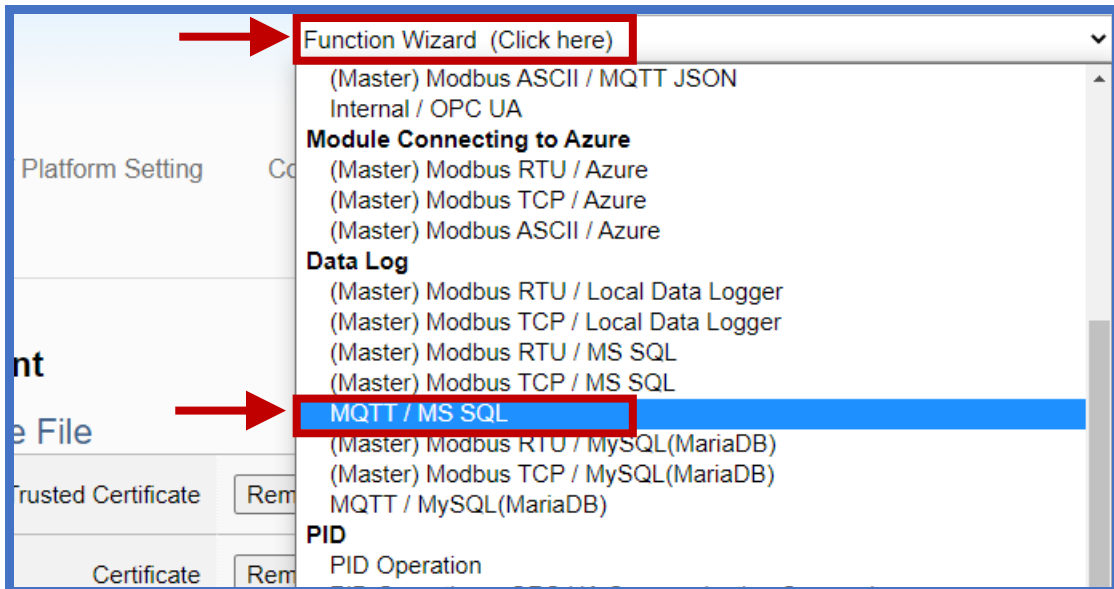# FAQ-DBL-07: UA Web UI Function Wizard – Data Log -

How to set up remote database function: MQTT / MS SQL ? (Use MQ-7255M)

This Function uses UA series to receive MQTT messages, and then write to MS SQL database. The architecture is as following:

MQTT

MQ-7255M
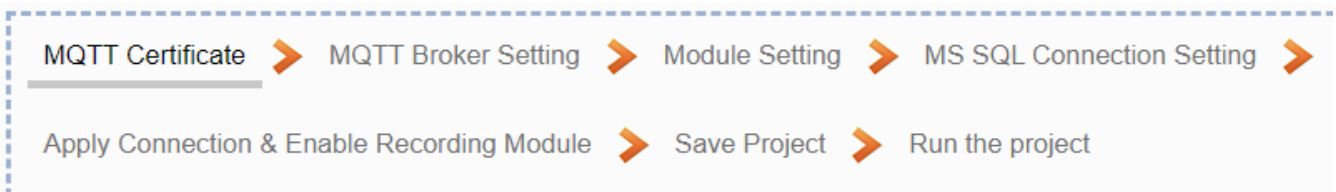(MQTT Client)

UA-Series

Database
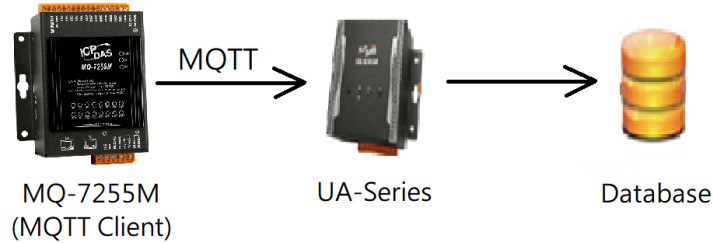
● **1. The Steps to set up the Project**

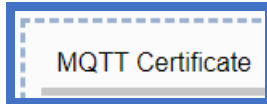Enter the UA Series Web UI, Click [MQTT / MS SQL] in the [Function Wizard] at the top right.

After Clicking [MQTT / MS SQL], follow the Step Box to set up the project.

