

## TigoMaster 2TH Profinet PLC Integration - W-Ports Configuration Via PLC

<Apr-7th, 2022 10:52>Version:1

This article describes how to integrate TigoMaster 2TH with PROFINET using Siemens PLC.

The w-ports configuration will be done via PLC. In case w-ports configuration required via TigoEngine, please refer to the article TigoMaster 2TH Profinet PLC Integration - W-Ports Configuration Via TigoEngine

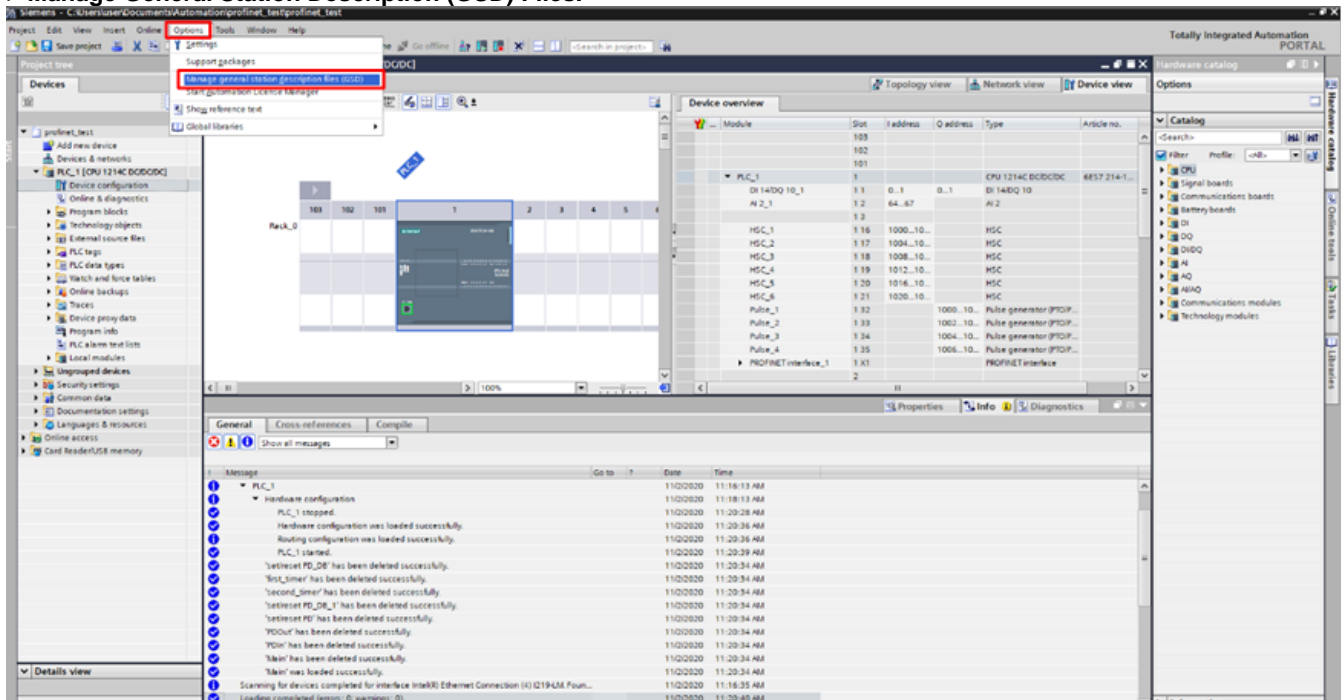
You can watch a video or follow the steps written below to integrate TigoMaster 2TH with PROFINET using Siemens PLC:

[Video Link - 2TH\\_PROFINET\\_Integration\\_WPorts\\_Configuration\\_Via\\_PLC](#)

Importing GSD & Connecting to the PLC:

Select Options

> Manage General Station Description (GSD) Files.



The screenshot displays the Siemens TIA Portal interface. The 'Manage General Station Description (GSD) Files' window is open, with the 'Installed GSDs' tab selected. The 'Device overview' table lists the following modules for PLC\_1:

