**DAUDIN CO., LTD.**

2501EN

V1.0.4

# i-Designer

# Software User Manual

# Table of Contents

# 1. System Overview

This document explains how to use the i-Designer software tool.

i-Designer is used on a PC and can configure the iO-GRID series modules through the following methods.

**I.** By connecting to the control module via Mini USB, you can manage and set the following parameters:

    (1) Set the control module station number

    (2) Set the I/O module station number

    (3) Serial RS485#1 external bus communication interface format and baud rate

    (4) Serial RS485#2 external bus communication interface format and baud rate

    (5) Search for the number and type of I/O modules on the bus board

**II.** By connecting a GFTL-RM01 and Micro USB to a single M series I/O module, you can configure the following parameters:

    (1) Station Number Setting

    (2) Baud rate setting

    (3) Format setting

**III.** By connecting to the gateway module via network cable, you can manage and set the following parameters:

    (1) Set the IP address of the gateway module

    (2) Set the operating mode

    (3) Serial settings

    (4) ID mapping

**IV.** By connecting to the C series coupler module via Micro USB, different parameters can be configured depending on the protocol.

The communication parameters that can be configured for the coupler and I/O modules in the software include:

    (1) Coupler IP settings

    (2) Module disconnection handling mechanism

    (3) Analog module range adjustment

    (4) Special function module settings

    (5) Firmware update

**V.** By connecting to the X series coupler <u>module</u> via Type C USB, different parameters can be configured depending on the protocol.

The communication parameters that can be configured for the coupler and I/O modules in the software include:

(1) Coupler IP settings

(2) Module disconnection handling mechanism

(3) Analog module range adjustment

(4) Special function module settings

(5) Firmware update

**VI.** By connecting to the Nemo series <u>module</u> via Micro USB, different parameters can be configured depending on the protocol.

The communication parameters that can be configured for the coupler and I/O modules in the software include:

(1) Module IP settings

(2) Module disconnection handling mechanism

# 2. M Series - Preparations Before Use

Before using i-Designer, ensure that all connections are correct before proceeding.

**I. Connection Method via Mini USB to the Control Module**

Connect the Mini USB to the Mini USB port on the control module.

Ensure the bus board is powered on, and open the i-Designer software to configure the related parameters for the control module.

Control module wiring diagram:



control module.　　I/O module.
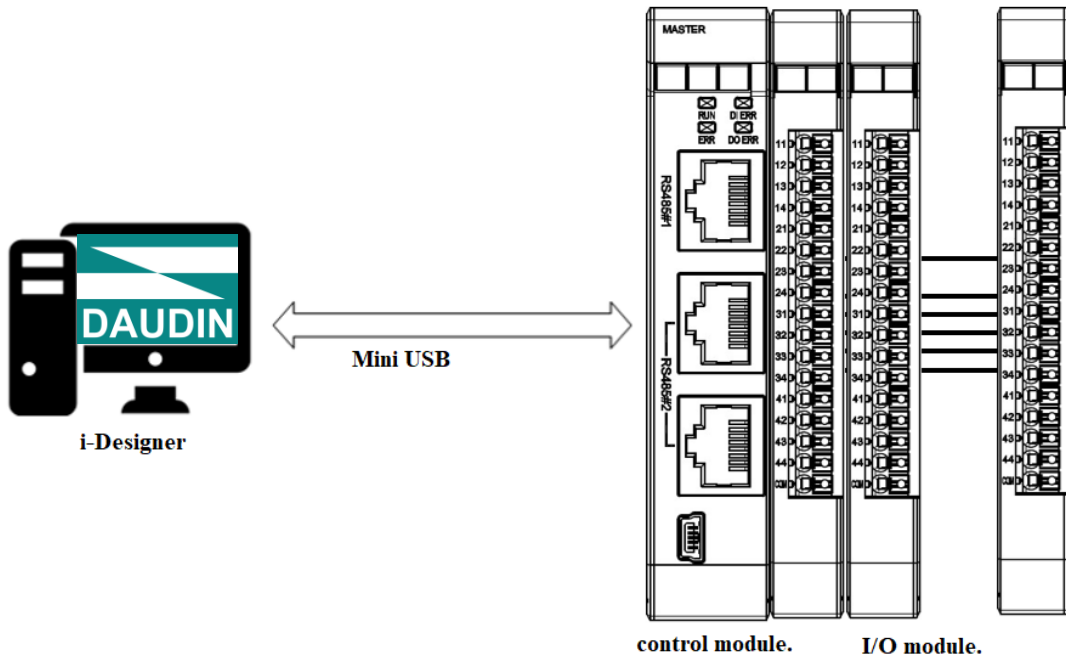
※Before setting the control module, ensure that the station numbers of the I/O modules on the bus board are not duplicated.

Control module wiring diagram:



## II. Individual **I/O Module** Connection Method

Connect the Micro USB interface to the GFTL-RM01, convert it to a USB port to connect to the computer, and remove it from the bus board. Ensure that the single I/O module is in a powered-off state, then open the iO-GRID M Utility software to configure the relevant parameters for the I/O module.
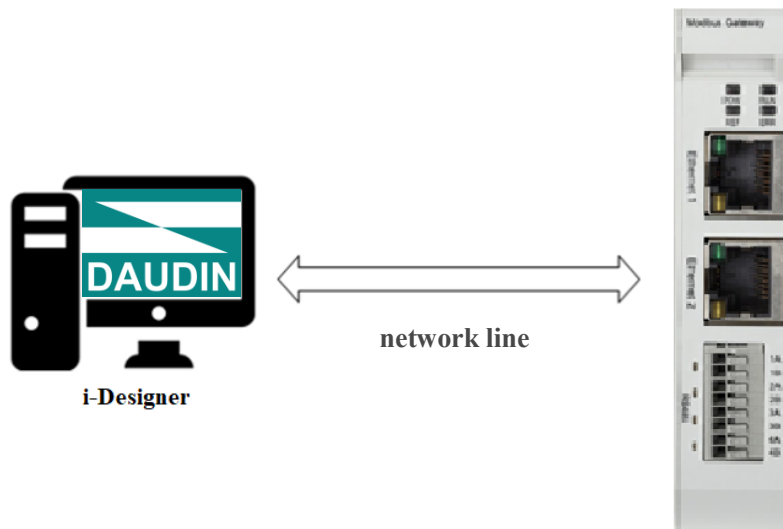
I/O module wiring diagram:
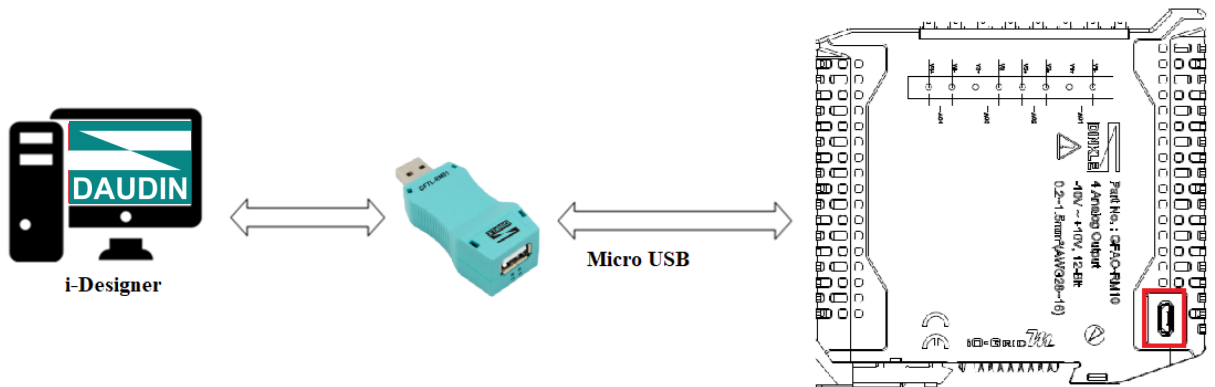
I/O module wiring diagram:
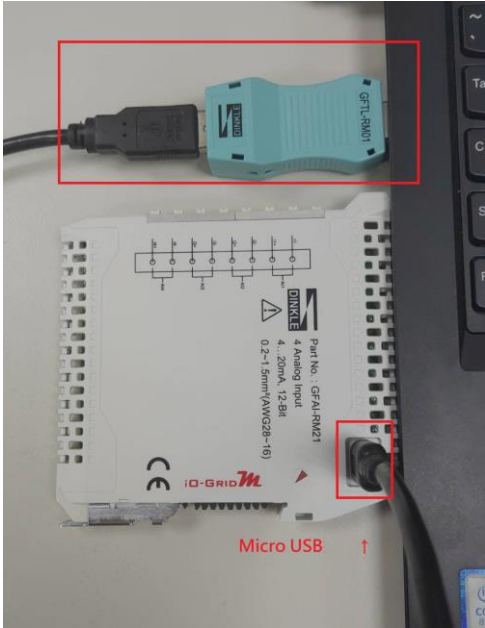


## III.  Connection Method for Gateway Module via Network Cable

Connect the network cable to the network interface on the gateway module.

Ensure the bus board is powered on, and open the i-Designer software to configure the relevant parameters for the gateway module.

I/O module wiring diagram:



network line

i-Designer

# 3. C Series - Preparations Before Use

Before using i-Designer, ensure that all connections are correct before proceeding.

### I.    Connection Method via Micro USB to the Coupler Module

Connect the Micro USB to the Micro USB port on the coupler module.

Ensure the bus board is powered on, and open the i-Designer software to configure the

coupler and I/O module parameters.


Coupler module wiring diagram:

# 4. X Series - Preparations Before Use

Before using i-Designer, ensure that all connections are correct before proceeding.

### I. Connection Method via Type C USB to the Coupler Module

Connect the Type C USB to the Type C port on the coupler module.

Ensure the coupler is powered on, and open the i-Designer software to configure the coupler and I/O module parameters.

Coupler module wiring diagram:
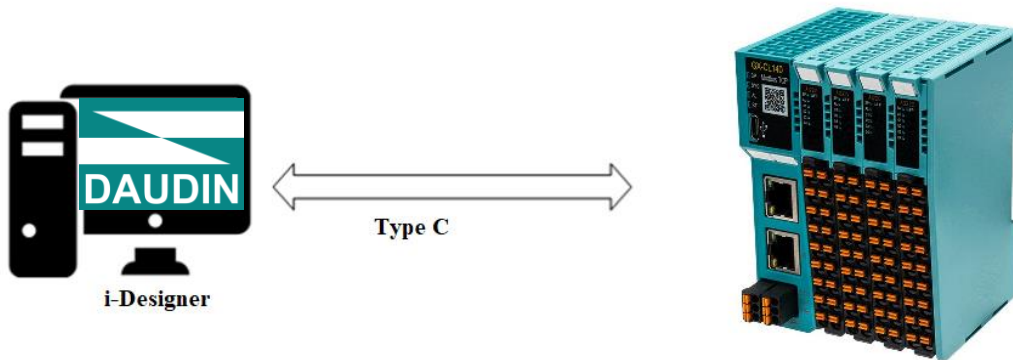
# 5. Nemo Series - Preparations Before Use

Before using i-Designer, ensure that all connections are correct before proceeding.

### I.  Connection Method via Type C USB to the Coupler Module

Connect the Type C USB interface to the Type C port on the module.

Ensure the module is powered on, and open the i-Designer software to configure the relevant parameters for the module.

Module wiring diagram:
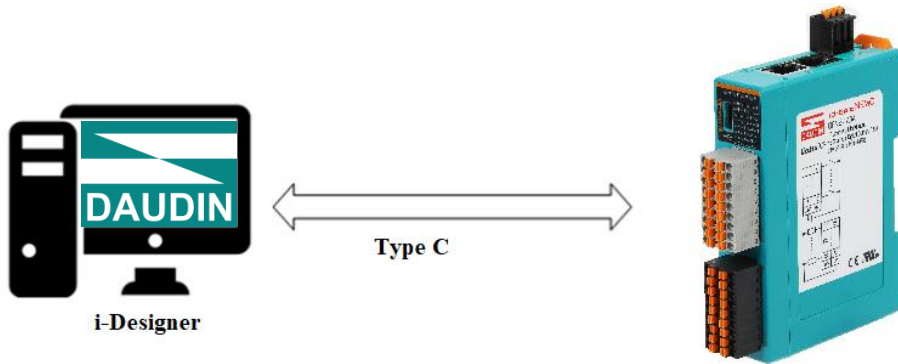
# 6. i-Designer Operating Instructions

## 6.1 Installation

Download the i-Designer program from the official website, then click on the program (as shown in the figure) to install it.



Figure 6. 1 Program Icon

After reading the user agreement, please check the box and click Start Installation.



Figure 6.2 Click Start Installation

During installation, the progress will be displayed.
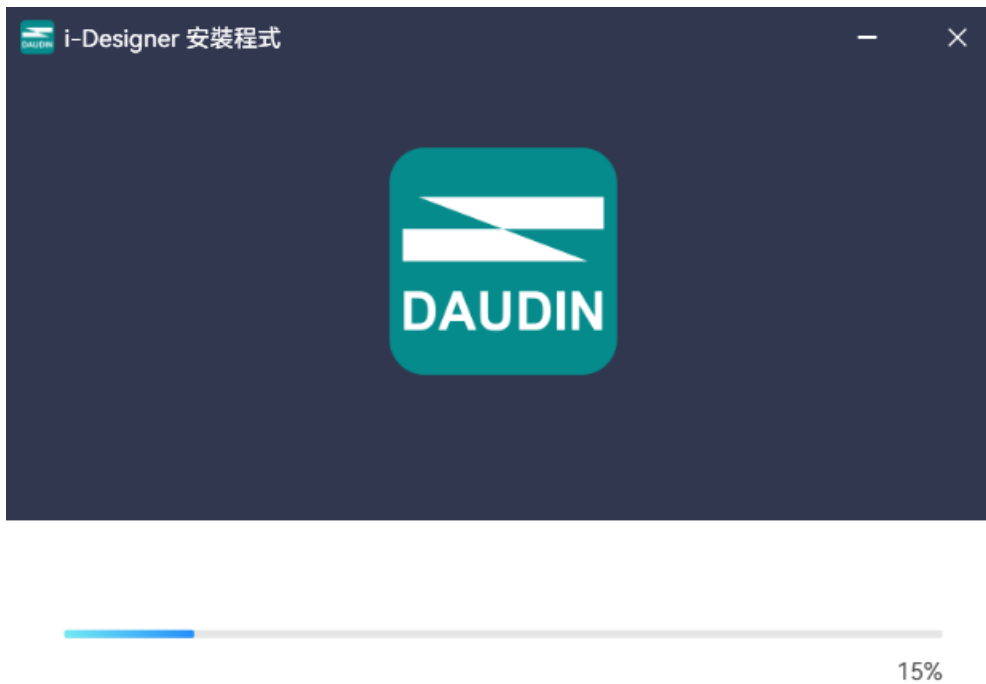


Figure 6.3 Installation Progress

Once the software installation is complete, you can choose to run it immediately by clicking the Finish button.