MQTT Certificate ➤ MQTT Broker Setting ➤ Module Setting ➤ MS SQL Connection Setting ➤

Apply Connection & Enable Recording Module ➤ Save Project ➤ Run the project

- **(a) Enter [MQTT Certificate]** (Skip this step if no encryption is required)

Confirm the **authentication setting of the remote Broker** is one-way or two-way:

If the remote Broker setting is **one-way authentication**, upload the **trust certificate of the remote Broker** on this setting page.

If the remote Broker setting is **two-way authentication**, upload the **trust certificate of the remote Broker**, the **certificate of the UA series**, and the **private key of the UA series** on this setting page.

1. Get the trusted certificates from MQTT Client and save in the PC.

2. In the [MQTT Client] > [Upload the file to the controller], click the button [Select File] to select the file of the Trusted Certificate, Certificate or Private Key.

3. Click the button [Upload].

Notes for MQTT Client Certificate:

- The supported **code format**: "**PEM**".

- The supported file extension name for **Certificates**: " ***.pem / *.cer / *.crt** " .

- The supported file extension name for **Private Key**: " ***.key** " .

- **(b) Click [MQTT Broker Setting]**

In MQTT Connection, select [Local Broker] or [Remote Broker] of the left menu.

Local Broker

The UA series has a built-in MQTT Broker service. When using MQTT communication, there is no need to build a Broker system.

Set up according to the user case situation (if there is no encryption need, please uncheck the SSL/TLS option), and click [Save].

Remote Broker

This function can set up the MQTT connection with the remote Broker. User can publish and subscribe messages to the remote Broker through this connection.

Add and set up a connection Broker name in the Remote Broker List.

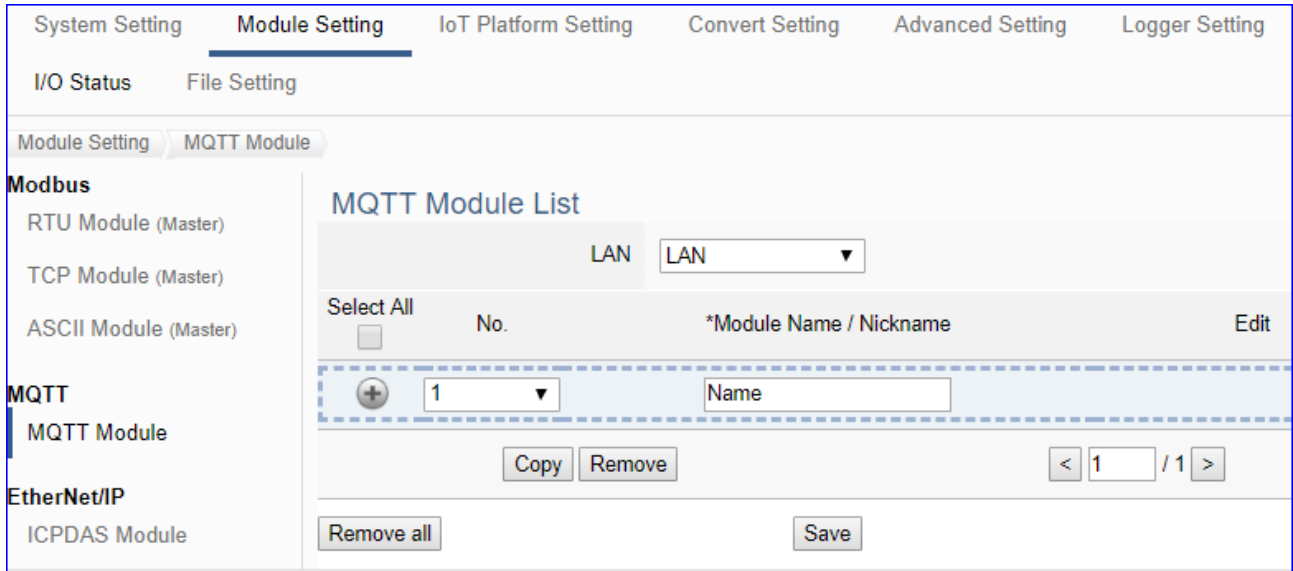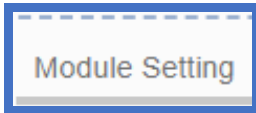After adding a list of the Remote Broker:

Click [Edit] to set up the group in the Broker Content Setting page. (if there is no encryption need, please uncheck the SSL/TLS option)

Broker Content Settings

Broker Name	Broker1
IP / Domain	127.0.0.1
Port	1883
Keep Alive Time(second)	60
SSL/TLS	☑ Enabled
Trusted Certificate	▼
Certificate	▼
Private Key	▼
Anonymous Login	☑ Enabled

OK   Cancel

- **(c) Click [Module Setting]**

Setting Steps:

1. Give the module name or nickname, e.g. MQ-7255, DL-302. Default: Name

2. Click the button [⊕] to add a new module

3. Click the button [**Edit**] to enter the Module Content Setting page
   Set up the Modbus Mapping Table for the UA controller and module I/O channels
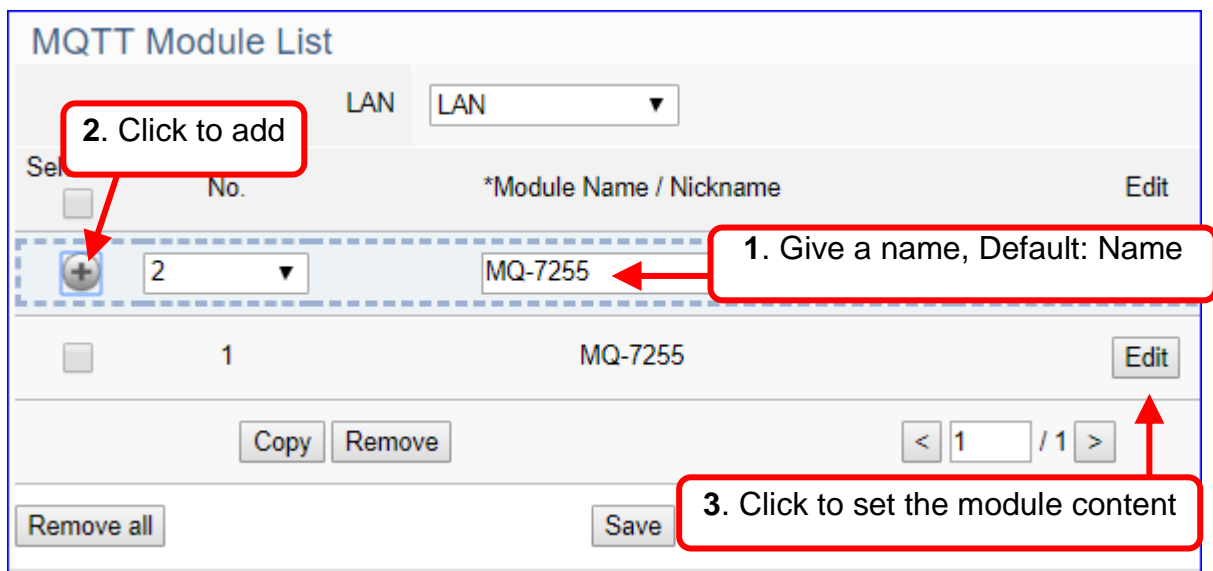
Select the MQTT Connection.

MQTT Client Setting

No.	1
Module Name	MQ-7255
MQTT Connection	● Broker (Local) ○ Cloud1 (Remote)

MQTT Variable Setting: Add the variables of the attribute/type/number for your project. EX: 2 variables for this case.

MQTT Variable Setting

Attribute	Read
Data Type	Bool
Data Number	1
Create Tables	Add
Details	Show Hide

The completed table looks like the following image:

MQTT Variable Table

Remove Tables Remove

Remove	Name	Attribute	Data Type	Subscribe Topic	Publish Topic	Description
☐	Tag1	Read	Bool	/MQTT_No.1_MQ-7255/Tag1/Subscribe		
☐	Tag2	Read	Bool	/MQTT_No.1_MQ-7255/Tag2/Subscribe		

OK Cancel

- ### (d) Click [MS SQL Connection Setting]
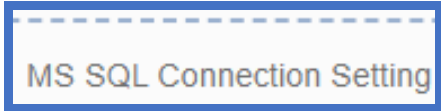
Add a database identification name (Ex: **ICPDAS_Cycle_DateTime**) as below, and then click [**Edit**] button to enter the "MS SQL Content Setting" page.

click [**Edit**] button to enter the "MS SQL Content Setting" page.

