



Industrial Automation Technology
Innovator and Enhancer.

如何透過Modbus與 iSN-81x 模組連線





目錄

- [iSN-81x-MRTU ModbusRTU_Csharp](#)
- [iSN-81x-MRTU ModbusRTU_Node.Js](#)
- [iSN-81x-MRTU ModbusRTU_Python](#)
- [iSN-81x-MTCP ModbusTCP_Csharp](#)
- [iSN-81x-MTCP ModbusTCP_Node.Js](#)
- [iSN-81x-MTCP ModbusTCP_Python](#)
- [如何安裝函式庫](#)

01

iSN-81x-MRTU ModbusRTU_Csharp

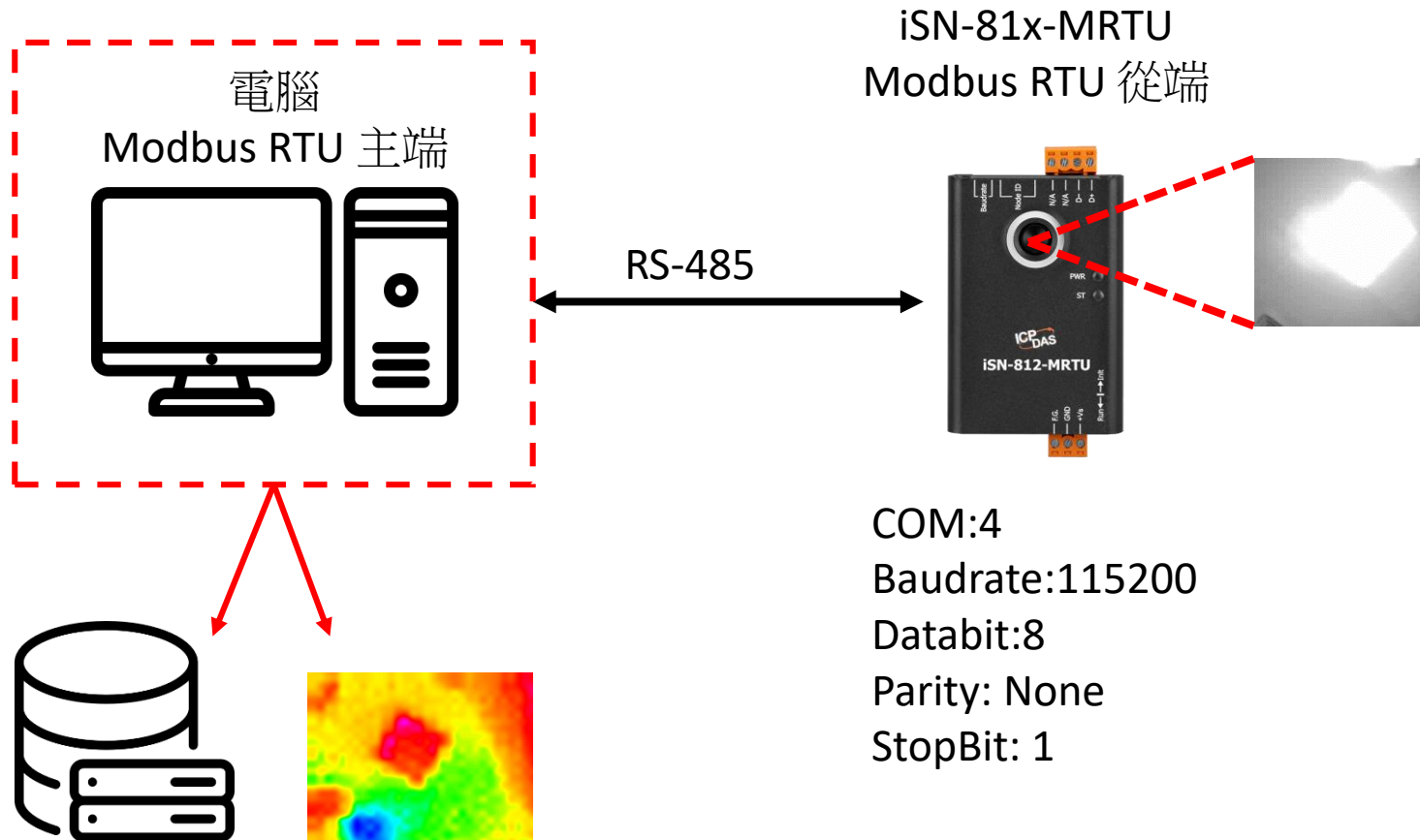
- 範例程式提供不同的程式語言給您參考，您可以透過範例程式取得以下數據：
 - 熱影像
 - 數據讀取時間
 - 型號
 - 紅外線數據
 - 熱影像的儲存路徑
- 範例程式使用SQLite儲存量測數據，您可以自行更改使用的資料庫，如MySQL、SQL Server等。

- 預先安裝

- Install-Package System.Data.SQLite

- Install-Package Newtonsoft.Json -Version 13.0.1

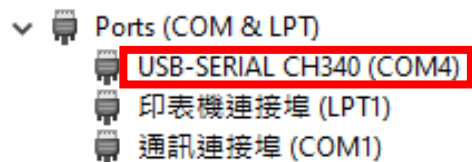
➤ 將 iSN-81x-MRTU 配置為 Modbus RTU 從端



➤ 將 iSN-81x-MRTU 配置為 Modbus RTU 從端

- 為了讓範例程式能夠連接到iSN-81x-MRTU，您需要修改在“Program.cs”中的變數“cmbPort”為iSN-81x-MRTU的連接埠。
- 開啟“Modbus client.exe”。

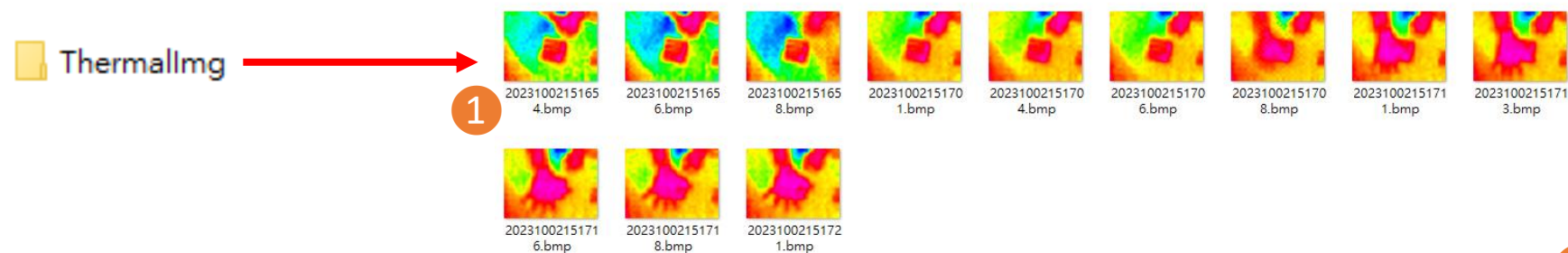
```
static string cmbPort = "COM4";  
static string cmbBaud = "115200";  
static string cmbParity = "None(0)";  
static string cmbDataBit = "8";  
static string cmbStopBit = "1";  
static int ID = 1;
```



Name	Date modified
Thermallmg	04/10/2023 09:40
x64	11/09/2023 16:57
x86	11/09/2023 16:57
EntityFramework.dll	17/04/2020 04:38
EntityFramework.SqlServer.dll	17/04/2020 04:38
EntityFramework.SqlServer.xml	17/04/2020 04:38
EntityFramework.xml	17/04/2020 04:38
irdata_icpdas.db	04/10/2023 09:55
log4net.dll	12/05/2020 11:55
Modbus Client.exe	04/10/2023 09:40
Modbus Client.exe.config	10/08/2023 10:19
Modbus Client.pdb	04/10/2023 09:40
Newtonsoft.Json.dll	17/03/2021 20:03

➤ 將 iSN-81x-MRTU 配置為 Modbus RTU 從端

- 接收到數據後會產生兩個檔案，一個是儲存數據的DB檔，一個是熱影像檔。



1 timestamp	2 ID	3 model	4 irdata	5 imgpath
2023-11-15 14:24:14	1	iSN-812-MRTU	26.0,26.0,26.8,2	D:\0_CODE\IR\Demo\M
2023-11-15 14:24:19	1	iSN-812-MRTU	26.9,26.1,27.1,2	D:\0_CODE\IR\Demo\M
2023-11-15 14:24:22	1	iSN-812-MRTU	25.6,26.6,26.4,2	D:\0_CODE\IR\Demo\M
2023-11-15 14:24:25	1	iSN-812-MRTU	26.3,26.5,26.9,2	D:\0_CODE\IR\Demo\M
2023-11-15 14:26:43	1	iSN-812-MRTU	24.3,24.7,25.0,2	D:\0_CODE\IR\Demo\M
2023-11-15 14:26:46	1	iSN-812-MRTU	24.1,25.3,25.2,2	D:\0_CODE\IR\Demo\M
2023-11-15 14:26:50	1	iSN-812-MRTU	25.1,25.3,24.8,2	D:\0_CODE\IR\Demo\M

- 1 → 取得資料的時間
- 2 → iSN-81x-MRTU的ID
- 3 → 型號
- 4 → IR data measured by iSN-81x-MRTU
- 5 → 熱影像的儲存路徑

➤ 修改DB檔名稱

- 如果你想要修改DB檔的名稱，開啟“Program.cs”後找到函式“func_irdata”然後編輯變數“dbname”。

```
public static void func_irdata(string jsondata)
{
    JsonTempData jsonObj = JsonConvert.DeserializeObject<JsonTempData>(jsondata);

    string dbname = "irdata_icpdas.db";
    string _connectionString = $"Data Source={dbname};
```

02

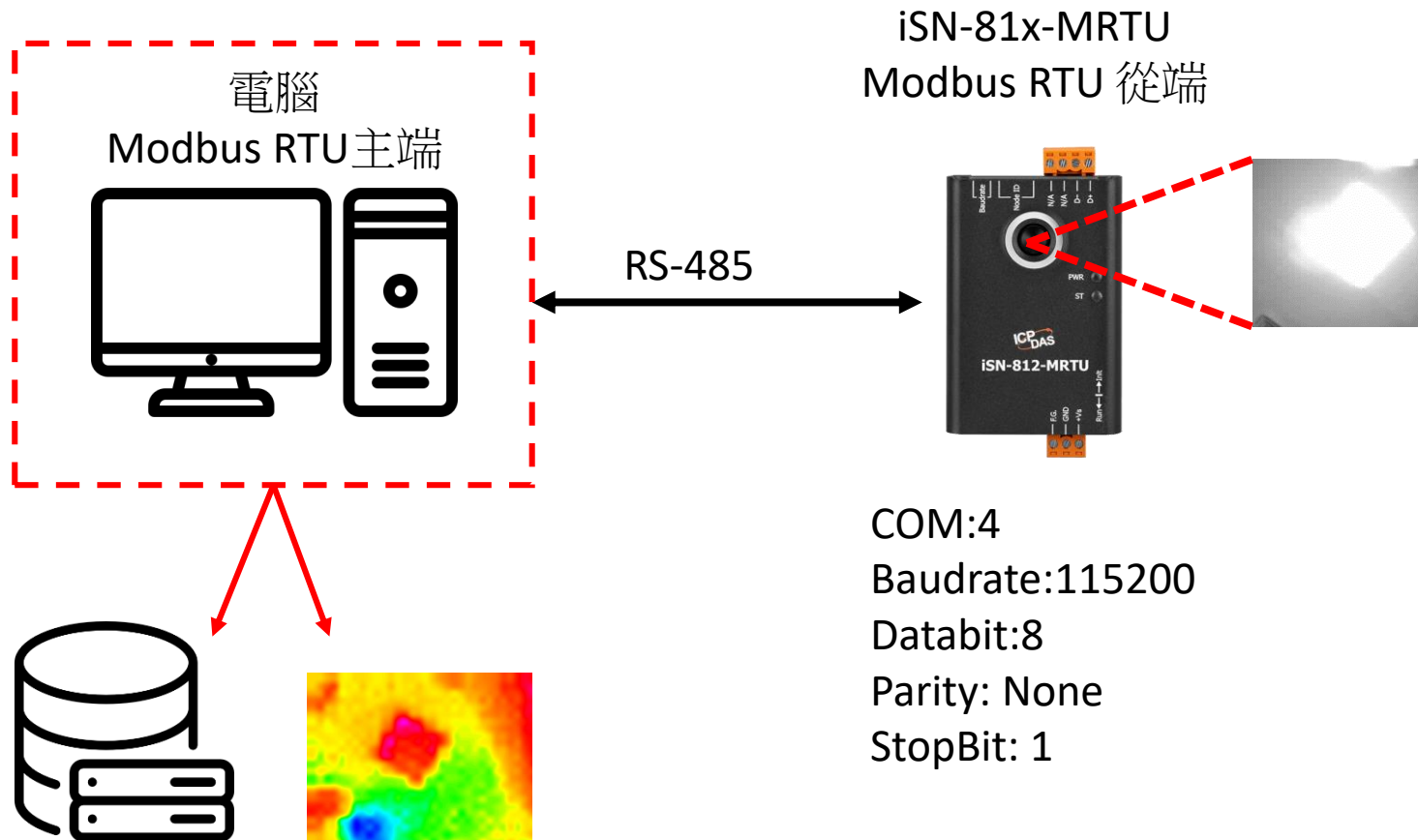
iSN-81x-MRTU ModbusRTU_Node.js

- 範例程式提供不同的程式語言給您參考，您可以透過範例程式取得以下數據：
 - 熱影像
 - 數據讀取時間
 - 型號
 - 紅外線數據
 - 熱影像的儲存路徑
- 範例程式使用SQLite儲存量測數據，您可以自行更改使用的資料庫，如MySQL、SQL Server等。

- 預先安裝

- `npm install Sqlite3`

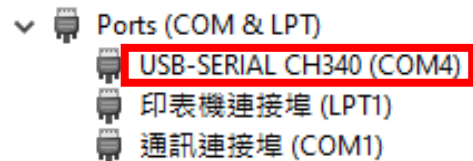
➤ 將 iSN-81x-MRTU 配置為 Modbus RTU 從端



➤ 將 iSN-81x-MRTU 配置為 Modbus RTU 從端

- 為了讓範例程式能夠連接到iSN-81x-MRTU，您需要修改在“modbus_client.js”中的變數“comport”為iSN-81x-MRTU的连接埠。
- 開啟“start.bat”

