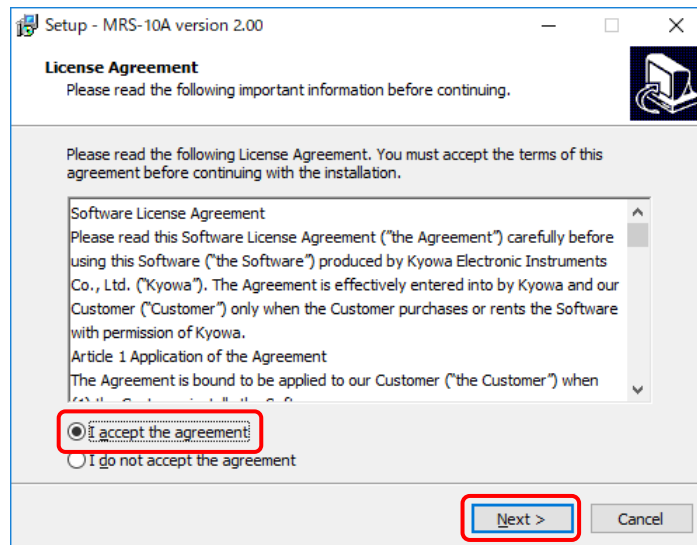
(4) Click **Next>**



(5) License Agreement is displayed. Read and verify what it says.

To agree with the conditions, select "I accept the agreement", and then click **Next>**.

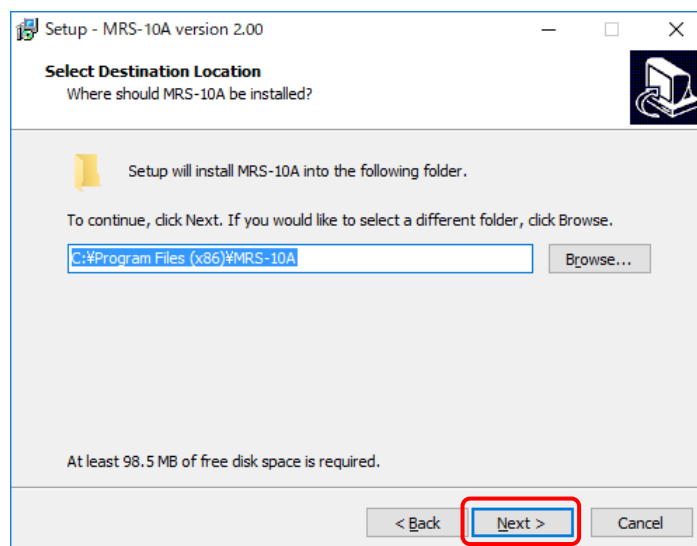
If you select "I do not accept the agreement", you cannot proceed.



(6) Specify the installation directory.

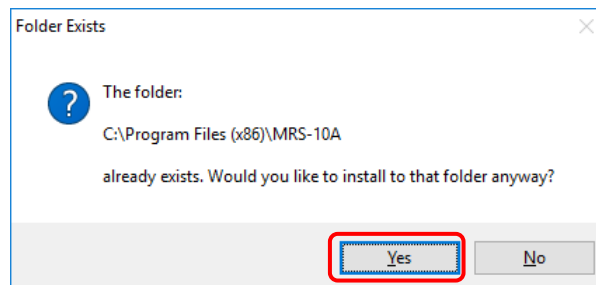
When you verify the installation directory, click **Next >**.

To select another folder, click **Browse...** and specify the desired installation directory.



If a folder with the same name already exists, the installation directory confirmation prompt is displayed.

Confirm that the directory is correct and click **Yes**.

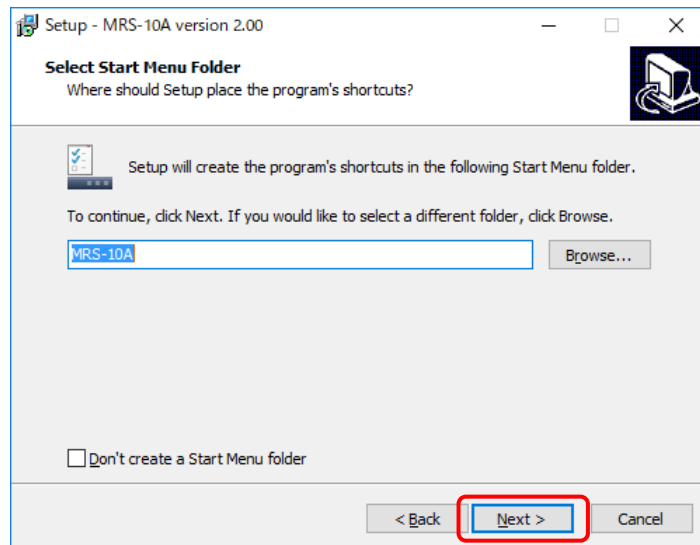


(7) Create a program icon.

Once details are confirmed, click **Next >**.

To select another folder, click **Browse...** and specify the desired installation directory.

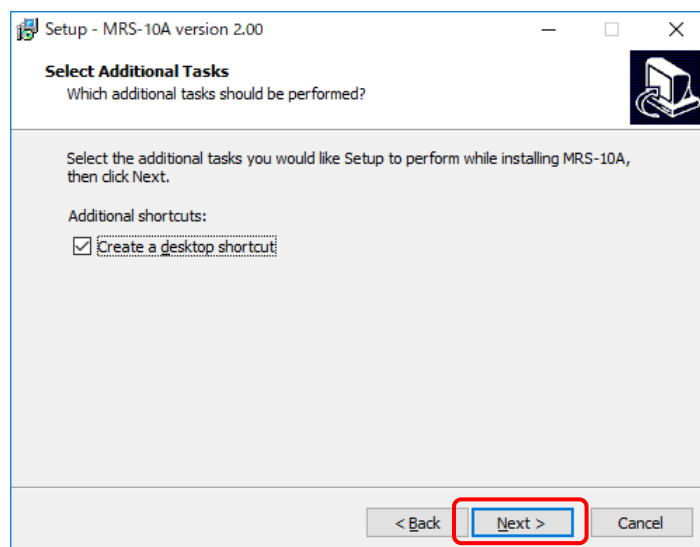
If you do not wish to create a Start Menu folder, check "Don't create a Start Menu folder".



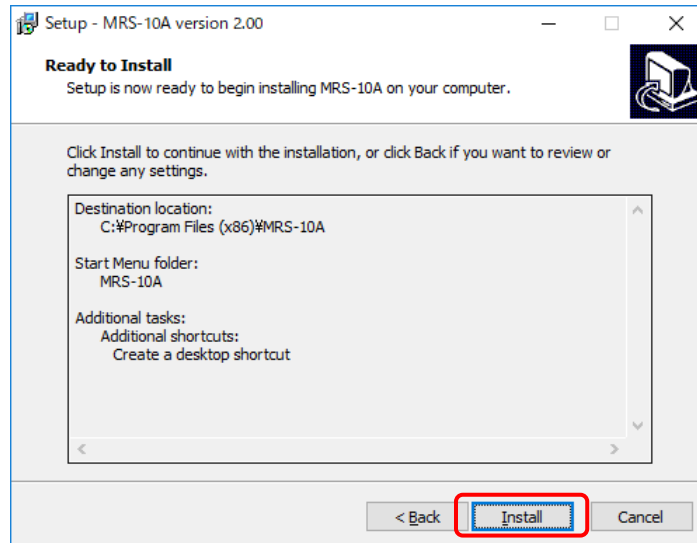
(8) Create a desktop icon.

Once details are confirmed, click **Next >**.

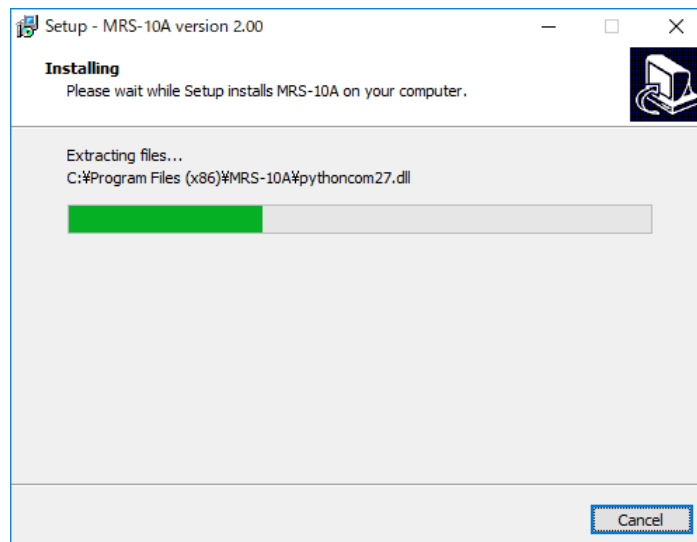
If you do not wish to create one, untick, and then click **Next>**.



- (9) Confirmation of installation setting is displayed.
- When you click **Install**, the installation starts.
- To confirm or change settings, click **<Back**.



- (10) The following window is displayed during the installation.

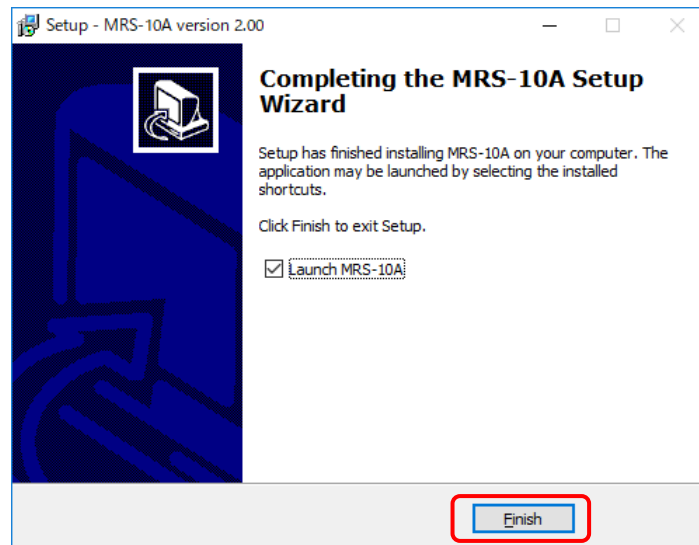


(11) Installation is complete.

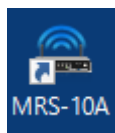
Click **Finish** to close the Setup.

After clicking Finish, the Control Software starts automatically.

If you do not wish to start the Control Software, untick Launch MRS-10A, and then click **Finish**.



