

ioPAC 6500 Series HART Module Configuration Manual – PACTware

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ioPAC 6500 Series HART Module Configuration Manual – PACTware

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1. Introduction

This manual guides you on how to configure HART field devices using Moxa ioPAC 6500 Series 65M-3800H, Moxa ioPAC 6500 HART DTMs, and PACTware 5.0

System Requirements

Supported platforms: Windows 7 and later versions, Windows server 2008, 2012, 2016

Supported models: ioPAC 6500 Series 65M-3800H

Specifications

65M-3800H (HART AI Module)	
Analog Input	
Number of Channels	8
Channel Enable/Disable	Yes
Differential/Single-ended	Differential
Input Type	Current 4 to 20 mA
Permitted Overload on Inputs	30 mA
Internal Loop Power Supply	Voltage: 24 VDC; 22.8 to 25.2 VDC Current: 500 mA (max.) (only for 2-wire connection)
Resolution	16 bits
Input Resistance	250 Ω
Measurement Resolution	1.6 μ A
Accuracy	$\pm$ 0.1% full-scale range @ 25°C $\pm$ 0.3% Full-scale range @ -40 to 75 °C
HART	
Number of HART Modem	1
HART Enable/Disable	Yes
Data Update Time	1 sec/field device
Operation Type	Primary master
Topology	Point-to-point
Max. number of modules allowed per system	16 (128 channels max.)
NOTE: System includes one control unit and up to four expansion units	

Necessities

Hardware

- PC

	Minimum Requirement	Recommended (or higher)
CPU	Intel i3	Intel i5
RAM	4 GB	8 GB
Storage Available	500 MB	1 GB

- ioPAC 6500 Series
- 65M-3800H (HART AI Module)

Software

- **PACTware 5.0**

Download **Former PACTware versions**.

Downloads of former PACTware Versions	
Download from Bopp & Reuther Messtechnik GmbH	
Download from Christian Bürkert GmbH & Co. KG	
Download from FieldComm Group	
Download from KROHNE Messtechnik GmbH	
Download from Pepperl+Fuchs SE	
Download from PR electronics A/S	
Download from Hans Turck GmbH & Co. KG	
Download from VEGA Grieshaber KG	
Download from wetcon GmbH	

The setup wizard will pop up to direct you to the next steps.

DTM

- **MOXA ioPAC 6500 HART Module DTMs**

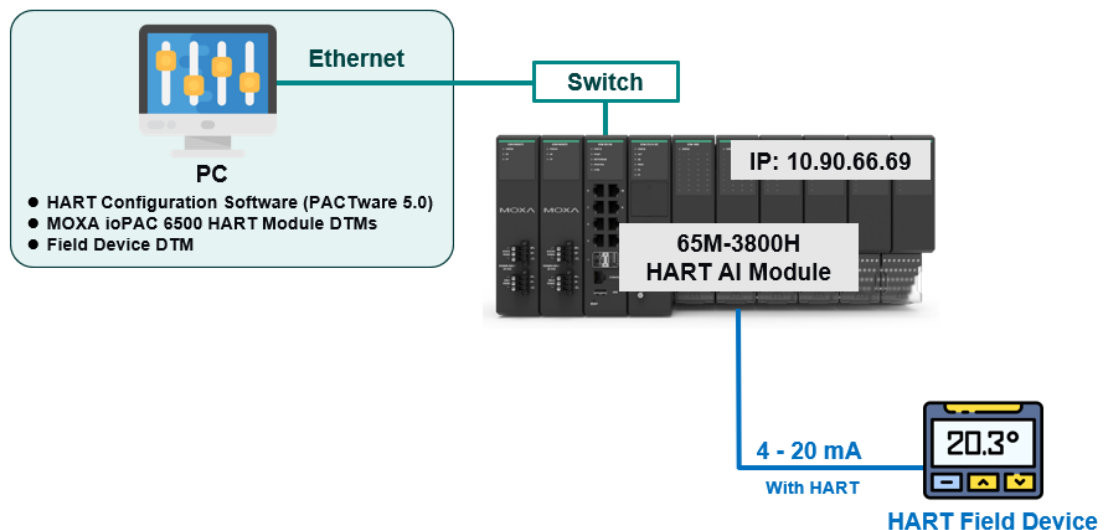
Visit Moxa Website → Products → Controllers & I/Os → Rugged Controllers & I/Os → ioPAC 6500 Series. Navigate to the "resource" tab and download Moxa ioPAC 6500 HART Module DTMs

- **Field Device DTM**

Download and install the field device DTM of your choice.