[**MS SQL Content Setting**] can set up the database relational setting.

MS SQL content settings

Identification Name	ICPDAS_Cycle_DateTime
Database Name	ICPDAS
Table Name	Module_All_DateTime
Server Name	192.168.85.11\ICPDAS
Port	1433
Account	root
Password	••••
Log Mode	Cycle
Interval Seconds	5
Date Time Format	[yyyy-MM-dd HH:mm:ss]
Enable	☑
Test Connection	Connection

OK Cancel

- **(e) Click [Apply Connection & Enable Recording Module]**

Apply Connection & Enable Recording Module
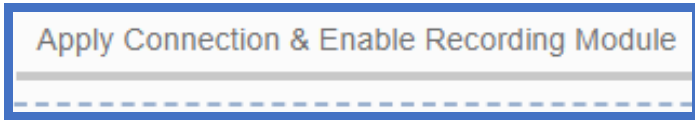
MQTT Module List

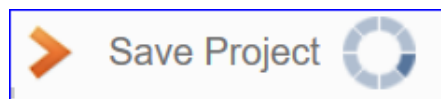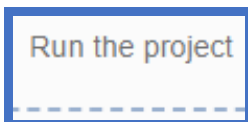| No.	*Module Name / Nickname	Edit	Database Name	All Enabled ☐
1	MQ-7255	Edit	ICPDAS_Cycle_DateTime **1** ▾ Apply **2**	☑ **3**
			< 1 / 1 >	

Save

- **(f) Click [Save Project]**
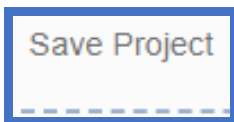
Save Project

Click **[Save Project],** the Step Box will show an animation as below picture, that means the project is saving. When the animation vanished, the project is saved completely.

➤ Save Project ◯
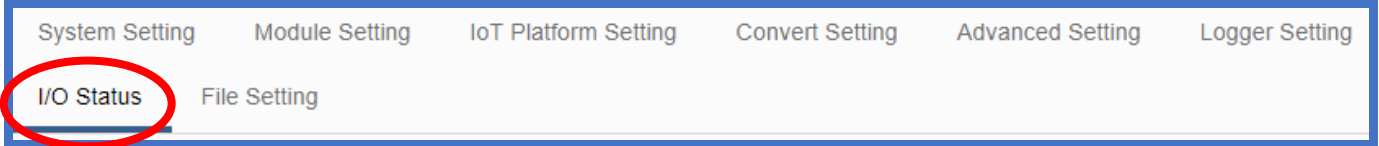
- **(g) Click [Run the Project]**

Run the project

When the words "**Please wait**" disappears, the new words "**Success**" appears, that means the UA controller is running new project successfully.
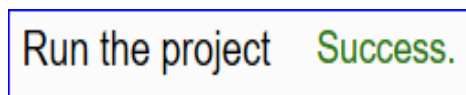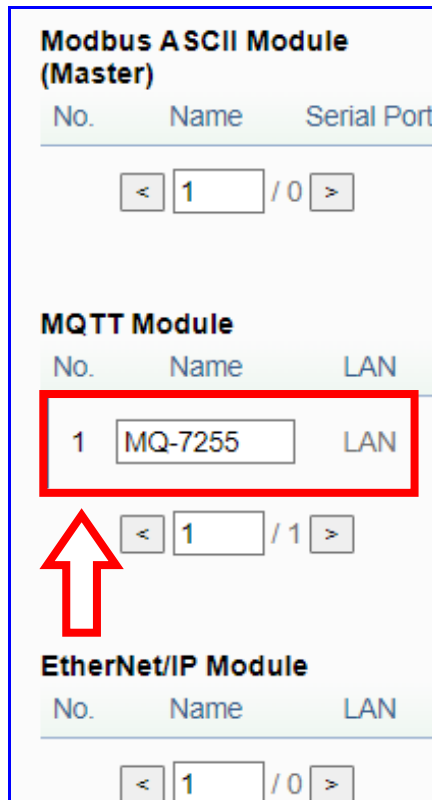
Run the project   Success.

● **2. Check the MQTT Real-Time Status**

Click the menu [**I/O Status**].

Check the left menu [MQTT Module] and Click the module name you want to check.

The I/O Status will display the [MQTT Module] status. If the Broker connection success, the status will show [Good].