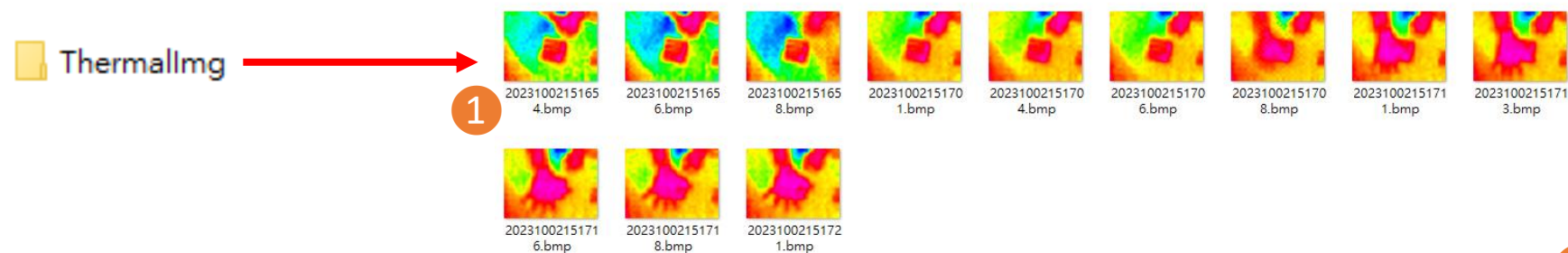
```
const comport = "COM4";
const options = {
  baudRate: 115200,
  dataBits: 8,
  stopBits: 1,
  parity: "none",
};
var ID = 1;
```



Name	Date modified
lib	11/09/2023 16:57
node_modules	11/09/2023 16:58
Demo_Modbus_NodeJs.pptx	06/10/2023 10:33
irdata_handler.js	14/08/2023 13:20
modbus_client.js	04/10/2023 10:21
package.json	09/08/2023 10:06
package-lock.json	09/08/2023 10:06
start.bat	08/08/2023 14:37

➤ 將 iSN-81x-MRTU 配置為 Modbus RTU 從端

- 接收到數據後會產生兩個檔案，一個是儲存數據的DB檔，一個是熱影像檔。



irdata_jcpdas.db

1 timestamp	2 ID	3 model	4 irdata	5 imgpath
2023-11-15 14:24:14	1	iSN-812-MRTU	26.0,26.0,26.8,2	D:\0_CODE\IR\Demo\M
2023-11-15 14:24:19	1	iSN-812-MRTU	26.9,26.1,27.1,2	D:\0_CODE\IR\Demo\M
2023-11-15 14:24:22	1	iSN-812-MRTU	25.6,26.6,26.4,2	D:\0_CODE\IR\Demo\M
2023-11-15 14:24:25	1	iSN-812-MRTU	26.3,26.5,26.9,2	D:\0_CODE\IR\Demo\M
2023-11-15 14:26:43	1	iSN-812-MRTU	24.3,24.7,25.0,2	D:\0_CODE\IR\Demo\M
2023-11-15 14:26:46	1	iSN-812-MRTU	24.1,25.3,25.2,2	D:\0_CODE\IR\Demo\M
2023-11-15 14:26:50	1	iSN-812-MRTU	25.1,25.3,24.8,2	D:\0_CODE\IR\Demo\M

- 1 → 取得資料的時間
- 2 → iSN-81x-MRTU的ID
- 3 → 型號
- 4 → IR data measured by iSN-81x-MRTU
- 5 → 熱影像的儲存路徑

➤ 修改DB檔名稱

- 如果你想要修改DB檔的名稱，開啟“irdata_handler.js”後找到變數“dbPath”然後編輯它。

```
const dbPath = './irdata_icpdas.db';
```

03

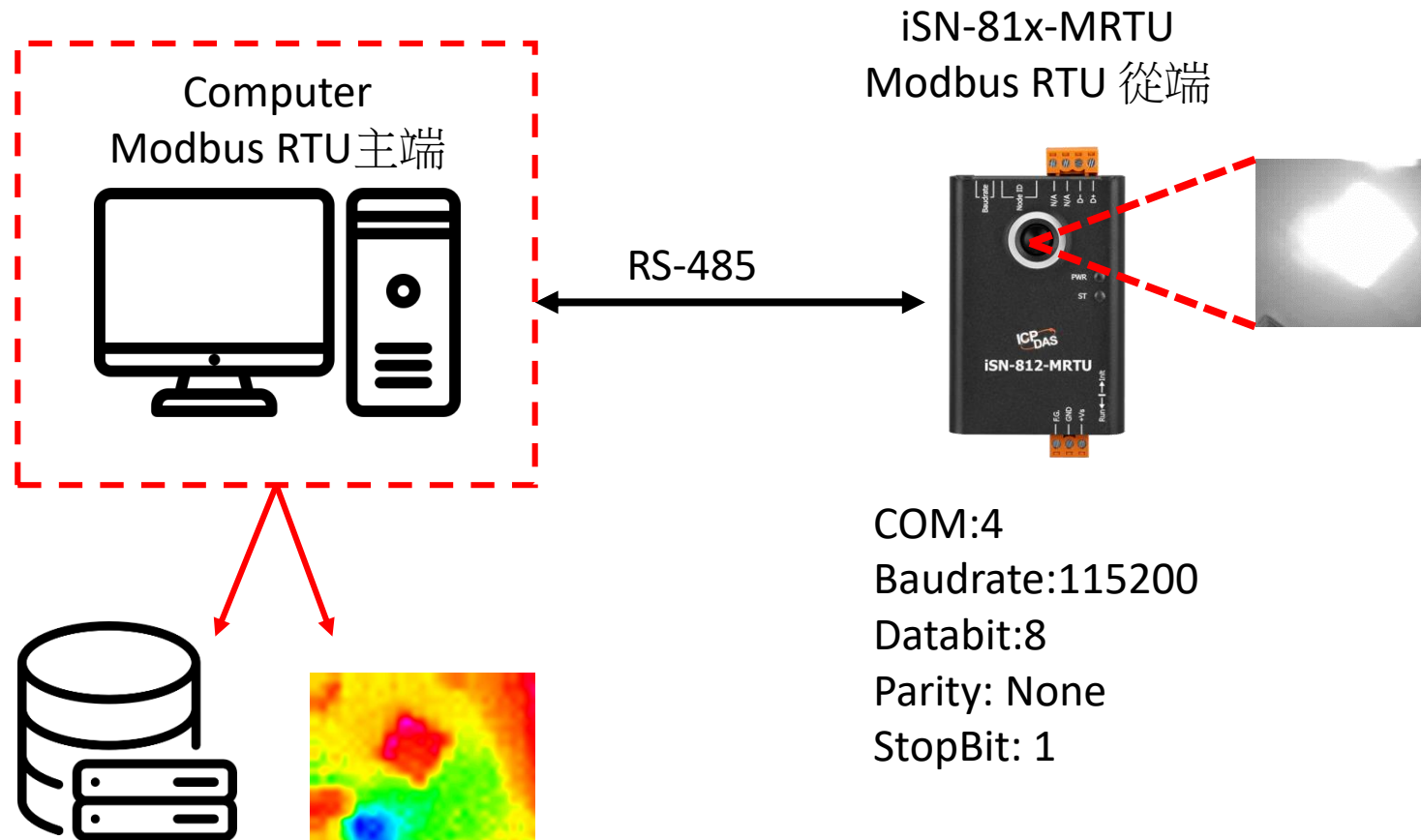
iSN-81x-MRTU ModbusRTU_Python

- 範例程式提供不同的程式語言給您參考，您可以透過範例程式取得以下數據：
 - 熱影像
 - 數據讀取時間
 - 型號
 - 紅外線數據
 - 熱影像的儲存路徑
- 範例程式使用SQLite儲存量測數據，您可以自行更改使用的資料庫，如MySQL、SQL Server等。

- 預先安裝

- pip install pymodbus
- pip install numpy
- pip install opencv-python

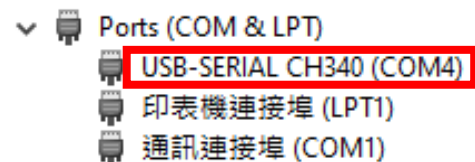
➤ 將 iSN-81x-MRTU 配置為 Modbus RTU 從端



➤ 將 iSN-81x-MRTU 配置為 Modbus RTU 從端

- 為了讓範例程式能夠連接到iSN-81x-MRTU，您需要修改在“modbus_client.py”中的變數“port”為iSN-81x-MRTU的连接埠。
- 開啟“start.bat”

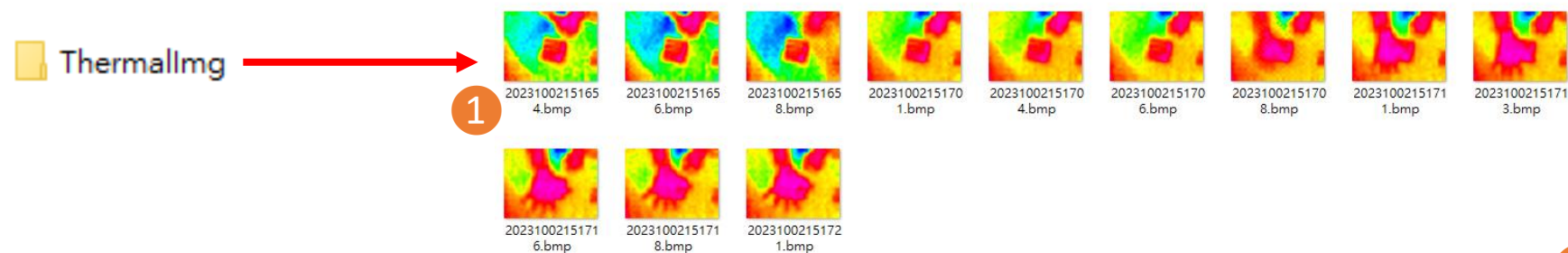
```
client = ModbusClient(  
    method='rtu',  
    port='COM4',  
    baudrate=115200,  
    stopbits=1,  
    bytesize=8,  
    parity='N'  
)  
slave_address = 1
```



Name	Date modified
.vs	23/09/2023 16:16
__pycache__	04/10/2023 10:26
lib	11/09/2023 16:58
Demo_Modbus_Python.pptx	04/10/2023 10:42
irdata_handler.py	14/08/2023 13:21
modbus_client.py	04/10/2023 10:34
Pre-Install.txt	09/08/2023 12:06
start.bat	09/08/2023 10:12

➤ 將 iSN-81x-MRTU 配置為 Modbus RTU 從端

- 接收到數據後會產生兩個檔案，一個是儲存數據的DB檔，一個是熱影像檔。



1 timestamp	2 ID	3 model	4 irdata	5 imgpath
2023-11-15 14:24:14	1	iSN-812-MRTU	26.0,26.0,26.8,2	D:\0_CODE\IR\Demo\M
2023-11-15 14:24:19	1	iSN-812-MRTU	26.9,26.1,27.1,2	D:\0_CODE\IR\Demo\M
2023-11-15 14:24:22	1	iSN-812-MRTU	25.6,26.6,26.4,2	D:\0_CODE\IR\Demo\M
2023-11-15 14:24:25	1	iSN-812-MRTU	26.3,26.5,26.9,2	D:\0_CODE\IR\Demo\M
2023-11-15 14:26:43	1	iSN-812-MRTU	24.3,24.7,25.0,2	D:\0_CODE\IR\Demo\M
2023-11-15 14:26:46	1	iSN-812-MRTU	24.1,25.3,25.2,2	D:\0_CODE\IR\Demo\M
2023-11-15 14:26:50	1	iSN-812-MRTU	25.1,25.3,24.8,2	D:\0_CODE\IR\Demo\M

- 1 → 取得資料的時間
- 2 → iSN-81x-MRTU的ID
- 3 → 型號
- 4 → IR data measured by iSN-81x-MRTU
- 5 → 熱影像的儲存路徑

➤ 修改DB檔名稱

- 如果你想要修改DB檔的名稱，開啟“irdata_handler.py”後找到變數“conn”然後編輯它。

```
conn = sqlite3.connect('irdata_icpdas.db')
```