Figure 6.4 Installation Complete

## 6.2 UI Screen Description

After installation, locate the program icon on the desktop and click it to open the settings screen (see the figure below).



Figure 6.5 Program Icon

The screen is organized as follows, from top to bottom:

I.   Tab Area: Select different product series or switch languages.

II.  Function Key Area: Displays different function keys based on the selected tab.

III. Display and Configuration Area: Shows the module status and settings.

IV. Progress Display Area: Displays the progress of various functions in percentages, helping users understand the current execution status, such as configuration or updates.



Figure 6.6 Default Homepage

**Tab Area:**

(1) Homepage Tab: Provides information about i-Designer and options for switching the language.

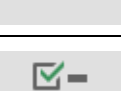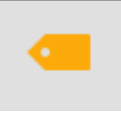(2) Product Settings Tab: Used for setting parameters for various **iO-GRID** product series.
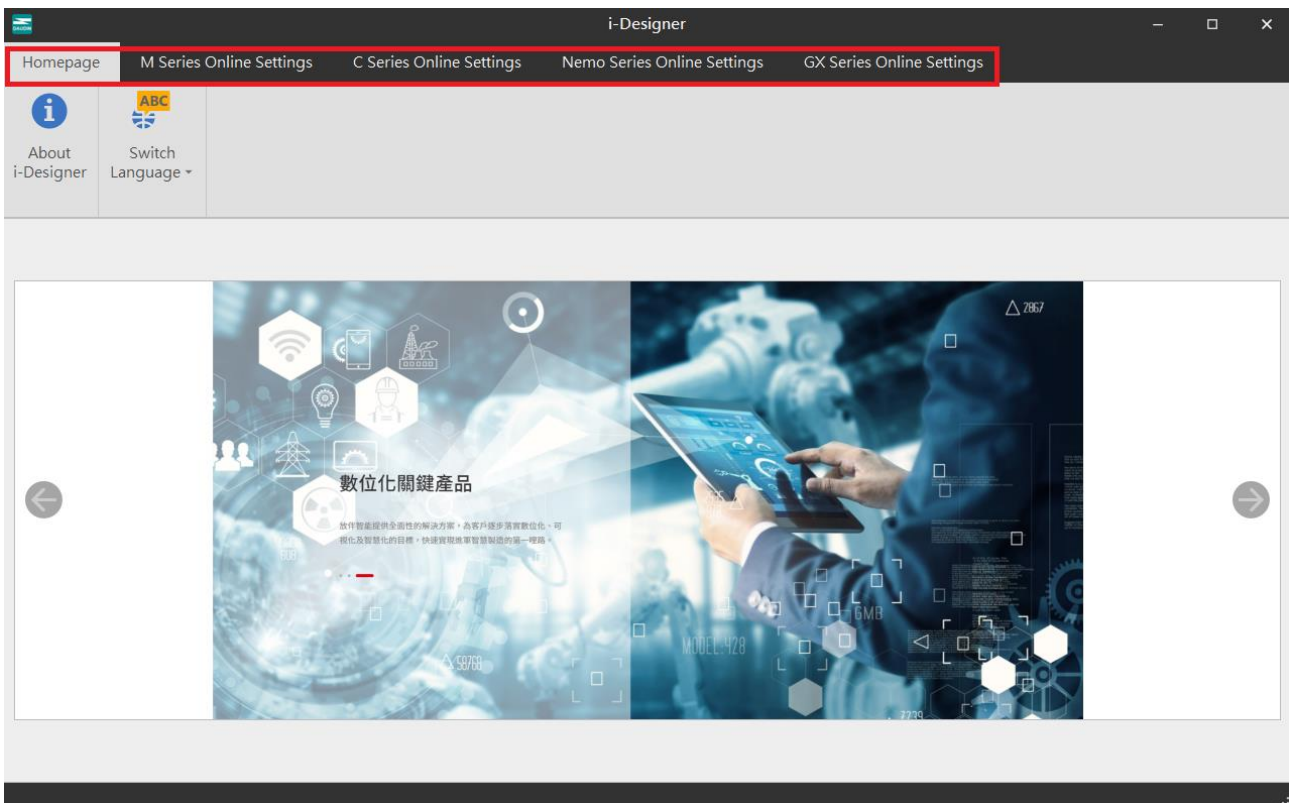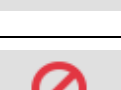


Figure 6.7 Tab

**Function Key Area:**

**The function keys displayed here vary based on the selected tab and product. The relevant descriptions are as follows:**

| Icon | Name | Description |
|---|---|---|
|  | About i-Designer | Shows software version information. |
|  | Switch Languages | Switches between Traditional Chinese, Simplified Chinese, and English. |
|  | Connection Mode | Offers automatic or manual module connection modes. |
|  | Connection Info | |
|  | Connect | Connects to the module. |
|  | Disconnect | Disconnects from the module. |
|  | System Stop | Temporarily stops the module system. |
|  | System Running | Starts the module system. |
|  | Auto Station Assignment | Reconfigures the station numbers of the module system. |
|  | Upload Parameters | Updates the module settings. |
|  | Online Adjustment | |
|  | Check for Updates | Searches and compares the current module firmware version to check if it's the latest. |

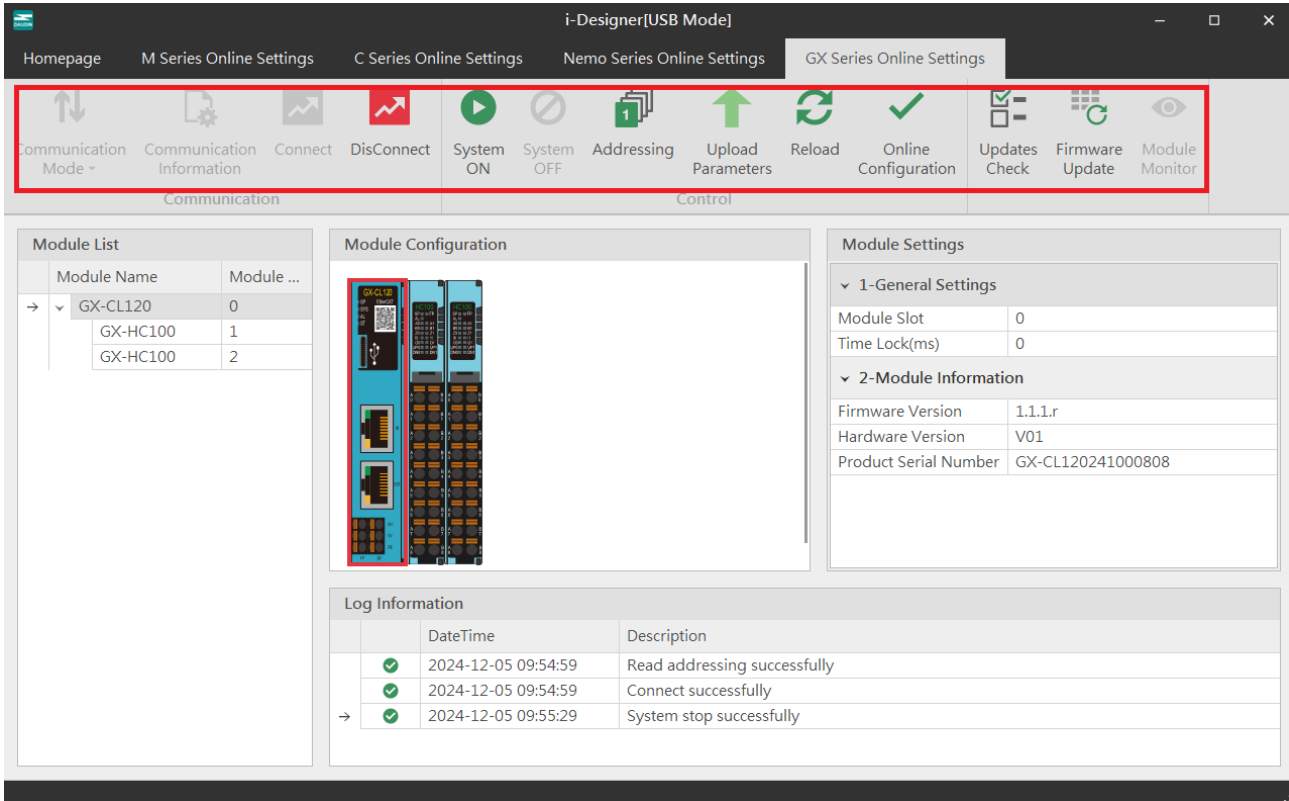| | Firmware Update | Manually updates the module firmware. |
|---|---|---|
| | Point Information Overview | Displays all operational data of the modules. |