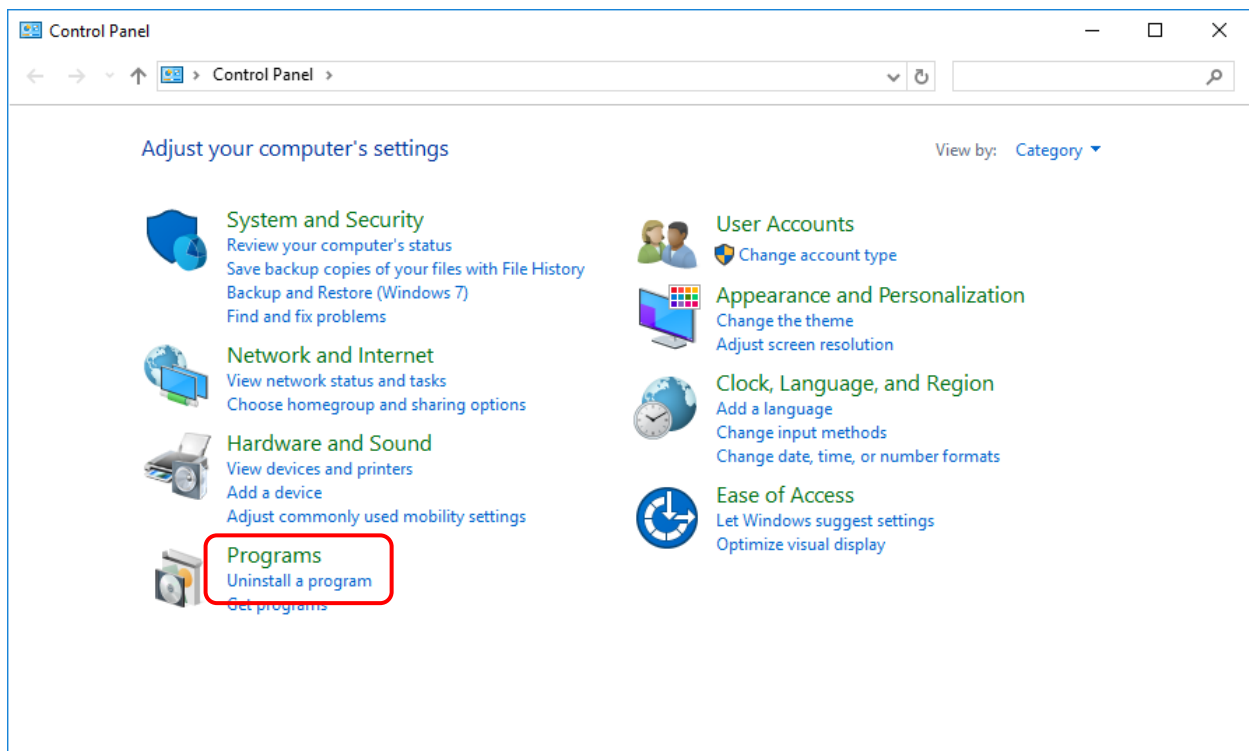
(12) When you select “Create a desktop icon”, an icon is created on the desktop.



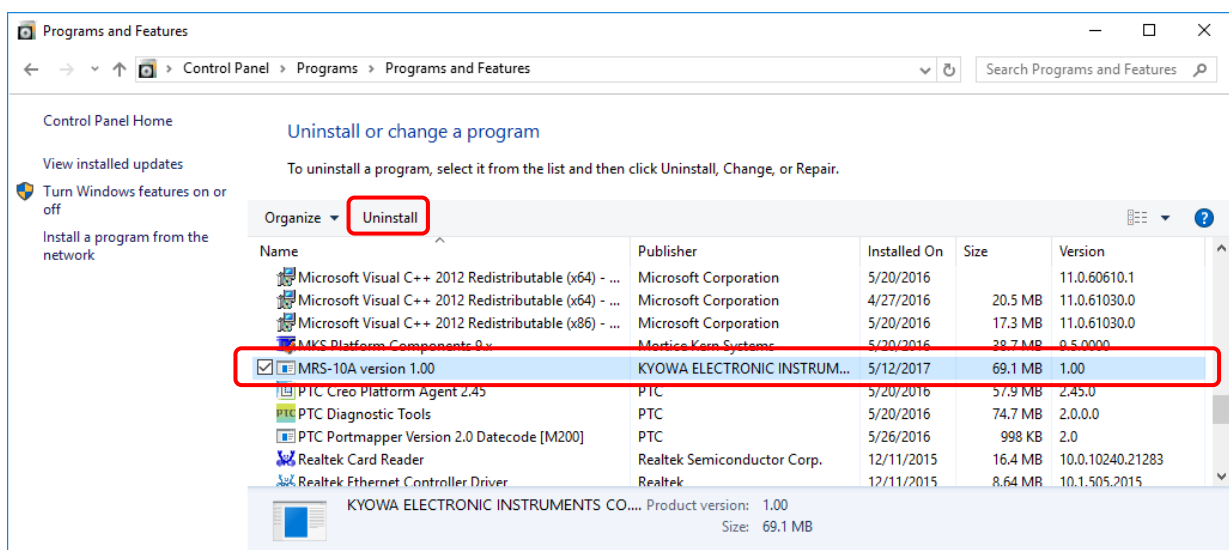
2-2. UNINSTALLATION

When you perform an uninstallation, the Control Software functions are uninstalled.

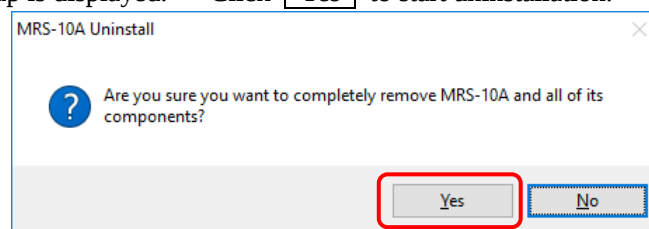
(1) From the Control Panel, select “Uninstall a program”.



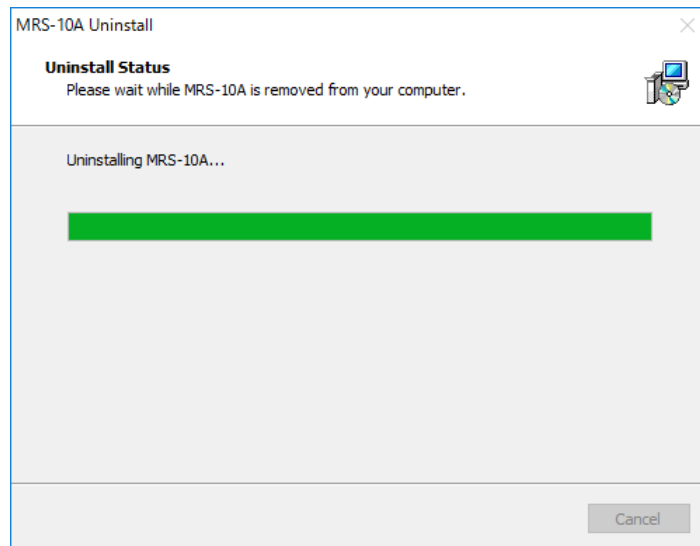
(2) From the list of programs displayed, select “MRS-10A” and then click **Uninstall**.



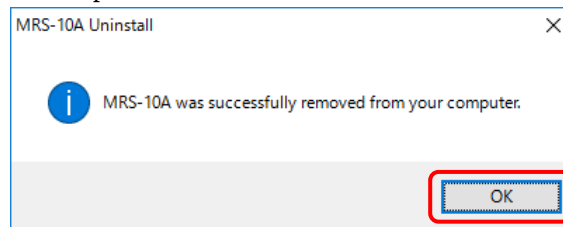
(3) A confirmation pop-up is displayed. Click **Yes** to start uninstallation.



(4) The following window is displayed during the uninstallation.

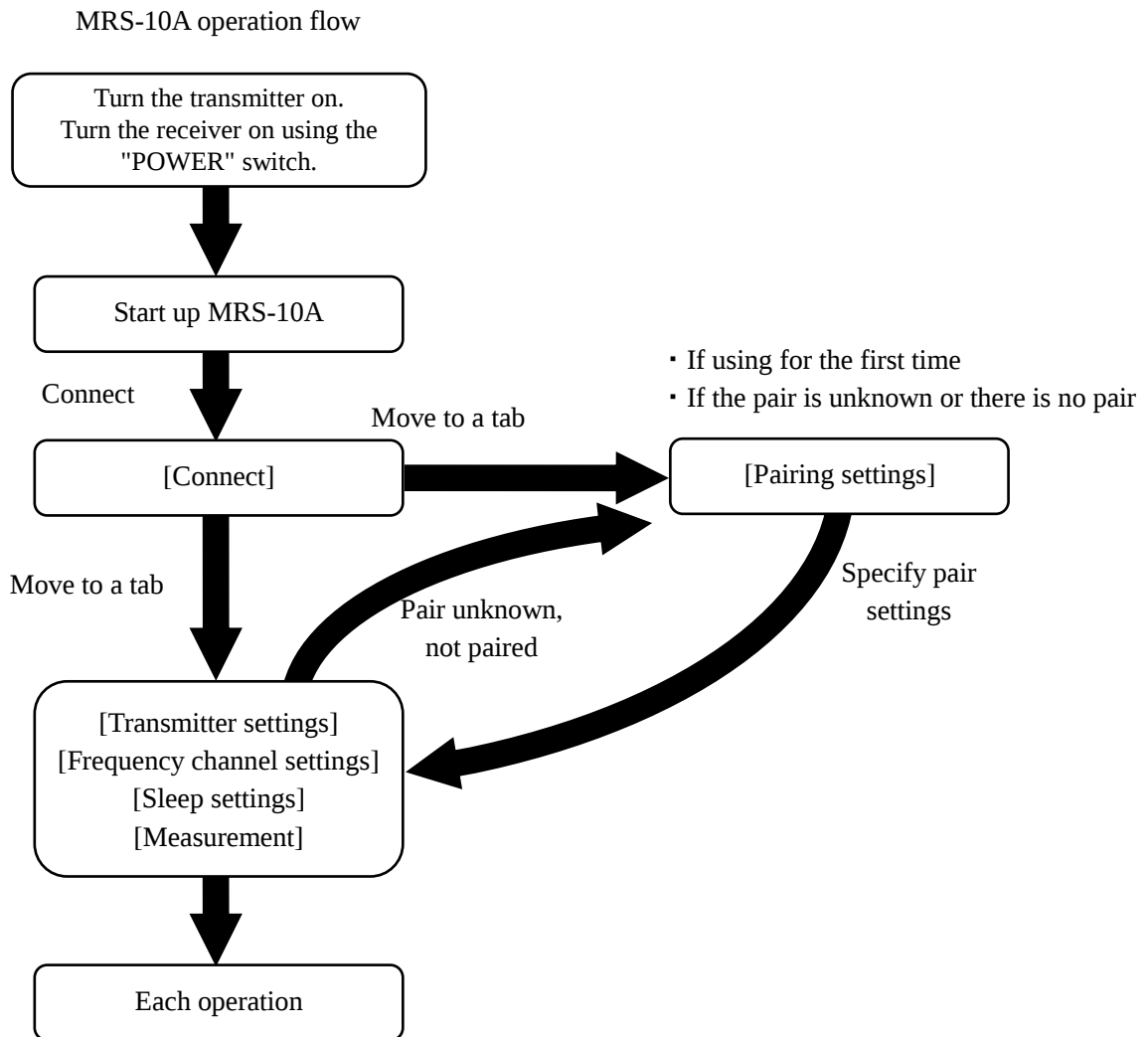


(5) Once the uninstallation is complete, the following window is displayed.
Click **OK** and complete the operation.



3. OPERATIONS

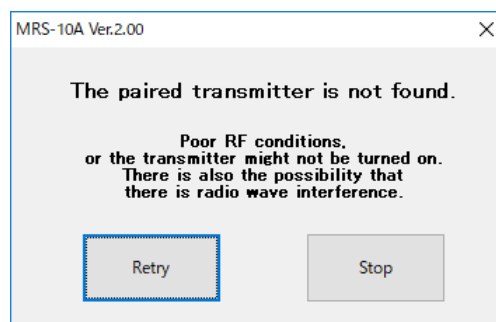
3-1. Operation flow



* It is necessary to specify the [Pairing settings] for the Transmitter and Receiver.

NOTE

If using the software for the first time, the pair is unknown, or pairing has not been performed, the popup window below is displayed upon attempting to move to a different tab, preventing you from doing so.



Click **Retry**, and then specify the [Pairing settings].

3-2. Startup procedure

After turning on the Transmitter, turn on the Receiver.

NOTE

This device uses the 2.4GHz frequency band, which is the same as a wireless LAN, Bluetooth, and microwave ovens.

Devices using a wireless LAN may create radio interference that could cause communication errors on this device.

Ensure such devices are not located close by while this device is in operation.