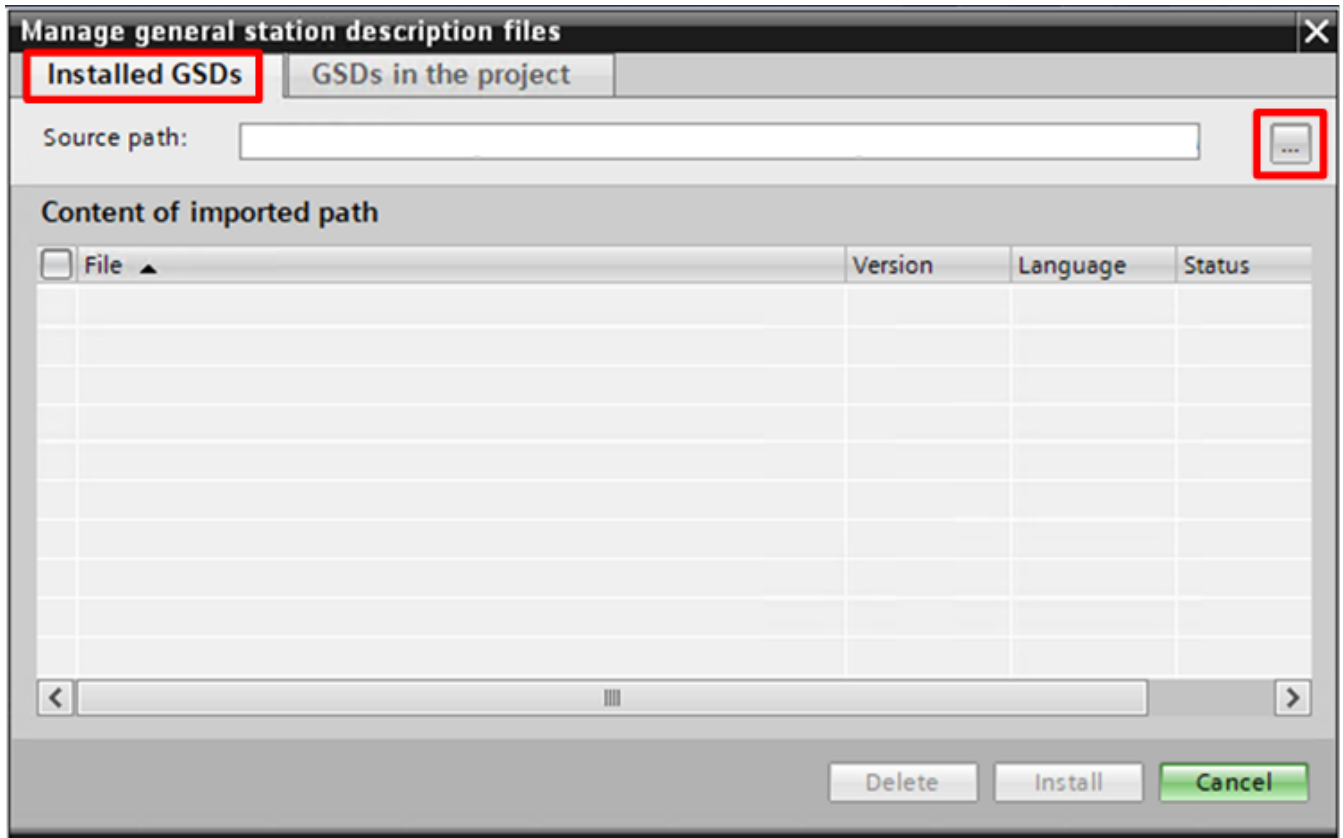
Module	Slot	I address	Q address	Type	Article no.
PLC_1	1			CPU 1214C-2 DP	6ES7 214-1...
DI 16xDC 16DO 16	1.1	0...1	0...1	DI 16xDC 16DO 16	
AI 5/AO 2	1.2	64...87		AI 5/AO 2	
HSC_1	1.16	1000...10...		HSC	
HSC_2	1.17	1000...10...		HSC	
HSC_3	1.18	1000...10...		HSC	
HSC_4	1.19	1012...10...		HSC	
HSC_5	1.20	1016...10...		HSC	
HSC_6	1.21	1020...10...		HSC	
Pulse_1	1.32		1000...10...	Pulse generator (PTOP...	
Pulse_2	1.33		1002...10...	Pulse generator (PTOP...	
Pulse_3	1.34		1004...10...	Pulse generator (PTOP...	
Pulse_4	1.35		1006...10...	Pulse generator (PTOP...	
PROFINET interface_1	1.41			PROFINET interface	

The 'Message' window at the bottom shows a log of successful hardware configuration steps, including:

- Hardware configuration
- PLC\_1 stopped
- Hardware configuration was loaded successfully
- Routing configuration was loaded successfully
- PLC\_1 started
- 'setreset\_PD\_DB' has been deleted successfully
- 'first\_timer' has been deleted successfully
- 'second\_timer' has been deleted successfully
- 'setreset\_PD\_DB\_1' has been deleted successfully
- 'setreset\_PD' has been deleted successfully
- 'YOut' has been deleted successfully
- 'YDir' has been deleted successfully
- 'Main' has been deleted successfully
- 'Main' was loaded successfully
- Scanning for devices completed for interface Intel(R) Ethernet Connection (4) I219-LM Four...
- Loading completed (error: 0; warning: 0)

