

TECH NOTE :: PMX with Beckhoff PLC and EtherCat

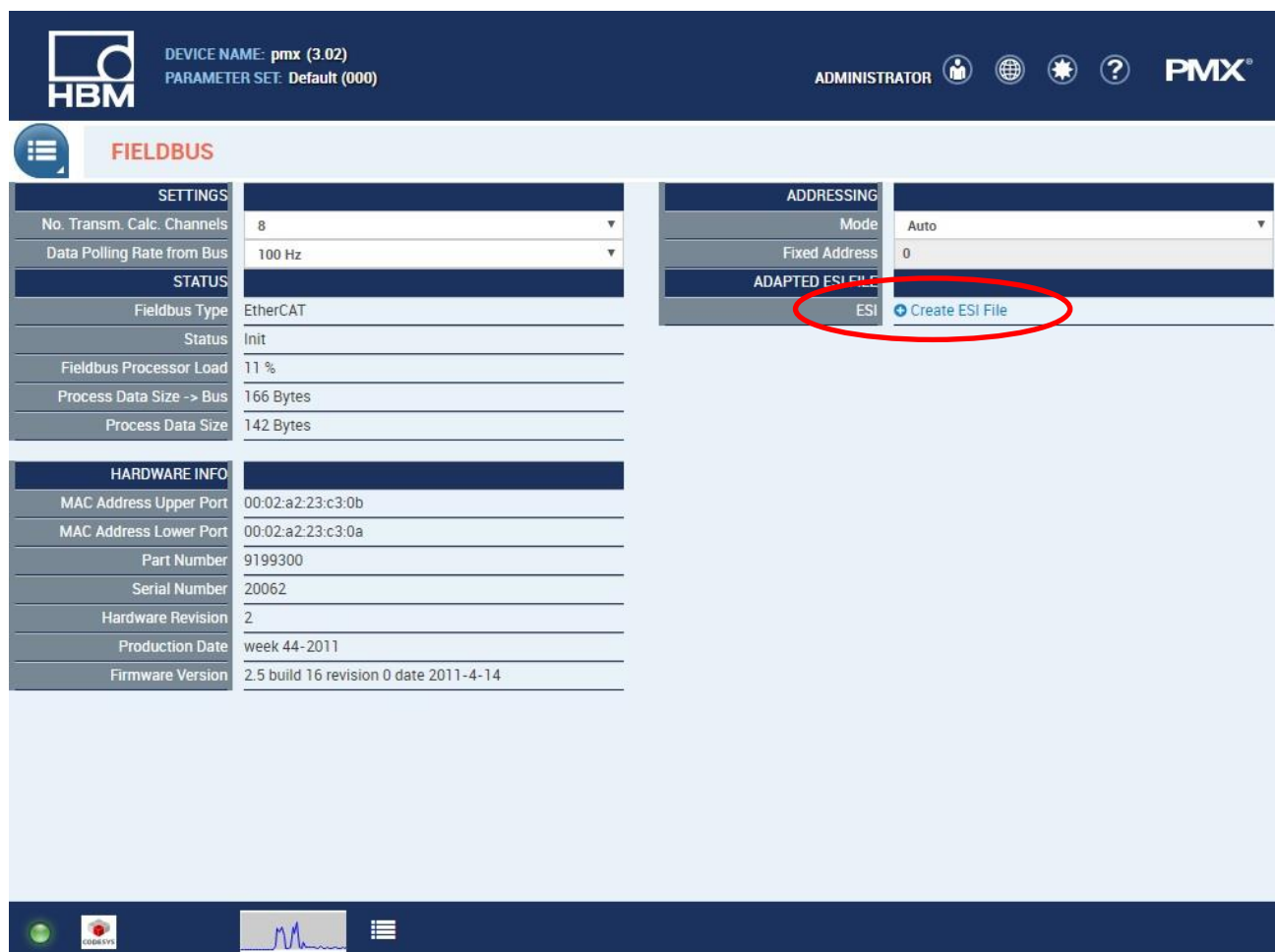
Version: 2018-04-13
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 Status: HBM: Public

Brief description

This is an instruction for creating a project with TwinCat that connects the PMX to a Beckhoff PLC. Furthermore, there is a short explanation about how to monitor measurements from the PMX in TwinCat. Basic knowledge about ProfiNet connections and the PMX is recommended.