04

iSN-81x-MTCP ModbusTCP_Csharp

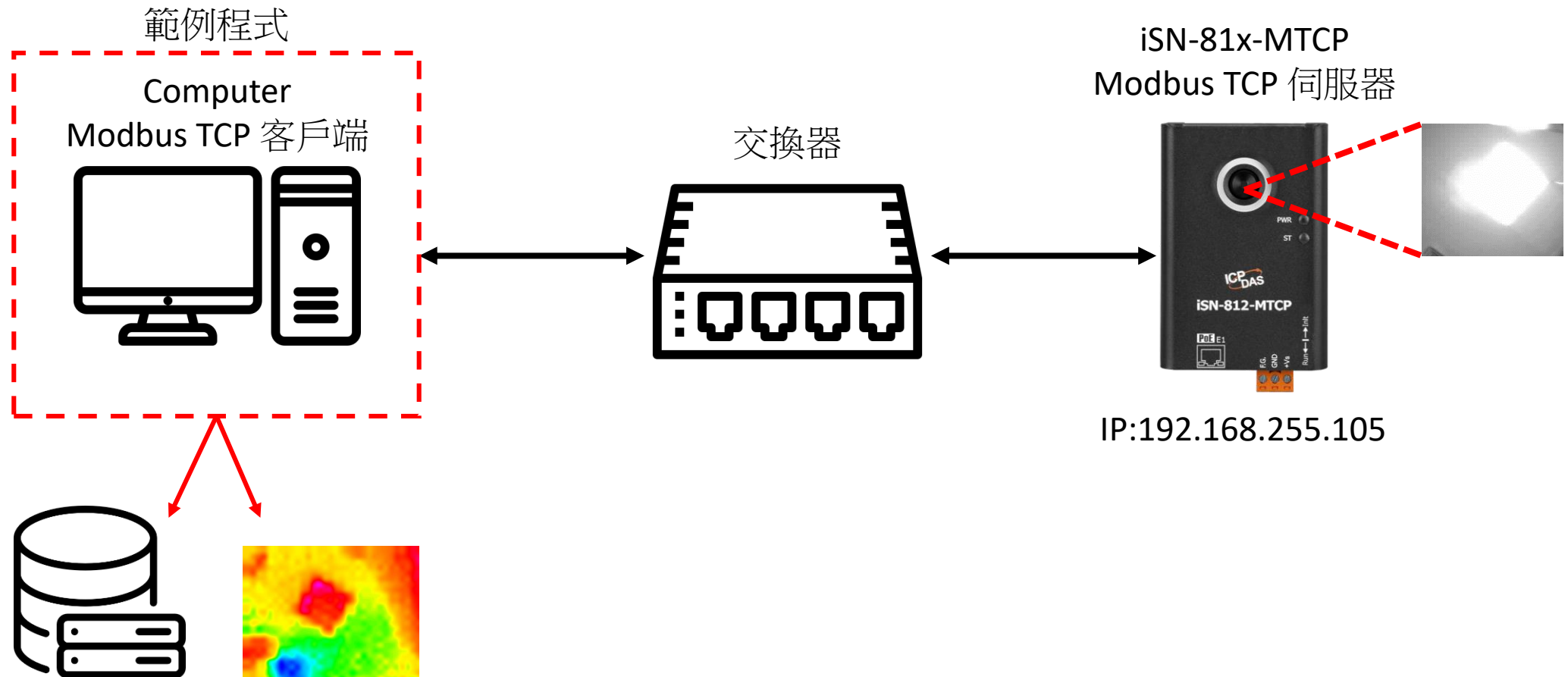
- 範例程式提供不同的程式語言給您參考，您可以透過範例程式取得以下數據：
 - 熱影像
 - 數據讀取時間
 - iSN-81x-MTCP的MAC地址
 - 型號
 - 紅外線數據
 - 熱影像的儲存路徑
- 範例程式使用SQLite儲存量測數據，您可以自行更改使用的資料庫，如MySQL、SQL Server等。

- 預先安裝

- Install-Package System.Data.SQLite

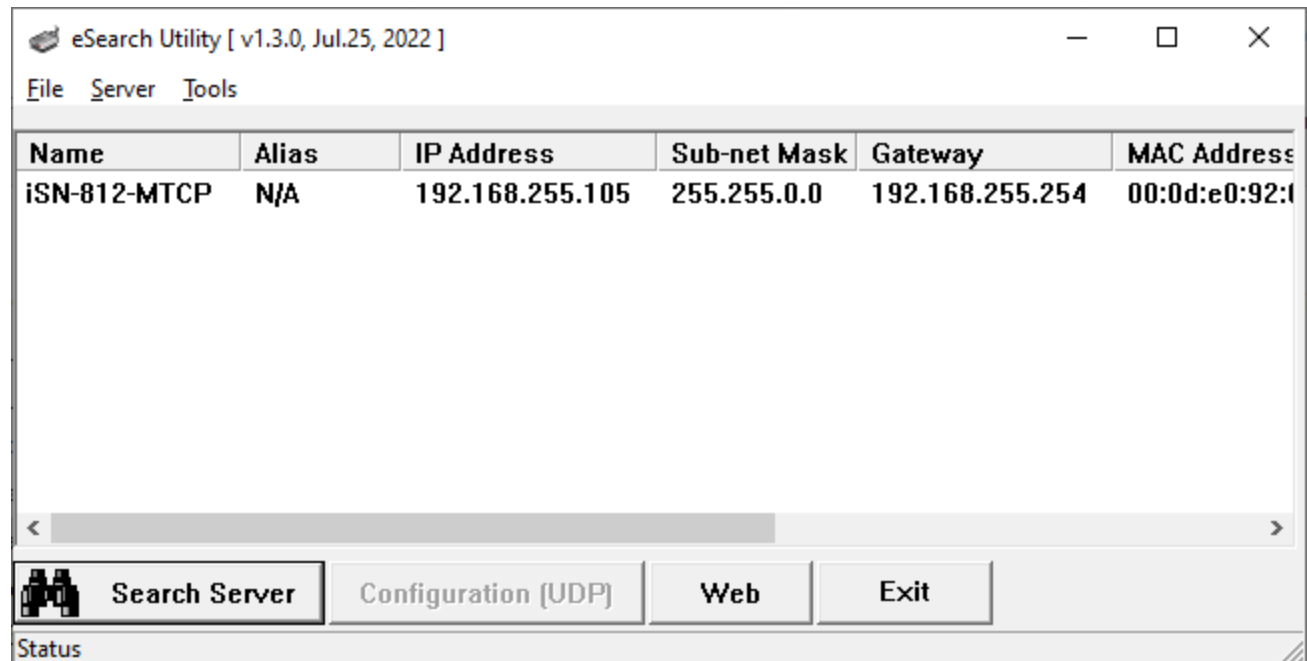
- Install-Package Newtonsoft.Json -Version 13.0.1

➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器



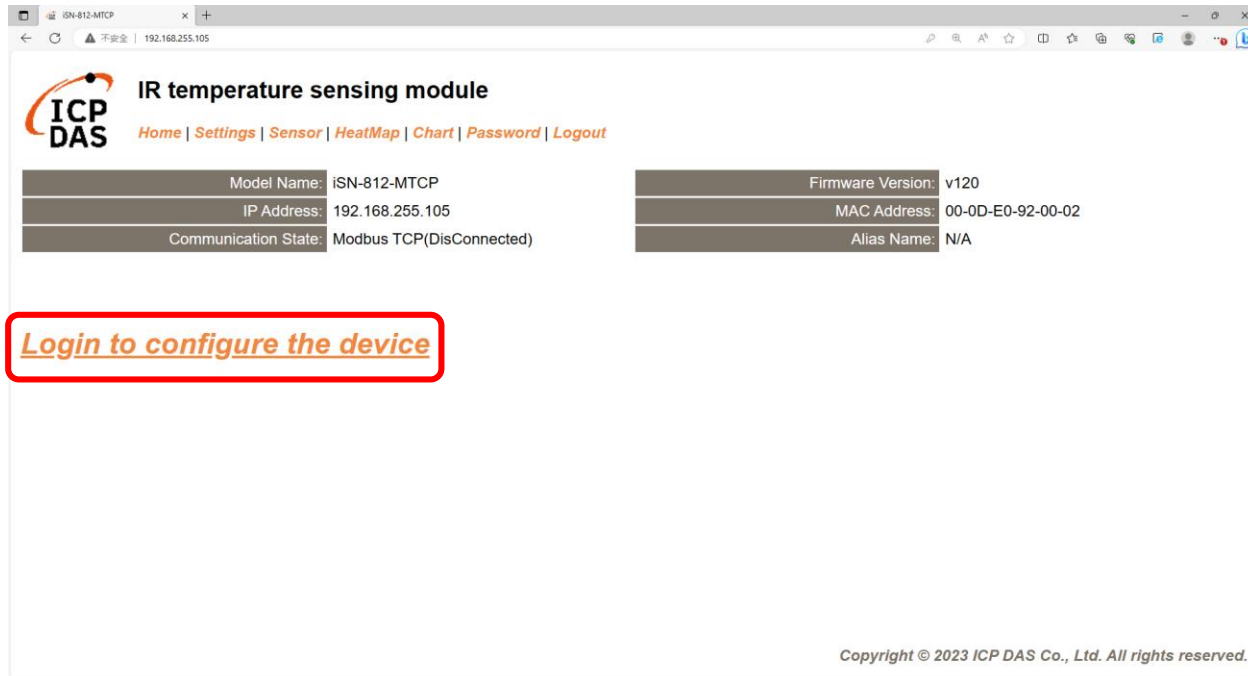
➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

- 使用eSearch來搜尋iSN-81x-MTCP
- 開啟iSN-81x-MTCP的網站



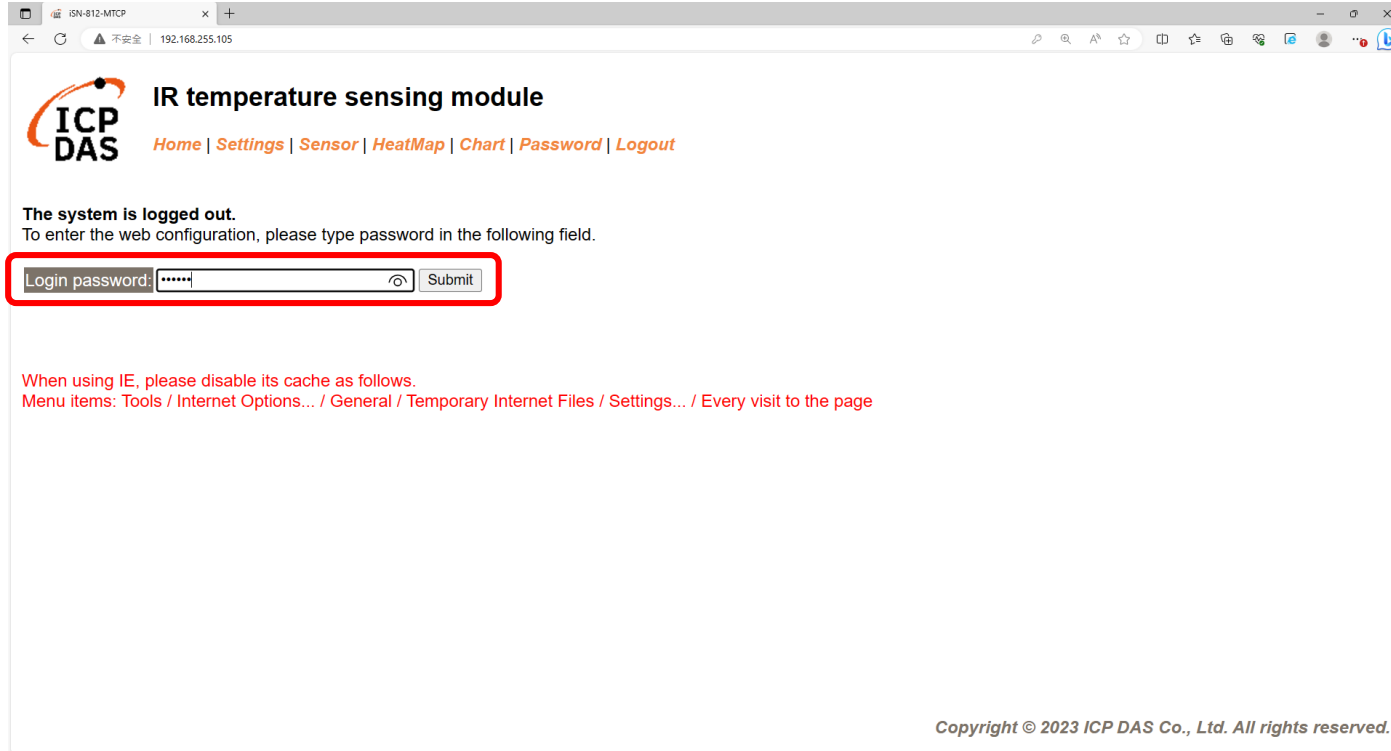
➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

• 點擊”Login to configure the device”來登入



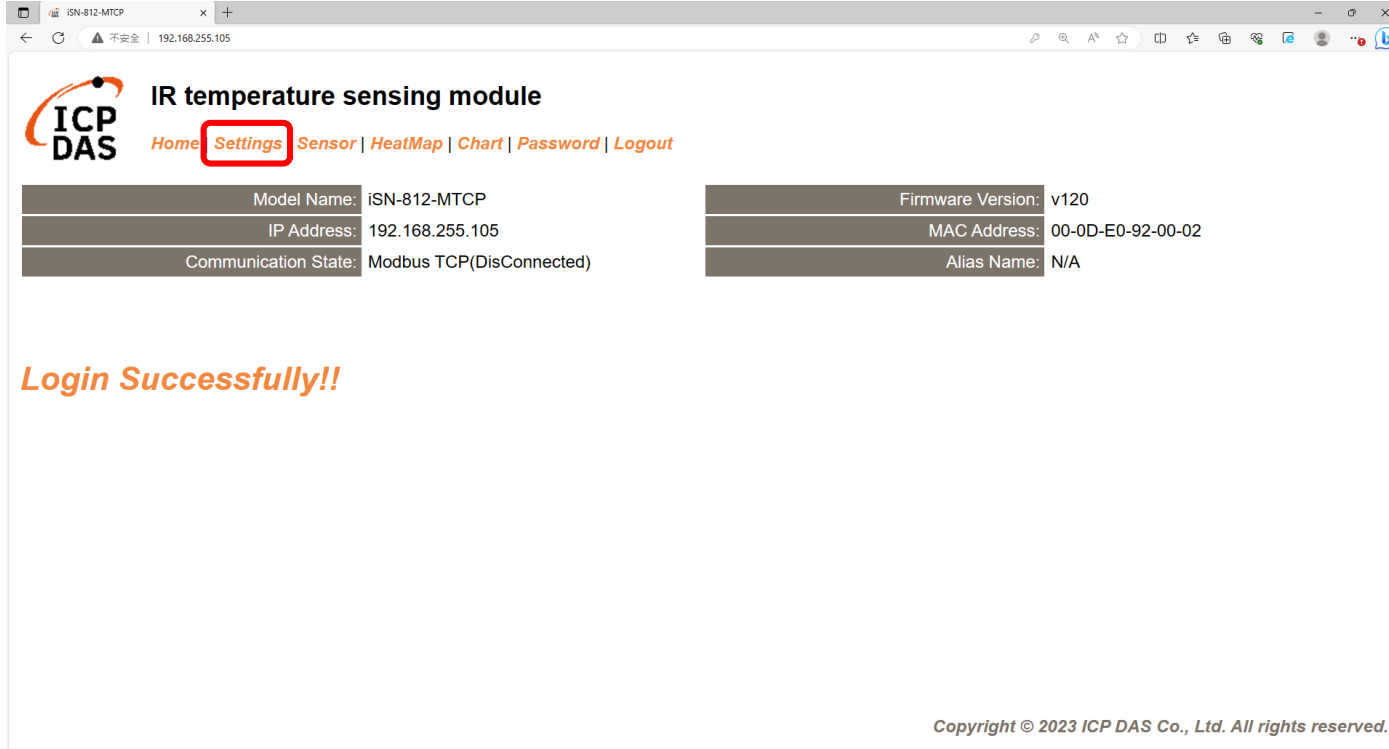
➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

- 登入(預設密碼: admin)



➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

- 點擊“Settings”來設定通訊模式



ICP DAS IR temperature sensing module

[Home](#) **Settings** [Sensor](#) [HeatMap](#) [Chart](#) [Password](#) [Logout](#)

Model Name:	iSN-812-MTCP	Firmware Version:	v120
IP Address:	192.168.255.105	MAC Address:	00-0D-E0-92-00-02
Communication State:	Modbus TCP(DisConnected)	Alias Name:	N/A

Login Successfully!!