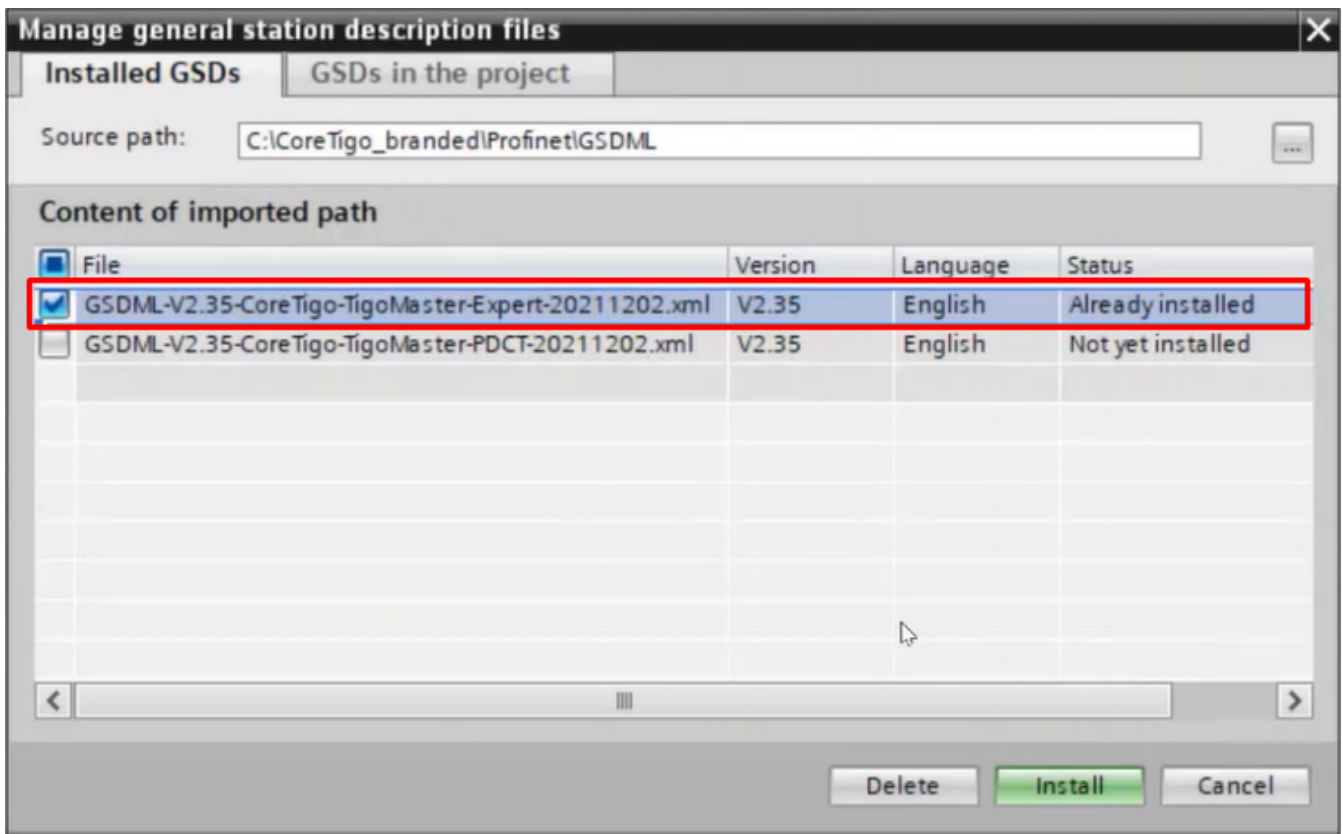
2. In the Manage General Station Description Files window, make sure that the Installed GSDs tab is selected.