Also, any wireless LAN and Bluetooth features on the computer being used may generate radio interference. When using a computer to operate this device, ensure that the built-in wireless LAN and Bluetooth features of the computer are turned off.

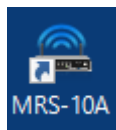
MEMO

The Transmitter mode after turning on the power differs depending on the Transmitter Firmware Ver.

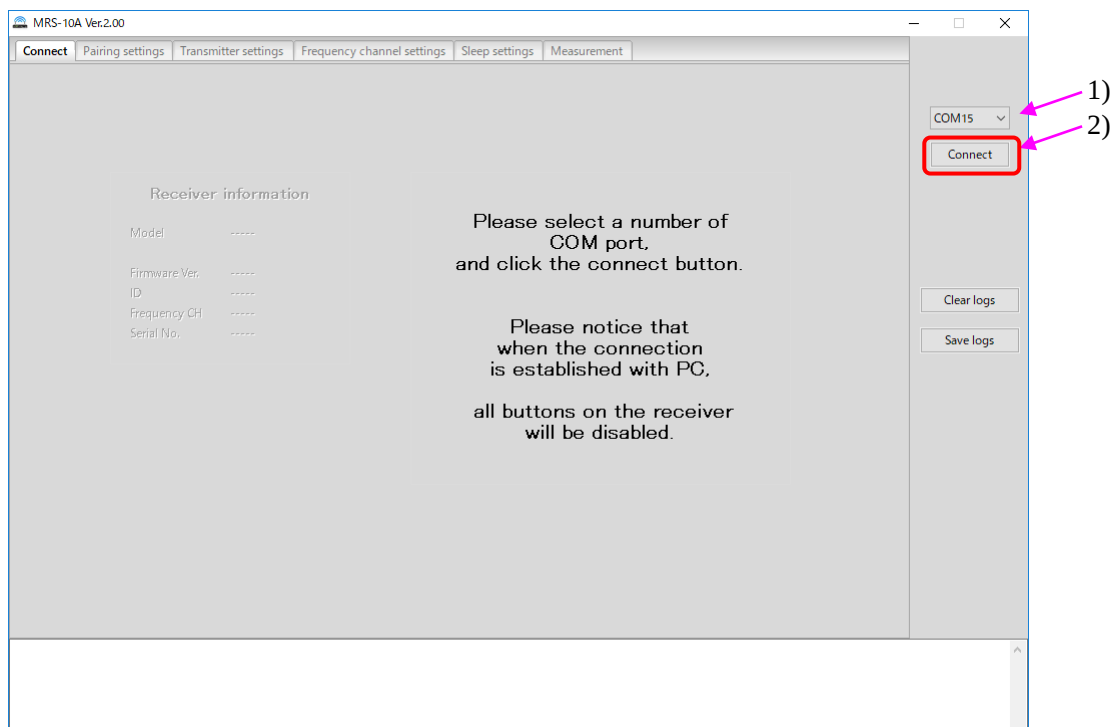
- For Firmware Ver.2.00 or later, it is the Measuring Mode.
- For Firmware Ver.1.00, it is the Command Mode.

3-3. Start

- (1) Connect the Receiver to a USB port of a computer on which the Control Software has been installed, and then, to start up, double-click the Control Software icon.



- (2) The [Connect] window is displayed, as is the COM port to which the Receiver is connected.
The [Connect] window is displayed.



1) COM: Displays the list of COM ports on the computer.

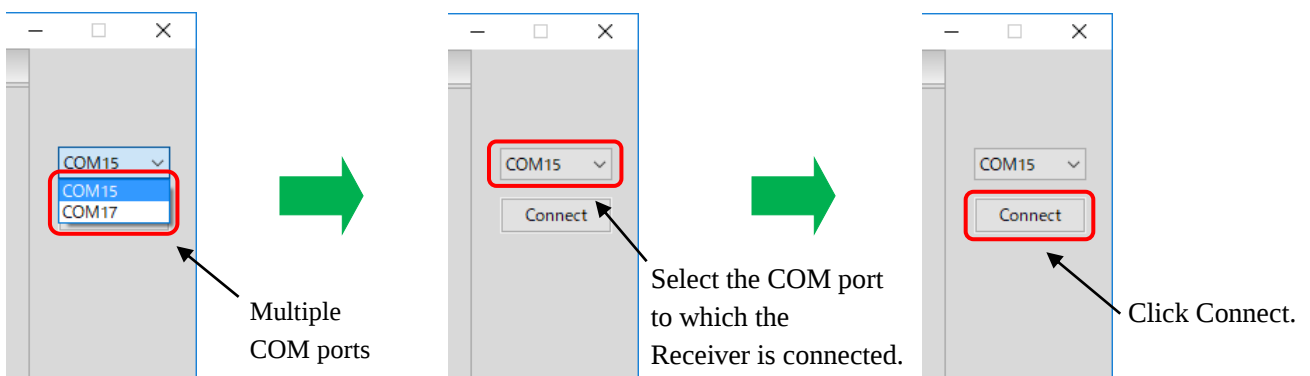
2) Connect/Disconnect: Connects/disconnects the Receiver to/from the selected COM port.

Before turning off the power of the Receiver, ensure the disconnect procedure is performed.

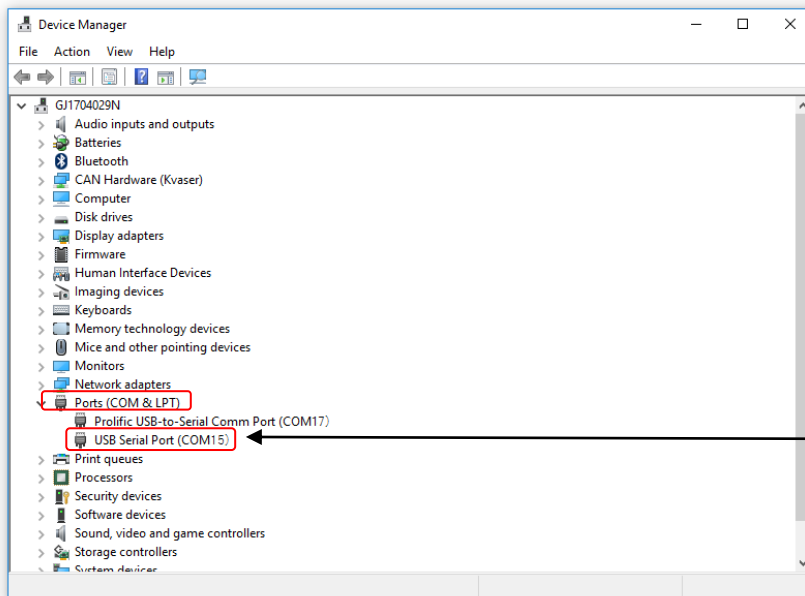
When multiple COM ports are detected

Normally, the COM port to which the Receiver is connected is displayed, but multiple COM ports are displayed in some cases.

In such cases, select the COM port to which the Receiver is connected, and then click Connect.



From the Device Manager, open “Ports (COM & LPT)”, and then confirm the connected port.



The port the Receiver is connected to is displayed as "USB Serial Port".

If COM port field is blank



COM port 1) is blank.

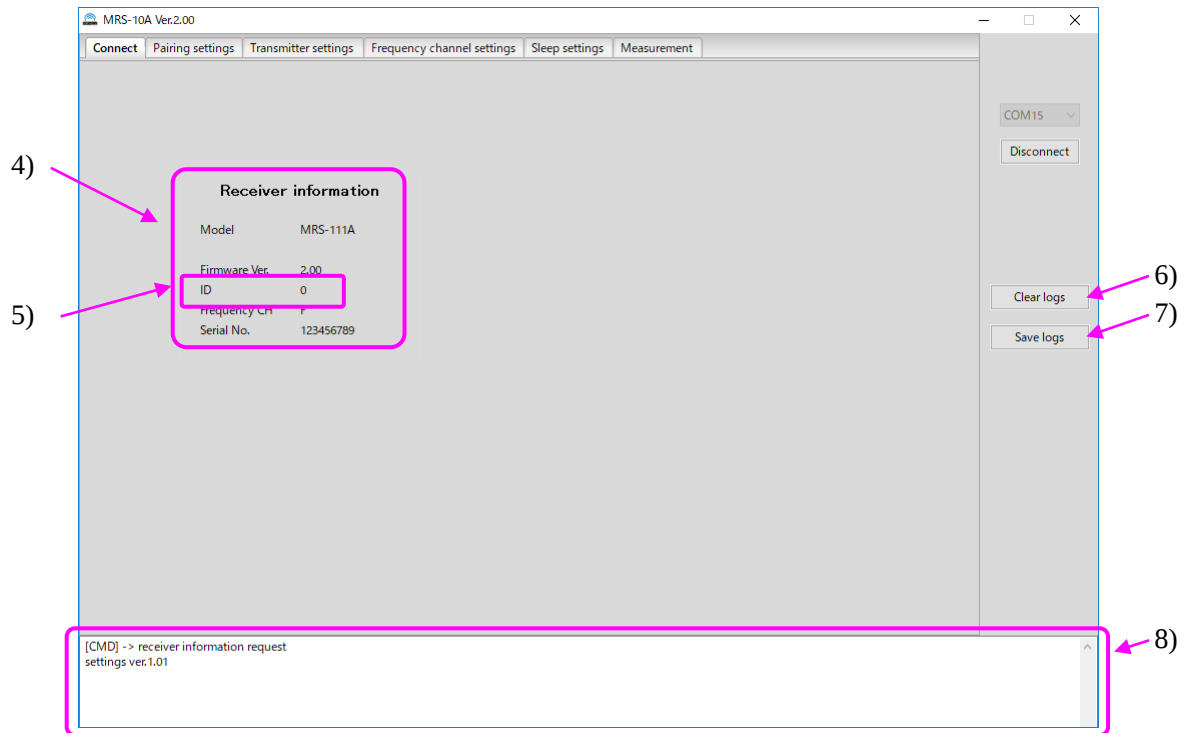
This could be due to the following reasons:

- The Receiver was turned on after starting up the Control Software.
- Receiver power is not turned on.
- The USB cable connection is faulty.
- USB driver is not installed.

In case a), click COM port 1) to search for COM ports and display the COM port to which the Receiver is connected.

If there are no problems with the Receiver power or USB cable connection, install the USB driver as described in “4. The installation of USB device driver”.

- (3) When the computer and Receiver are successfully connected, the Receiver information 4) of the connected Receiver is displayed and the operation can be performed.



- 4) Receiver information: Information about the connected Receiver is displayed.
5) ID: Displays ID of the paired Transmitter (Transmitter that can perform communication).
6) Clear logs: Deletes communication log.
7) Save logs: Saves communication log.
8) Communication log area: Displays communication log.

When the Receiver information is not displayed, the computer and Receiver are not connected.
Check the Receiver power and perform the connect procedure again.

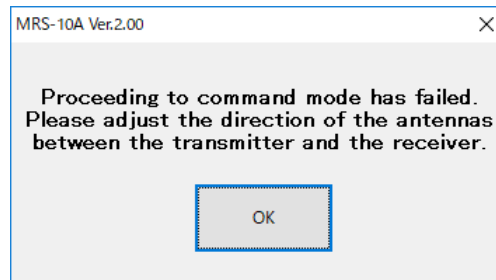
MEMO

Even in the Measuring Mode, establishing a connection switches the system from the Measuring Mode to the Command Mode, and operations from the Control Software become possible.

NOTE

If the Transmitter is in the Measuring Mode, clicking **Connect** sends a command from the Receiver to the Transmitter to switch to the Command Mode.

If switching to the Command Mode fails, the following popup window is displayed.



Click **OK**, and then click **Connect** again.