Copyright © 2023 ICP DAS Co., Ltd. All rights reserved.

➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

- 將通訊模式設定為“Modbus TCP”

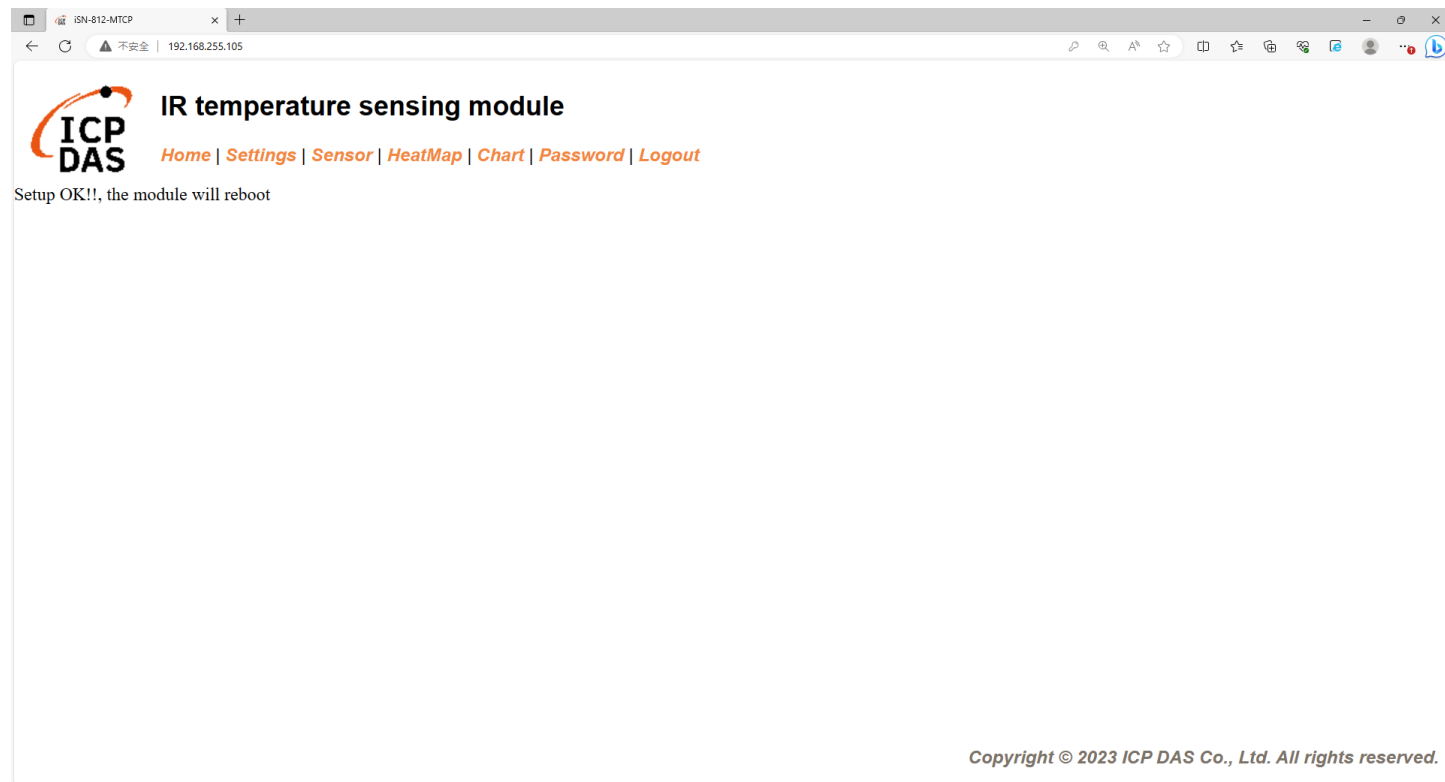
The screenshot shows the web interface for the ICP DAS IR temperature sensing module. The page title is "IR temperature sensing module" and the URL is "192.168.255.105". The interface is divided into several sections:

- Device IP Settings:** A table with columns for "Current" and "Updated" values, and a "Comment" column. The "Address Type" is set to "Static IP". The "Static IP Address" is 192.168.255.105, "Subnet Mask" is 255.255.0.0, and "Gateway" is 192.168.0.254. A "Update Settings" button is located below the table.
- Communication Settings:** A table with columns for "Communication", "Current", "Updated", and "Comment". The "Mode" is set to "Modbus TCP". The "Updated" dropdown menu is open, showing options: "Modbus TCP", "Modbus TCP", "RESTful API", and "MQTT client". The "Comment" column contains "Modbus TCP(Default), RESTful API or MQTT".
- General Settings:** A table with columns for "Network", "Current", "Updated", and "Comment". The "Web Auto-logout" is set to 10. The "Misc." section has an "Alias Name" set to "N/A".

Copyright © 2023 ICP DAS Co., Ltd. All rights reserved.

➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

• 等待重新啟動



➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

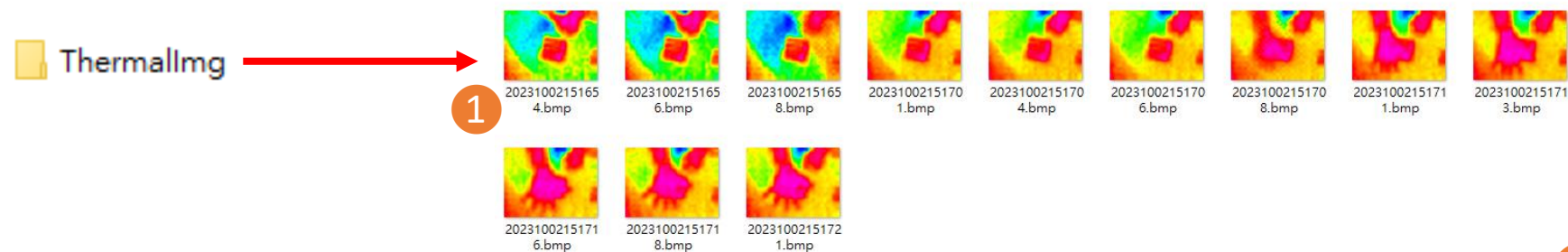
- 為了讓範例程式能夠連接到iSN-81x-MTCP，您需要修改在“Program.cs”中的變數“serverIP”為iSN-81x-MTCP的IP。
- iSN-81x-MTCP的IP為192.168.255.109
- 開啟“Modbus client.exe”

```
static string serverIP = "192.168.255.109";
```

Name	Date modified
Thermallmg	04/10/2023 09:40
x64	11/09/2023 16:57
x86	11/09/2023 16:57
EntityFramework.dll	17/04/2020 04:38
EntityFramework.SqlServer.dll	17/04/2020 04:38
EntityFramework.SqlServer.xml	17/04/2020 04:38
EntityFramework.xml	17/04/2020 04:38
irdata_icpdas.db	04/10/2023 09:55
log4net.dll	12/05/2020 11:55
Modbus Client.exe	04/10/2023 09:40
Modbus Client.exe.config	10/08/2023 10:19
Modbus Client.pdb	04/10/2023 09:40
Newtonsoft.Json.dll	17/03/2021 20:03

➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

- 接收到數據後會產生兩個檔案，一個是儲存數據的DB檔，一個是熱影像檔。



irdata_icpdas.db

1	2	3	4	5
timestamp	macno	model	irdata	imgpath
2023-10-02 15:16:54	00-0D-E0-92-00-02	iSN-812-MTCP	30.0,30.2,31 D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:16:56	00-0D-E0-92-00-02	iSN-812-MTCP	30.2,30.5,31 D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:16:58	00-0D-E0-92-00-02	iSN-812-MTCP	31.1,31.9,32 D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:17:01	00-0D-E0-92-00-02	iSN-812-MTCP	31.2,30.9,32 D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:17:04	00-0D-E0-92-00-02	iSN-812-MTCP	30.1,31.2,31 D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:17:06	00-0D-E0-92-00-02	iSN-812-MTCP	30.9,31.6,31 D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:17:08	00-0D-E0-92-00-02	iSN-812-MTCP	30.8,30.7,31 D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:17:11	00-0D-E0-92-00-02	iSN-812-MTCP	30.7,30.4,31 D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:17:13	00-0D-E0-92-00-02	iSN-812-MTCP	30.6,32.0,32 D:\0_CODE\IR\Demo\RESTfu	

- 1 → 取得資料的時間
- 2 → iSN-81x-MTCP的MAC Address
- 3 → 型號
- 4 → iSN-81x-MTCP量測的IR數據
- 5 → 熱影像的儲存路徑

➤ 修改DB檔名稱

- 如果你想要修改DB檔的名稱，開啟“Program.cs”後找到函式“func_irdata”然後編輯變數“dbname”。

```
public static void func_irdata(string jsondata)
{
    JsonTempData jsonObj = JsonConvert.DeserializeObject<JsonTempData>(jsondata);

    string dbname = "irdata_icpdas.db";
    string _connectionString = $"Data Source={dbname}";
```


05

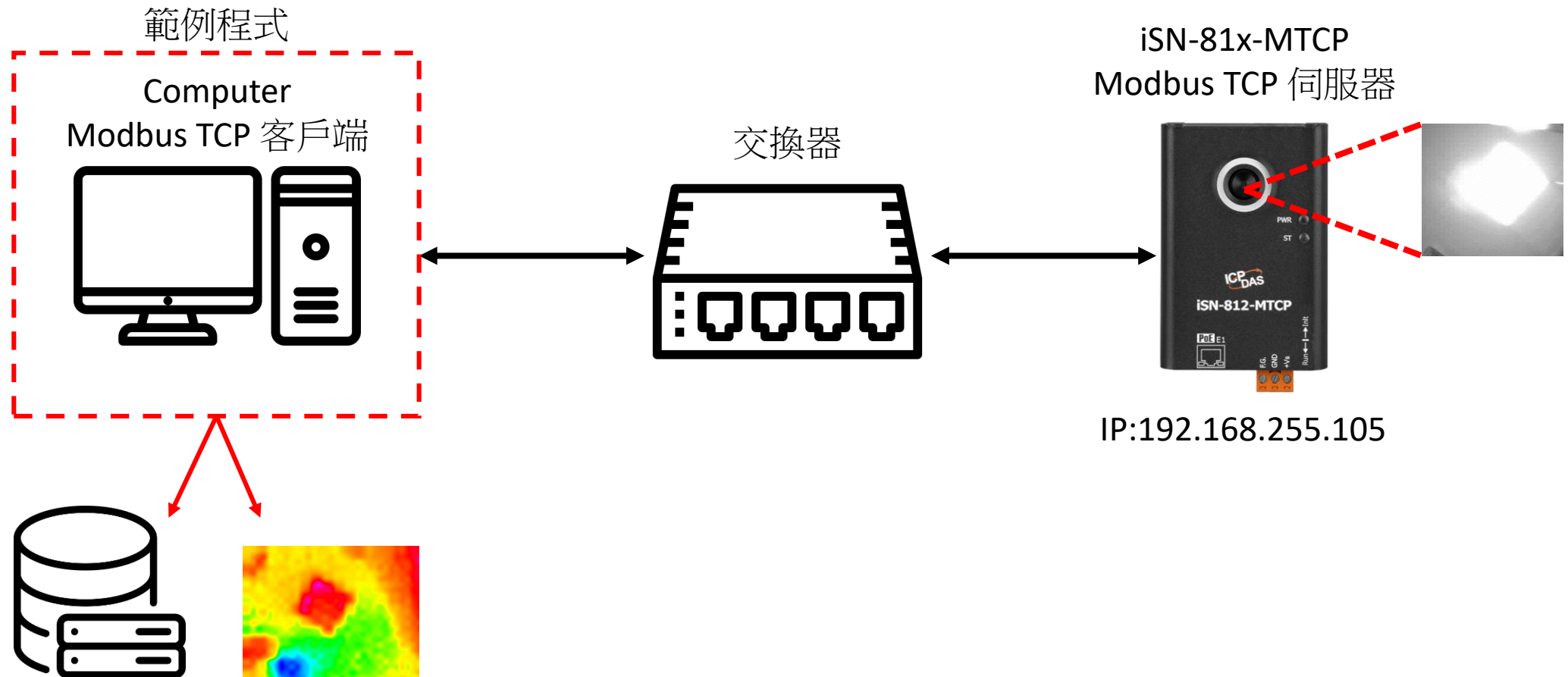
iSN-81x-MTCP ModbusTCP_Node.js

- 範例程式提供不同的程式語言給您參考，您可以透過範例程式取得以下數據：
 - 熱影像
 - 數據讀取時間
 - iSN-81x-MTCP的MAC地址
 - 型號
 - 紅外線數據
 - 熱影像的儲存路徑
- 範例程式使用SQLite儲存量測數據，您可以自行更改使用的資料庫，如MySQL、SQL Server等。