3. Click the ellipsis (...) button.



4. Select the Source Path for the GSDML file.

5. A list of available GSD files appears under Content of imported path.

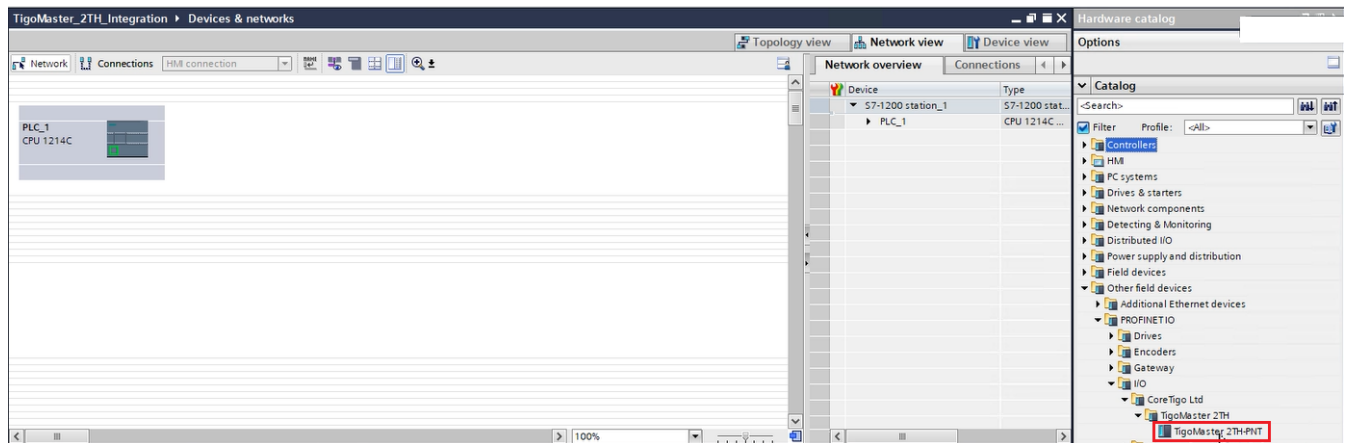


6. Select the relevant GSDML file from the list. (There are 2 options: PDCT and Expert. In this article, the

Expert option provides the capability to configure the wireless ports via the PLC programming environment)

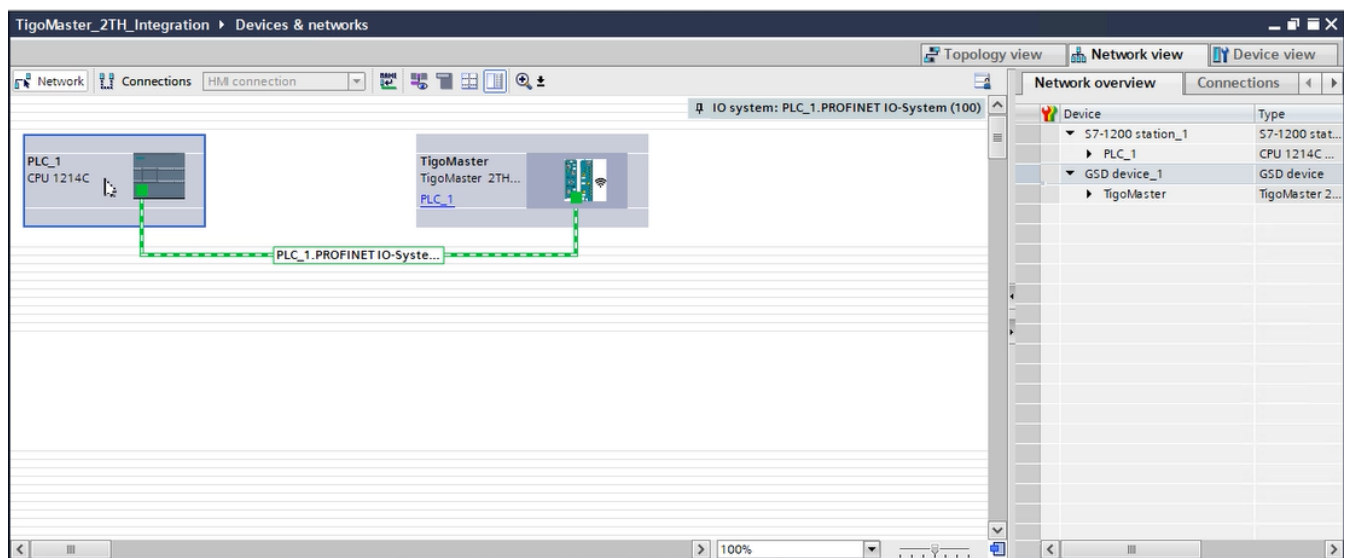
7. Click the Install button.

8. When the installation is complete, a new module (TigoMaster 2TH) is added to the Hardware catalog under Other field devices > PROFINET IO > I/O > CoreTigo Ltd > TigoMaster 2TH-PNT