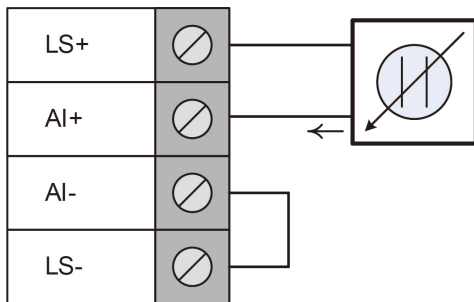
System Architecture

The architecture shown below guided the editing of this document.



Wiring Guide and Terminal Block Pin Out

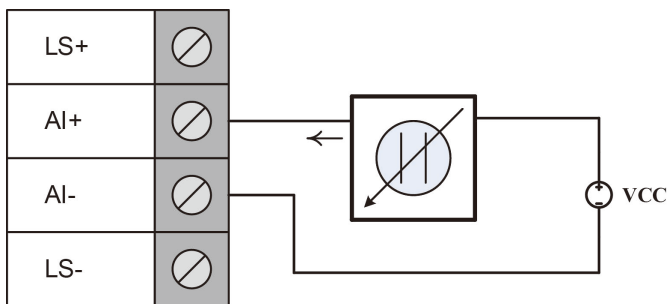
2-Wire Current Sensor (Internal Loop Power)



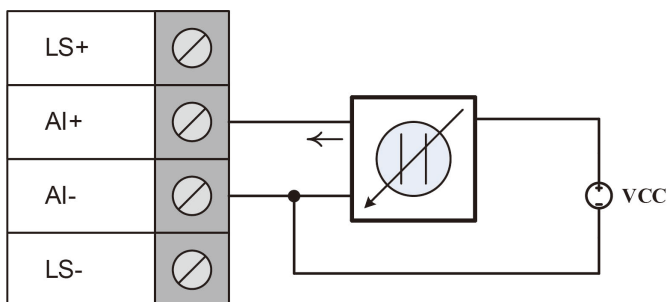
NOTE

Internal loop power supply: voltage 24 VDC, current 500 mA (max.) (only for 2 wire connection).

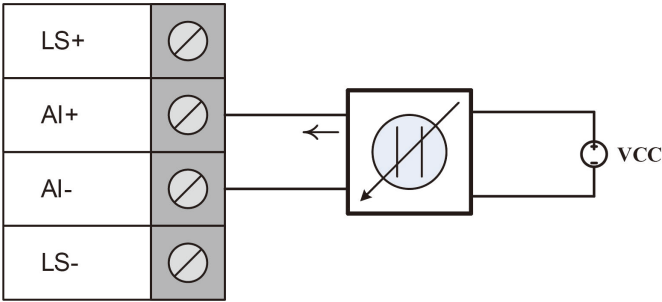
2-Wire Current Sensor (External Loop Power)



3-Wire Current Sensor



4-Wire Current Sensor

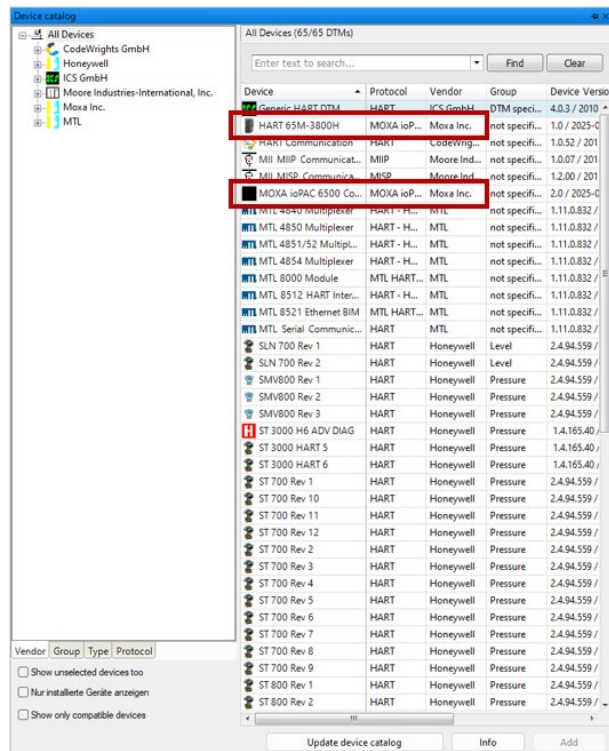
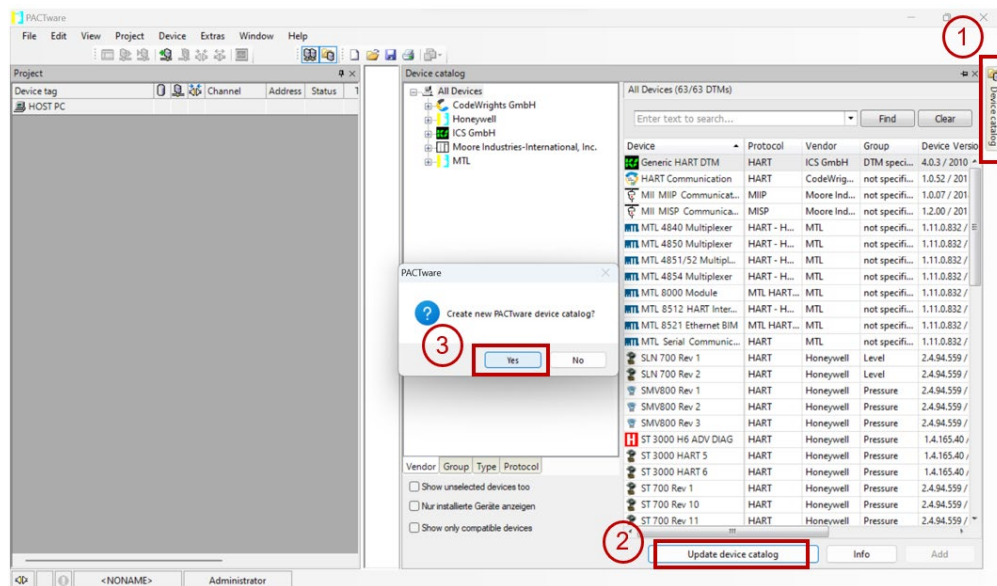