- 預先安裝

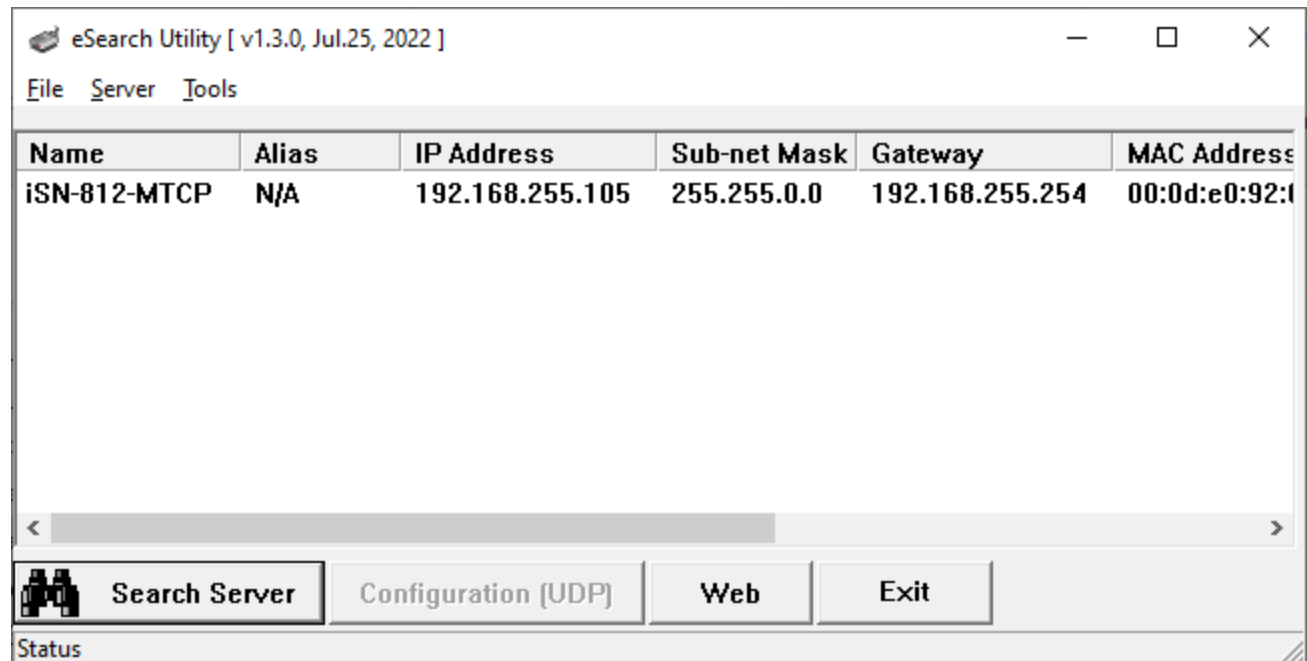
- `npm install Sqlite3`

➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器



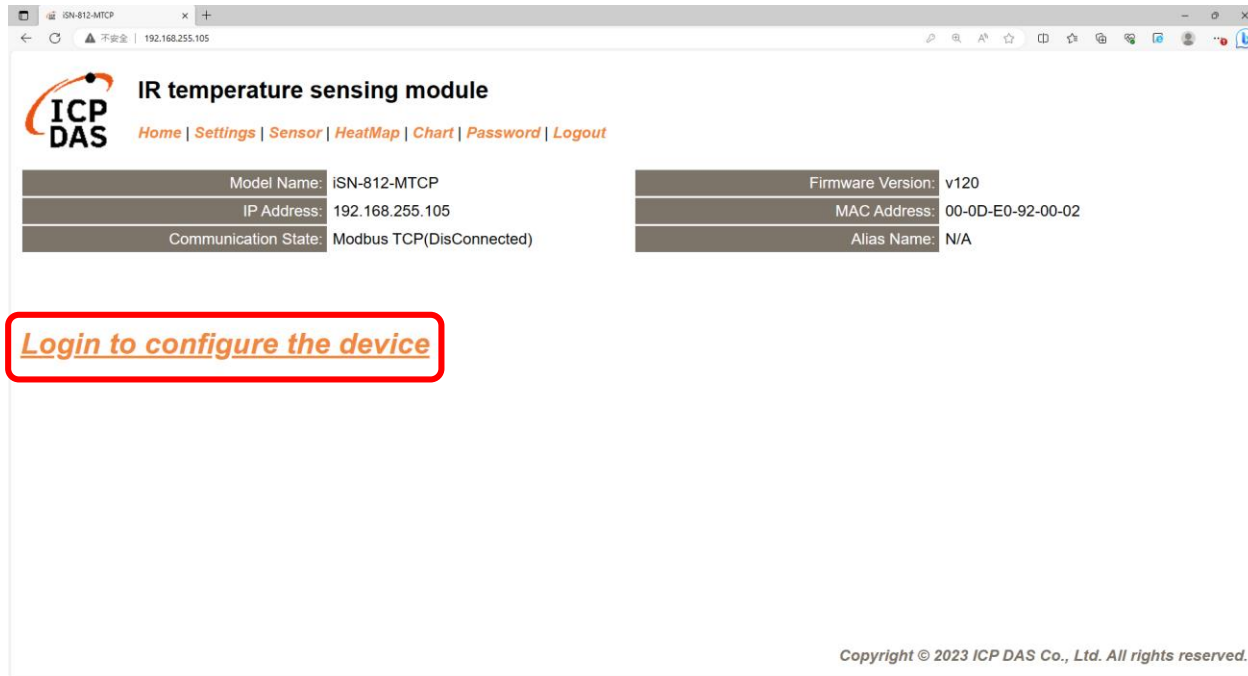
➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

- 使用eSearch來搜尋iSN-81x-MTCP
- 開啟iSN-81x-MTCP的網站



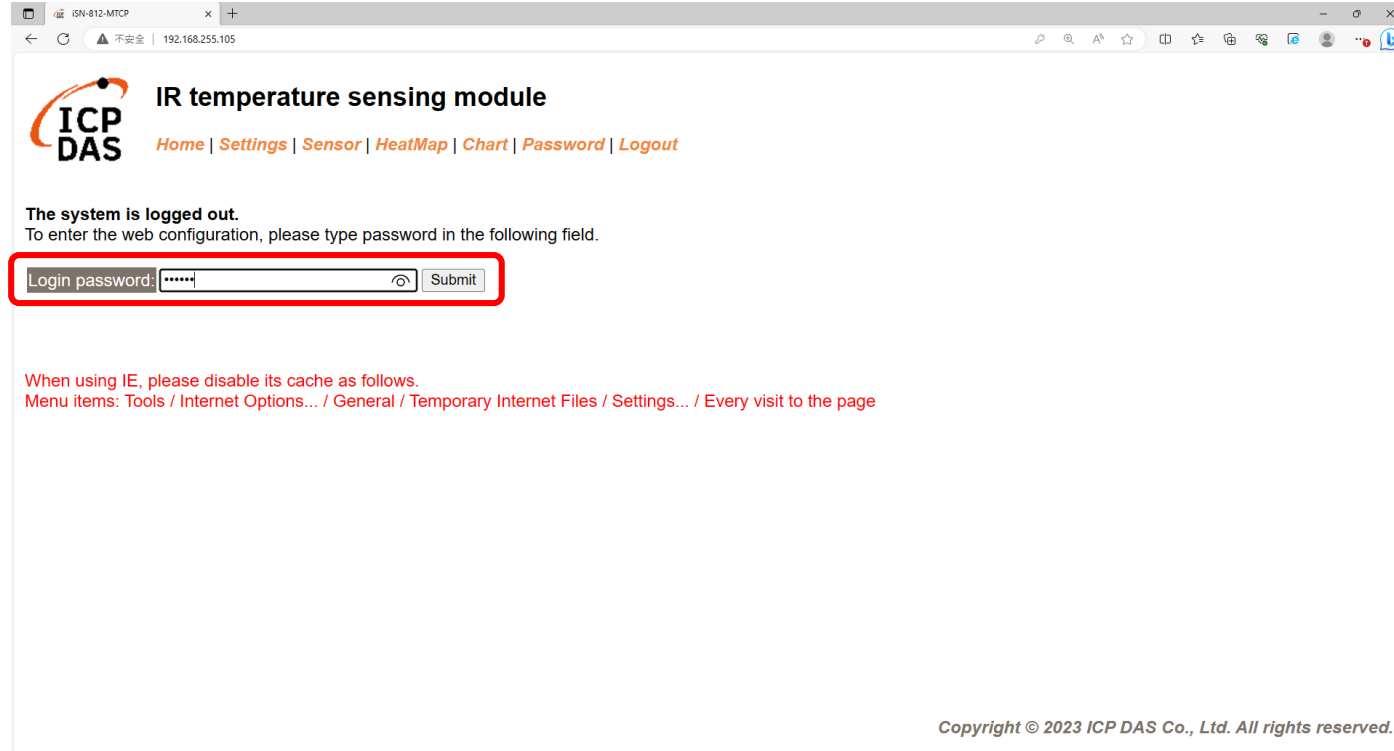
➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

• 點擊”Login to configure the device”來登入



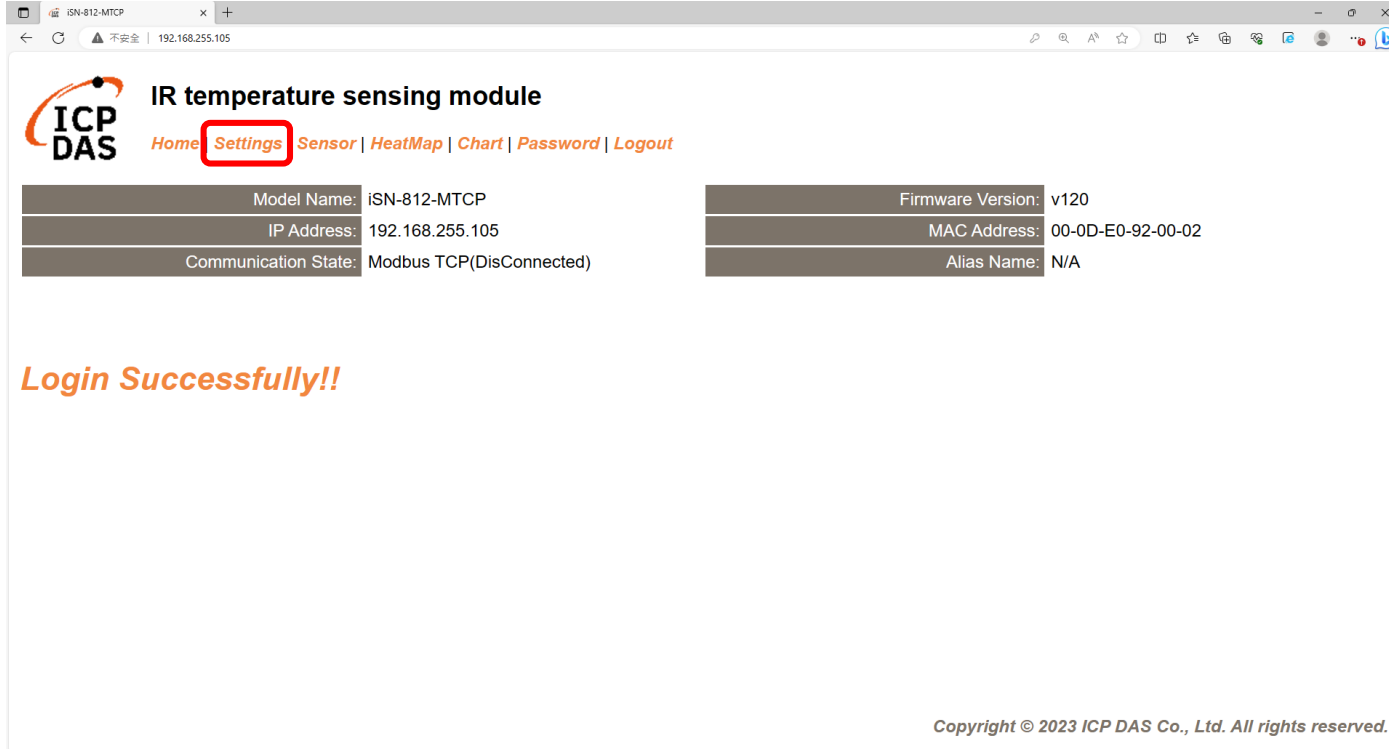
➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

- 登入(預設密碼: admin)



➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

- 點擊“Settings”來設定通訊模式



ICP DAS IR temperature sensing module

Home **Settings** Sensor | HeatMap | Chart | Password | Logout

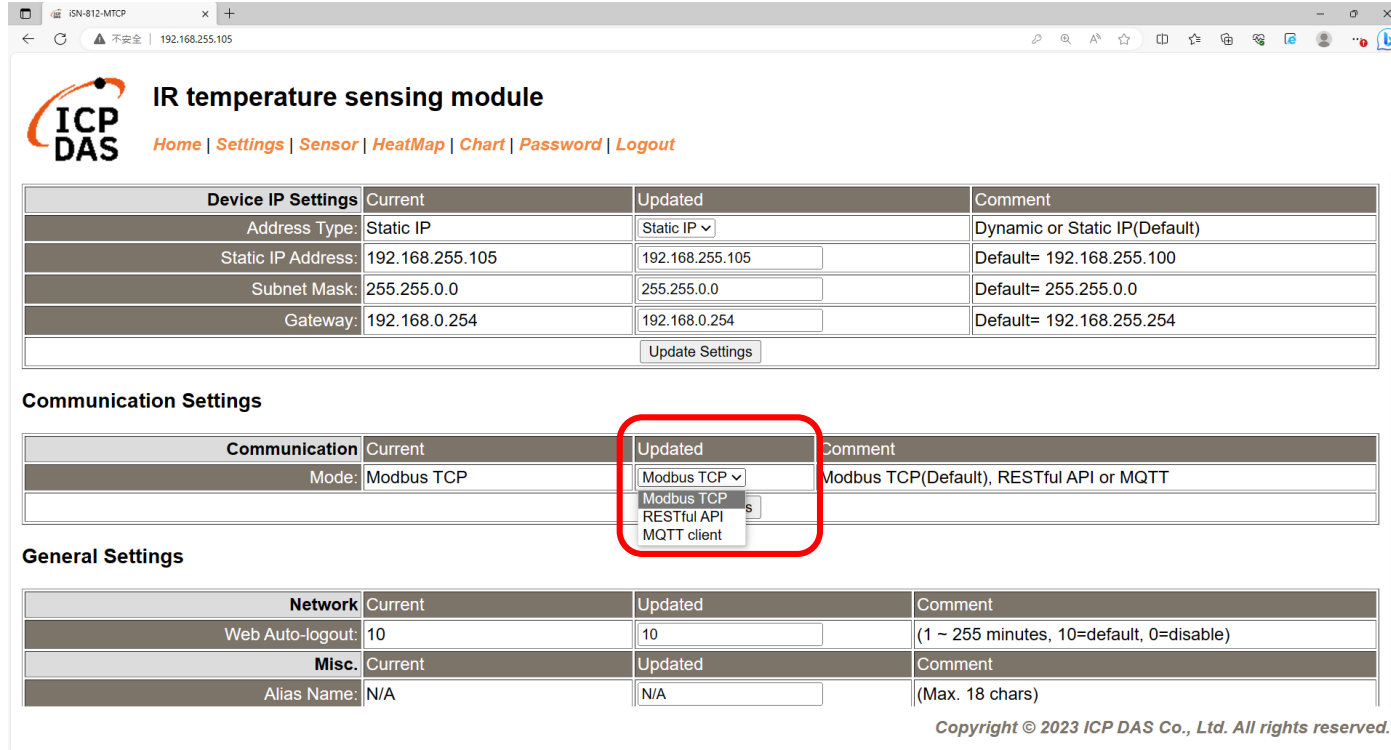
Model Name:	iSN-812-MTCP	Firmware Version:	v120
IP Address:	192.168.255.105	MAC Address:	00-0D-E0-92-00-02
Communication State:	Modbus TCP(DisConnected)	Alias Name:	N/A

Login Successfully!!