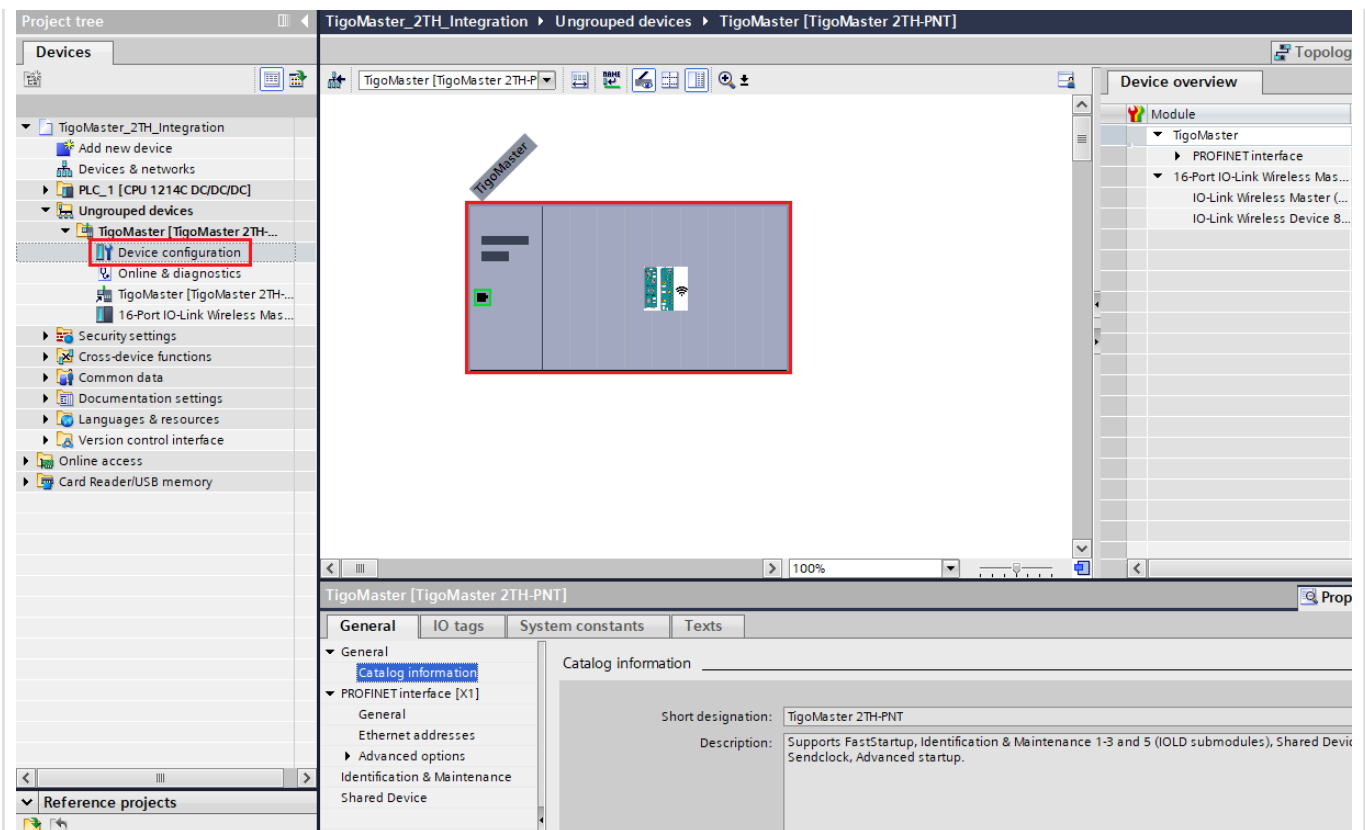
9. In the Hardware catalog pane, locate the TigoMaster 2TH-PNT, and then drag it to Devices & networks > Topology view.

10. In the Network View tab, draw a connection between the TigoMaster 2TH and PLC .



11. Select the TigoMaster 2TH and go to the Device view tab.

12. Click on the Master (which is outlined in red) to open configuration fields.



13. In the General tab, go to PROFINET interface [x1] > Ethernet addresses.

14. Under IP protocol, set the desired IP address.

15. Under PROFINET, make sure the PROFINET device name is correct.

TigoMaster [TigoMaster 2TH-PNT]

General | IO tags | System constants | Texts

General

Catalog information

PROFINET interface [X1]

General

**Ethernet addresses**

Advanced options

Identification & Maintenance

Shared Device

Ethernet addresses

Interface networked with

Subnet: PN/IE\_1

Add new subnet

IP protocol

IP address: 192 . 168 . 1 . 200

Subnet mask: 255 . 255 . 255 . 0

☒ Synchronize router settings with IO controller

☐ Use router

Router address: 0 . 0 . 0 . 0

PROFINET

☒ Generate PROFINET device name automatically

PROFINET device name: tigomaster

Converted name: tigomaster

Device number: 1

#### Configuring Submodules:

Go to the Device Overview tab. If under the module column all W-ports appear as deactivated, select the rows and press delete in order to activate it. In the Catalog pane, go to Submodules -> IOL wireless generic devices, and select the desired submodule. (The sub module will be selected according to the device process data size - please see table at the end of this article) Drag the selected submodule into the list in the Device overview tab. (Each port can have different sub module)