5	10	15	20	25	30	35	40
LS+	LS+	LS-	LS-	NC	NC	NC	NC
4	9	14	19	24	29	34	39
AI4+	AI4-	AI8+	AI8-	NC	NC	NC	NC
3	8	13	18	23	28	33	38
AI3+	AI3-	AI7+	AI7-	NC	NC	NC	NC
2	7	12	17	22	27	32	37
AI2+	AI2-	AI6+	AI6-	NC	NC	NC	NC
1	6	11	16	21	26	31	36
AI1+	AI1-	AI5+	AI5-	NC	NC	NC	NC

2. Configuration

Update Device Catalog

1. Open PACTware, select Device catalog on the right-hand side.
2. Update device catalog.
3. Once updated, you will see **MOXA ioPAC 6500 CommDTM** and **HART 65M-3800H** loaded into PACTware.

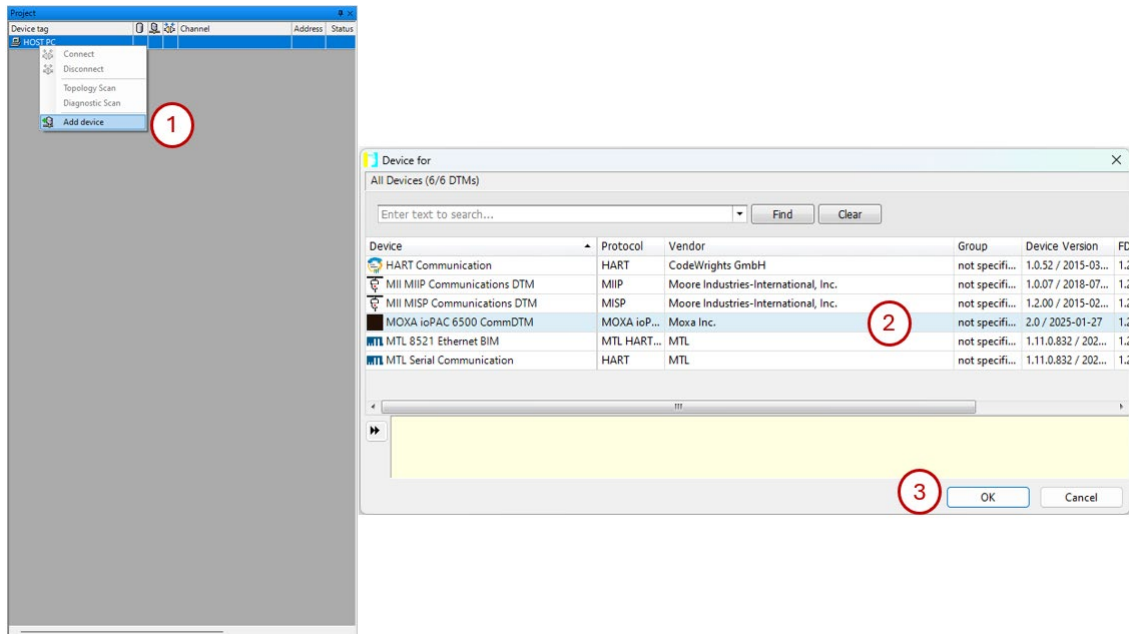


Add Device

Topology Scan

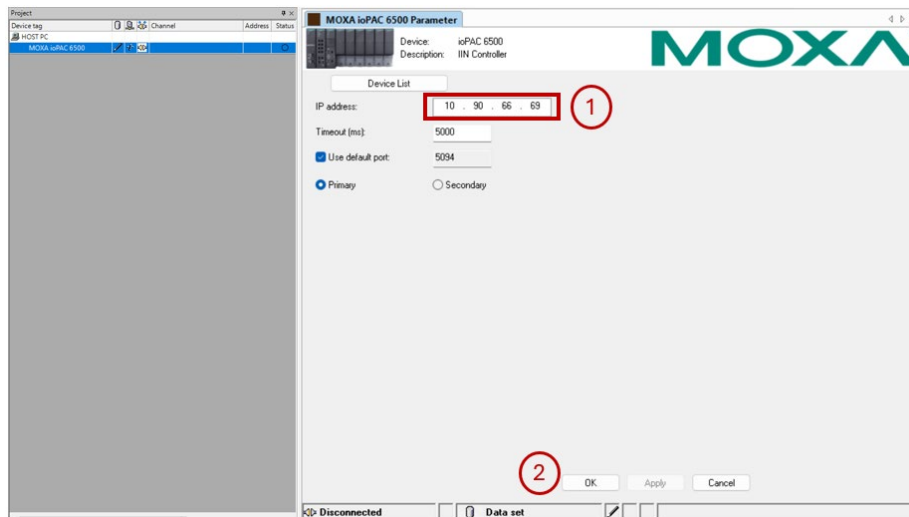
Prerequisite: The ioPAC 6500 Series hardware has already been set up and powered on.