Figure 6.8 Function Key Area

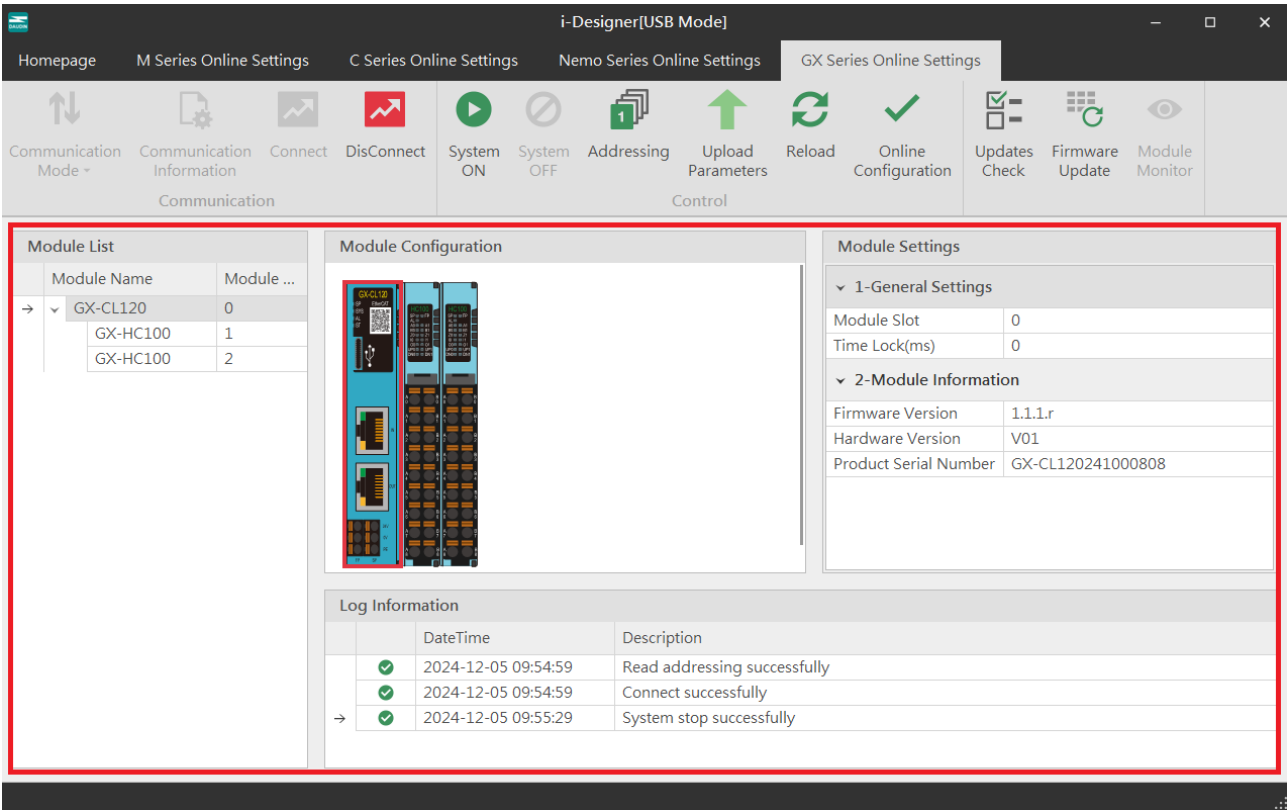**Display and Configuration Area**

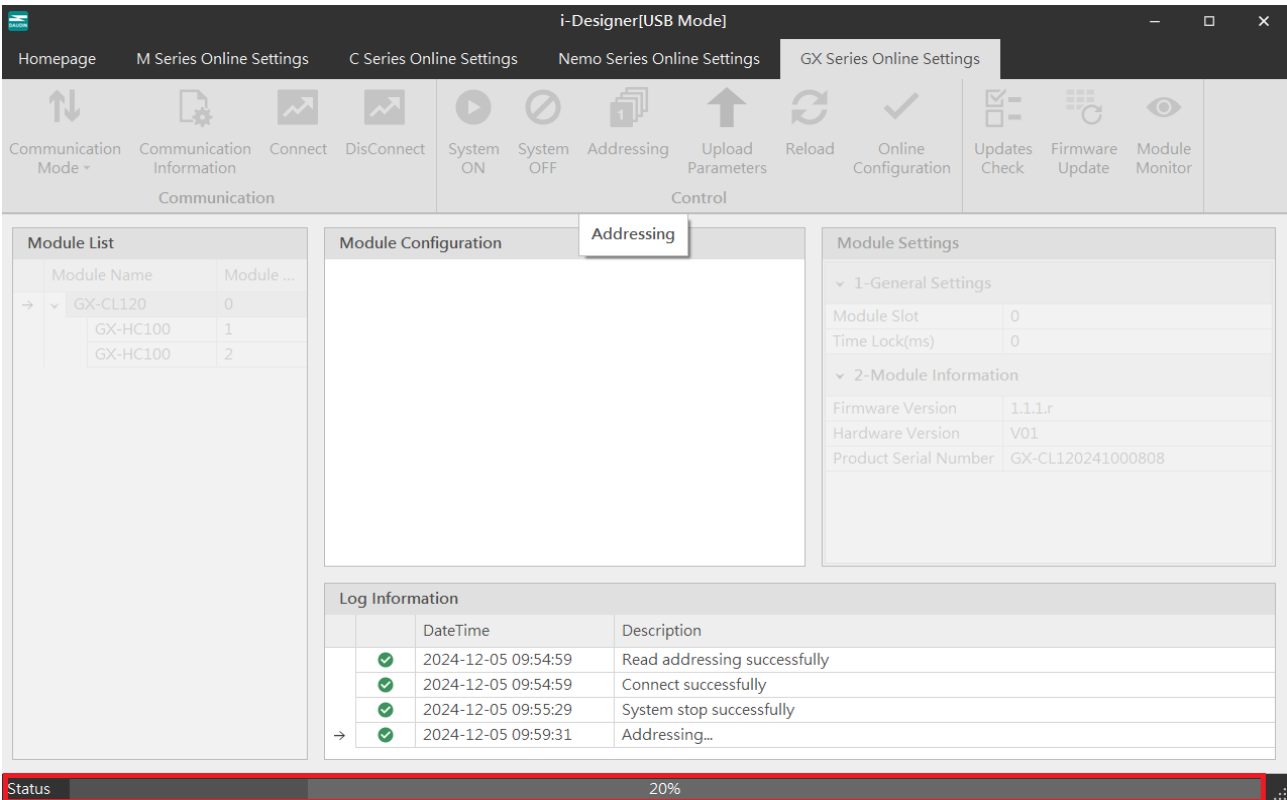

Figure 6.9 Display and Configuration Area



Figure 6.10 Progress Display Area

## 6.3　i-Designer Information Verification
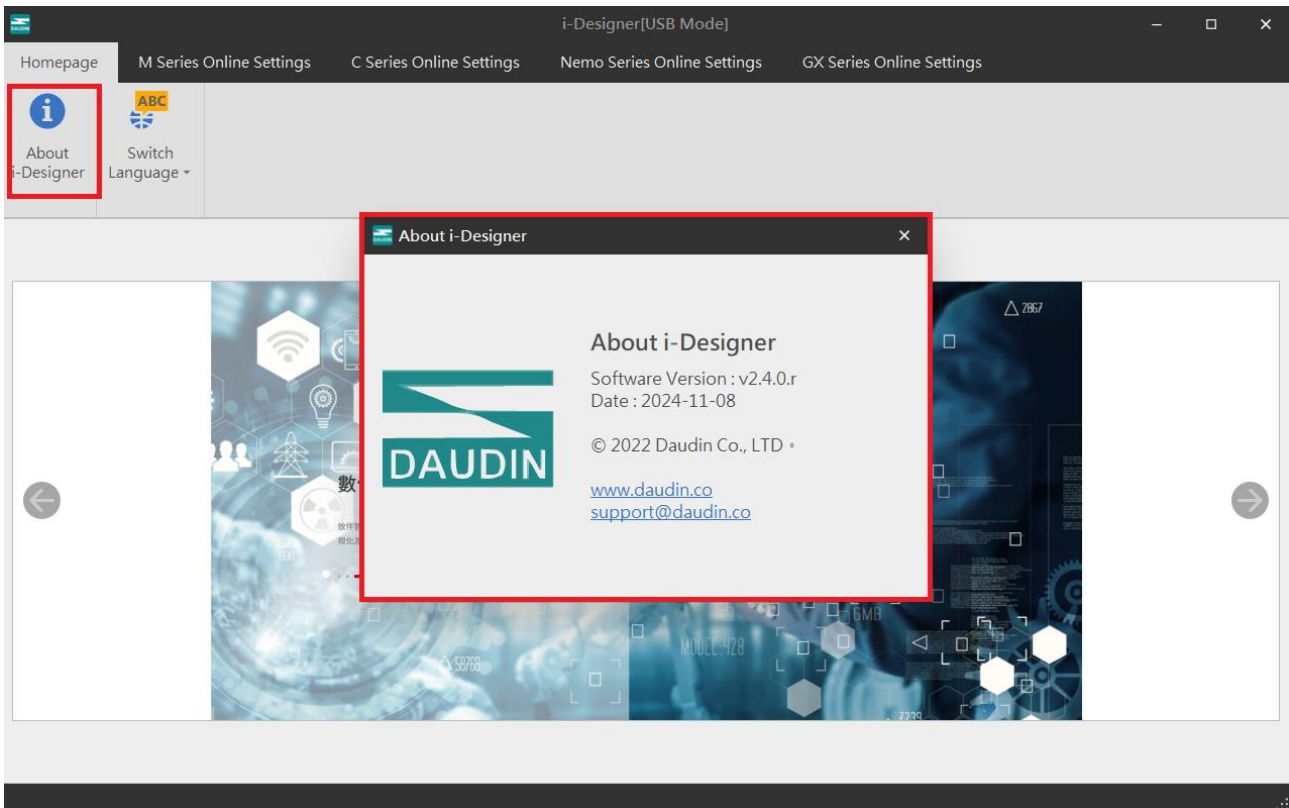
**Click on the homepage -> About i-Designer**



Figure 6.11 Software Information

## 6.4 Language Settings

i-Designer currently supports three languages: Traditional Chinese, Simplified Chinese, and English. Use this feature to change the language.
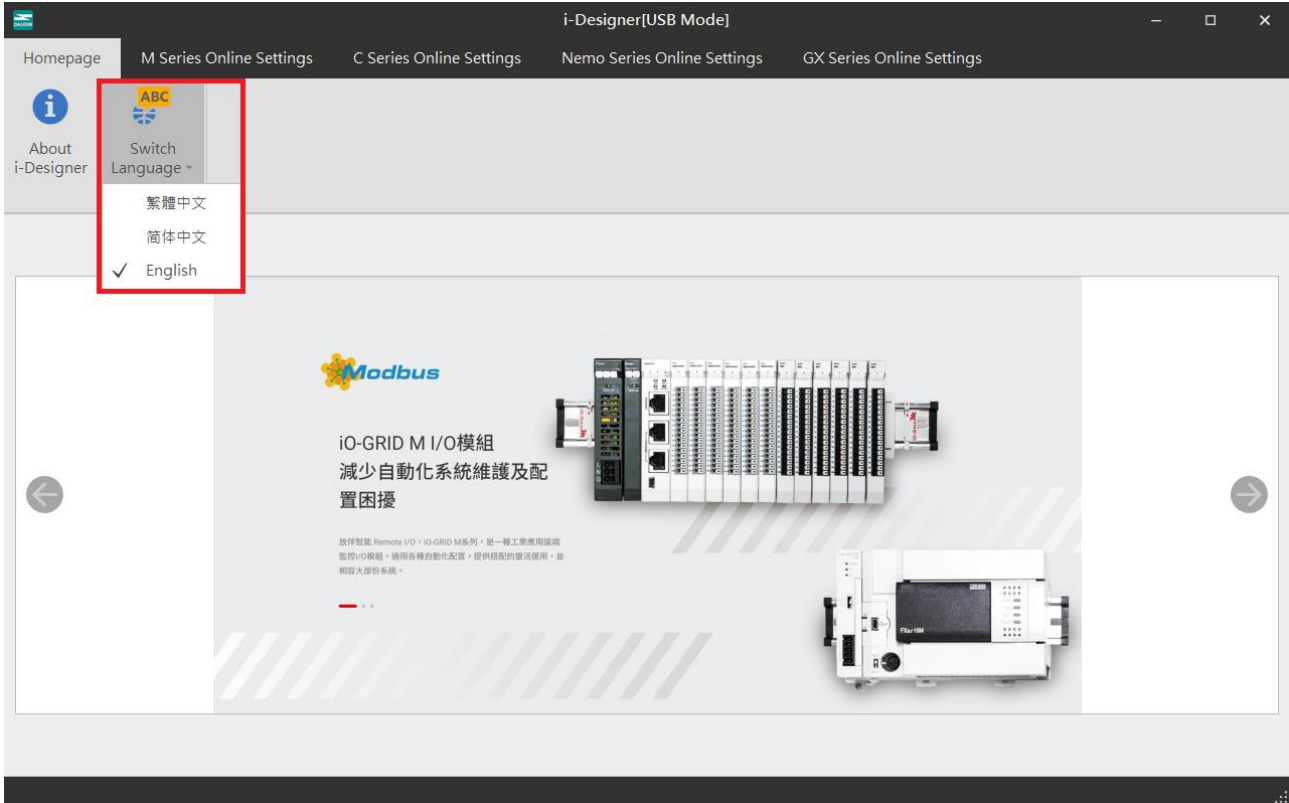


Figure 6.12 Language Selection

## 6.5 COM Port Connection Settings

i-Designer communicates with ¡O-GRID primarily through the COM Port interface. The connection mode can be either automatic module search or manual COM Port connection.

Before setting up the custom connection with ¡O-GRID, confirm the module COM Port interface number on your system
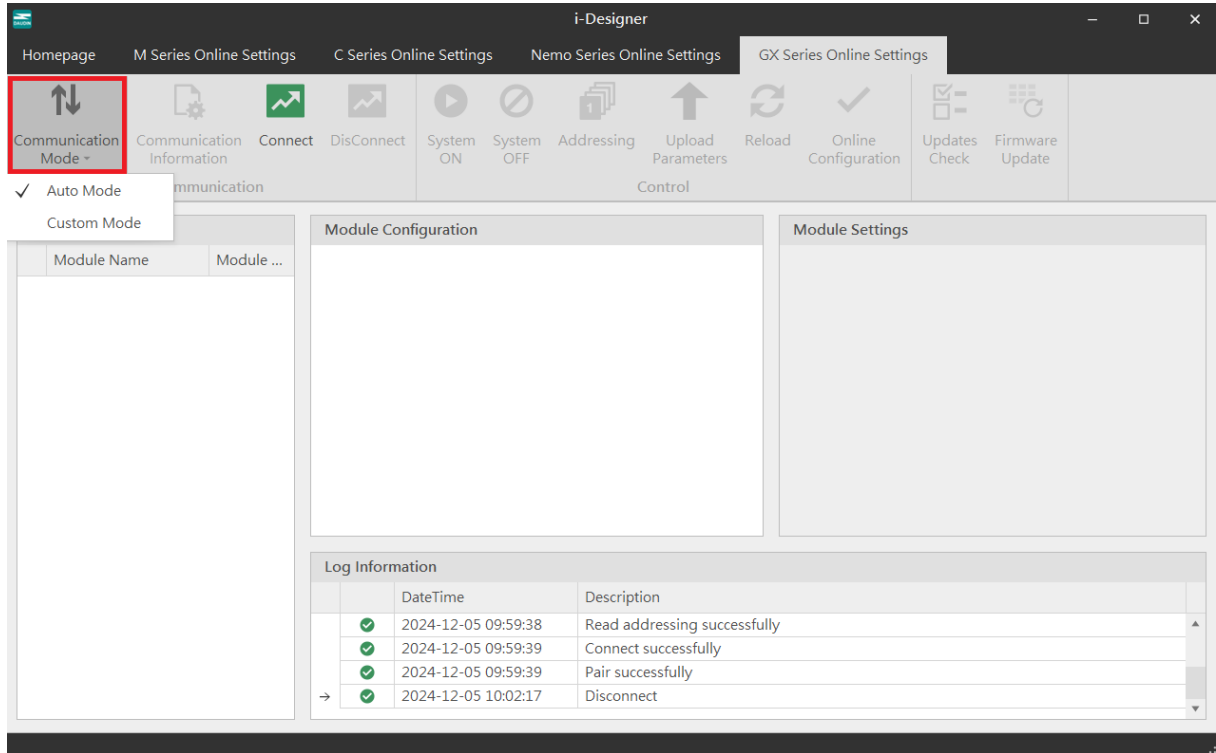
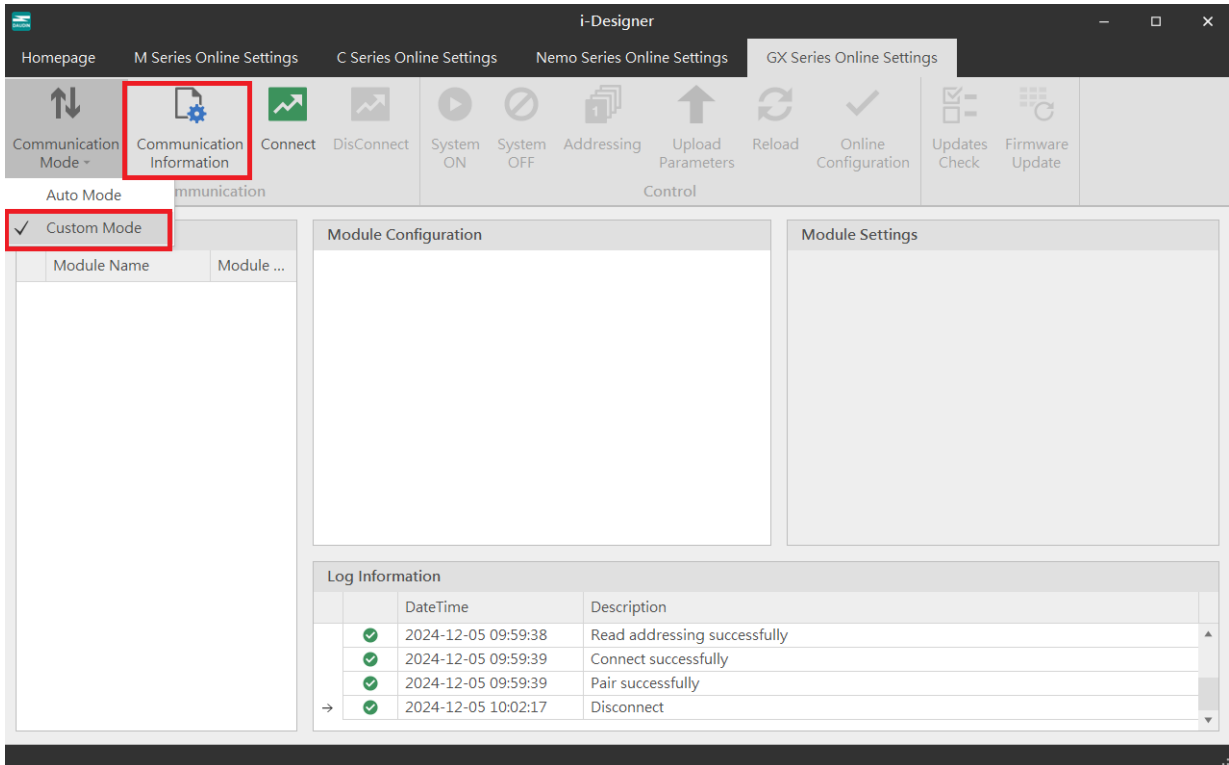

Figure 6.13 Connection Mode Selection
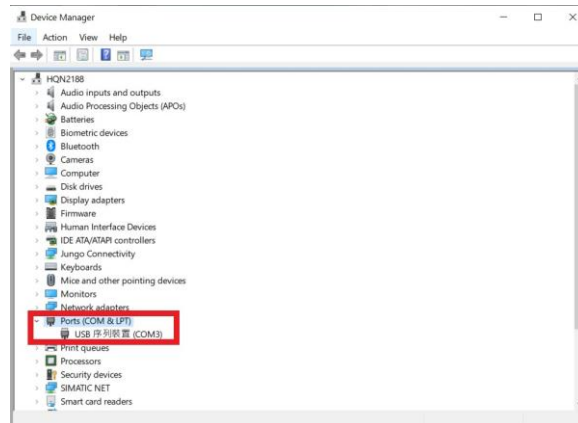
Figure 6.14 Custom Mode Settings