...goMaster\_2TH\_Integration\_Expert > Ungrouped devices > TigoMaster [TigoMaster 2TH-PNT]

Topology view | Network view | **Device view**

Device overview

Module	Rack
TigoMaster	0
PROFINET interface	0
16 Port IO-Link Wireless Mas...	0
IO-Link Wireless Master (...)	0

Hardware catalog

Options

Filter Profile: <All>

IOL wireless generic devices

Deactivated

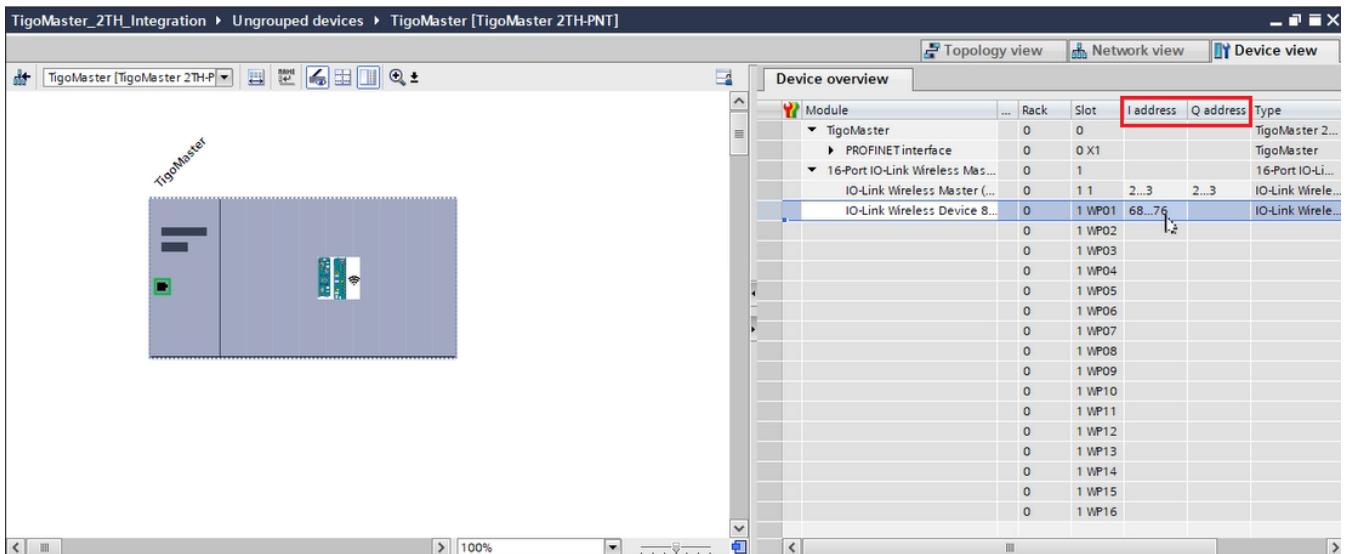
- IO-Link Wireless Device 1 I + PQI (Expert)
- IO-Link Wireless Device 1 I/ 1 O + PQI (Exp...
- IO-Link Wireless Device 1 O + PQI (Expert)
- IO-Link Wireless Device 16 I + PQI (Expert)
- IO-Link Wireless Device 16 I/ 16 O + PQI ...
- IO-Link Wireless Device 16 O + PQI (Expert)
- IO-Link Wireless Device 2 I + PQI (Expert)
- IO-Link Wireless Device 2 I/ 2 O + PQI (Exp...
- IO-Link Wireless Device 2 O + PQI (Expert)
- IO-Link Wireless Device 32 I + PQI (Expert)
- IO-Link Wireless Device 32 I/ 32 O + PQI ...
- IO-Link Wireless Device 32 O + PQI (Expert)
- IO-Link Wireless Device 4 I + PQI (Expert)
- IO-Link Wireless Device 4 I/ 4 O + PQI (Exp...
- IO-Link Wireless Device 4 O + PQI (Expert)
- IO-Link Wireless Device 8 I + PQI (Expert)
- IO-Link Wireless Device 8 I/ 8 O + PQI (Exp...
- IO-Link Wireless Device 8 O + PQI (Expert)