NOTE

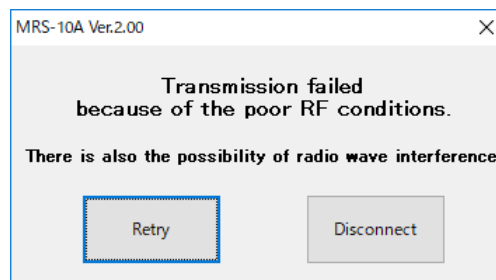
If the Transmitter is turned on after starting up the Control Software, the following popup window might be displayed.



In this case, click **STOP**.

The system switches to the Command Mode, and the Control Software can be used to perform operations.

If switching to the Command Mode fails, the following popup window is displayed.



Click **Retry** to try switching to the Command Mode again.

Click **Disconnect** to disconnect from the computer.

Click **Connect** again.

NOTE

If the Receiver is connected to the computer, the panel switches cannot be used.

Once the Receiver is connected, use the Control Software to operate the device.

When you click to disconnect the computer and Receiver, the switches on the main Receiver body are activated.

3-4. [Pairing settings]

To use this device, the Frequency CH of the Transmitter and Receiver must be identical, and the Transmitter ID and Transmitter information (including Transmitter type, Range and Bridge resistance) to identify the Transmitter must be registered in the Receiver.

For this purpose, the Pairing setting must be performed to match the specified Transmitter ID and Frequency CH before the Transmitter information (including Transmitter type, Range and Bridge resistance) already registered in the Transmitter can be registered to the Receiver.

NOTE

When using this device for the first time, the Pairing settings must be performed.

When changing the Transmitter and Receiver pair, the Pairing settings must be performed.

If the [Pairing settings] are not specified, measurement errors will occur, and normal communication will not be possible.

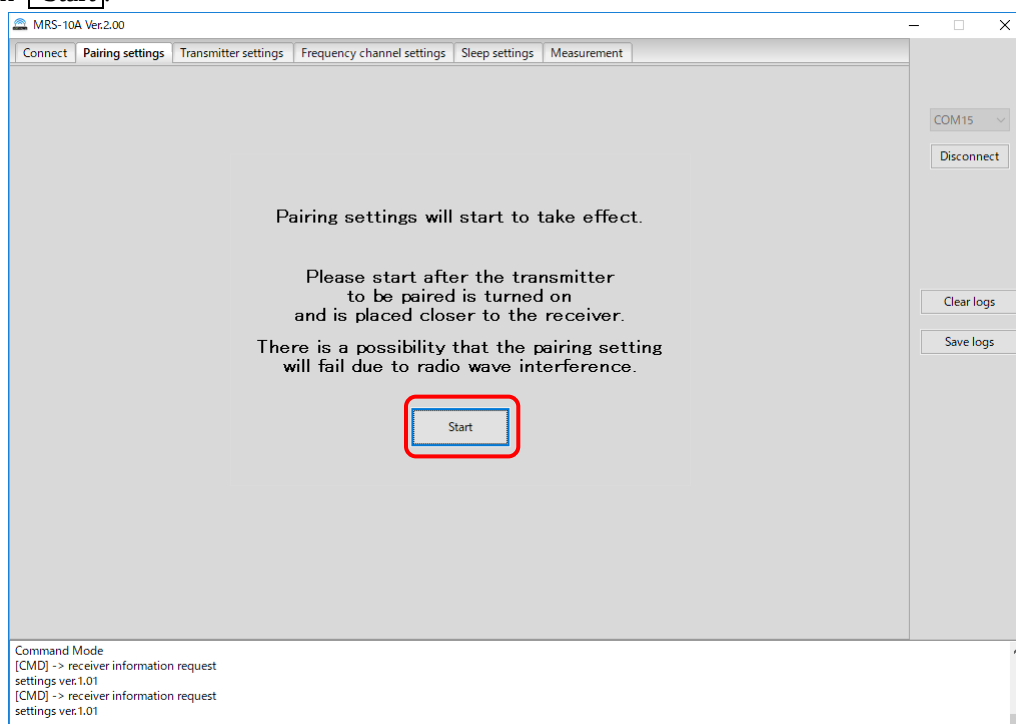
- (1) To execute the Pairing settings, place the Transmitter and Receiver within a 50cm range.

NOTE

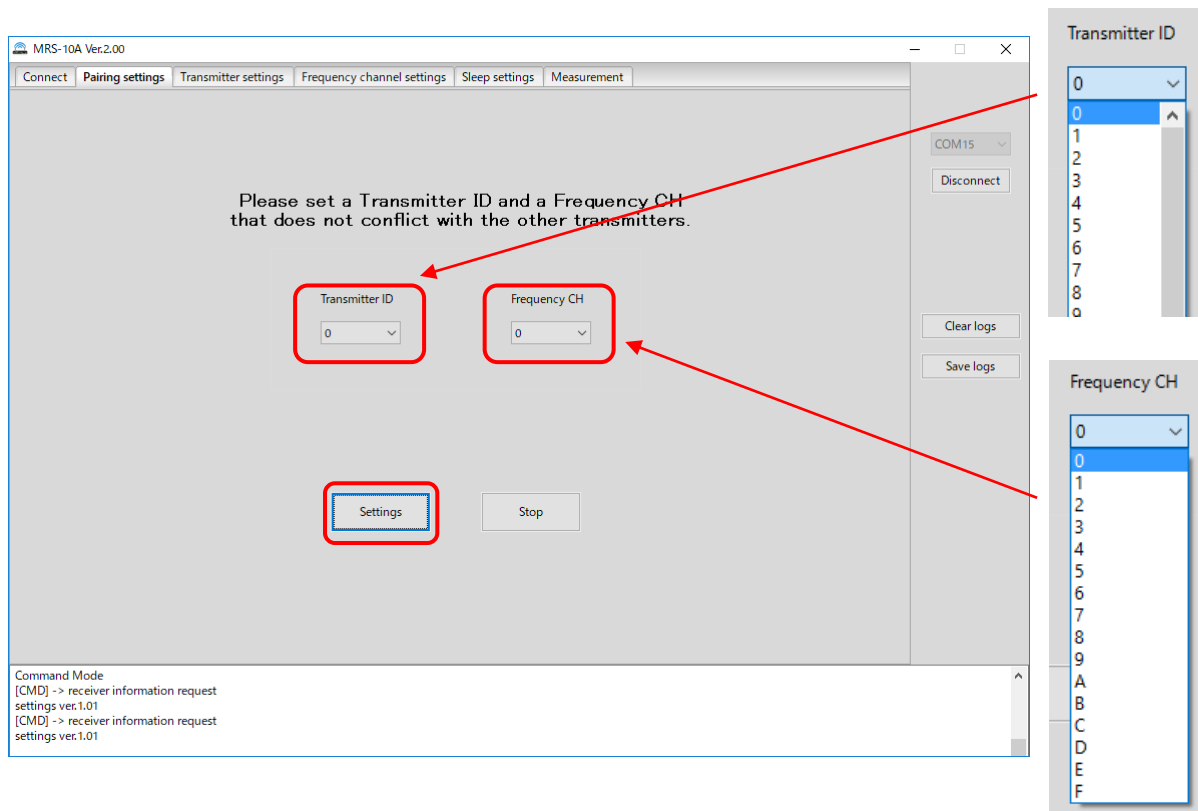
When a Transmitter other than the target Transmitter exists, the Pairing settings may fail or the other Transmitter not intended to be paired may be paired to the Receiver.

When performing the Pairing settings, only turn on the power of the target Transmitter.

- (2) Click **Start**.



- (3) Set the Transmitter ID and the Frequency CH to be used for the communication.
Select each value from the pull-down menu, and then click **Settings**.



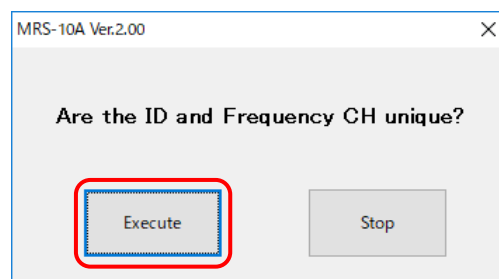
For the Transmitter ID, 47 choices between 0 and 46 are available. For the Frequency CH, 16 choices between 0 and F are available.

NOTE

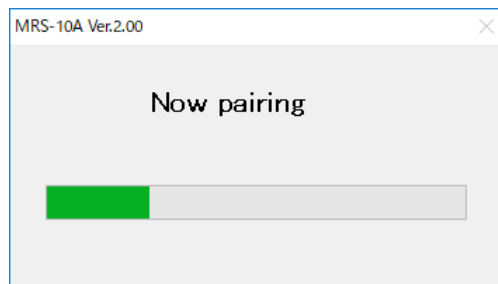
When using multiple transmitter-receiver pairs, ensure the Transmitter ID and Frequency CH are not the same as the ones used by other pairs.

When overlapping, normal communication cannot be established.

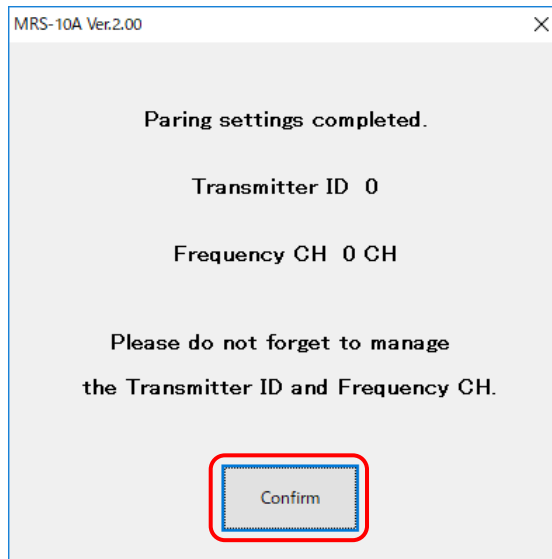
- (4) When the Transmitter ID and Frequency CH are different from other transmitter-receiver pairs, click **Execute**.



- (5) The following window is displayed while performing the Pairing settings.



- (6) When the Pairing settings are complete, the configured ID and Frequency CH are displayed. Check the settings again and click **Confirm**.



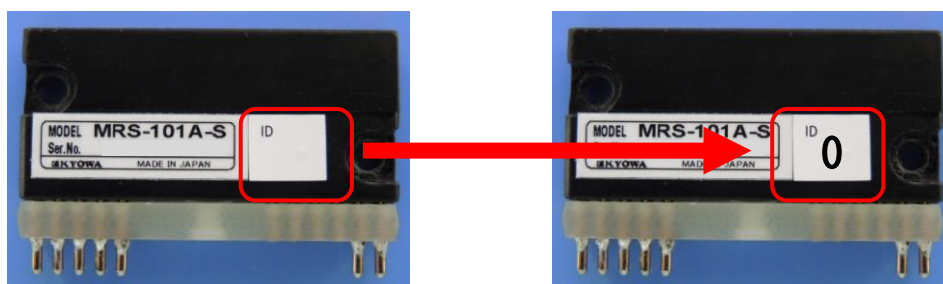
MEMO

The Transmitter ID and Frequency CH settings are saved to nonvolatile memory in the Transmitter and Receiver.
Settings are saved even after power down.

The Transmitter ID and Frequency CH are important information to establish communication. Manage the Transmitter ID and Frequency CH carefully.

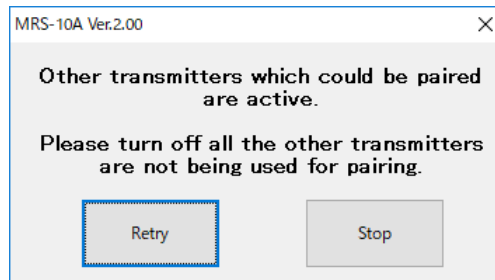
A label is attached to the Transmitter where the ID can be written down. Write down the set ID using a permanent marker.

A spare label is included in the Transmitter.