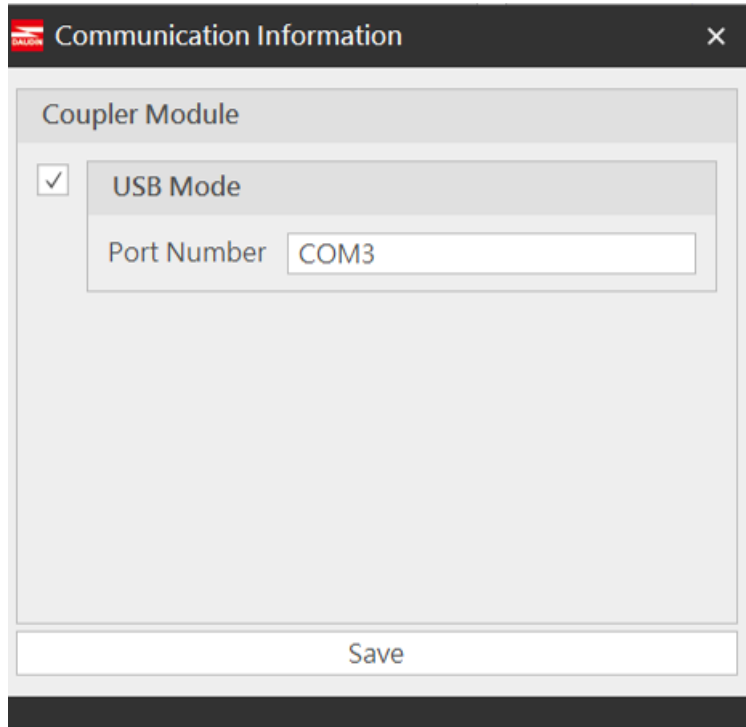Figure 6.15 Confirming Device Manager COM Port Number

Figure 6.16 Setting Connection COM Port

## 6.6    Connection Setting Instructions

Once the connection is successful, the current connection mode will be displayed in the window, and the firmware version of all modules will be detected. If the system is running, a pop-up window will ask whether to stop the system to perform firmware version detection for all modules.
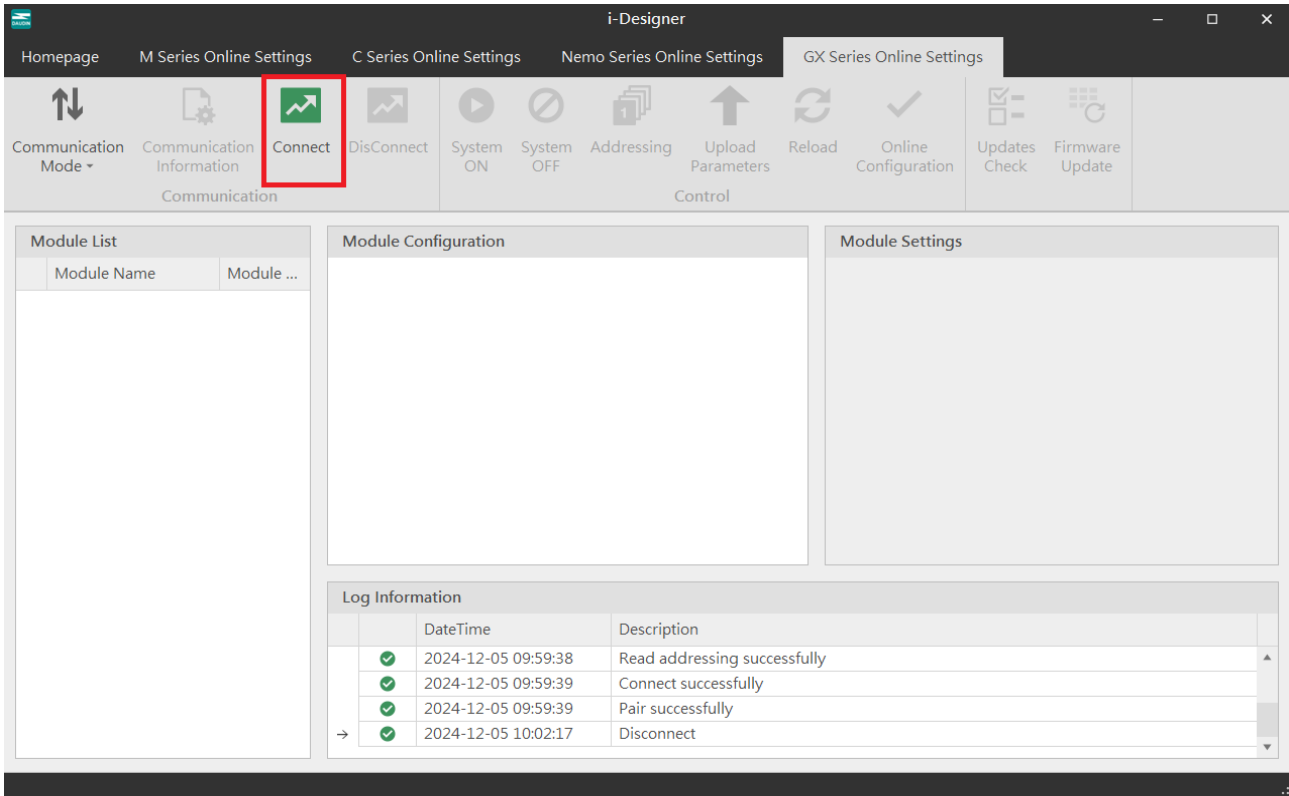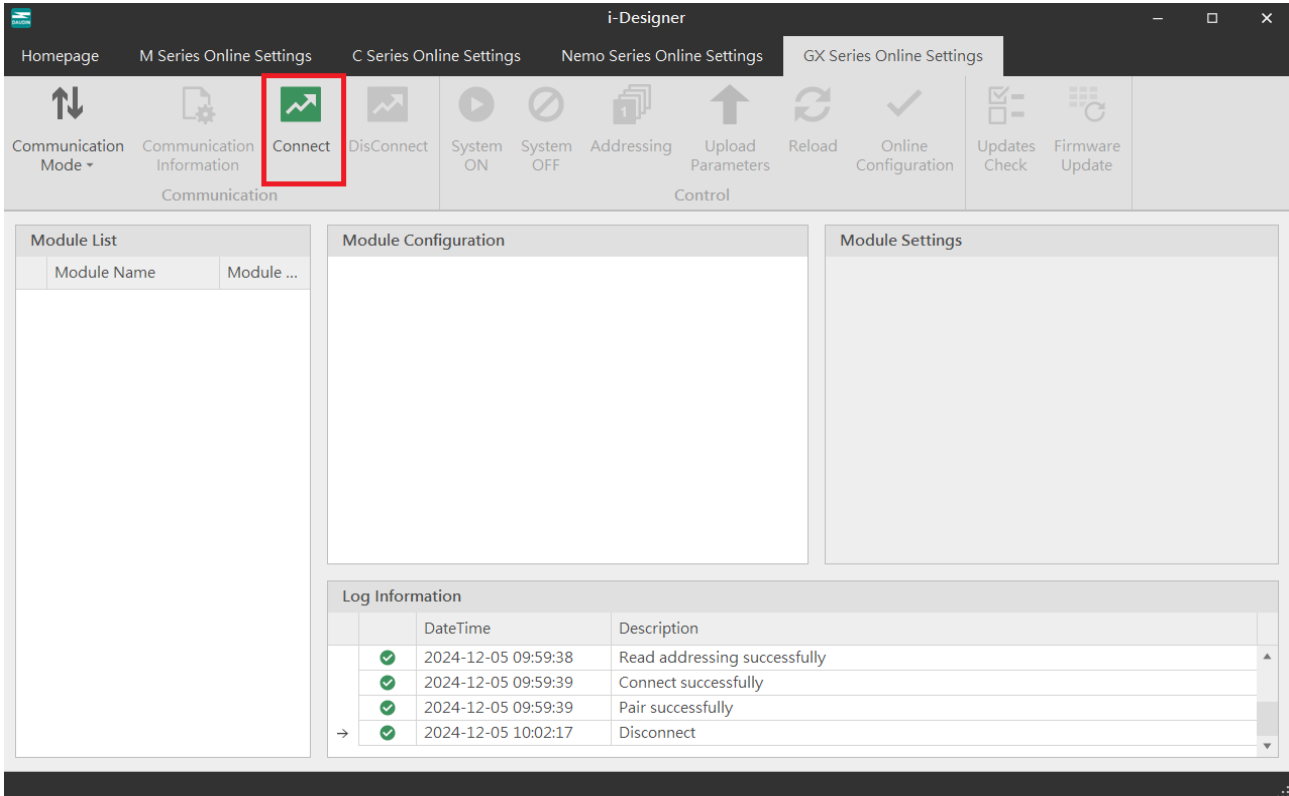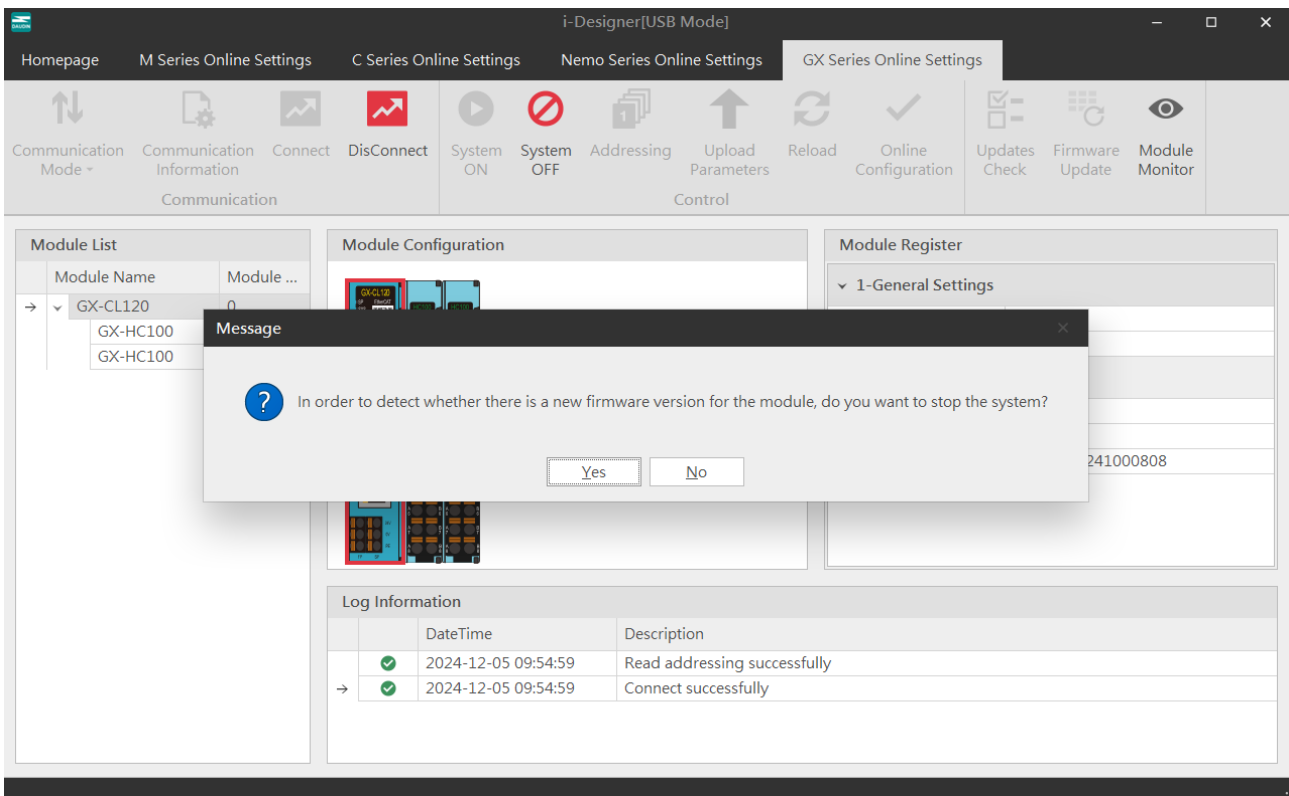
Figure 6.17 Setting Connection



Figure 6.18 After Connection, Module Automatically Confirms Module Version and Prompts for

Updates

If the system is stopped, i-Designer will automatically detect the module version.
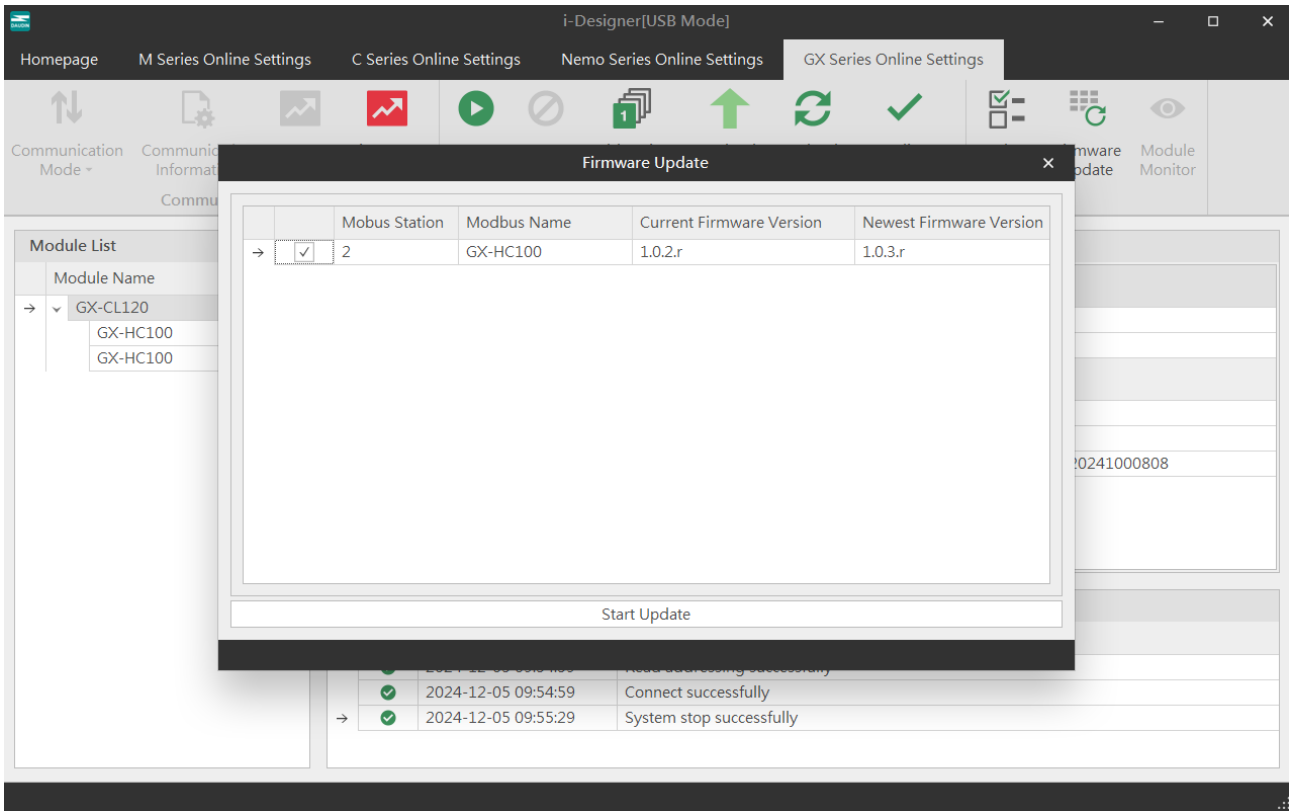