1. Add device.
2. Select **MOXA ioPAC 6500 CommDTM**.



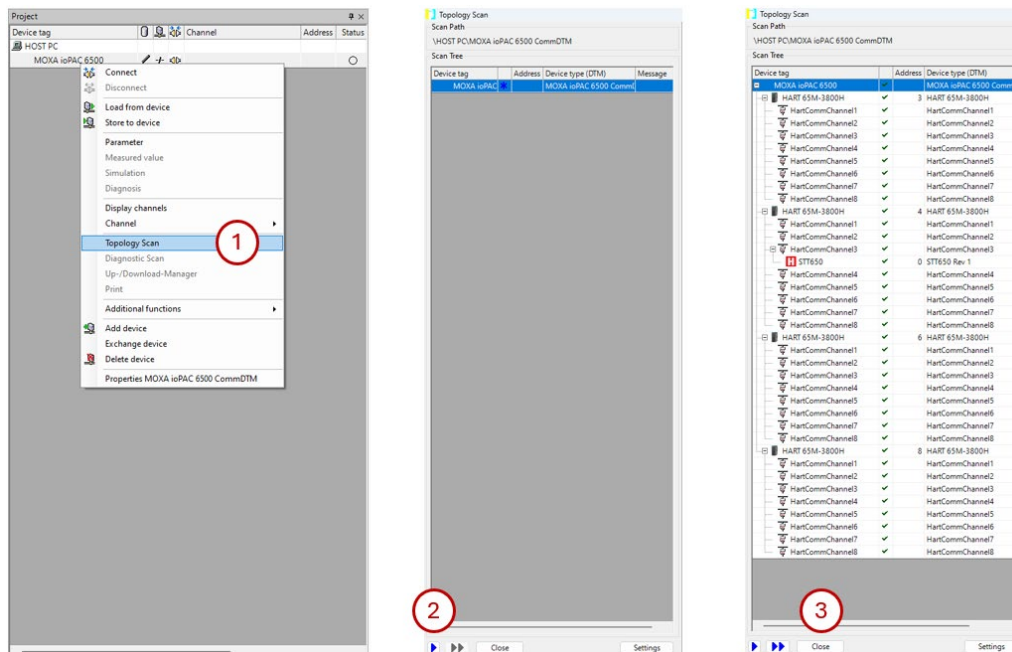
Set up IP address

1. Type in the IP address of the ioPAC 6500 Series.
2. Select **OK**.



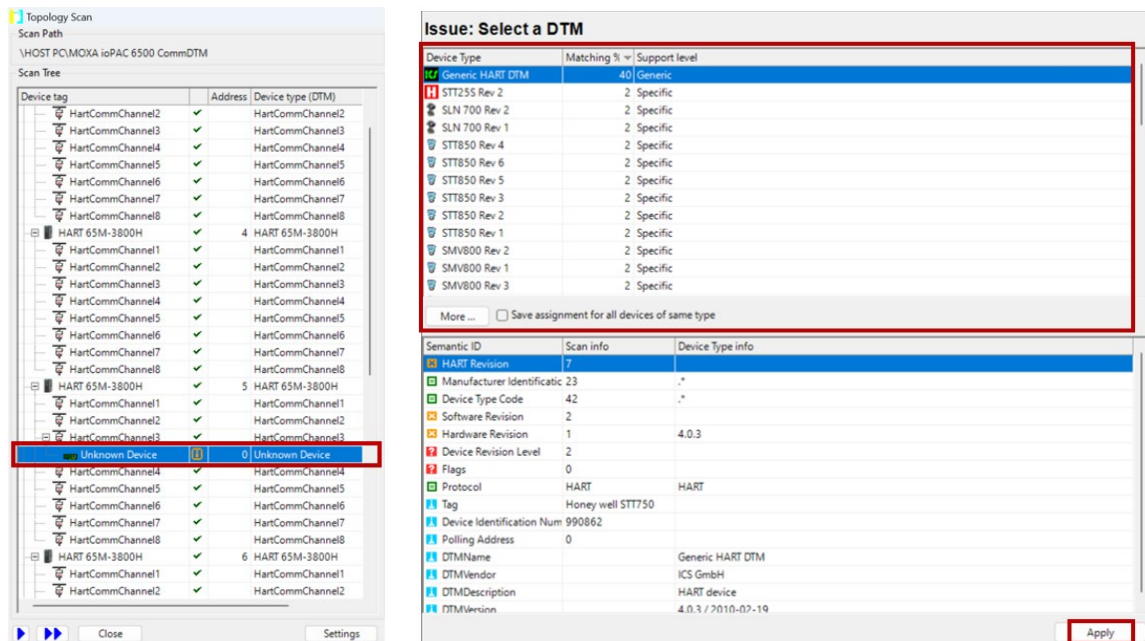
Topology Scan

1. Select **Topology Scan**.