Copyright © 2023 ICP DAS Co., Ltd. All rights reserved.

➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

- 將通訊模式設定為“Modbus TCP”



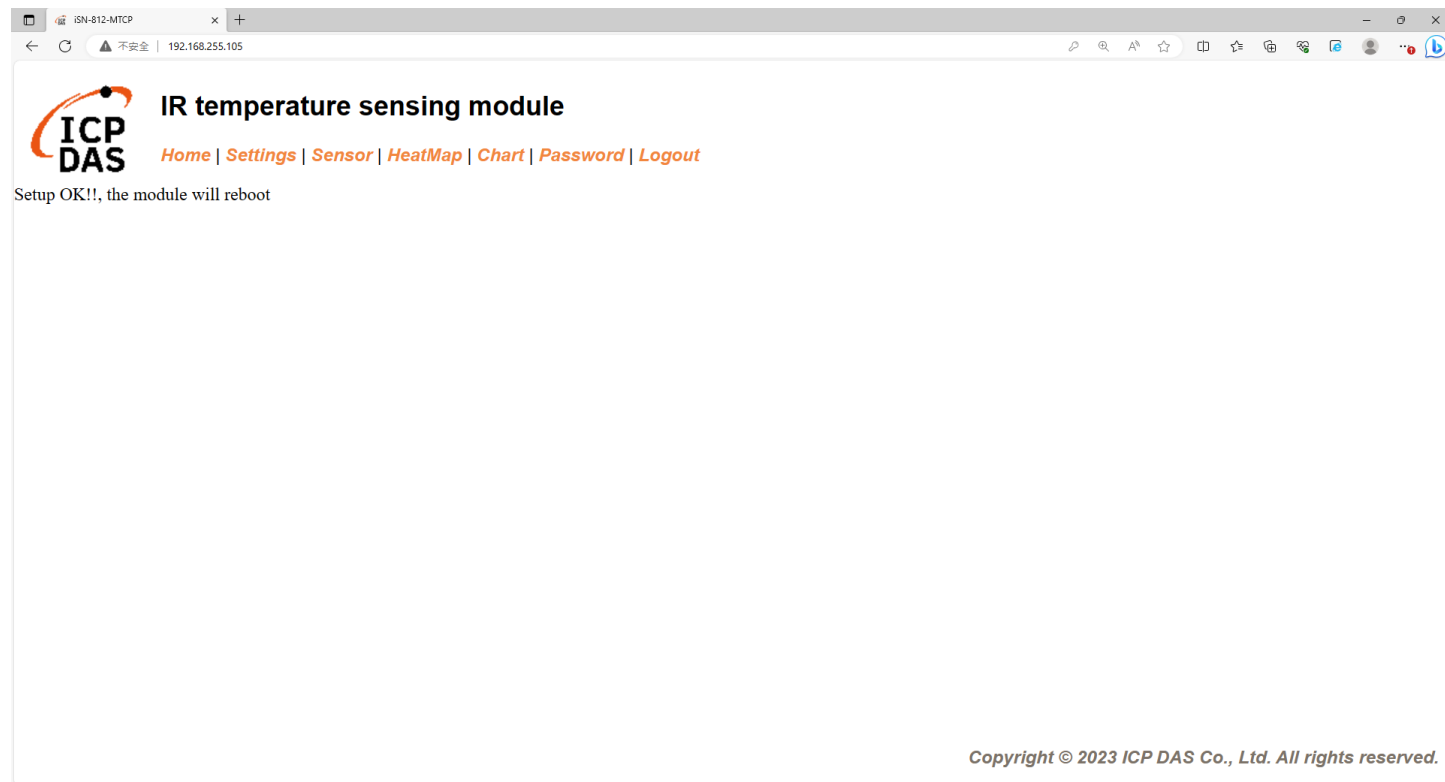
The screenshot shows the web interface for an ICP DAS IR temperature sensing module. The page title is "IR temperature sensing module" and the URL is "192.168.255.105". The interface is divided into several sections:

- Device IP Settings:** A table with columns for "Current" and "Updated" values, and a "Comment" column. The "Address Type" is set to "Static IP". The "Static IP Address" is 192.168.255.105, "Subnet Mask" is 255.255.0.0, and "Gateway" is 192.168.0.254. A "Update Settings" button is located below the table.
- Communication Settings:** A table with columns for "Communication", "Current", "Updated", and "Comment". The "Mode" is set to "Modbus TCP". The "Updated" dropdown menu is open, showing options: "Modbus TCP", "Modbus TCP", "RESTful API", and "MQTT client". The "Comment" column contains "Modbus TCP(Default), RESTful API or MQTT".
- General Settings:** A table with columns for "Network", "Current", "Updated", and "Comment". The "Web Auto-logout" is set to 10. The "Misc." section has an "Alias Name" set to "N/A".

Copyright © 2023 ICP DAS Co., Ltd. All rights reserved.

➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

• 等待重新啟動



➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

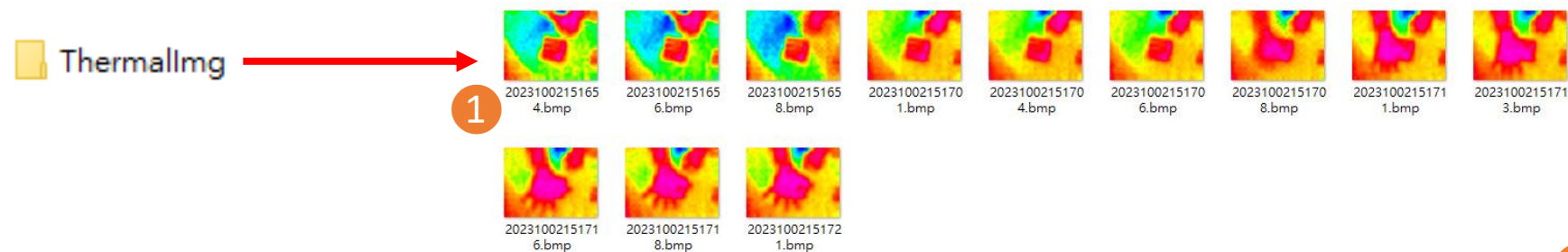
- 為了讓範例程式能夠連接到iSN-81x-MTCP ，您需要修改在“modbus_client.js”中的變數“serverIP”為iSN-81x-MTCP的IP。
- iSN-81x-MTCP的IP為192.168.255.109
- 開啟“start.bat”

```
const serverIP = "192.168.255.109";
```

Name	Date modified
lib	11/09/2023 16:57
node_modules	11/09/2023 16:58
Demo_Modbus_NodeJs.pptx	06/10/2023 10:33
irdata_handler.js	14/08/2023 13:20
modbus_client.js	04/10/2023 10:21
package.json	09/08/2023 10:06
package-lock.json	09/08/2023 10:06
start.bat	08/08/2023 14:37

➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

- 接收到數據後會產生兩個檔案，一個是儲存數據的DB檔，一個是熱影像檔。



1 timestamp	2 macno	3 model	4 irdata	5 imgpath
2023-10-02 15:16:54	00-0D-E0-92-00-02	iSN-812-MTCP	30.0,30.2,31D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:16:56	00-0D-E0-92-00-02	iSN-812-MTCP	30.2,30.5,31D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:16:58	00-0D-E0-92-00-02	iSN-812-MTCP	31.1,31.9,32D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:17:01	00-0D-E0-92-00-02	iSN-812-MTCP	31.2,30.9,32D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:17:04	00-0D-E0-92-00-02	iSN-812-MTCP	30.1,31.2,31D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:17:06	00-0D-E0-92-00-02	iSN-812-MTCP	30.9,31.6,31D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:17:08	00-0D-E0-92-00-02	iSN-812-MTCP	30.8,30.7,31D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:17:11	00-0D-E0-92-00-02	iSN-812-MTCP	30.7,30.4,31D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:17:13	00-0D-E0-92-00-02	iSN-812-MTCP	30.6,32.0,32D:\0_CODE\IR\Demo\RESTfu	

- 1 → 取得資料的時間
- 2 → iSN-81x-MTCP的MAC Address
- 3 → 型號
- 4 → iSN-81x-MTCP量測的IR數據
- 5 → 熱影像的儲存路徑

➤ 修改DB檔名稱

- 如果你想要修改DB檔的名稱，開啟“irdata_handler.js”後找到變數“dbPath”然後編輯它。

```
const dbPath = './irdata_icpdas.db';
```

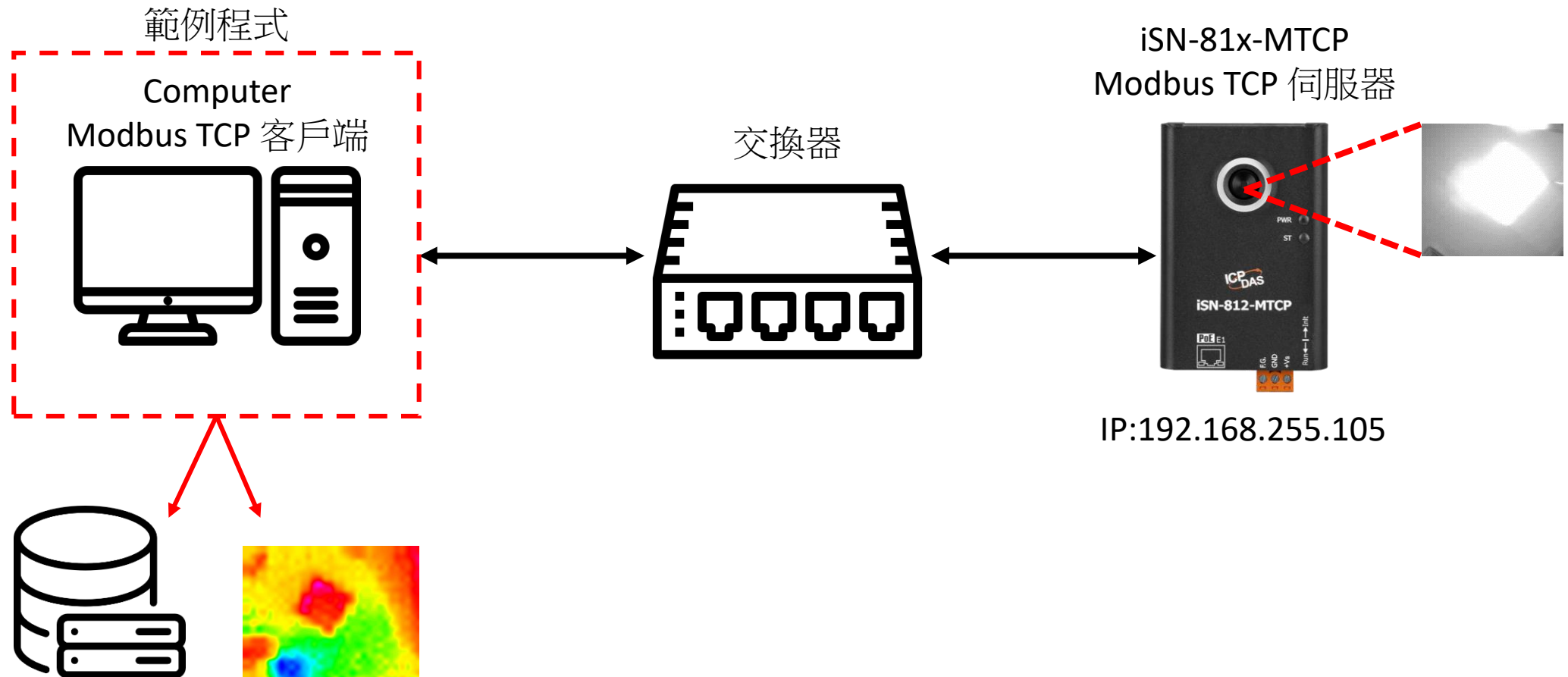
06

iSN-81x-MTCP ModbusTCP_Python

- 範例程式提供不同的程式語言給您參考，您可以透過範例程式取得以下數據：
 - 熱影像
 - 數據讀取時間
 - iSN-81x-MTCP的MAC地址
 - 型號
 - 紅外線數據
 - 熱影像的儲存路徑
- 範例程式使用SQLite儲存量測數據，您可以自行更改使用的資料庫，如MySQL、SQL Server等。