Figure 6.19 Module Version Information Display

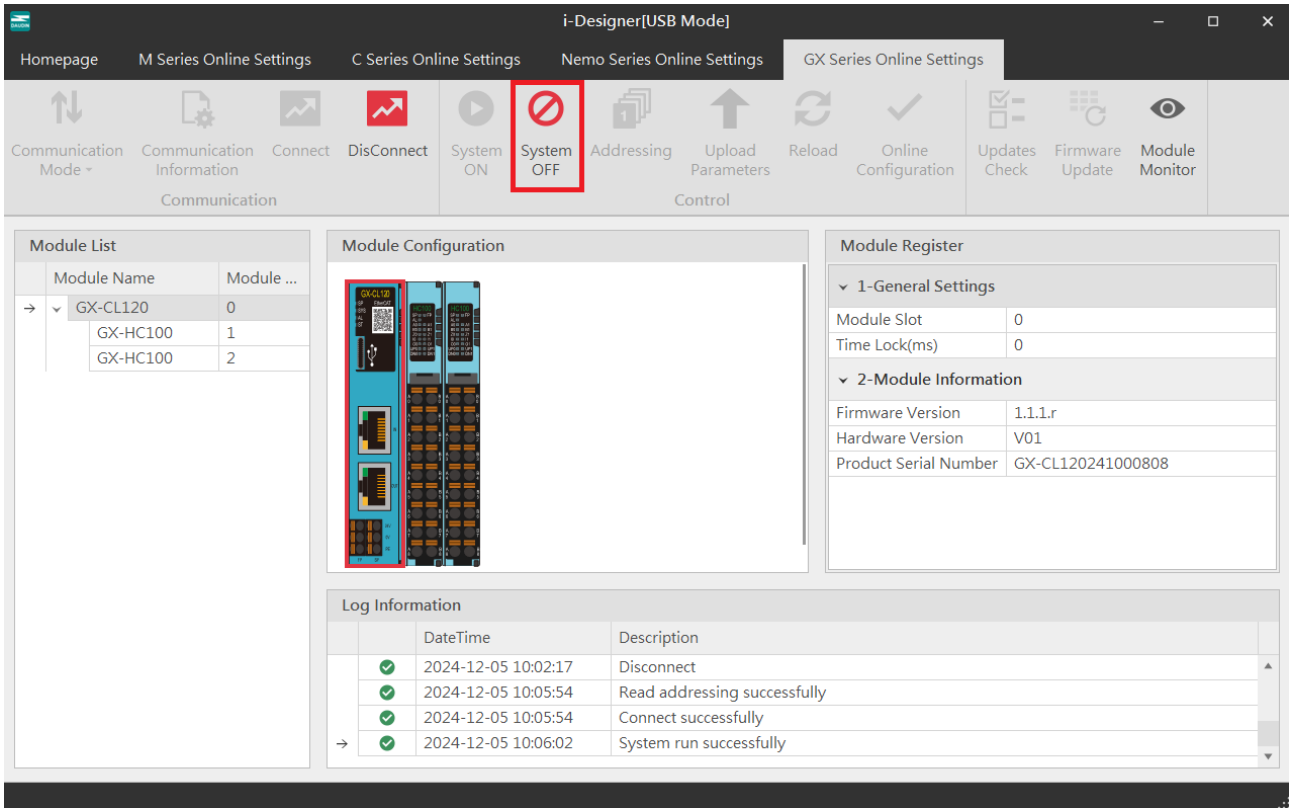Only after the system is stopped can the module functions be configured.
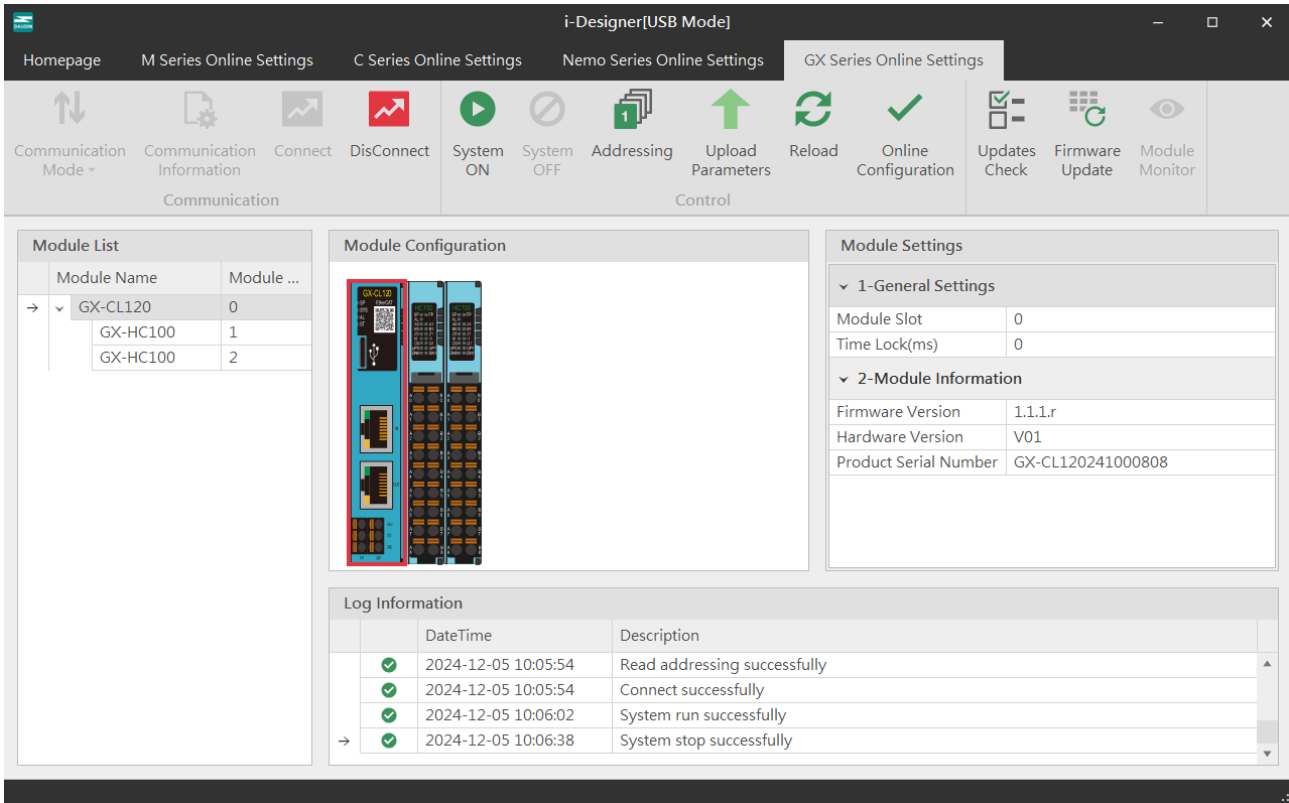


Figure 6.20 System Stop Screen

Figure 6.21 System Stop Screen

When connecting to X series modules, if the listed modules do not match the actual modules, you can search for modules through the Auto Station Assignment function.
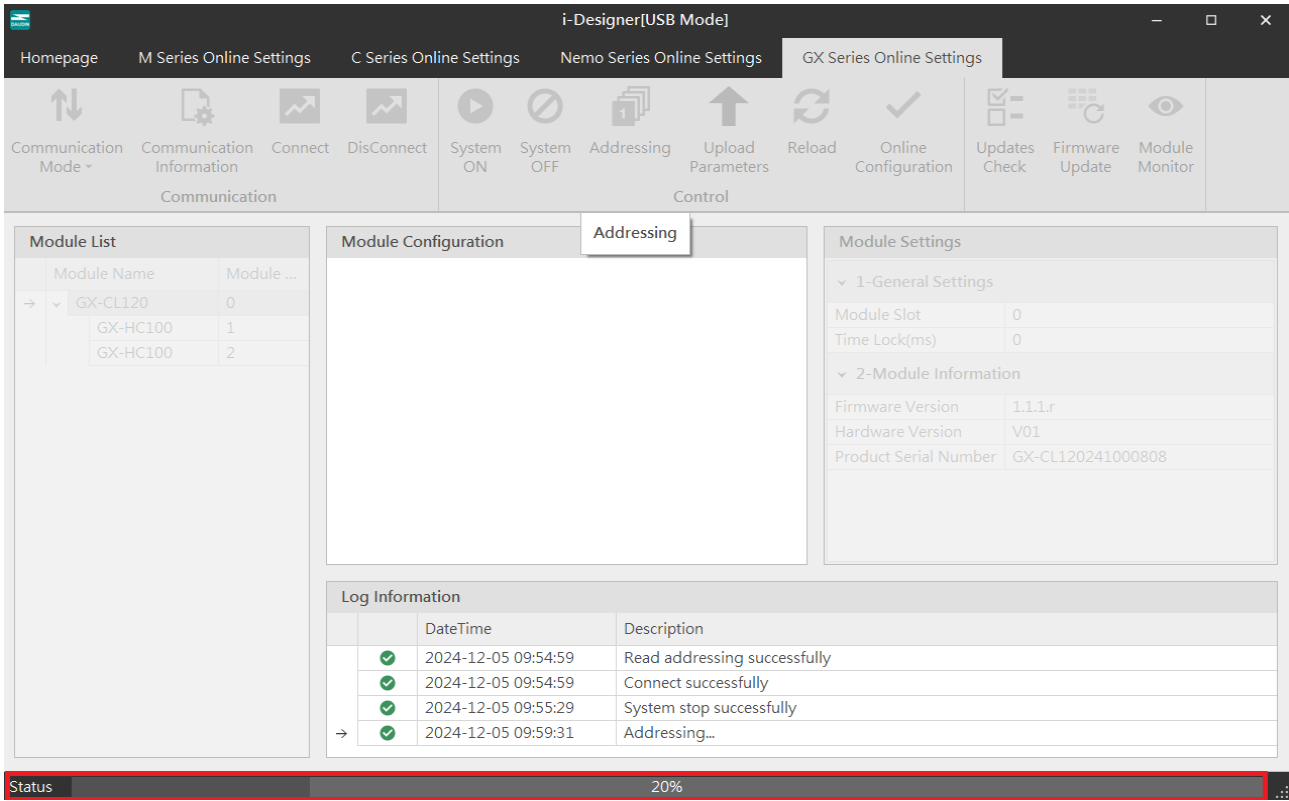


Figure 6.22 Station Assignment in Progress

After configuring the module functions, you must click "Upload Parameters" to save the settings correctly.
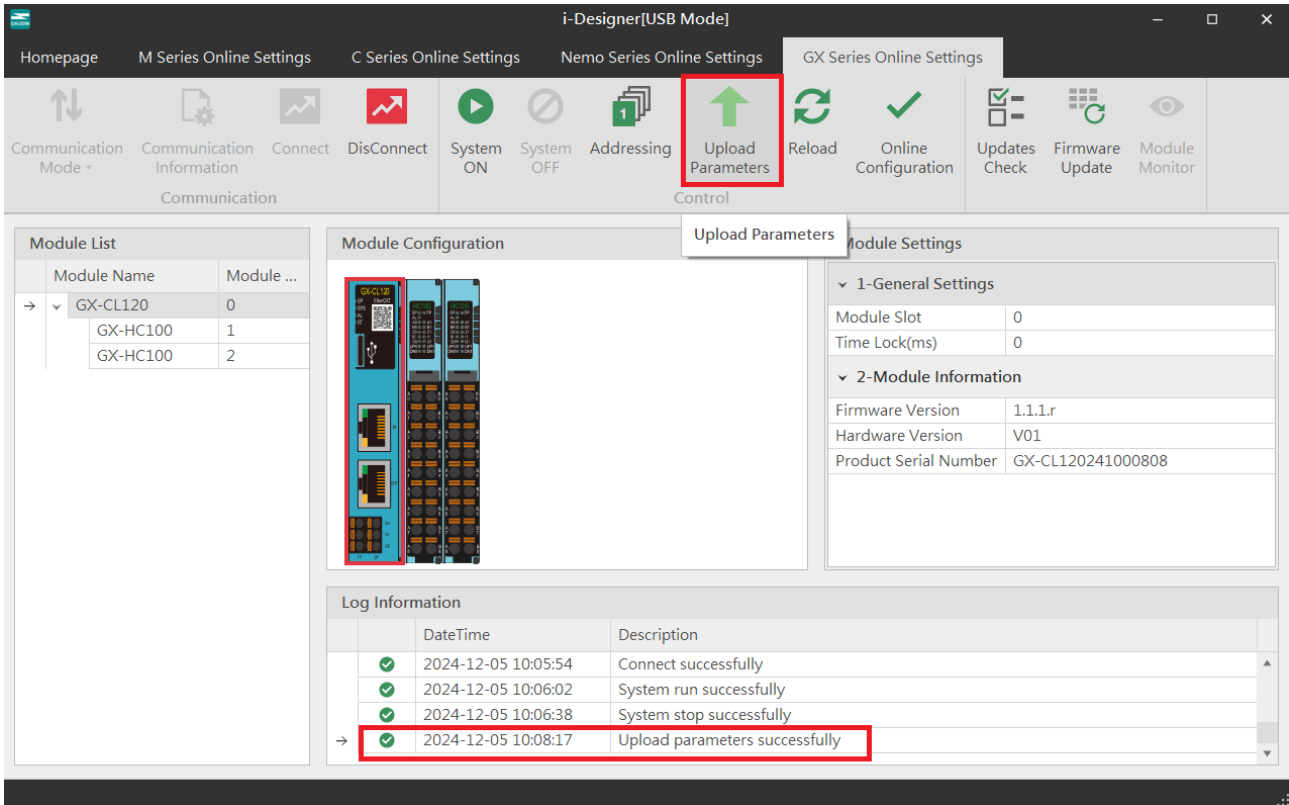


Figure 6.23 Screen After Uploading Parameters

You can view the IO point status through the online debugging feature.