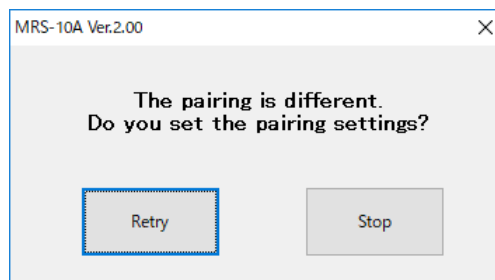
MEMO

When multiple Transmitters are present, the following window is displayed.
Make sure Transmitters other than the Transmitter targeted in the Pairing settings are not present.
Turn off the power of other Transmitters, click **Retry**, and then perform the Pairing settings again.



MEMO

When the following window is displayed, Transmitters with unmatched Transmitter information (the Transmitter without Pairing settings) are powered on.
Either click **Stop** to return to the Transmitter with Pairing settings or click **Retry** to apply Pairing settings to the Transmitter currently selected.



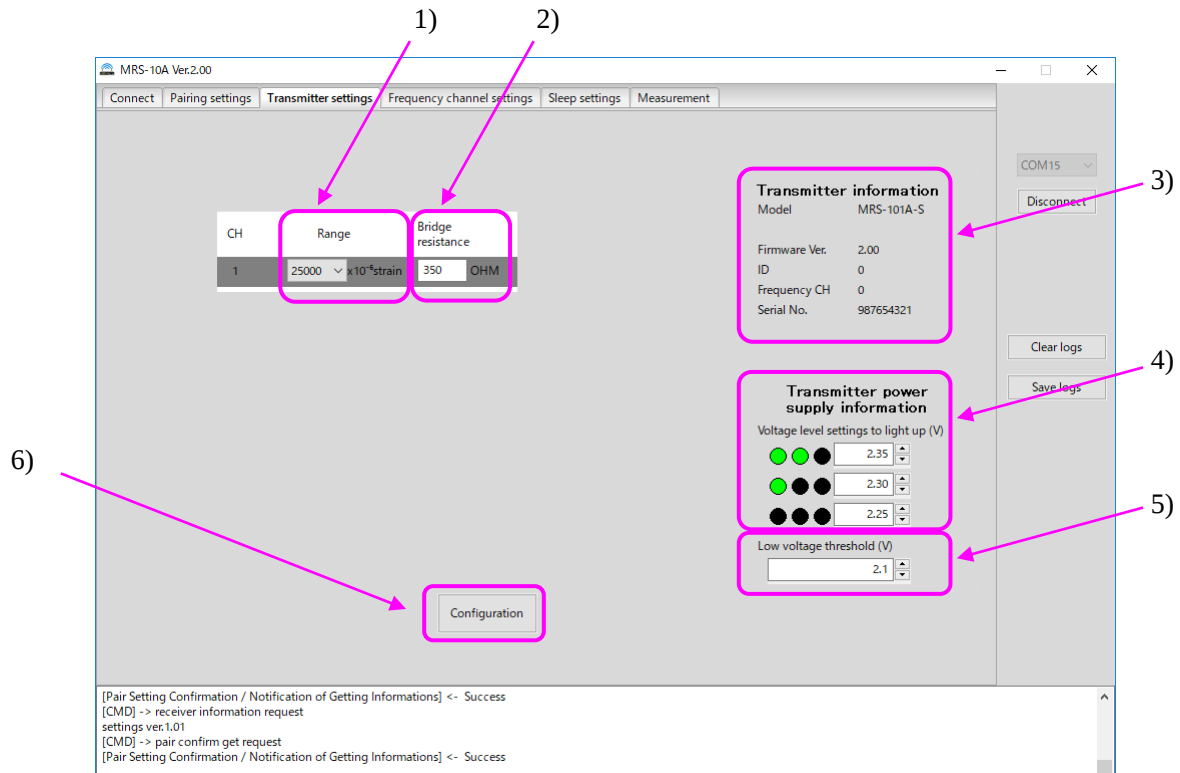
When the Pairing settings of the Transmitter and Receiver cannot be found, the Pairing settings can be performed again to establish a pair.

3-5. [Transmitter settings]

This is where settings of the paired Transmitter are configured and displayed.

The window differs depending on the Transmitter type specified for pairing.

- If using the MRS-101A-S (1ch-Strain Transmitter) or MRS-101A-SE (1ch-Strain Transmitter (EXT Antenna))



1) Range: Use the pull-down menu to set the measurement range to 25,000, 10,000, 5,000, 2,500, or 1,000×10⁻⁶ strain.

2) Bridge resistance: Enter the Bridge resistance to be used.
Enter within the range of 115 and 1005Ω.

3) Transmitter information: Displays information about the paired Transmitter.

4) Transmitter power supply information: Set the lighting voltage of the Transmitter power supply voltage monitoring LEDs.

The voltage level can be set in units of 0.01V over 3 stages.

Set as follows: Discharge cutoff voltage < ●●●● < ●●●● < ●●●●

In the onscreen display example, the number of lit green LEDs are reduced from 3 to 2 when the voltage drops below approx 2.35V.

5) Low voltage threshold (V): Set the voltage that will stop the Transmitter.

The Transmitter will stop when the battery voltage drops below the set voltage.

The Transmitter may fail to start up depending on the setting here.

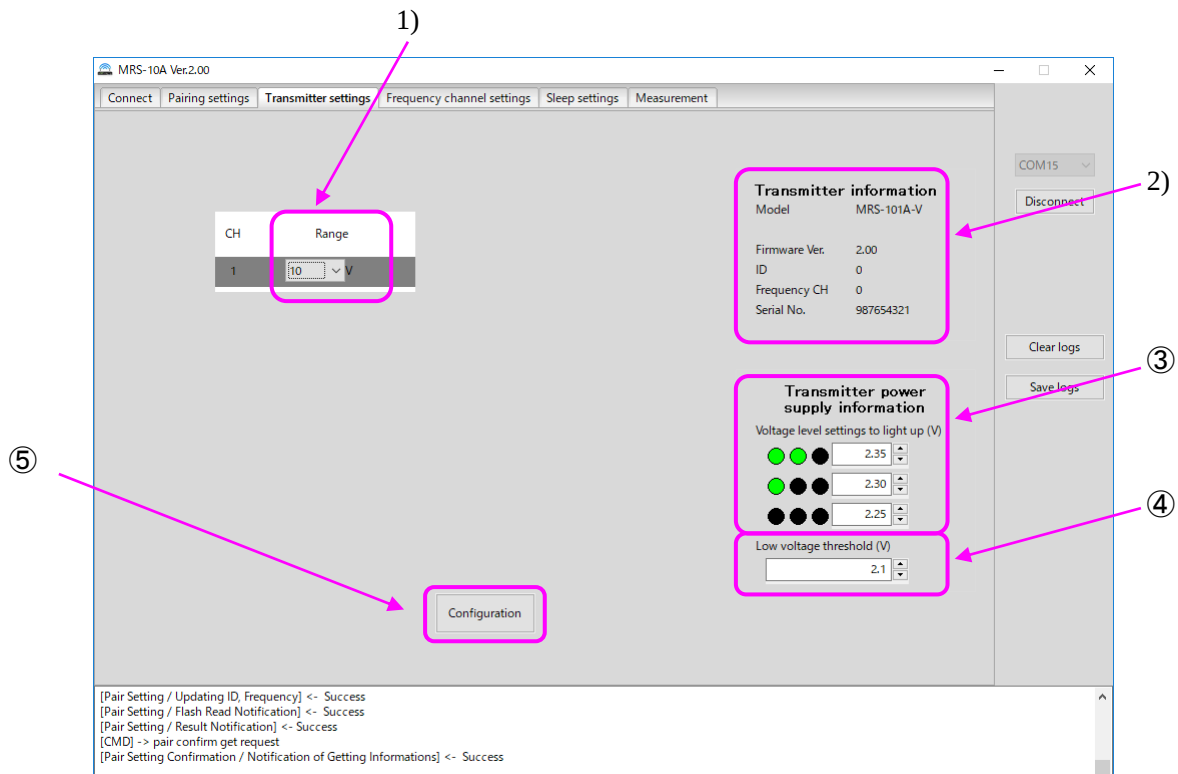
Read the **note** before making adjustments.

6) Configuration button: Change setting values.

When changes are made to items, click the Configuration button.

Settings are applied to the Transmitter.

- If using the MRS-101A-V (1ch-Voltage Transmitter)



1) Range: Use the pull-down menu to set the measurement range to 10 or 5V.

2) Transmitter information: Displays information about the paired Transmitter.

3) Transmitter power supply information: Set the lighting voltage of the Transmitter power supply voltage monitoring LEDs.

The voltage level can be set in units of 0.01V over 3 stages.

Set as follows: Discharge cutoff voltage < ●●●● < ●●●● < ●●●●

In the onscreen display example, the number of lit green LEDs are reduced from 3 to 2 when the voltage drops below approx 2.35V.

4) Low voltage threshold (V): Set the voltage that will stop the Transmitter.

The Transmitter will stop when the battery voltage drops below the set voltage.

The Transmitter may fail to start up depending on the setting here.

Read the **note** before making adjustments.

5) Configuration button:

Change setting values.

When changes are made to items, click the Configuration button.

Settings are applied to the Transmitter.

NOTE

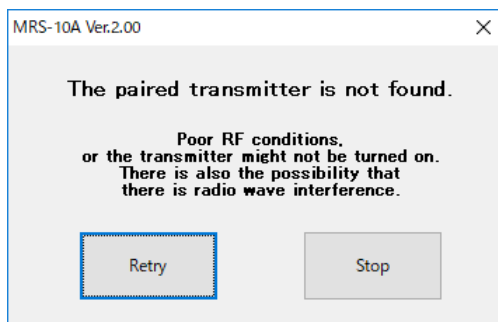
When setting the low voltage threshold, check the battery voltage, and pay attention to the setting.

- After performing a battery replacement, the Transmitter will not be able to start up if the Low voltage threshold is set lower than the voltage of the replacement battery.
Caution should be taken regarding the low voltage threshold value especially when replacing lithium-ion batteries with batteries that operate at a lower output voltage, such as 2twonickel-hydrogen chargeable batteries in series.
- While it is possible to set the Low voltage threshold higher than the voltage of batteries currently in use, doing so will force the Low voltage threshold to be exceeded as soon the setting is applied.
This will result in the Transmitter not being able to start up.

If the Transmitter is unable to start up, first input a voltage higher than the low voltage threshold (must be below 4.4V) to the Transmitter, and then reset the low voltage threshold to the correct value.

MEMO

When the power of the paired Transmitter is off, a dialog will indicate that “The transmitter is not found”. In this case, pages other than [Connect] and [Pairing settings] cannot be opened.



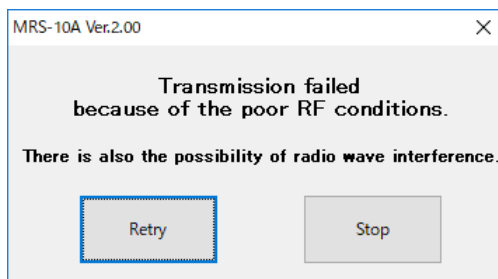
If this happens, check the Transmitter status.

Once checked, click **Retry** or **Stop**.

When you click **Stop**, the [Connect] window opens.

MEMO

If a command fails after opening a dialog, the following message is displayed: “Transmission failed because of the poor RF conditions”.



This may be due to radio interference against the frequency CH in use.

You may wait a moment before clicking **Retry**, or switch to a frequency CH with better radio wave status.

3-6. [Frequency channel settings]

This is where you can check the communication status between the Receiver and Transmitter, and change the Frequency CH.