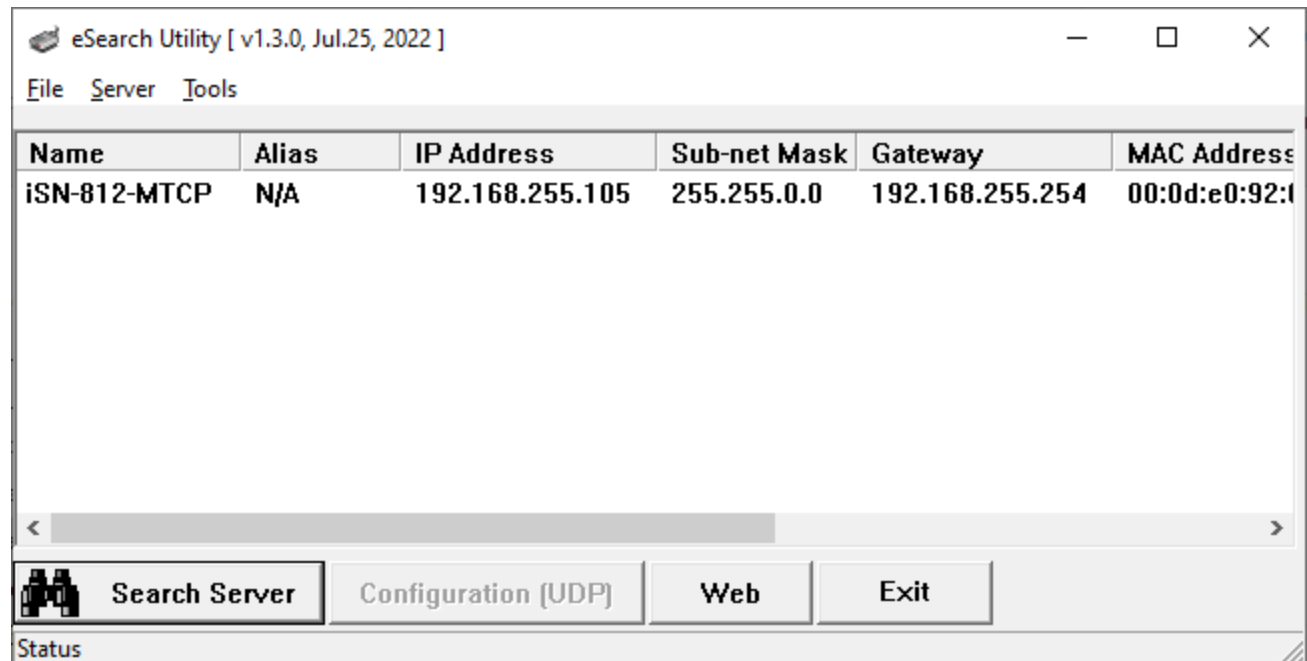
- 預先安裝
 - pip install pymodbus
 - pip install opencv-python
 - pip install numpy

➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器



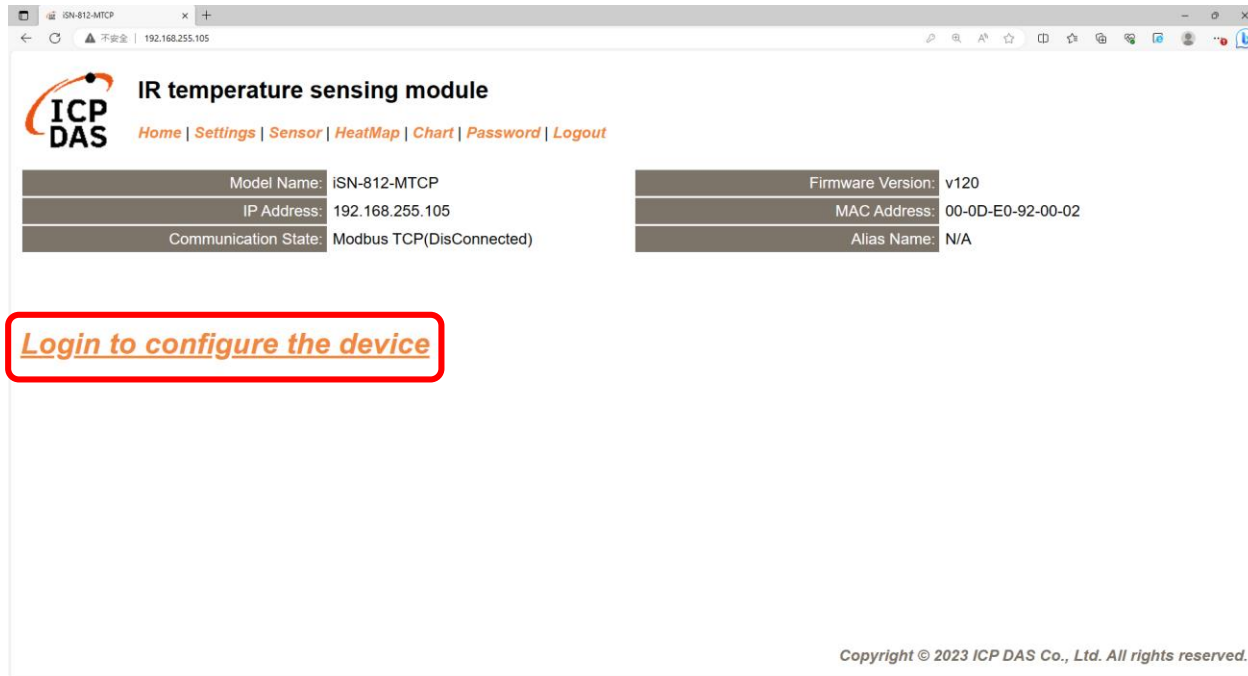
➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

- 使用eSearch來搜尋iSN-81x-MTCP
- 開啟iSN-81x-MTCP的網站



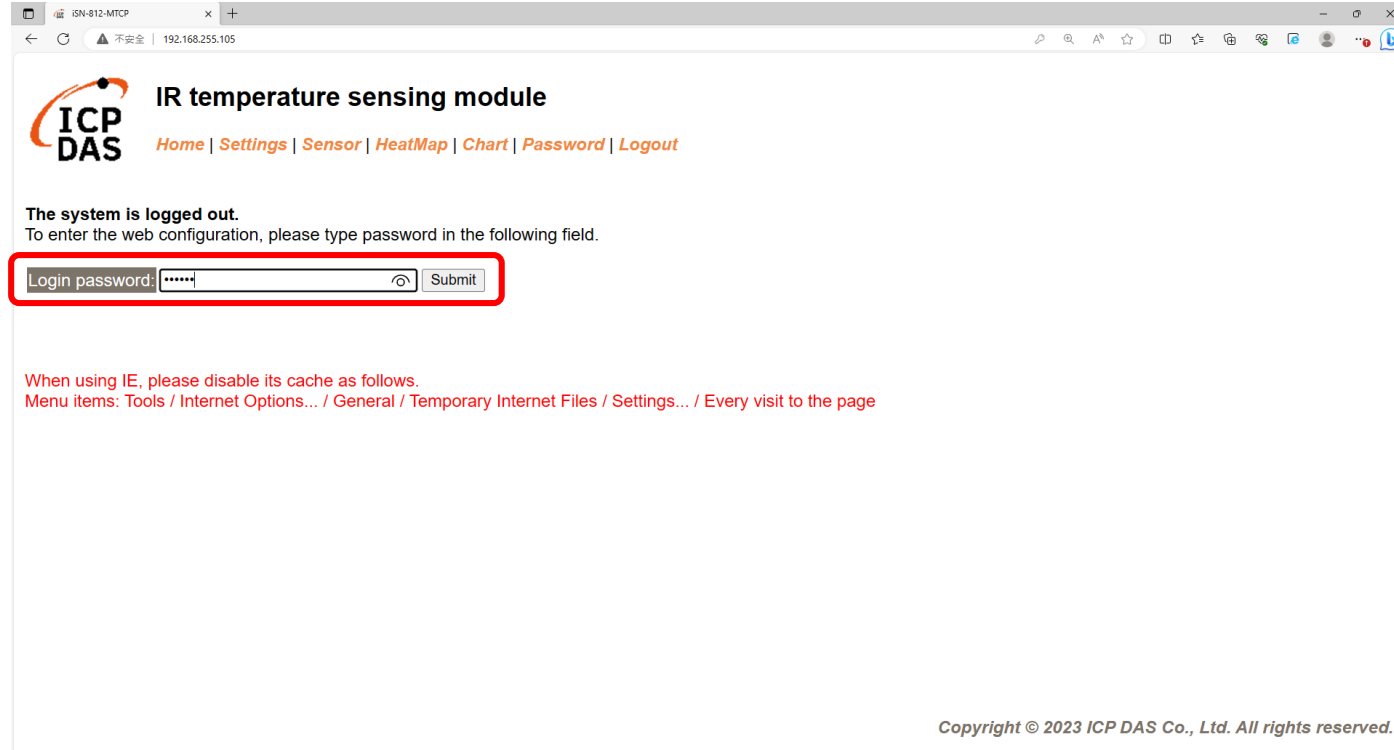
➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

• 點擊”Login to configure the device”來登入



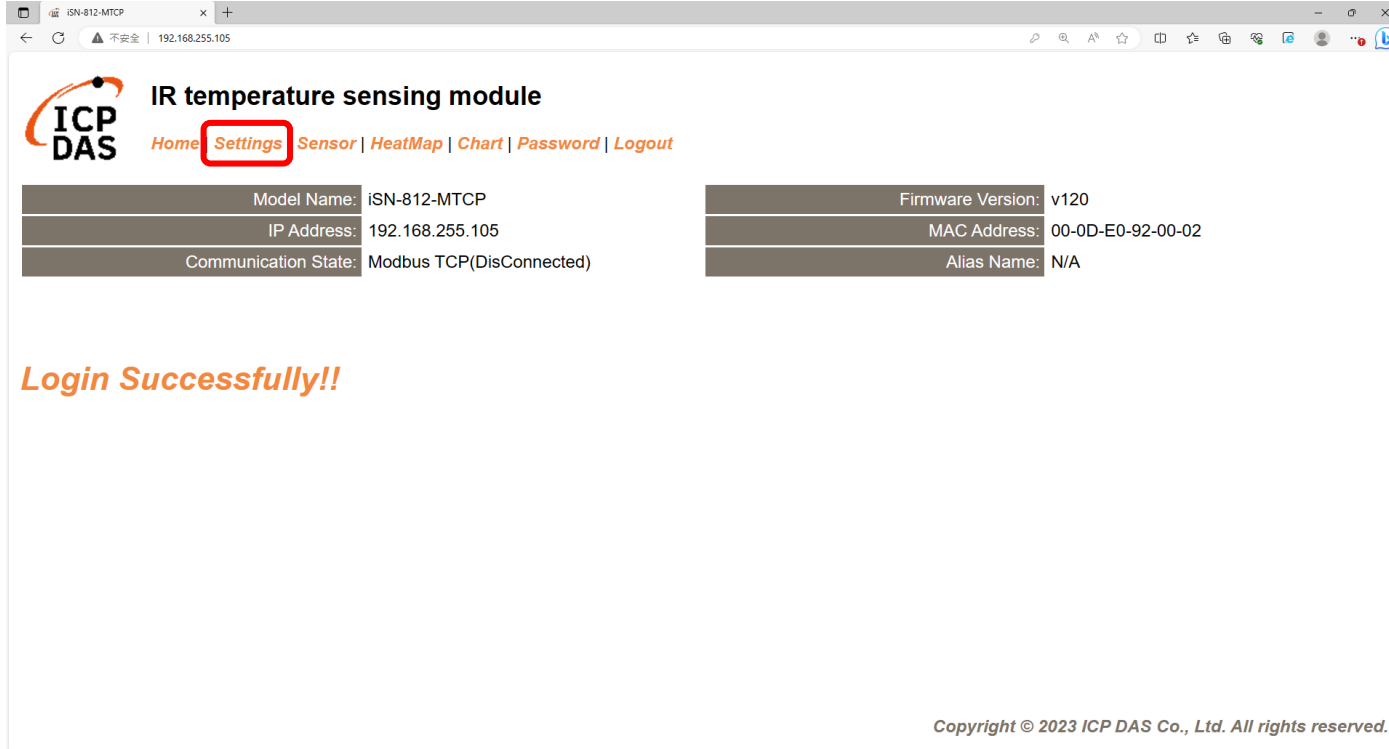
➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

- 登入(預設密碼: admin)



➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

- 點擊“Settings”來設定通訊模式



ICP DAS IR temperature sensing module

Home **Settings** Sensor | HeatMap | Chart | Password | Logout

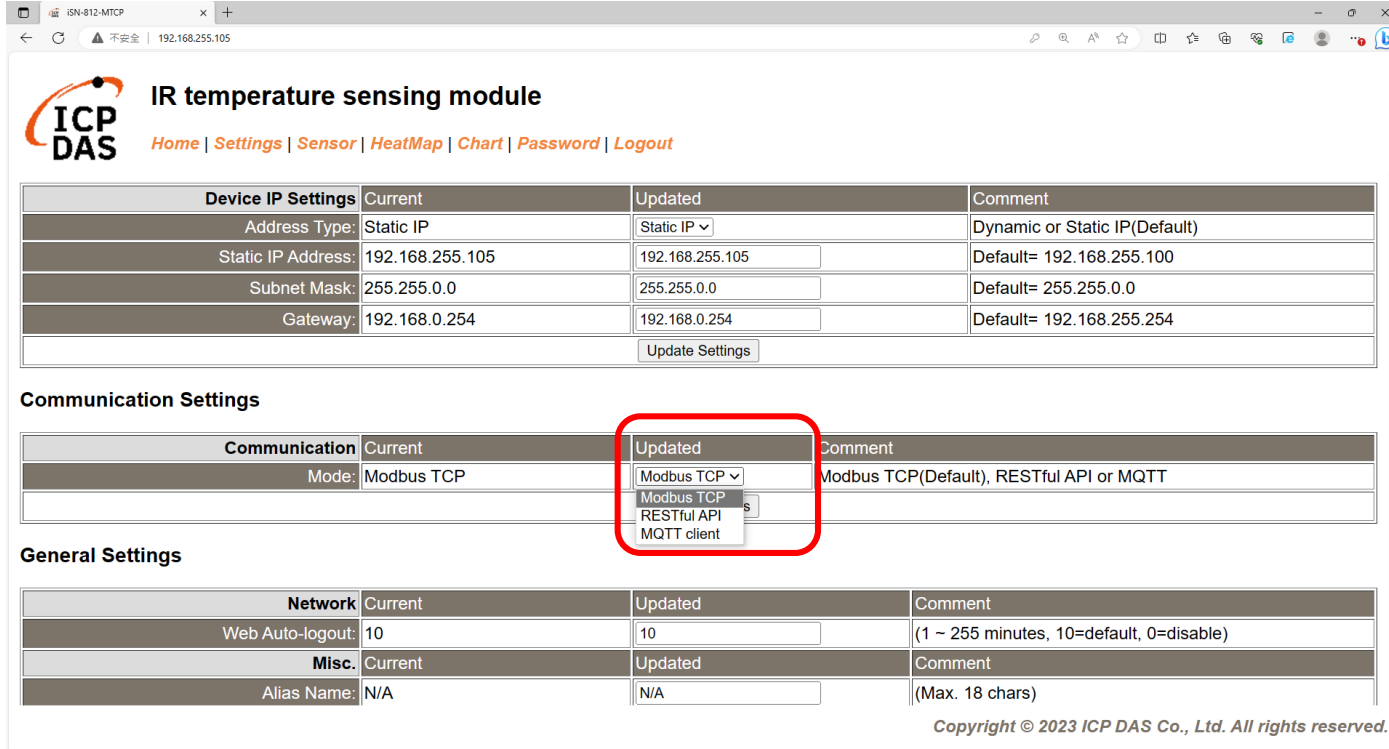
Model Name:	iSN-812-MTCP	Firmware Version:	v120
IP Address:	192.168.255.105	MAC Address:	00-0D-E0-92-00-02
Communication State:	Modbus TCP(DisConnected)	Alias Name:	N/A

Login Successfully!!