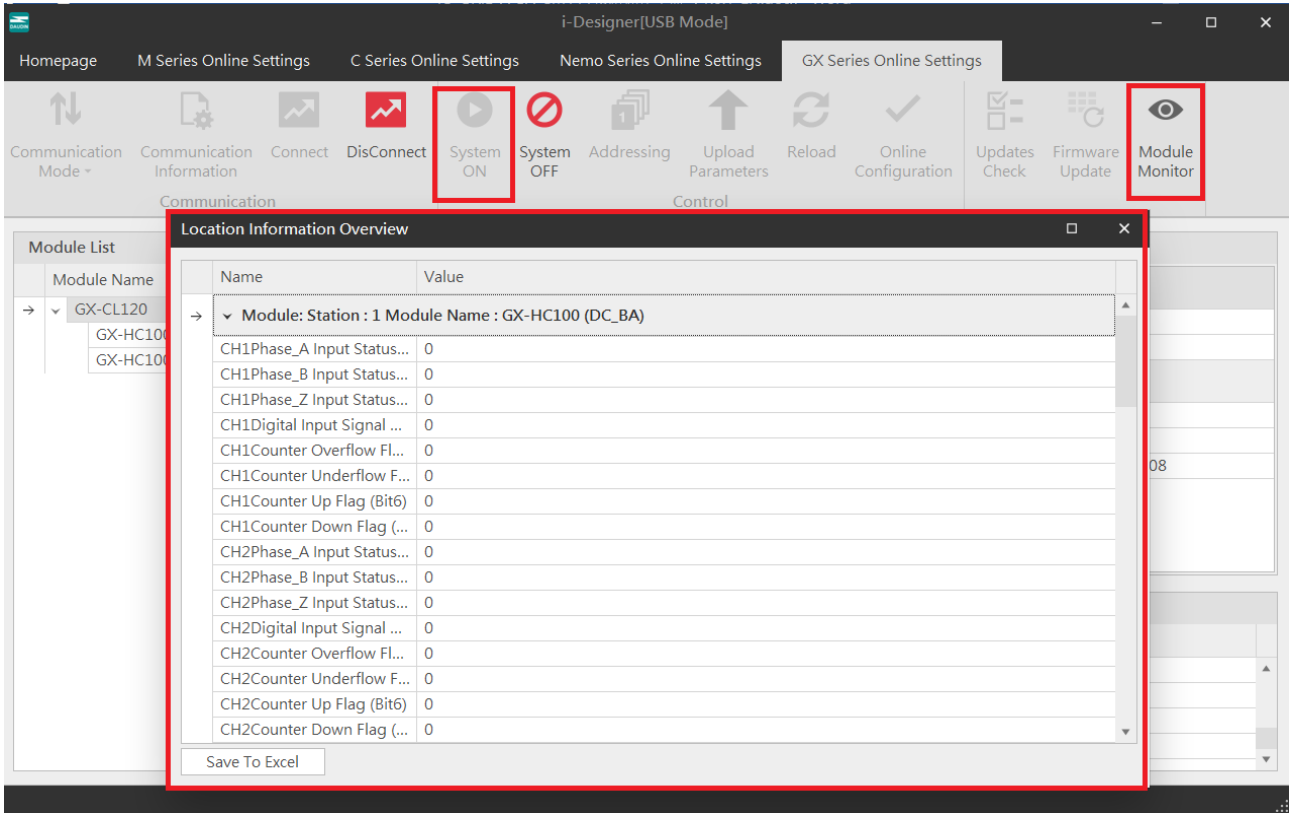Note: You must disconnect from the external master station before proceeding.



Figure 6.24 Online Adjustment Screen

The system will detect whether the current module version is the latest and prompt for updates.
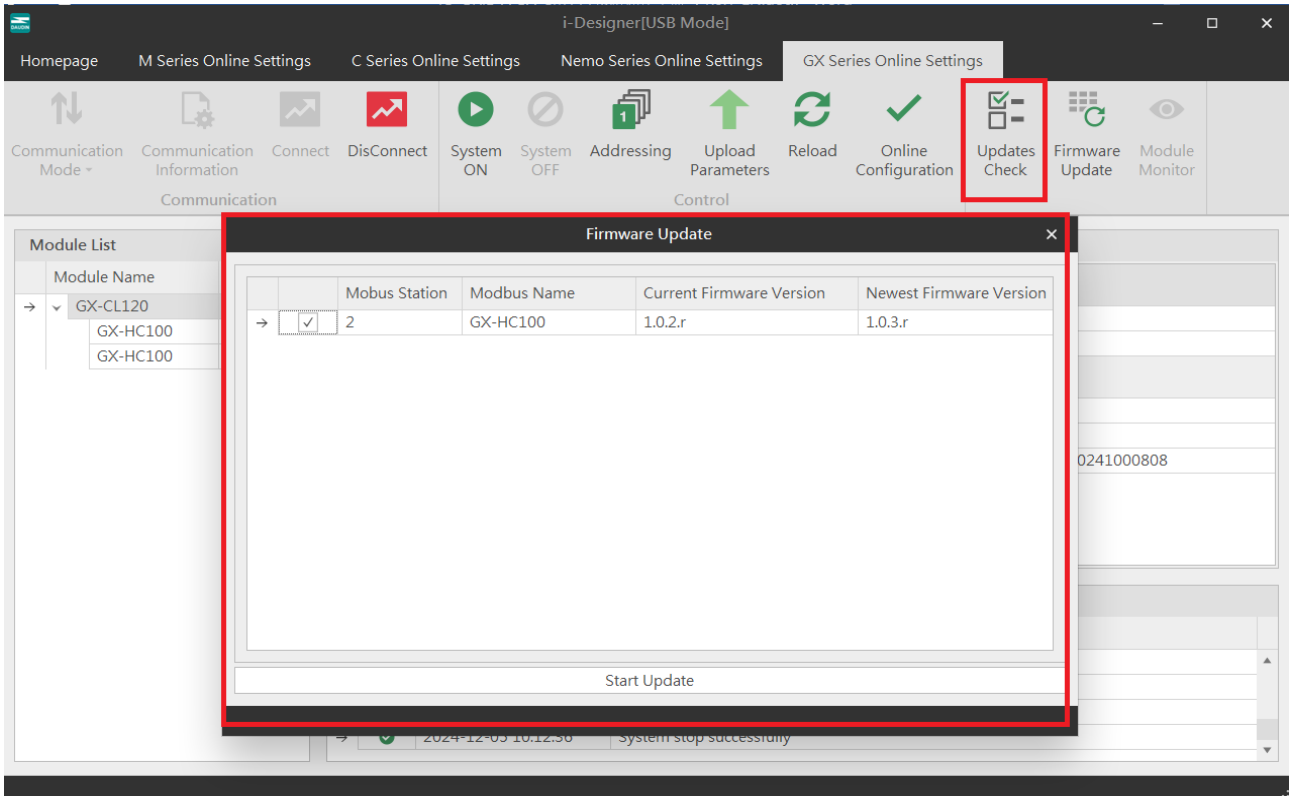


Figure 6.25 Firmware Update Screen

The GX-CL140 will display the Modbus register positions for the configured IO modules.
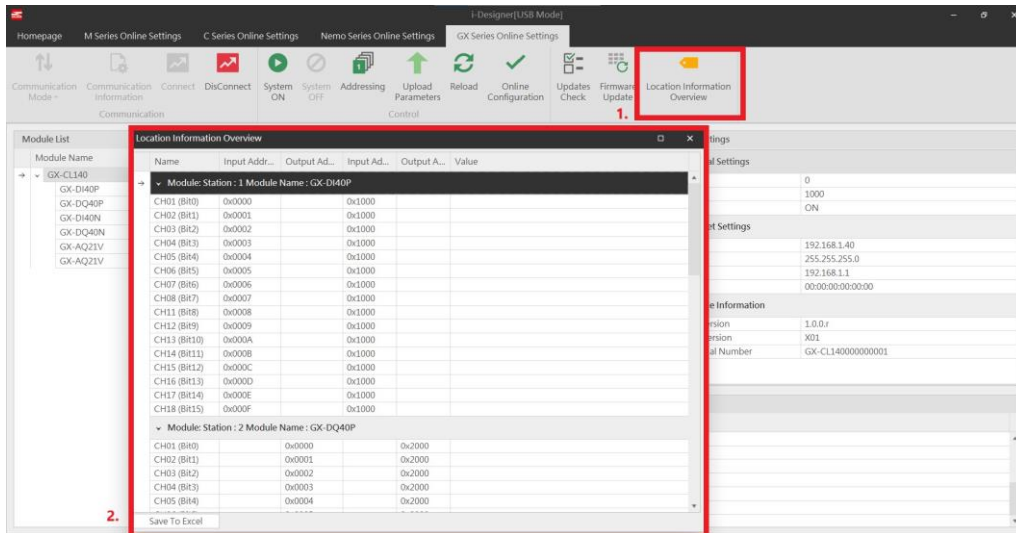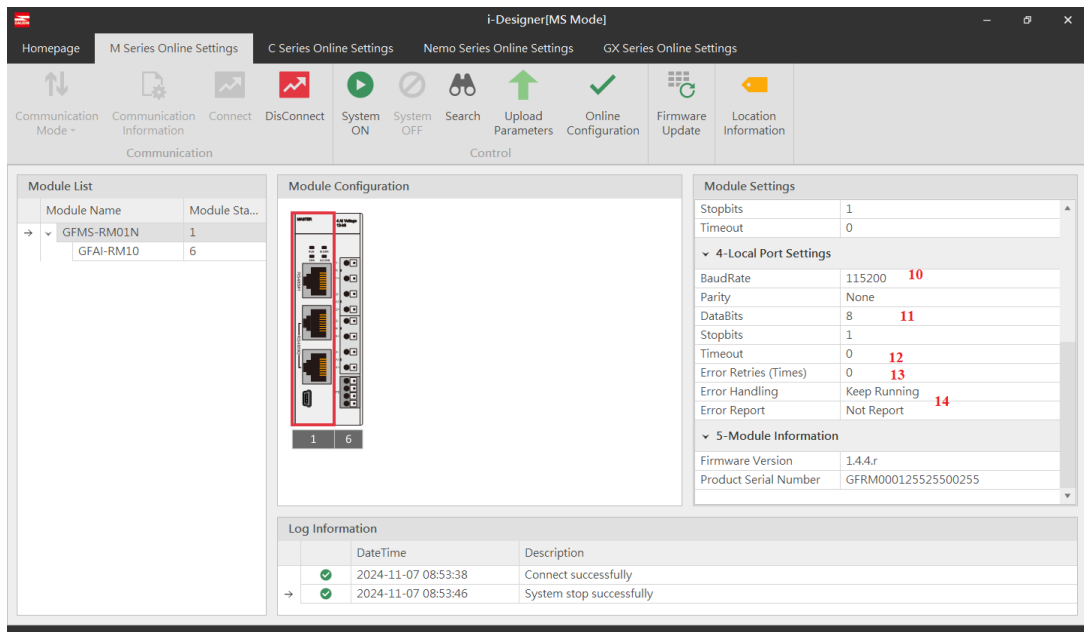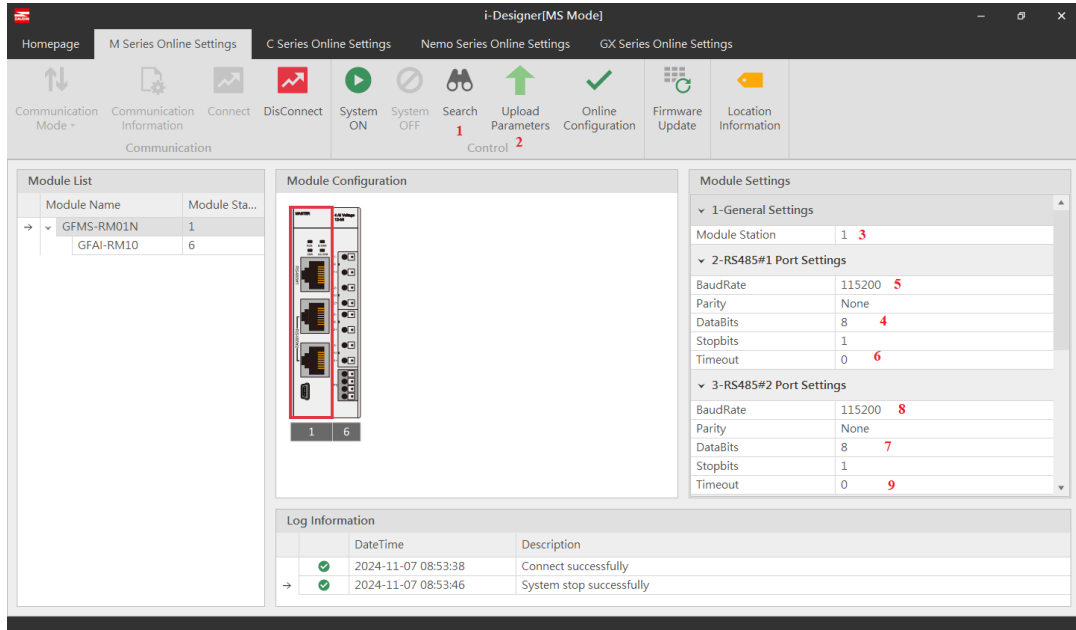


Figure 6.26 Point Information Overview Screen

# 7. M-Series Control Module Setup Function Introduction

I. Function Editing Area Setup Instructions

1.  Search Module

    When users initially configure each I/O module's station number and format, they can use the "Search Module" button to display the types and quantities of I/O modules on the bus board in the module list selection area.

    ※Before searching for modules, ensure that the "format" and "baud rate" set locally match those of the I/O modules.
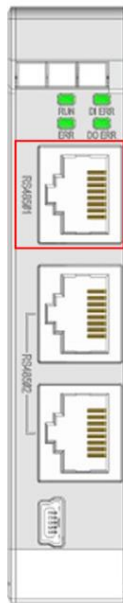
2.  Set

    Confirm the changes to the parameters. After setting 3 to 15 parameters, you must first click the "Set" button and then press the "Search Module" button again for all the parameter changes to take effect.

3.  Station Number

    Set the slave station number of the Modbus master controller.

4.  #1 Format

    The communication interface format for the first external RS485 bus.