- 1) Frequency CH: The current Frequency CH is lit green.
- 2) RSSI CH Confirmation: Tick the CH to apply the Confirm RSSI.
All channels can be selected or deselected by clicking the box directly under “RSSI CH Confirmation”.
- 3) Confirm RSSI button: Runs the Confirm RSSI on the ticked Frequency CH.
- 4) RSSI: Displays results of Confirm RSSI of the MAIN ANTENNA and SUB ANTENNA.
- 5) Change Frequency CH: Tick the Frequency CH you wish to change.
- 6) Change frequency CH button: Apply changes to the Frequency CH.
- 7) Transmitter information: Displays information about the paired Transmitter.

3-6-1. Confirm RSSI

When you tick the Frequency CH for which you wish to check the radio wave status and then click **Confirm RSSI**, a communication test is performed on the ticked Frequency CH between the paired Transmitter and Receiver. The result is displayed as the radio wave status.

All channels can be selected or deselected by clicking the box directly under “RSSI CH Confirmation”.

Select or deselect all

Tick the CH you wish to check.

Confirm RSSI

Change Frequency CH

Transmitter information

Model: MRS-101A-S

FW Ver.: 2.00

Transmitter ID: 0

Frequency CH: 0

Serial No.: 987654321

[RSSI Notification] <- (12/16) B CH (2460MHz): MAIN / SUB

[RSSI Notification] <- (13/16) C CH (2465MHz): MAIN / SUB

[RSSI Notification] <- (14/16) D CH (2470MHz): MAIN / SUB

[RSSI Notification] <- (15/16) E CH (2475MHz): MAIN / SUB

[RSSI Notification] <- (16/16) F CH (2480MHz): MAIN / SUB

The radio wave status is displayed in 4 stages.

■ ■ ■ Excellent

■ ■ □ Good

■ □ □ Weak

□ □ □ Fail (Low communication level and potential radio interference of wireless LAN.)

NOTE

Performing Confirm RSSI may introduce radio interference to other transmitter-receiver pairs in the same space.

First exclude the Frequency CH used by other transmitter-receiver pairs before performing Confirm RSSI.

MEMO

Use the Confirm RSSI when selecting the installation location and Frequency CH to be used.

Since it displays radio wave status for the MAIN ANTENNA and SUB ANTENNA individually, it could be used for selecting the installation location of antennas connected via the Receiver extension cable.

3-6-2. Change Frequency CH

Tick the “Change Frequency CH” field and click Change Frequency CH to change the Frequency CH.

NOTE

When you switch to the Frequency CH used by other transmitter-receiver pair in the same space, it may cause radio interference and communication errors.

First exclude Frequency channels used by other transmitter-receiver pairs before performing Change Frequency CH.

MEMO

Depending on factors including the surrounding environment, there may be Frequency CH with weaker radio wave signal strength compared to other Frequency CH.

We recommend you perform a Confirm RSSI operation before doing a Change Frequency CH in order to check the status of the target Frequency CH.

3-7. [Sleep settings]

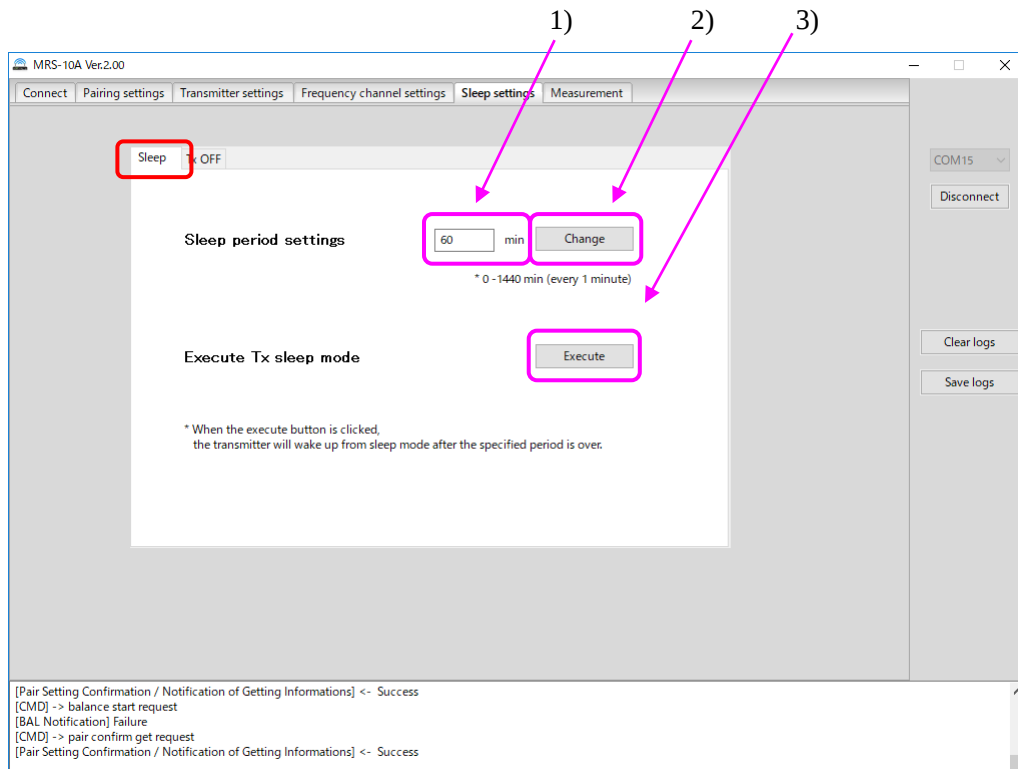
This is where you put the paired Transmitter into sleep, set sleep time, and run Tx OFF.

3-7-1. Sleep

When you click **Execute**, the Transmitter will be put into sleep for the set period of time. This saves unnecessary battery consumption.

The Transmitter cannot be operated while it is in sleep.

Once the set period of time elapses, the Transmitter automatically resumes operation, and can then be operated from the Receiver.



1) Sleep period settings: The sleep period can be set between 0 and 1,440 minutes (24 hours) in one minute increments.

When set to 0 minutes, the sleep function is disabled.

2) Change button: Changes the sleep setup time on the Transmitter.

3) Execute button: Put the Transmitter into sleep.

MEMO

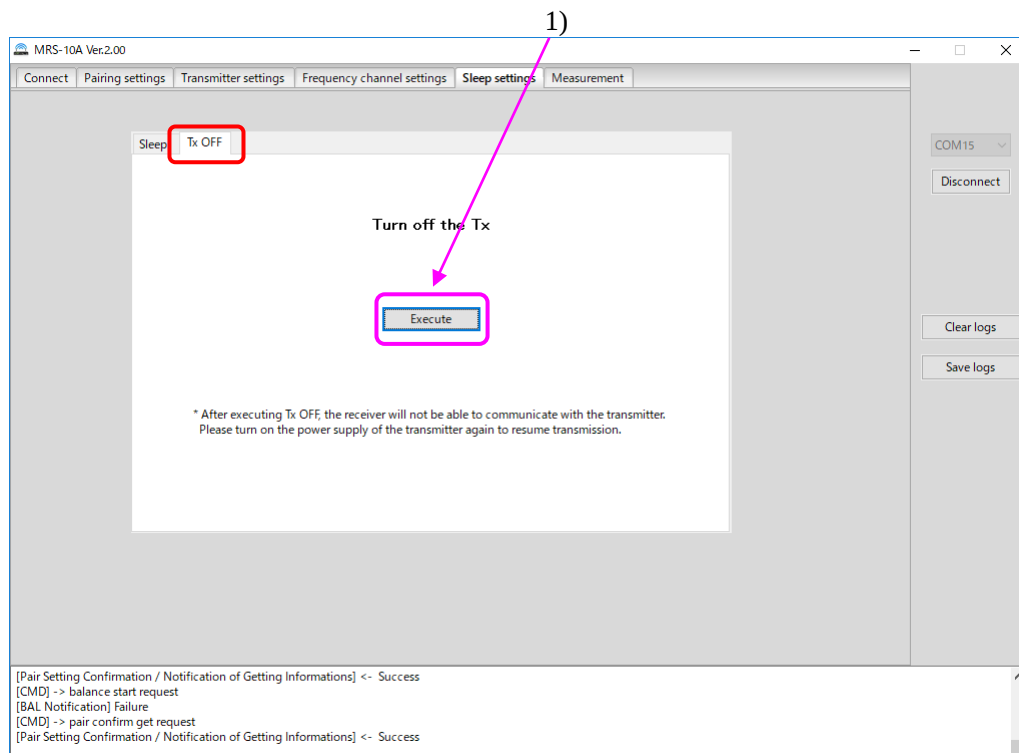
When the Transmitter is turned on again or the Sleep period elapses, the Transmitter's status upon resuming operation differs depending on its Firmware Ver. as follows:

- For Firmware Ver.2.00 or later, operation is resumed in the Measuring Mode.
- For Firmware Ver.1.00, operation is resumed in the Command Mode.

3-7-2. Tx OFF

When you click **Execute**, the Transmitter power is turned off.

Once executed, the Transmitter will not resume operation until the Transmitter is restarted manually.



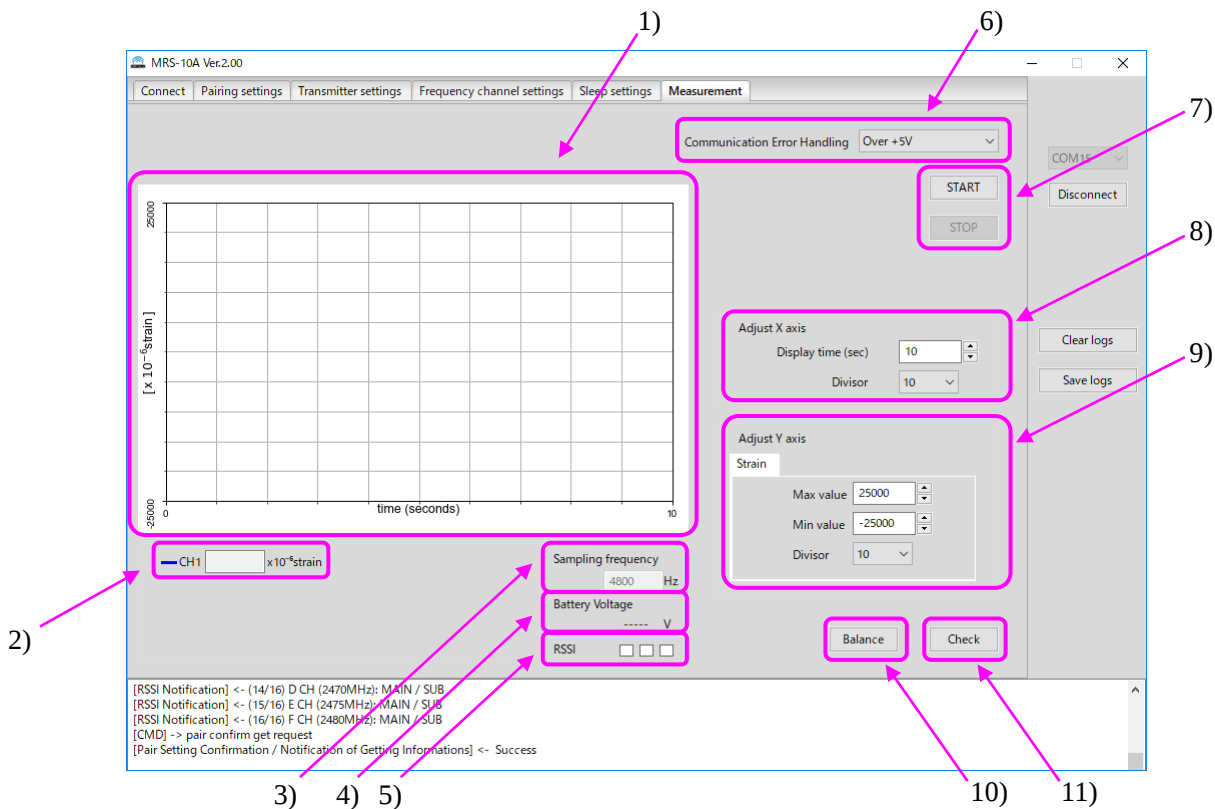
1) Execute button: Executes Tx OFF on the Transmitter.