2. Select the **Play** button to scan.
3. Select **Close**.



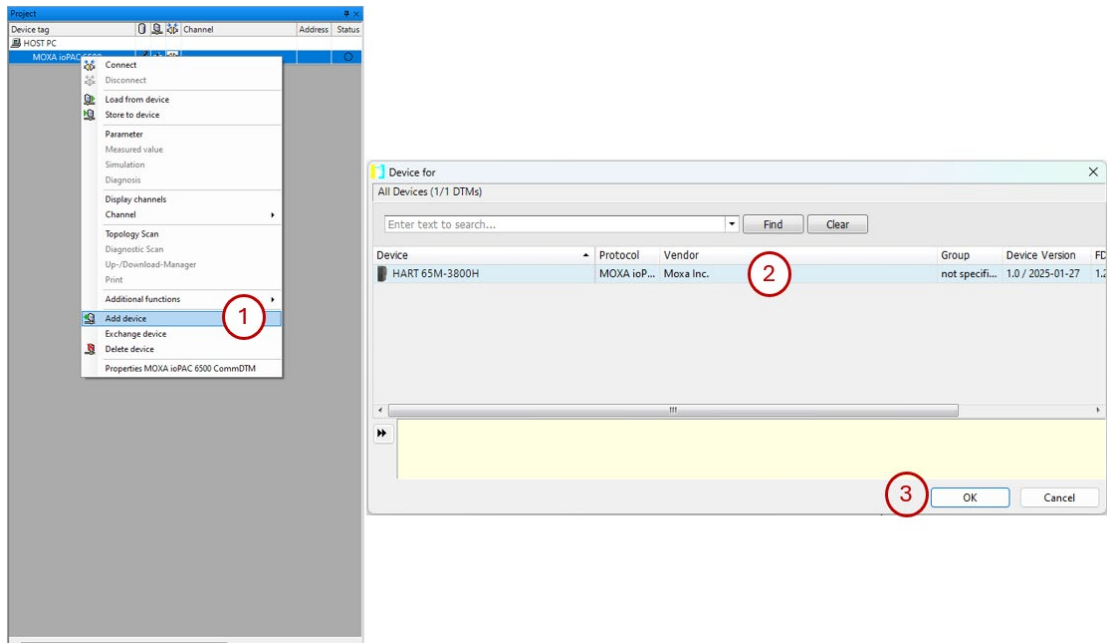
NOTE

Some of the field devices may be recognized as an "Unknown Device" after scanning. If this happens, manually select the DTM as shown below.