5.  #1 Baud Rate

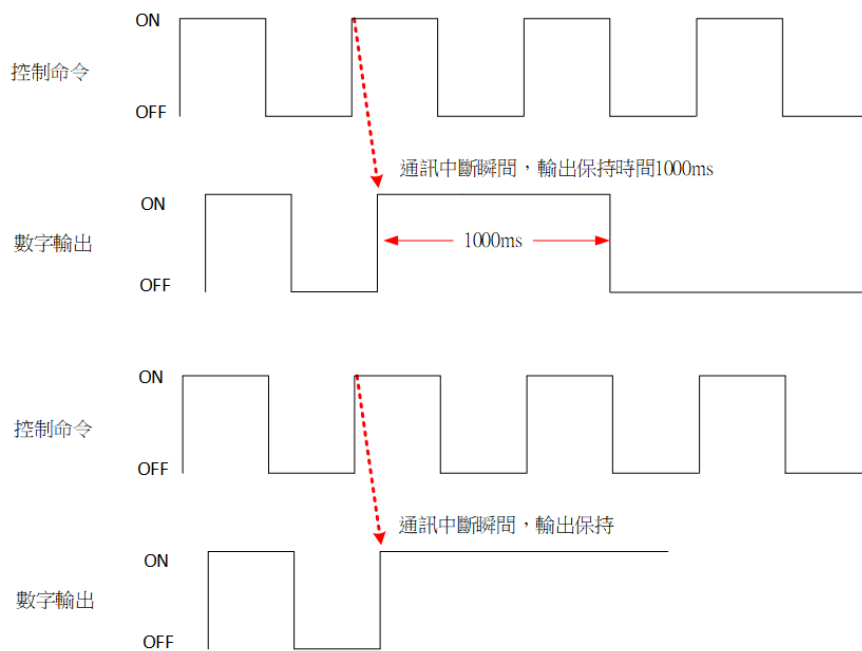    The communication speed of the first external RS485 bus interface.

6. #1 Timeout Setting

Set how long the I/O module will maintain its current state after communication with the controller is interrupted.

Example:

To maintain the state for 1 second after communication is interrupted, set the value to: 1000 ms.

To maintain the state permanently after communication is interrupted, set the value to: 0 ms.

控制命令　ON／OFF

通訊中斷瞬間，輸出保持時間1000ms

數字輸出　ON／OFF　1000ms

控制命令　ON／OFF

通訊中斷瞬間，輸出保持

數字輸出　ON／OFF

7. #2 Format

The communication interface format for the second external RS485 bus.

8. #2 Baud Rate

   The communication speed of the second external RS485 bus interface.

9. #2 Timeout Setting

   Set how long the I/O module will maintain its current state after communication with the controller is interrupted.
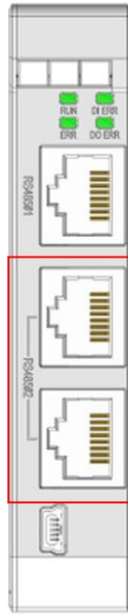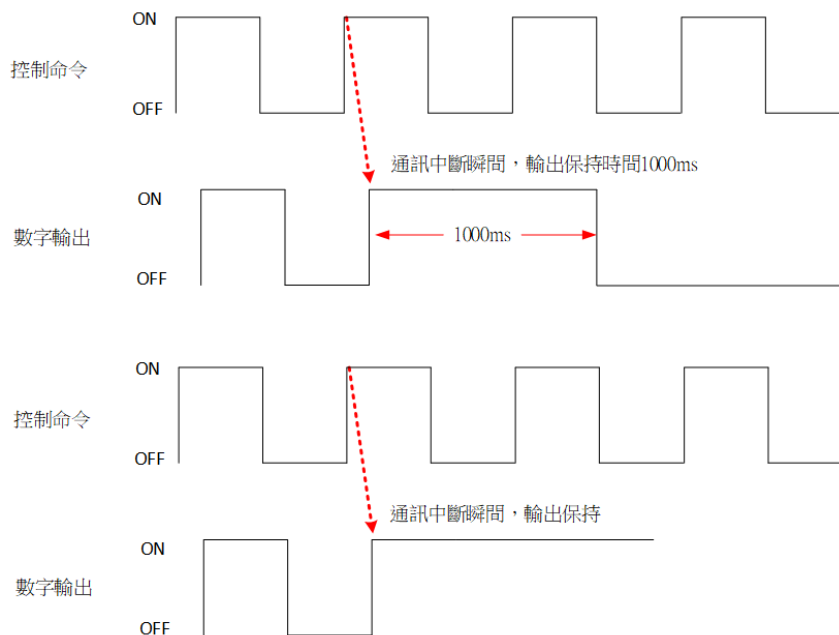
   Example:

   To maintain the state for 1 second after communication is interrupted, set the value to: 1000 ms.

   To maintain the state permanently after communication is interrupted, set the value to: 0 ms.



10. Speed

    The communication speed of the I/O module on the bus board, with a maximum of 1.5M.

11. Format

    The Modbus communication format on the bus board.

12. Timeout Setting

    The time the master controller waits for a response from the I/O module on the bus board after pressing the "Search Module" button.

13. Error Resend

Set the number of times the <u>control module</u> will resend commands.

When the "Search Module" button is pressed, if there is an error in the response from the <u>I/O module</u> on the bus board, the control module will resend the command to the <u>I/O modules</u> on the bus board.

14. Error Handling

Set whether the system should stop if any <u>I/O module</u> on the bus board encounters an error.

Example:

Stop Operation: The system will stop if any <u>I/O module</u> on the bus board encounters an error.

Continue Operation The system will continue to operate even if an <u>I/O module</u> encounters an error.

**II.** Module List Selection Area Setup Instructions:

1. Use the left mouse button to select the I/O module that needs configuration.

2. Enter the station number using the keyboard.

3. After clicking the "Upload Parameters" button, confirm the changes.
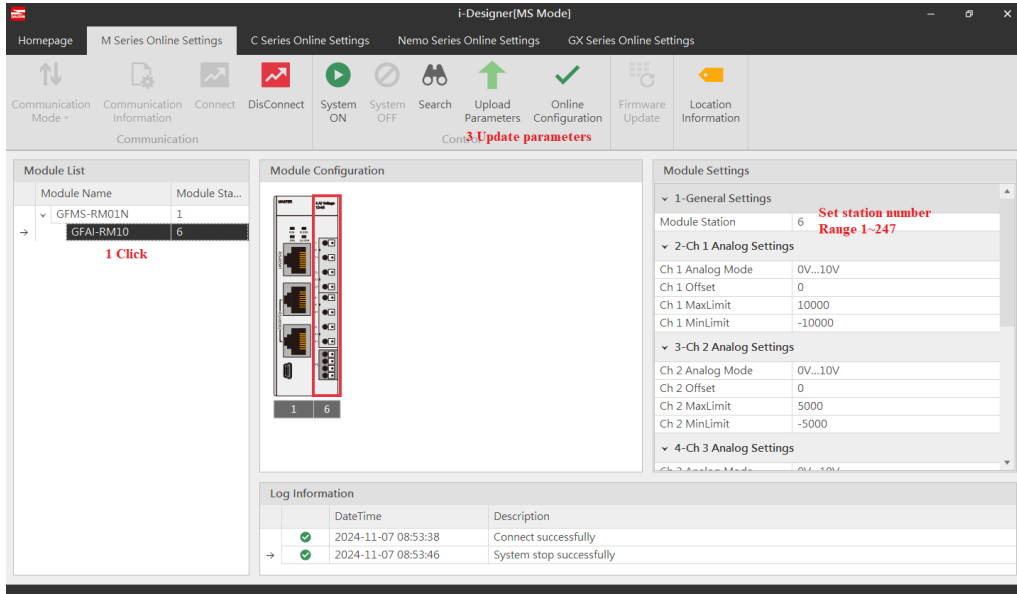
# 8. M-Series Standalone I/O Module Station Number Setup

I. **After connecting the I/O module, open the iO-GRID M Utility and click "Connect." If a prompt box appears, select "No" to enter non-backplane mode.**

*Do not power on the I/O module during single module setup.

**II.** **Click "Connect." Once the "Module Connected Successfully" message appears in the status log area, you can begin setting the station number, speed, and format.**
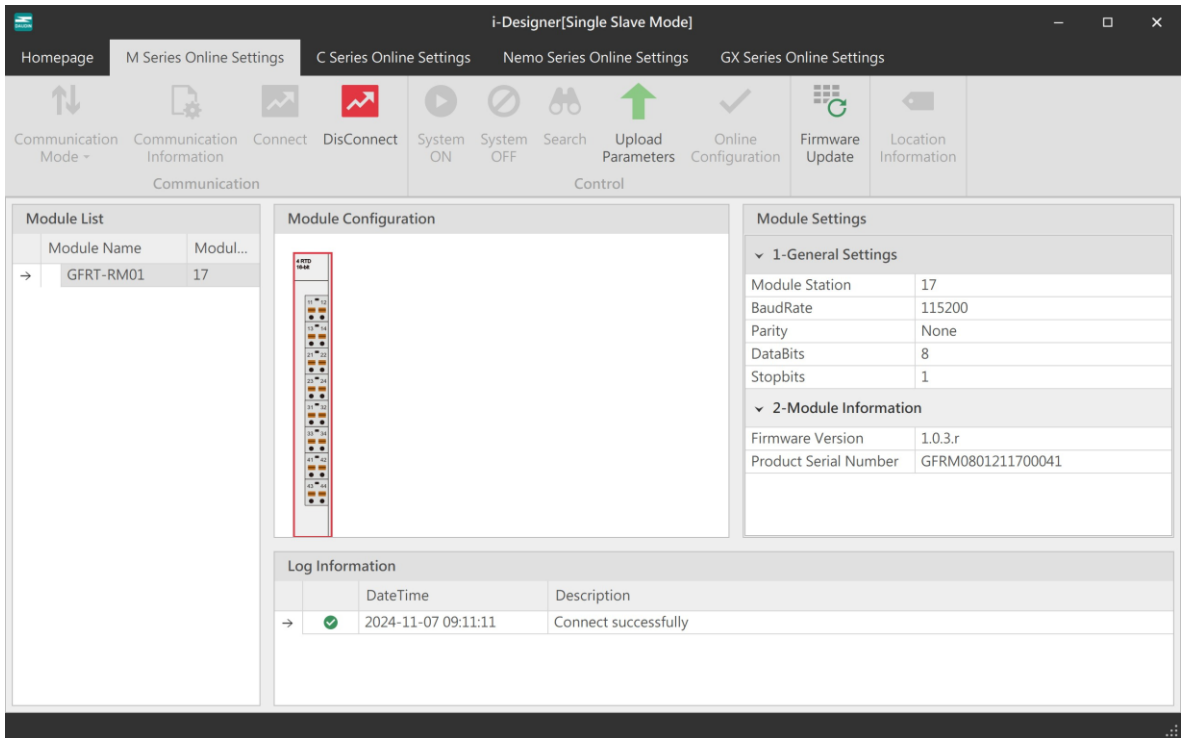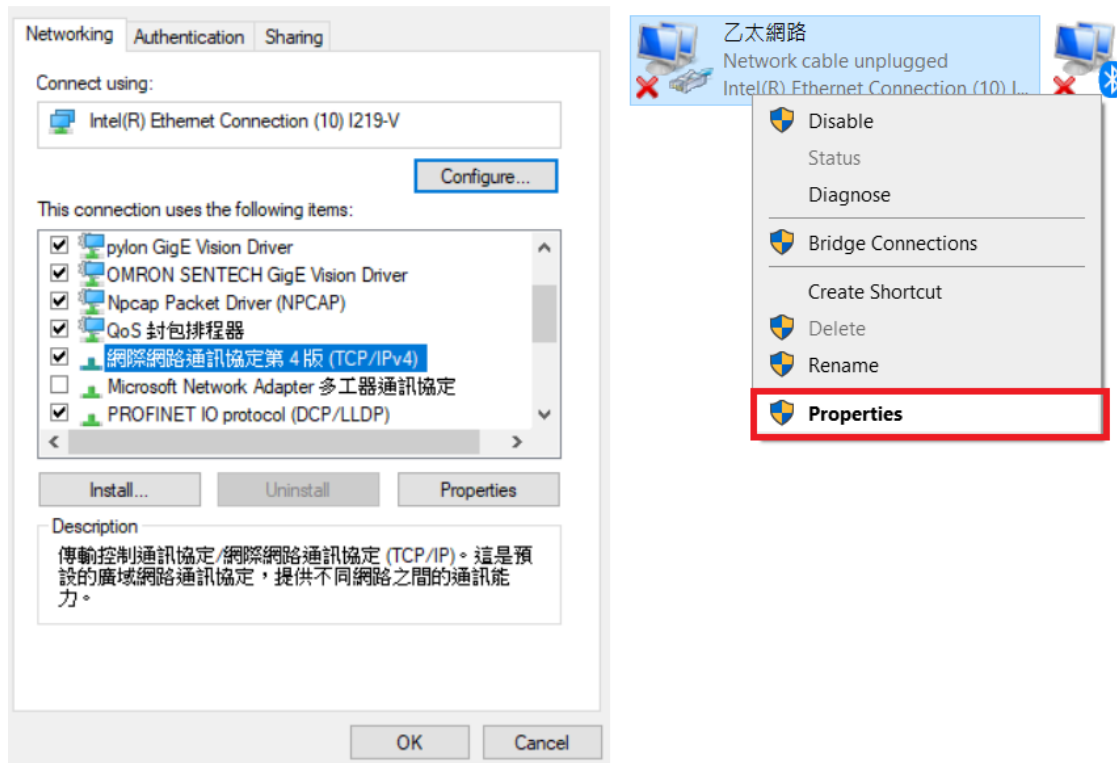


**III.** **After completing the settings, click "Set Module." Once the module settings are confirmed as complete, the process is finished.**