3-8. [Measurement]

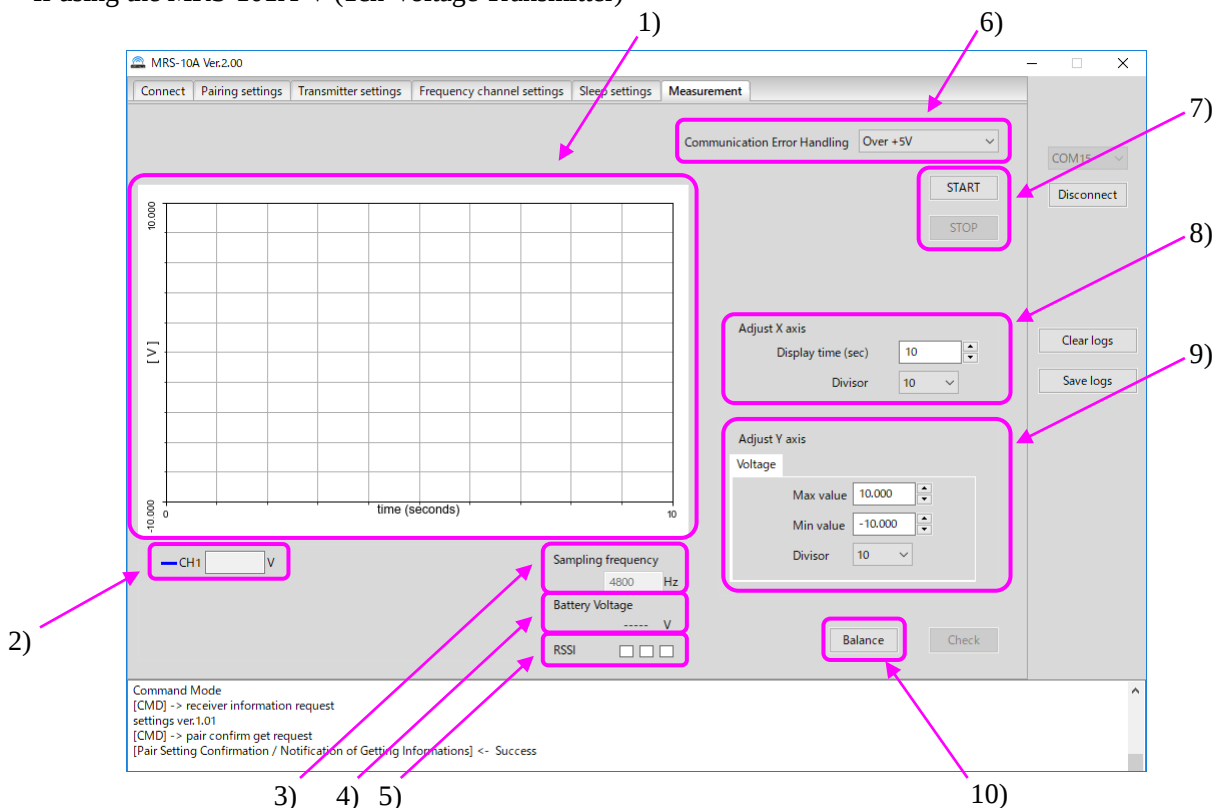
The balance adjustment, Sensor connection check, and start/stop operations can be executed from the computer. When the measurement-start operation is performed, the strain, voltage, RSSI, and transmitter battery voltage can be monitored.

The window differs depending on the Transmitter type specified for pairing.

- If using the MRS-101A-S (1ch-Strain Transmitter) or MRS-101A-SE (1ch-Strain Transmitter (EXT Antenna))



- If using the MRS-101A-V (1ch-Voltage Transmitter)



- 1) Monitor display: You can monitor data sent from the Transmitter in a simplified format.
- 2) Strain value display: Displays the strain value sent from the Transmitter.
- 3) Sampling frequency: Displays the current sampling frequency.
- 4) Battery Voltage: Displays the voltage of the Transmitter battery.
Display is activated after clicking START.
- 5) RSSI: Displays the RSSI of the MAIN ANTENNA. When a reception error occurs at the MAIN ANTENNA, the RSSI of the SUB ANTENNA is displayed.
The display responds to the indicator display of the Receiver.
Double-click the ■■■ area to view the RSSI in full-screen mode.
Press the ESC button to exit the full-screen mode.
- 6) Communication Error Handling: Displays and changes the data error processing method taken when a communication error occurs.
- 7) START/STOP: Starts and stops measurement.

START

 → Go to the measurement mode.

STOP

 → Go to the command mode.
- 8) Adjust X axis: Adjusts X-axis of the monitor display.
The maximum display time is 10,000 seconds.
The divisor can be set from the pull-down menu.
If the time is set too long, the process may not be completed in time if the performance of the computer is insufficient. In such case, an error will be displayed.
If you encounter this error, set a shorter display time.
- 9) Adjust Y axis: Adjusts Y-axis of the monitor .
- 10) Balance: Executes zero adjustment of the Transmitter.
- 11) Check: Executes sensor connection check.

If using the MRS-101A-V (ch-Voltage Transmitter), this function is not available.

MEMO

- When transition to the command mode (stop measurement) does not start immediately after clicking

STOP

The measurement may not stop after clicking “STOP” once, depending on the timing. This may include a situation in which the timing for the Transmitter to send packet data and the timing for the Receiver to send the STOP command have coincided.
In such a case, wait a moment before clicking

STOP

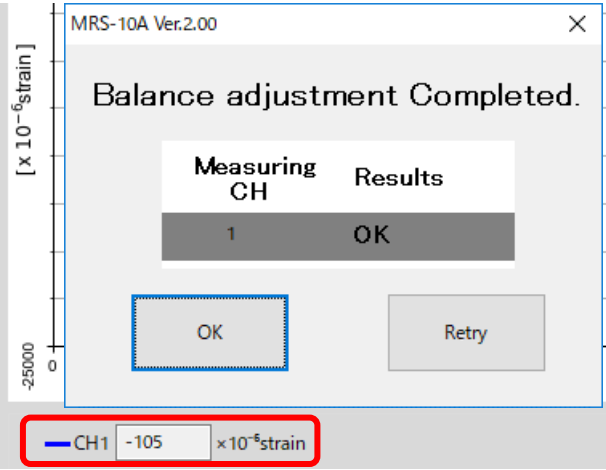
 again. Repeat the process until the measurement stops.

3-8-1. Balance

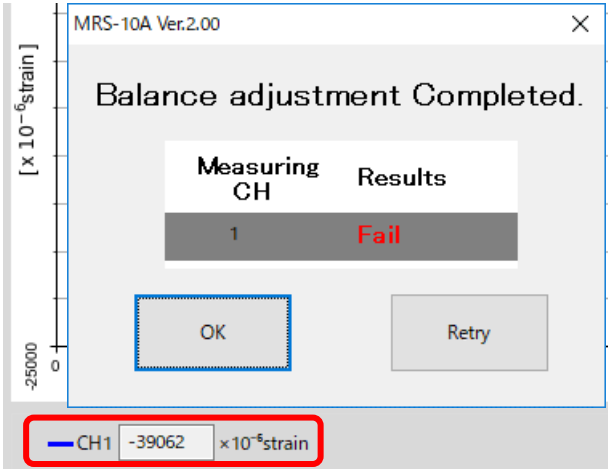
By clicking **Balance**, zero adjustment of the Transmitter can be performed.

- If using the MRS-101A-S (1ch-Strain Transmitter) or MRS-101A-SE (1ch-Strain Transmitter (EXT Antenna))

After performing a balance adjustment, the balance adjustment result is displayed. The value shown in the red circle indicates a value close to the unbalanced value.



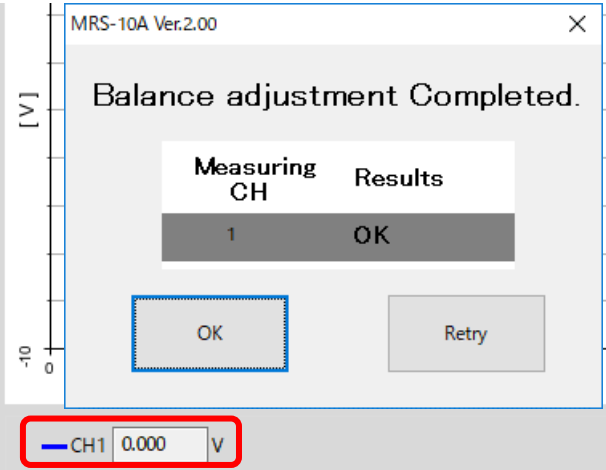
OK



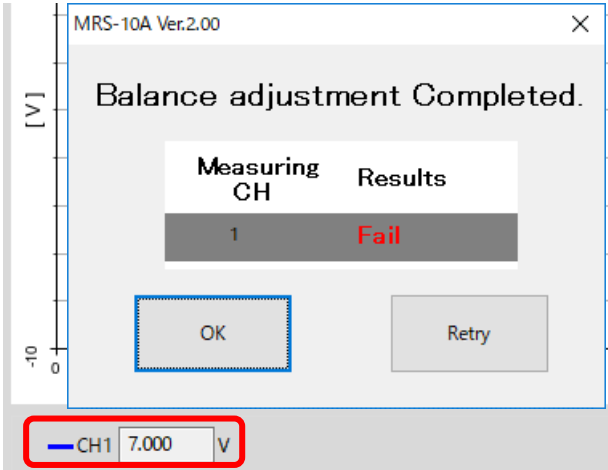
Fail

- If using the MRS-101A-V (1ch-Voltage Transmitter)

After performing a balance adjustment, the balance adjustment result is displayed. The value shown in the red circle indicates a value close to the initial value.



OK



Fail

Click **Confirm** to close the result view.

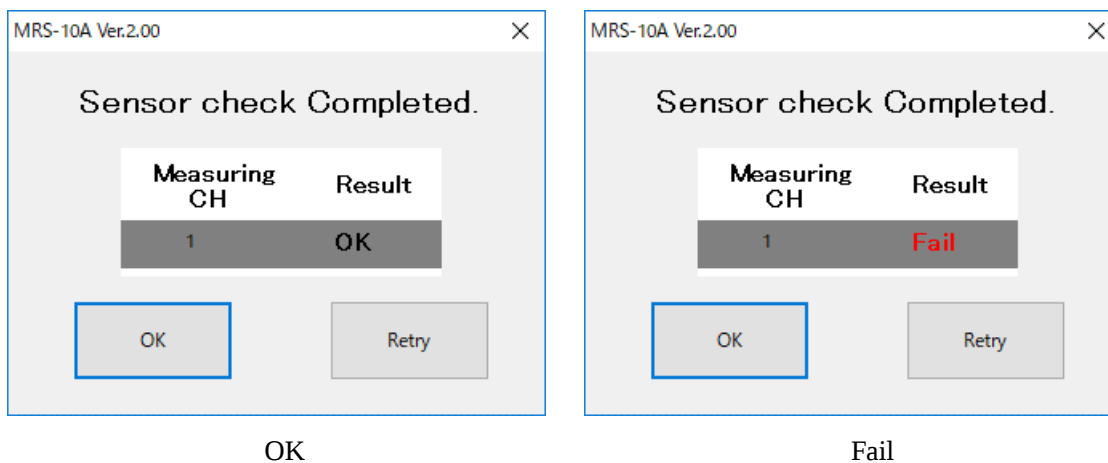
Click **Retry** to perform the balance adjustment again.