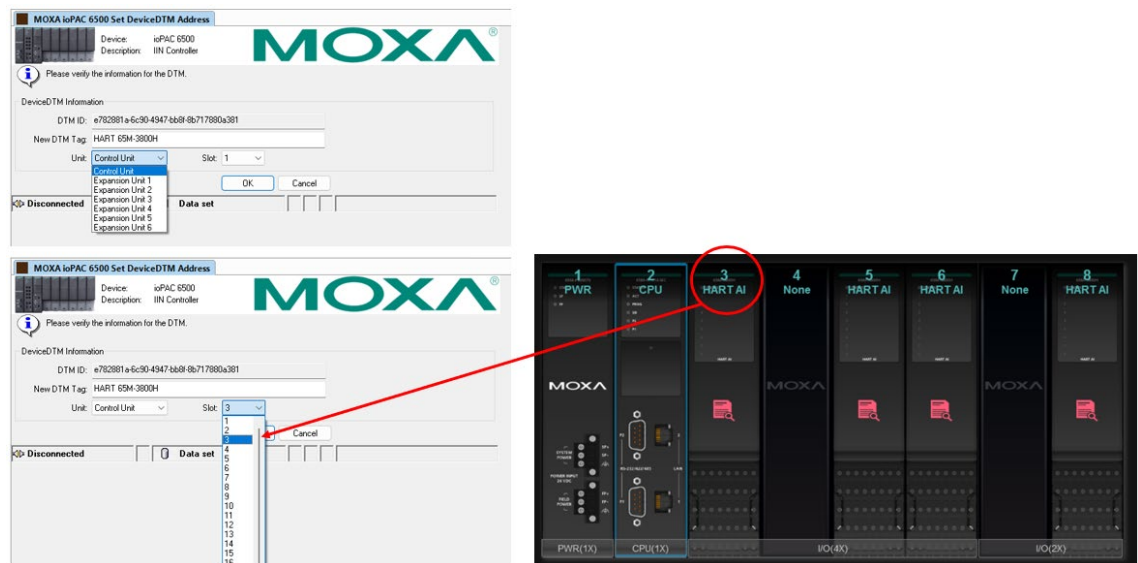


Add Manually: 65M-3800H

1. Add device.
2. Select **HART 65M-3800H**.
3. Click **OK**.

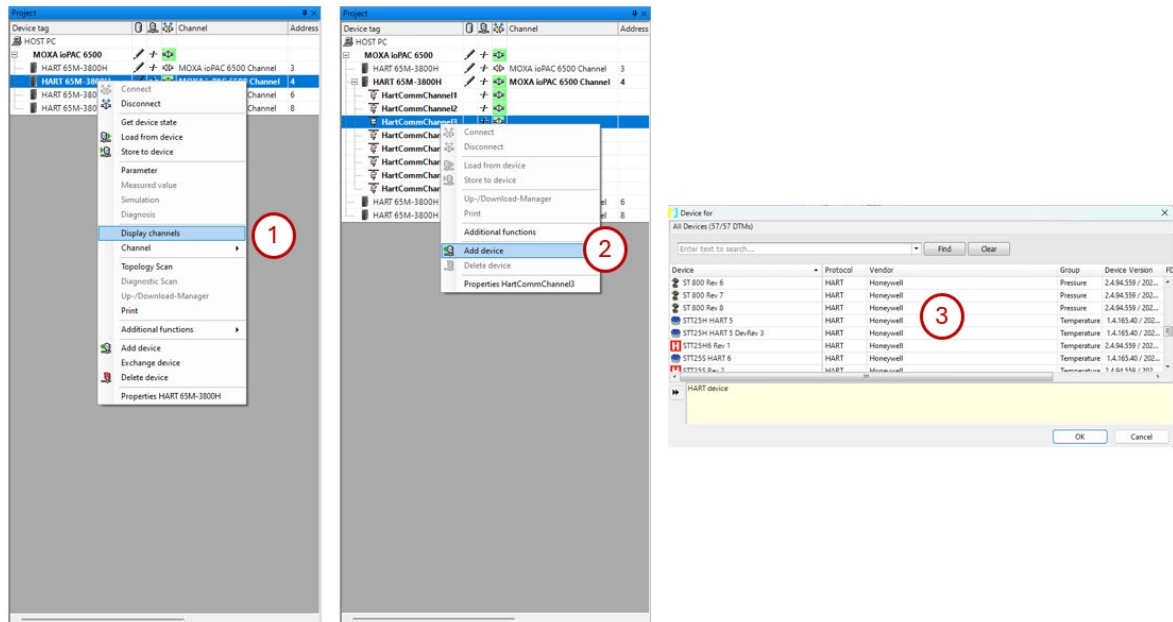


4. Select the desired unit and slot number, where the HART module will be installed. The slot number can be referenced in IINxpress.