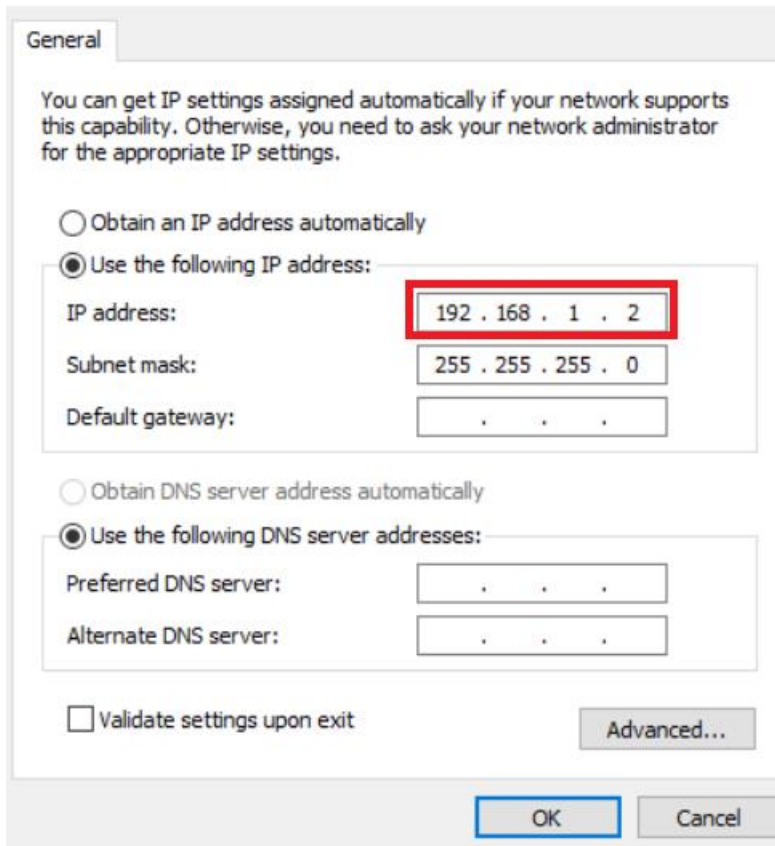# 9. M-Series Gateway Module Setup Function Overview

**I.** Go to the Network and Sharing Center to change the network interface settings.
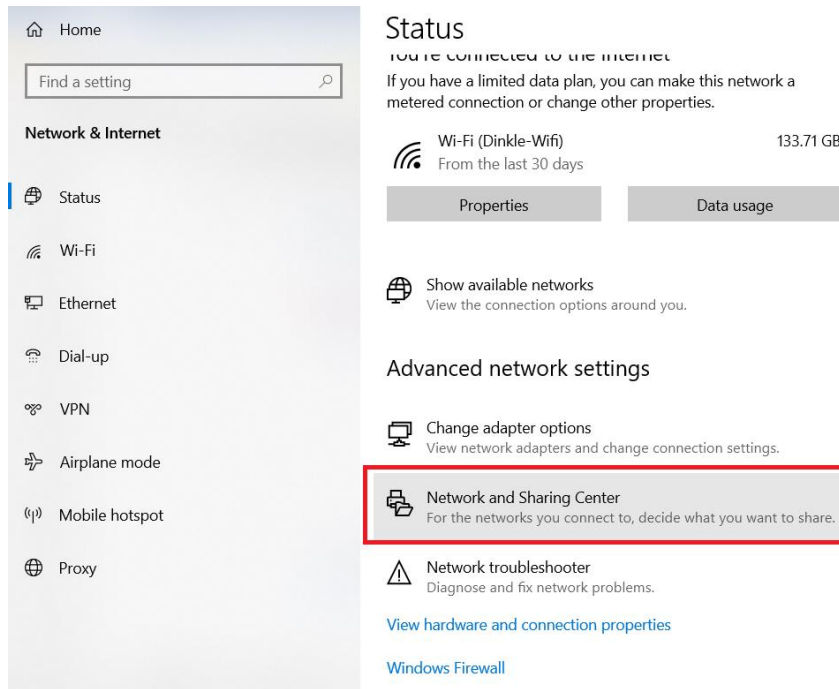


**II.** Click "Ethernet," select "Properties," and then click "Internet Protocol Version 4 (TCP/IPv4)."

**III.** Ensure the domain settings match those of the gateway module (e.g., 192.168.1.XXX).



**IV.** Check that the domain settings match the gateway module's configuration (e.g., 192.168.1.XXX) and connect to the module.

**V.** Function editing area setup instructions



(1) Select whether each serial port is connected to a Master or Slave module. If connected to the controller, select Master; otherwise, select Slave.
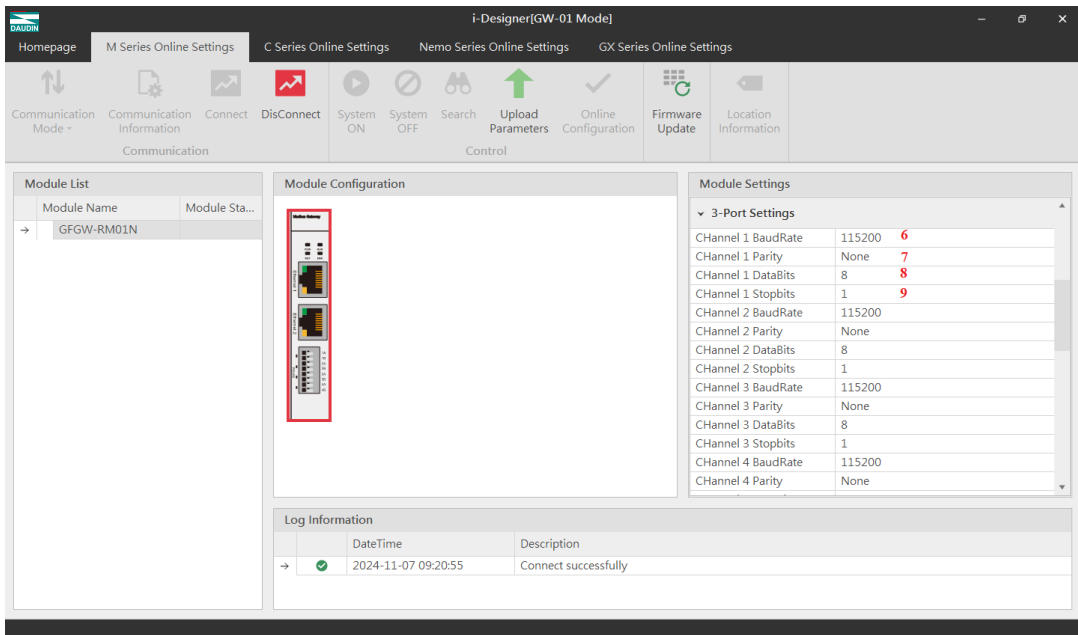
* A simple guide: Choose Slave for Modbus TCP to Modbus RTU, and Master for the reverse.

(2) For the serial port that is connected to a slave module, you will need to configure the communication timeout parameters.
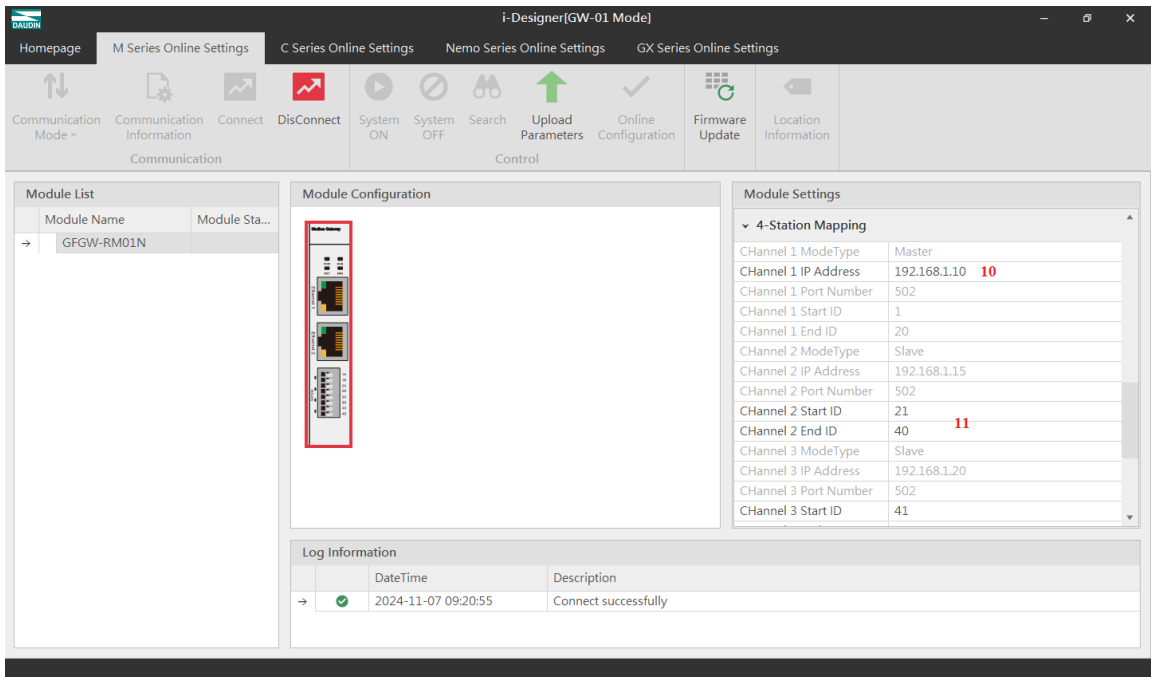
(3) Set the IP address.

(4) Set the network mask.

(5) Set the default gateway.

(6) Set the communication baud rate for each serial port.

(7) Set the Modbus communication format for each serial port (RTU/ASCII).

(8) Configure parity (None / Even / Odd).

(9) Set the number of stop bits (0 / 1 / 2).

(10) If the operation mode is set to Master, configure the mapped master station
IP address.

(11) If the operation mode is set to Slave, configure the mapped slave station
ID range (in decimal).

* The ID mapping range of the slave determines which RS485 interface outputs the
Modbus RTU station number packet.

# 10. i-Designer Precautions

**I.** **From the top toolbar, ensure you select the correct module system.**
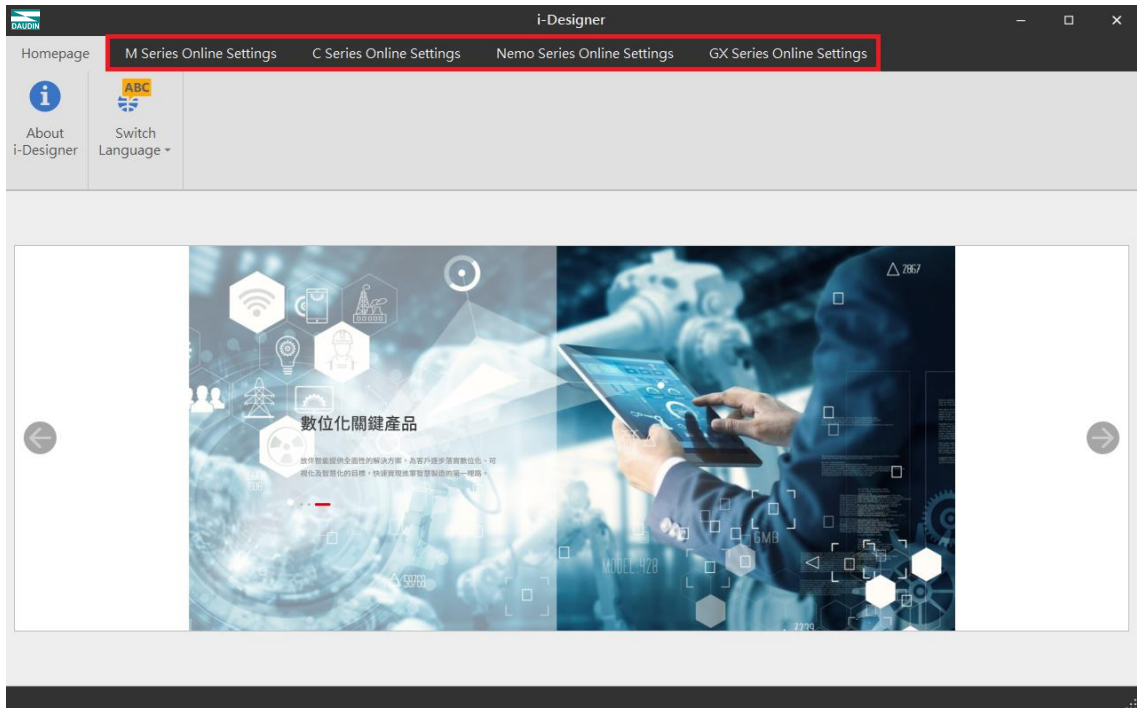


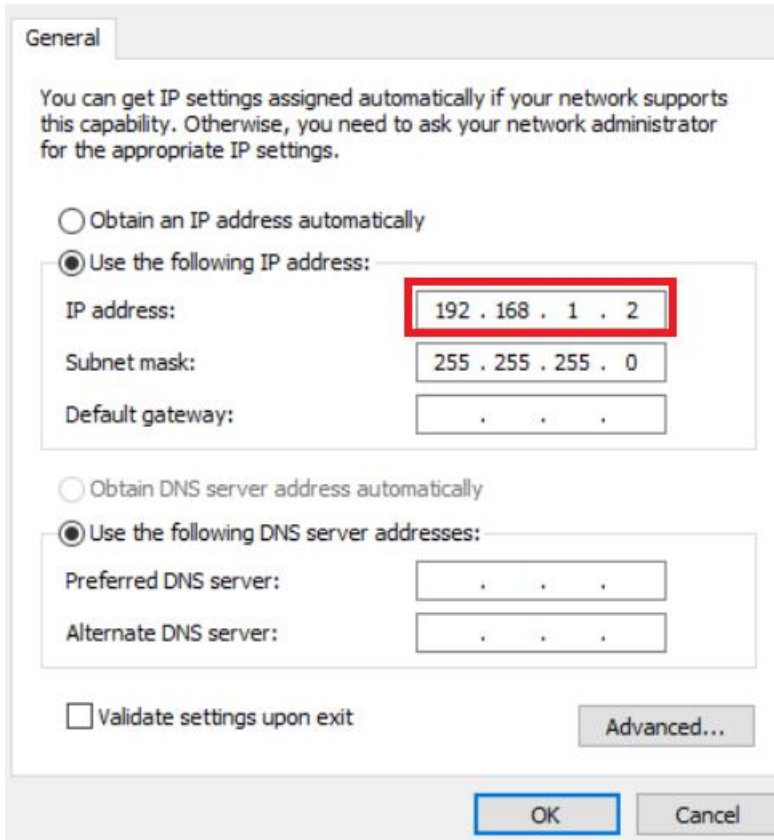**II.** **The connection sequence for the module is as follows:**

(12) Assemble the modules

(13) Power on the modules

(14) Connect the USB to the modules

(15) Open i-Designer

(16) Connect

(17) System stop

(18) Set parameters

(19) Upload parameters

(20) System running

Following this order ensures proper use of the module.

**III. When connecting the gateway module using a network cable, you must ensure that it is in the same domain(LAN) as the gateway.**

Verify that the domain(LAN) settings match those of the gateway module:

192.168.1.XXX.

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

○ Obtain an IP address automatically

◉ Use the following IP address:

IP address:            192 . 168 . 1 . 2

Subnet mask:           255 . 255 . 255 . 0

Default gateway:         .    .    .

○ Obtain DNS server address automatically

◉ Use the following DNS server addresses:

Preferred DNS server:      .    .    .

Alternate DNS server:      .    .    .

☐ Validate settings upon exit                    Advanced...

OK          Cancel