3-8-2. Check

(If using the MRS-101A-V (1ch-Voltage Transmitter), this function is not available.)

Click to run a sensor connection check.

If the result shows “Fail”, a bridge circuit connection error or wire disconnection may be occurring.



Click to close the result view.

Click to perform the check again.

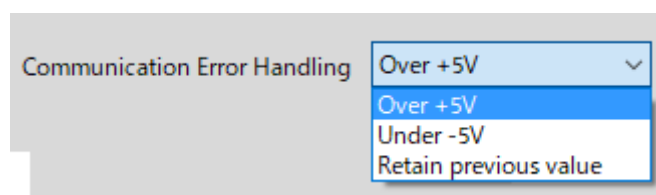
NOTE

When the bridge resistance value in use and the bridge resistance value set in the [Transmitter settings] are not matched closely, the sensor check result will fail.

3-8-3. Communication Error Handling

This is where you can select a method for measurement data error processing in the case of a communication error.

From the pull-down menu, a processing method can be selected from among three options.



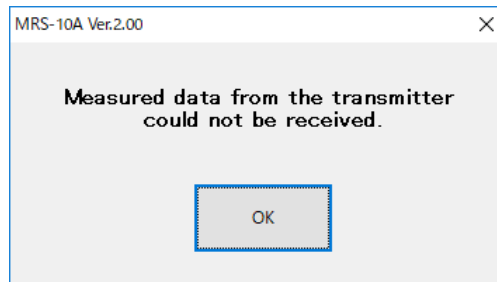
Over +5V: To identify the error, more than +5V is applied forcibly to the analog output of the Receiver.

Under -5V: To identify the error, less than -5V is applied forcibly to the analog output of the Receiver.

Retain previous value: Retains measurement data value immediately prior to the occurrence of the error and applies it to the analog output of the Receiver.

MEMO

When the communication status deteriorates and data from the Receiver is interrupted for a certain period of time, the following window is displayed and operation stops.



Once communication returns and the measurement data from the Receiver can be received, operation automatically resumes.

3-8-4. RSSI

Double click the “RSSI” indicator area () to view the RSSI in full-screen mode.

Press the **ESC** key on the keyboard to exit the full-screen mode.

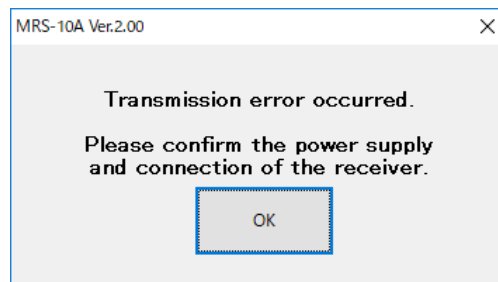
Using full-screen mode, the radio wave status can be monitored more easily from a distance.



3-9. EXIT

When turning off the Receiver power, first click **Disconnect** to release the computer and Receiver connection before proceeding.

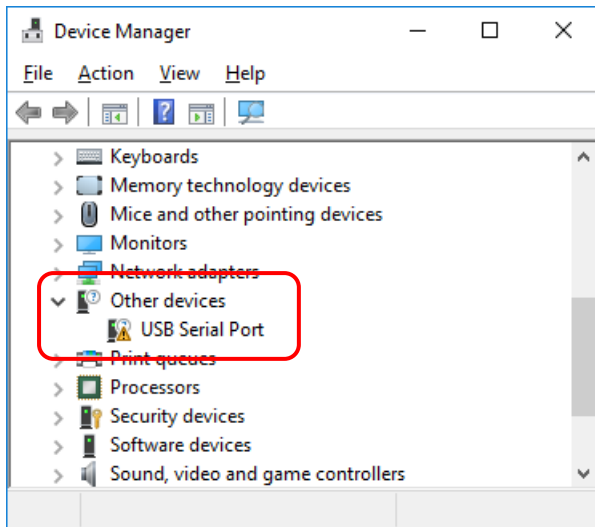
If you turn off the Receiver power before clicking Disconnect, the following window is displayed and the Control Software terminates.



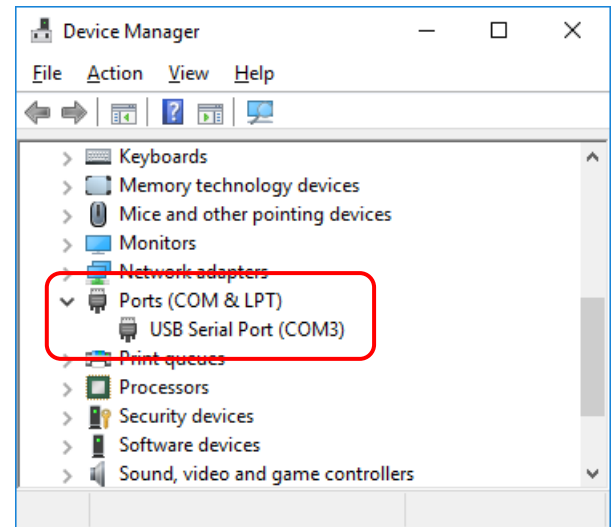
4. The installation of USB device driver

Once the Receiver is connected to the computer, open Device Manager to check the USB driver.

Driver not available



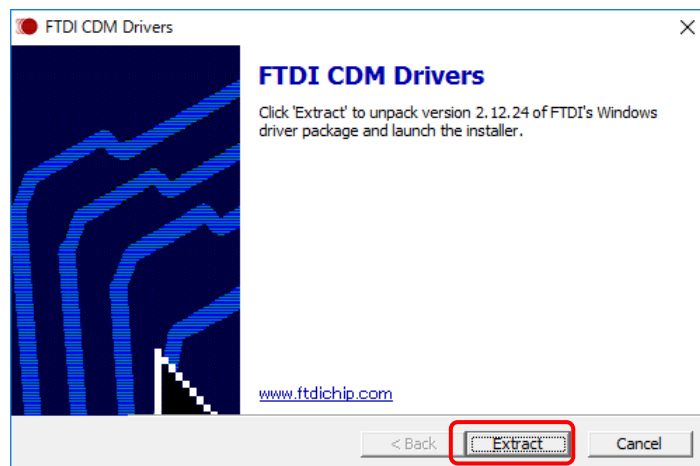
Driver available



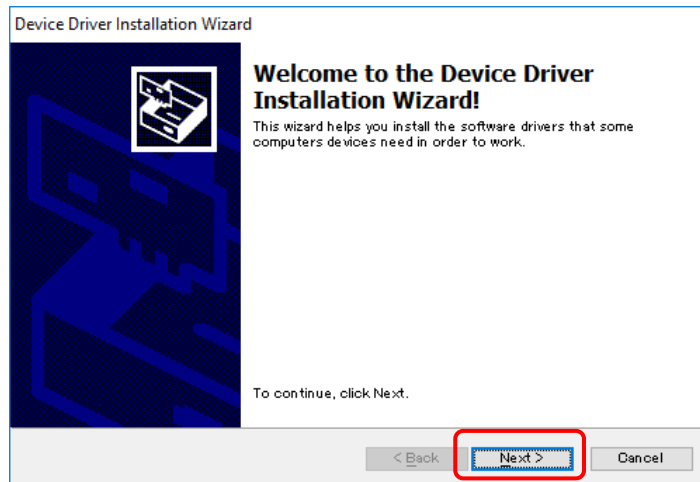
If the USB driver is not available, a driver installation is required.

Follow the procedure below to install the USB driver:

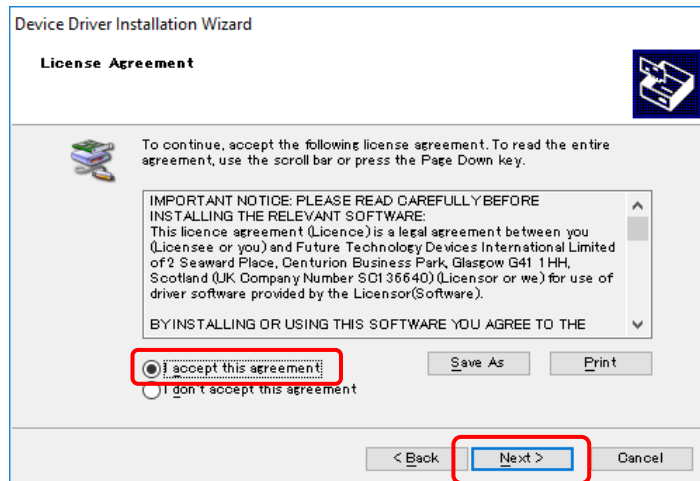
- (1) Select CDM21224_Setup.exe in the included CD-ROM, “Right click”, and then select “Run as administrator”.
- (2) When the User Account Control pop-up is displayed, click to continue.
- (3) Click .



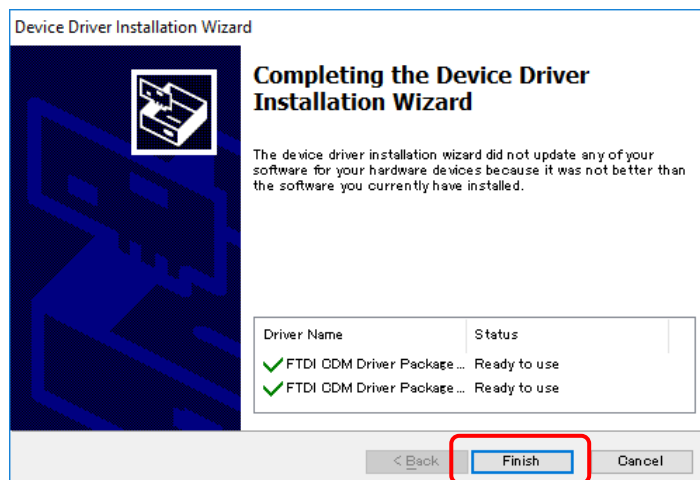
- (4) Click **Next>**.



- (5) License Agreement is displayed.
Select "I accept the agreement" to agree to the license agreement and click **Next>** to start the installation.
If you select "I do not accept the agreement", you cannot proceed.



- (6) Installation is complete.
Click **Finish** to close the installation.



MEMO

Even if the USB driver is not installed on the computer, the required driver will be searched for on the network and installed automatically when the computer first connects to the Receiver.

If the computer is not connected to the network or the driver cannot be found, a USB driver installation should be performed.

5.SPECIFICATIONS

This software lets you control Receivers from a computer and perform Transmitter setup and measurements. A computer and the Receiver must be connected via USB.

■Software Functions

Setting Functions	Set the Measuring Range. Set the LEDs lighting level for monitoring transmitter supply voltage. Set the Minimum voltage for operating transmitter. Set frequency channel. Set the sleep time of transmitter. Set data processing at the time of radio communication error.
Operation Functions	Execute balance adjustment. Check sensor connection. Display graph.
Inspection Function	Radio condition inspection.

■Operating Environment

OS	Windows 7, Windows 8/8.1, Windows 10 Japanese/English, 32/64 bit support
CPU	Intel Core2Duo,2GHz or advanced
Memory	4GB or more
Interface	USB2.0 (can also be operated in a USB3.0 port)
Display	1024*768 dots or more.

* There is no data acquisition function by this software.

This software requires “.NET Framework” and “Microsoft Visual C++ Runtime”.

For most computers, a new installation is not required but if you cannot launch this software after installation, open the following page to download and install the latest versions for the OS you are using:

「.NET Framework」

<https://www.microsoft.com/net/download/framework>

「Microsoft Visual C++ Runtime」

<https://www.microsoft.com/en-US/download/details.aspx?id=29>



Kyowa Electronic Instruments Co., Ltd.
3-5-1, Chofugaoka, Chofu, Tokyo 182-8520 Japan
<http://www.kyowa-ei.com/>