Copyright © 2023 ICP DAS Co., Ltd. All rights reserved.

➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

- 將通訊模式設定為“Modbus TCP”



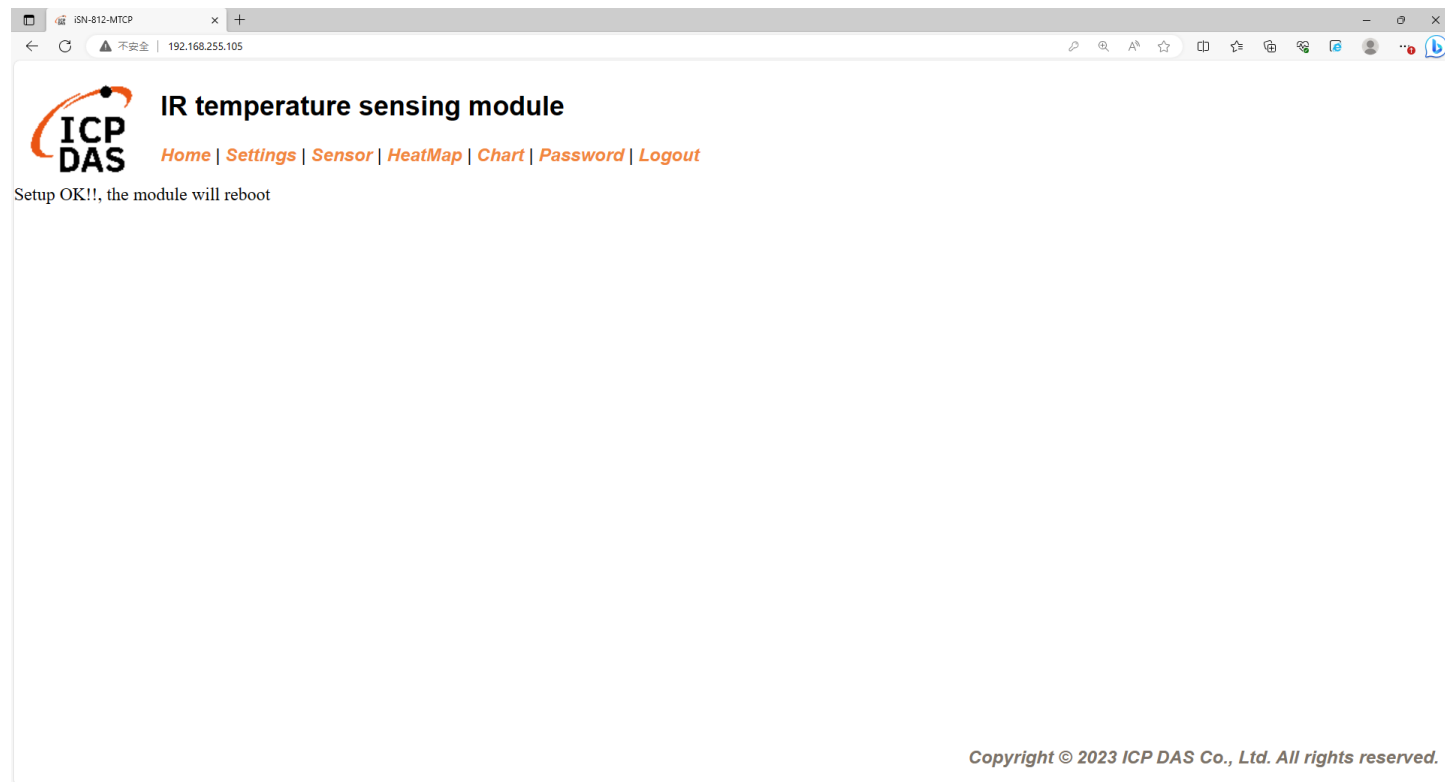
The screenshot displays the web interface for an ICP DAS IR temperature sensing module. The page title is "IR temperature sensing module" and the URL is "192.168.255.105". The interface is divided into several sections:

- Device IP Settings:** A table with columns for "Current" and "Updated" values, and a "Comment" column. The "Address Type" is set to "Static IP". The "Static IP Address" is 192.168.255.105, "Subnet Mask" is 255.255.0.0, and "Gateway" is 192.168.0.254. A "Update Settings" button is located below the table.
- Communication Settings:** A table with columns for "Communication", "Current", "Updated", and "Comment". The "Mode" is set to "Modbus TCP". The "Updated" dropdown menu is open, showing options: "Modbus TCP" (selected), "Modbus TCP", "RESTful API", and "MQTT client". The comment for this mode is "Modbus TCP(Default), RESTful API or MQTT".
- General Settings:** A table with columns for "Network" and "Misc.", "Current", "Updated", and "Comment". The "Web Auto-logout" is set to 10 minutes. The "Alias Name" is set to N/A.

Copyright © 2023 ICP DAS Co., Ltd. All rights reserved.

➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

• 等待重新啟動



➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

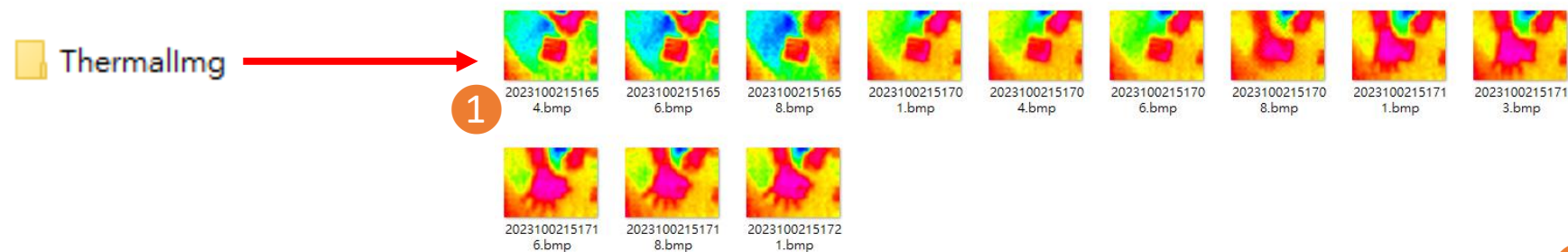
- 為了讓範例程式能夠連接到iSN-81x-MTCP，您需要修改在“modbus_client.py”中的變數“serverIP”為iSN-81x-MTCP的IP。
- iSN-81x-MTCP的IP為192.168.255.109
- 開啟“start.bat”

```
serverIP = "192.168.255.109";
```

Name	Date modified
.vs	23/09/2023 16:16
__pycache__	04/10/2023 10:26
lib	11/09/2023 16:58
Demo_Modbus_Python.pptx	04/10/2023 10:42
irdata_handler.py	14/08/2023 13:21
modbus_client.py	04/10/2023 10:34
Pre-Install.txt	09/08/2023 12:06
start.bat	09/08/2023 10:12

➤ 將 iSN-81x-MTCP 配置為 Modbus TCP 伺服器

- 接收到數據後會產生兩個檔案，一個是儲存數據的DB檔，一個是熱影像檔。



irdata_icpdas.db

1	2	3	4	5
timestamp	macno	model	irdata	imgpath
2023-10-02 15:16:54	00-0D-E0-92-00-02	iSN-812-MTCP	30.0,30.2,31 D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:16:56	00-0D-E0-92-00-02	iSN-812-MTCP	30.2,30.5,31 D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:16:58	00-0D-E0-92-00-02	iSN-812-MTCP	31.1,31.9,32 D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:17:01	00-0D-E0-92-00-02	iSN-812-MTCP	31.2,30.9,32 D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:17:04	00-0D-E0-92-00-02	iSN-812-MTCP	30.1,31.2,31 D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:17:06	00-0D-E0-92-00-02	iSN-812-MTCP	30.9,31.6,31 D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:17:08	00-0D-E0-92-00-02	iSN-812-MTCP	30.8,30.7,31 D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:17:11	00-0D-E0-92-00-02	iSN-812-MTCP	30.7,30.4,31 D:\0_CODE\IR\Demo\RESTfu	
2023-10-02 15:17:13	00-0D-E0-92-00-02	iSN-812-MTCP	30.6,32.0,32 D:\0_CODE\IR\Demo\RESTfu	

- 1 → 取得資料的時間
- 2 → iSN-81x-MTCP的MAC Address
- 3 → 型號
- 4 → iSN-81x-MTCP量測的IR數據
- 5 → 熱影像的儲存路徑

➤ 修改DB檔名稱

- 如果你想要修改DB檔的名稱，開啟“irdata_handler.py”後找到變數“conn”然後編輯它。

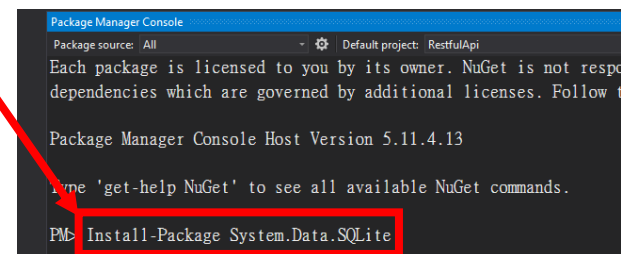
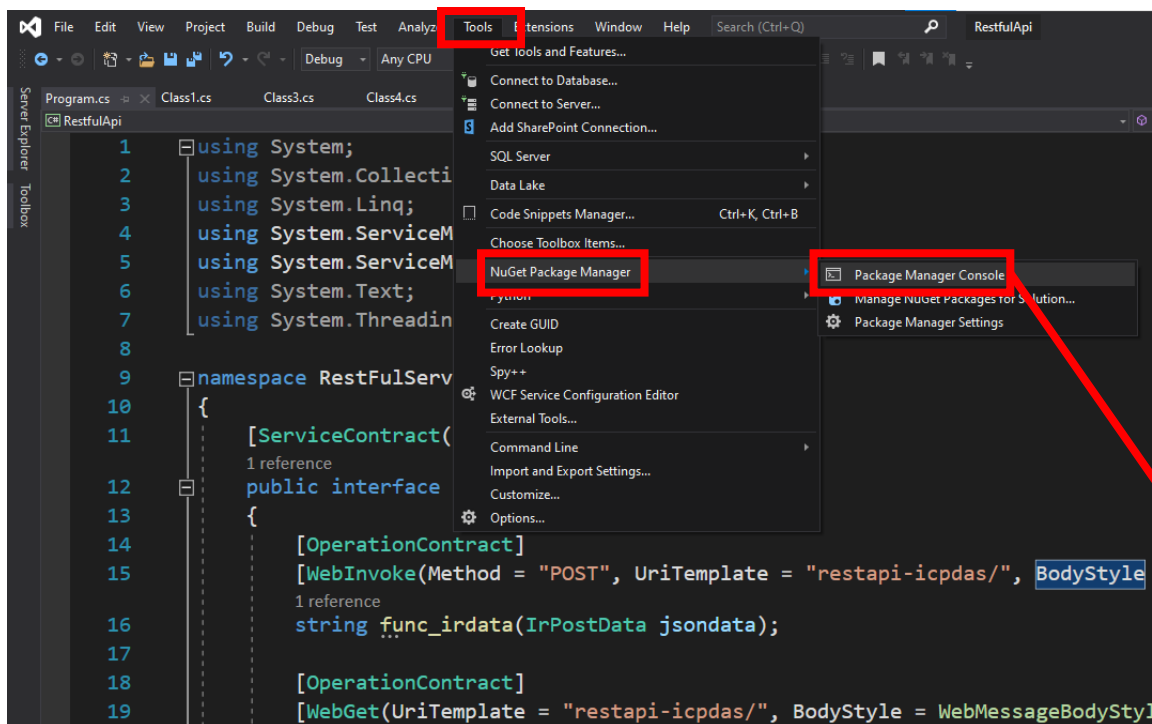
```
conn = sqlite3.connect('irdata_icpdas.db')
```

07

如何安裝函式庫

➤ CSharp如何安裝函式庫

- NuGet
- 安裝命令 → Install-Package System.Data.SQLite (函式庫名稱)



➤ Node.js如何安裝函式庫

- 當你安裝node.js環境時，也會安裝npm。npm用於在node.js環境中安裝各種函式庫
- 使用命令檢查npm是否有安裝→`npm --version`
- 安裝命令→`npm install modbus-serial`(函式庫名稱)

```
Command Prompt
Microsoft Windows [Version 10.0.19045.3570]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Adam>npm --version
10.2.0

C:\Users\Adam>
```

➤ Python如何安裝函式庫

- Python使用pip來管理函式庫。安裝python時，也會安裝pip
- 使用命令檢查pip是否有安裝→pip --version
- 安裝命令→ pip install pymodbus(函式庫名稱)

```
ca. Command Prompt
Microsoft Windows [Version 10.0.19045.3570]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Adam>pip --version
pip 23.2.1 from C:\Python312\Lib\site-packages\pip (python 3.12)

C:\Users\Adam>
```