Add Manually: Field Device

1. Display channels.
2. Add the device to the desired channel that is connected to the HART field device.
3. Choose the corresponding field device DTM, (Make sure you've downloaded the needed field device DTM beforehand and **Update Device Catalog**).



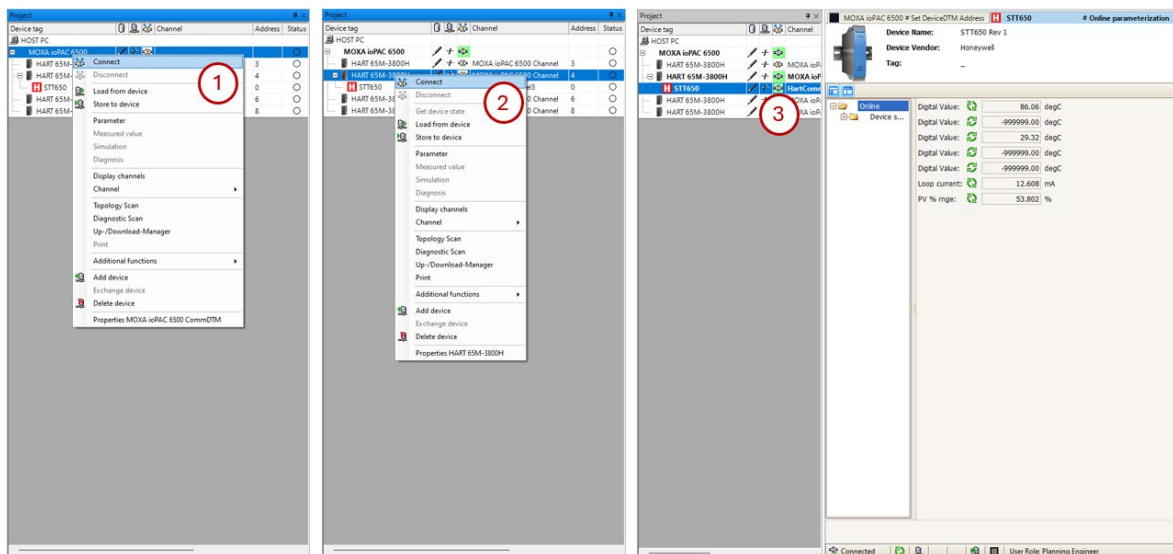
Connection

1. Connect MOXA ioPAC 6500 CommDTM.
2. Connect HART 65M-3800H.
3. Connect the field device.

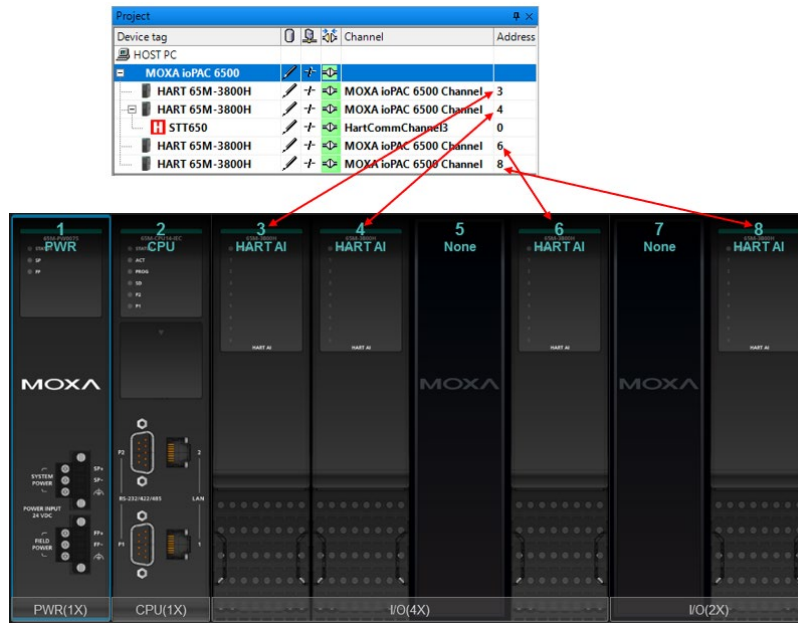


NOTE

This document uses Honeywell STT650 as an example.



4. Make sure the address number aligns with your configuration in IINxpress.



3. Troubleshooting

Device List—Troubleshooting Information

Select **Device List** to check configuration status.