General

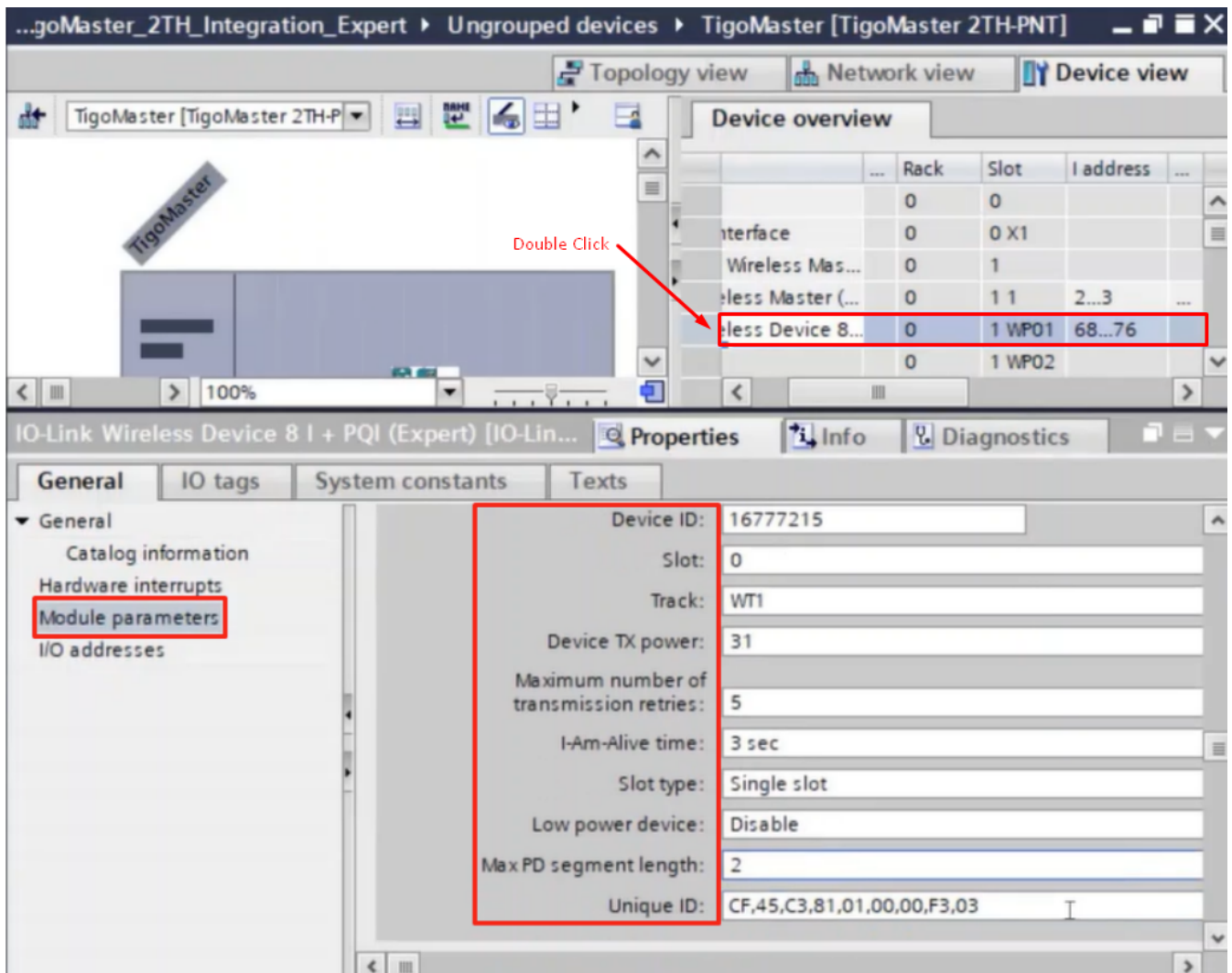
No 'properties' available.

No 'properties' can be shown at the moment. There is either no object selected or the selected object does not have any displayable properties.

5. Under the I address the system will allocate addresses for the PDIN and under the Q address the system will allocate addresses for the PDOU:



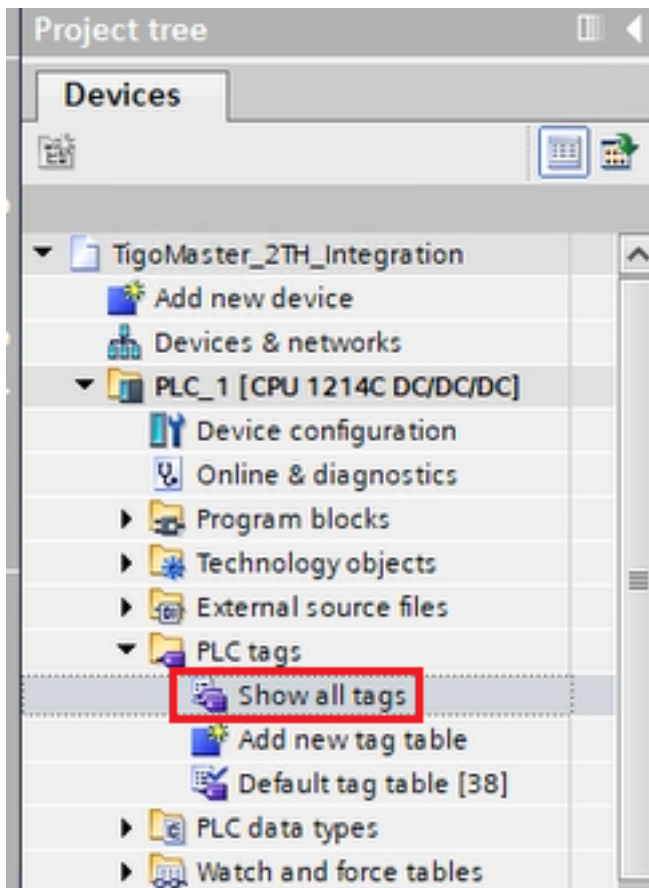
6. After double-clicking on the sub module, you can see and set all the parameters for the configuration including the slot number, track number, validation & backup, the UID of the device, etc.



6. After setting all the parameters, compile & download in order to apply the current settings.

7. In the Project Tree, under the relevant PLC go to PLC Tags > Show All Tags.





8. In the Tags tab, enter the addresses that were assigned to the W-ports in order to see the data in online.

The screenshot shows the 'TigoMaster\_2TH\_Integration\_Expert' window. The 'PLC tags' tab is active. The table below shows the data for the PLC tags.

	Name	Writa...	Visibl...	Monitor value	Comment
1	Tag_1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	16#3F	
2	Tag_2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	16#00	
3	<Add new>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

Table - Port Submodule Parameters:

Parameter

**Description**

**Input Process**

**Data Size (PD\_IN)**

**Output Process**

**Data Size (PD\_OUT)**

**IO-Link 1 I + PQI**

**IO-Link with 1 byte input**

**data and PQI**

**1 byte + 1 byte PQI**

**-**

**IO-Link 1 I / 1 O + PQI**

**IO-Link with 1 byte input data**

**and 1 byte output data and PQI**

**1 byte + 1 byte PQI**

**1 byte**

**IO-Link 1 O + PQI**

**IO-Link with 1 byte output**

**data and PQI**

**-**

**1 byte**

**IO-Link 16 I + PQI**

**IO-Link with 16 bytes input**

**data and PQI**

**16 bytes + 1 byte PQI**



-

**IO-Link 16 I / 16 O + PQI**

**IO-Link with 16 bytes input data and  
16 bytes output data and PQI**

**16 bytes + 1 byte PQI**

**16 bytes**

**IO-Link 16 O + PQI**

**IO-Link with 16 bytes output  
data and PQI**

-

**16 bytes**

**IO-Link 2 I + PQI**

**IO-Link with 2 bytes input  
data and PQI**

**2 bytes + 1 byte PQI**

-

**IO-Link 2 I / 2 O + PQI**

**IO-Link with 2 bytes input data and  
2 bytes output data and PQI**

**2 bytes + 1 byte PQI**

**2 bytes**

**IO-Link 2 O + PQI**

**IO-Link with 2 bytes output**

**data and PQI**

-

**2 bytes**

**IO-Link 32 I + PQI**

**IO-Link with 32 bytes input**

**data and PQI**

**32 bytes + 1 byte PQI**

-

**IO-Link 32 I / 32 O + PQI**

**IO-Link with 32 bytes input data and**

**32 bytes output data and PQI**

**32 bytes + 1 byte PQI**

**32 bytes**

**IO-Link 32 O + PQI**

**IO-Link with 32 bytes output**

**data and PQI**

-

**32 bytes**

**IO-Link 4 I + PQI**

**IO-Link with 4 bytes input**

**data and PQI**

**4 bytes + 4 bytes PQI**

-

**IO-Link 4 I / 4 O + PQI**

**IO-Link with 4 bytes input data and**

**4 bytes output data and PQI**

**4 bytes + 4 bytes PQI**

**4 bytes**

**IO-Link 4 O + PQI**

**IO-Link with 4 bytes output**

**data and PQI**

**-**

**4 bytes**

**IO-Link 8 I + PQI**

**IO-Link with 8 bytes input**

**data and PQI**

**8 bytes + 8 bytes PQI**

**-**

**IO-Link 8 I / 8 O + PQI**

**IO-Link with 8 bytes input data and**

**8 bytes output data and PQI**

**8 bytes + 8 bytes PQI**

**8 bytes**

**IO-Link 8 O + PQI**

**IO-Link with 8 bytes output**

**data and PQI**

**-**

**8 bytes**

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