

Getting Started with DAD143 using PROFINET and SIMENS TIA Portal,

Pre requisites:

1. You must install the TIA16 Portal on your PC.
2. If you are using touch HMI then WinCC display images must be installed too.
3. We recommend you use a separate Ethernet connection for this. Either an extra PCI(-e) board or a USB to Ethernet converter.

Hardware:

1. A Siemens PLC. We are using a S7-1212C.
2. A DAD143
3. Four Ethernet cables.
4. 24VDC Power for the HMI and the DAD143.
5. A simple 10/100Mbit Ethernet switch with at least 4 ports (PC, PLC, DAD143 and HMI).

Setup:

PROFINET states that everything is about MAC addresses; but to setup things you will need to assign IPv4 addresses too. Most users use address "192.168.0.xx" to "192.168.1.xx" for their private (company) network.

Your new "Test Net" using the extra network adaptor must have its own address range, so that Windows can determine what network to use when an Ethernet message is to be sent.

We use "192.168.11.xx":

- PC: "192.168.11.23"
- PLC: "192.168.11.12"
- HMI: "192.168.11.55"
- DAD143: "192.168.11.10"

You may think this is odd choices, but anything goes here as long as the last fields (10, 12, 23 and 55) are different and neither 0 nor 255.

To do:

Connect everything and power up your system.

First Time Startup:

Start TIA16 Portal.

Click on "Project view" in the left bottom corner.

Select Project->Open.

Click "Browse".

Browse to your "DAD143.1_KTP400.zap16" archived project.

Create a folder for it, select it and click "open".

In the left plane find and click on the "Devices & networks".

You should now see your test setup: PLC, HMI and DAD143

Right-click on the PLC and select "Compile->Hardware(rebuild all)"

Right-click on the PLC and select "Compile->Software(rebuild all)"

Right-click on the PLC and select "Download to device ->Hardware configuration"

Check that PG/PC interface is "PN/IE" and select the right Network Card.

Select "PN/IE_1" as Connection to subnet.

Click on "Start search".

Highlight the line showing your PLC.

Click "Load" and then "Load" again.

Change the "Start module" to "No action" and click "Finish" (we haven't loaded any software yet).

Right-click on the PLC and select "Download to device ->Software(all)"

Click "Load".

Change "No Action" to "Start module" and click "Finish".

In the Project Tree open the "PLC_1"->"Distributed I/O"->"PROFINET IO-System"->"dad143 [DAD143.1]":

Right-click on dad143 [DAD143.1]" and select "Online and Diagnostics":

Select "Functions"->"Assign PROFINET device name":

Click "Update list" then highlight the DAD143 and click "Assign name".

The PLC and DAD143 should now be running.

If you are using a KTP400 display then:

..Right-click on the HMI and select Compile->Software(rebuild all)

..Right-click on the HMI and select Download to device ->Software(all)

..Check the "Overwrite all" checkbox.

..Click "Load".

Else delete the KTP400 HMI and add your own display

Everything should now be running.