Status	Model	Unit	Slot	Status description
DTM	HART 65M-3800H	Control Unit	3	Configuration OK
DTM	HART 65M-3800H	Control Unit	4	Configuration OK
DTM	HART 65M-3800H	Control Unit	6	Configuration OK
DTM	HART 65M-3800H	Control Unit	8	Configuration OK

Troubleshooting Icon Definition

Icon	Status Description	Troubleshooting
	Configuration OK	N/A
	Configuration failed, check DTM	After connecting, the detected device does not align with PACTware configuration.
	Configuration failed, check Mode/unit/slot	1. Wrong module installed. 2. Module installed on a wrong unit or slot.
	Configuration failed, DTM not installed	1. DTM is not yet installed. 2. Device catalog is not yet updated.
	Configuration failed, connect the device first	Check IP address and connect the device.

Example

Possible situation—this could happen when adding the device manually.

Status	Model	Unit	Slot	Status description
	HART 65M-3800H	Control Unit	3	Configuration failed, check DTM
	HART 65M-3800H	Control Unit	4	Configuration failed, check DTM
	HART 65M-3800H	Control Unit	6	Configuration failed, check DTM
	HART 65M-3800H	Control Unit	8	Configuration failed, check DTM
	HART 65M-3800H	Control Unit	1	Configuration failed, check model/unit/slot
	HART 65M-3800H	Control Unit	1	Configuration failed, check model/unit/slot
	HART 65M-3800H	Control Unit	1	Configuration failed, check model/unit/slot
	HART 65M-3800H	Control Unit	1	Configuration failed, check model/unit/slot

The Device information retrieved from the device after connection

The manually added configuration

Solution

1. Double-click the blue area and open the setting tab. Change slot number from 1 to 3.

The screenshot shows the MOXA ioPAC 6500 # Device List window with a table of devices. The first row is highlighted in blue. A red box highlights the 'Slot' column for the first row, and a red arrow points to the 'Slot' column for the second row. Below the table is the MOXA ioPAC 6500 # Set DeviceDTM Address dialog. The dialog shows the DeviceDTM Information section with a warning icon and the text 'This address (unit/slot) is already used by another DTM!'. The 'New DTM Tag' is set to 'HART 65M-3800H', 'Unit' is 'Control Unit', and 'Slot' is '1'. The 'Cancel' button is visible.

Status	Model	Unit	Slot	Status description
	HART 65M-3800H	Control Unit	3	Configuration failed, check DTM
	HART 65M-3800H	Control Unit	4	Configuration failed, check DTM
	HART 65M-3800H	Control Unit	6	Configuration failed, check DTM
	HART 65M-3800H	Control Unit	8	Configuration failed, check DTM
	HART 65M-3800H	Control Unit	1	Change 1 to 3. Match the Slot Number.
	HART 65M-3800H	Control Unit	1	Configuration failed, check model/unit/slot
	HART 65M-3800H	Control Unit	1	Configuration failed, check model/unit/slot
	HART 65M-3800H	Control Unit	1	Configuration failed, check model/unit/slot

MOXA ioPAC 6500 # Set DeviceDTM Address

Device: ioPAC 6500
Description: IIN Controller

MOXA

This address (unit/slot) is already used by another DTM!

DeviceDTM Information

DTM ID: bd8321d9-7b5a-4959-8a71-919ee90e5f31

New DTM Tag: HART 65M-3800H

Unit: Control Unit Slot: 1

Cancel

Connected Data set

2. Check the device list again. It should be **Configuration OK** at this point.

The screenshot shows the MOXA ioPAC 6500 # Device List window. The first row is now highlighted in red, and the 'Status' column shows a green 'DTM' icon. The 'Status description' for the first row is 'Configuration OK'.

Status	Model	Unit	Slot	Status description
	HART 65M-3800H	Control Unit	3	Configuration OK
	HART 65M-3800H	Control Unit	4	Configuration failed, check DTM
	HART 65M-3800H	Control Unit	6	Configuration failed, check DTM
	HART 65M-3800H	Control Unit	8	Configuration failed, check DTM
	HART 65M-3800H	Control Unit	1	Configuration failed, check model/unit/slot
	HART 65M-3800H	Control Unit	1	Configuration failed, check model/unit/slot
	HART 65M-3800H	Control Unit	1	Configuration failed, check model/unit/slot

3. Repeat for slot 4, 6, and 8.

The screenshot shows the MOXA ioPAC 6500 # Device List window. The first four rows are now highlighted in green, and the 'Status' column shows a green 'DTM' icon. The 'Status description' for the first four rows is 'Configuration OK'.

Status	Model	Unit	Slot	Status description
	HART 65M-3800H	Control Unit	3	Configuration OK
	HART 65M-3800H	Control Unit	4	Configuration OK
	HART 65M-3800H	Control Unit	6	Configuration OK
	HART 65M-3800H	Control Unit	8	Configuration OK