Generate GSE File

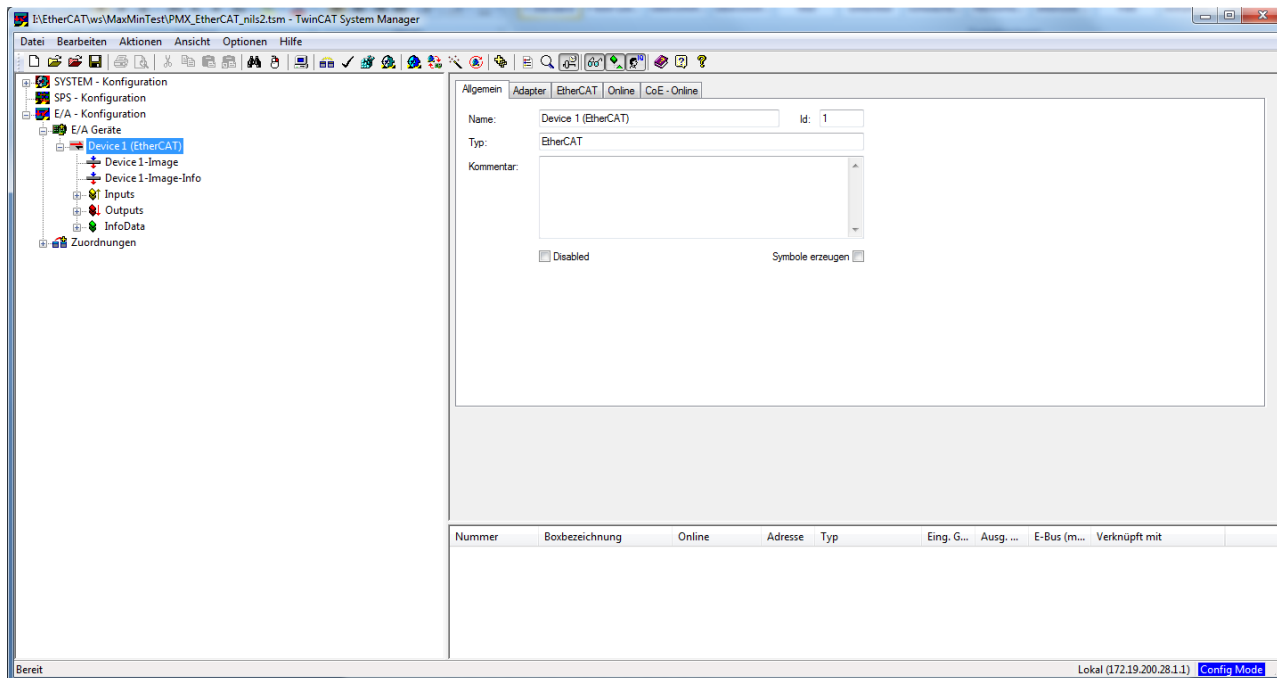
Since firmware version 2.00 it is possible to automatically generate an individual ESI (EtherCat Slave Information) file from each PMX. It includes the device configuration and names of all channels. Therefore go to settings -> fieldbus. Now click "Create ESI File" on the bottom. This approach saves time and is more resistant to mistakes compared to a manual configuration in TwinCat.



Important: It is essential to not change the file name. It is normed and includes important information for the software. Also define the number of transmitted calculated channels before generating the file. In the device there has to be mounted at least one measurement card (PX878 is not a measurement card).

Install devices

Open the TwinCat software.



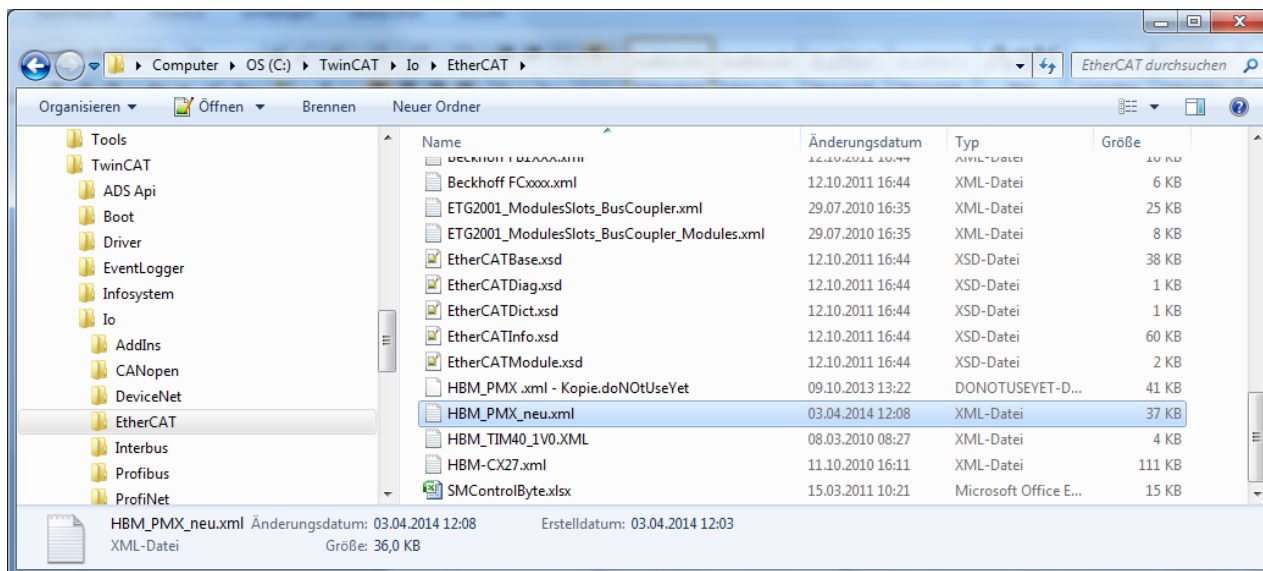
There are two ways to add a device:

1. Load individual ESI file, or load PMX XML file and configure manually.
2. Scan for devices via icon from menu bar.

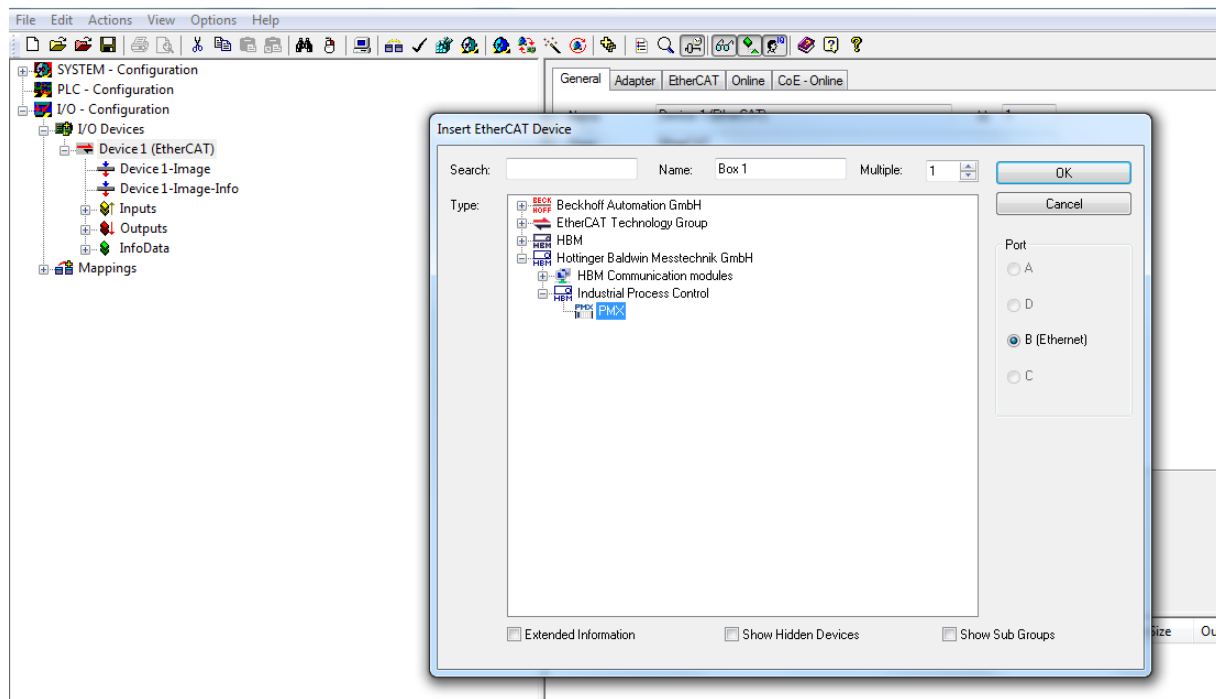
Both options will be described separately below. They are not compatible but are instead optional.

1) Integrate PMX with ESI file

First of all, the XML file must be available. Bear in mind the difference between device specific and general ESI file. The first one can be generated directly from the device, the second can be downloaded from the HBM website. Use the following path to load the file.

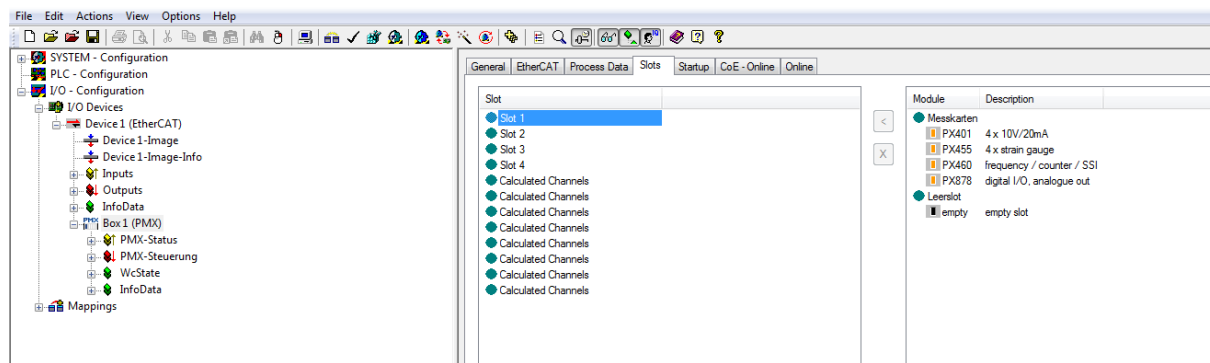


To load the XML file, right-click Device1 and choose "Append Box". The following dialog opens which enables you to scan for a PMX system.

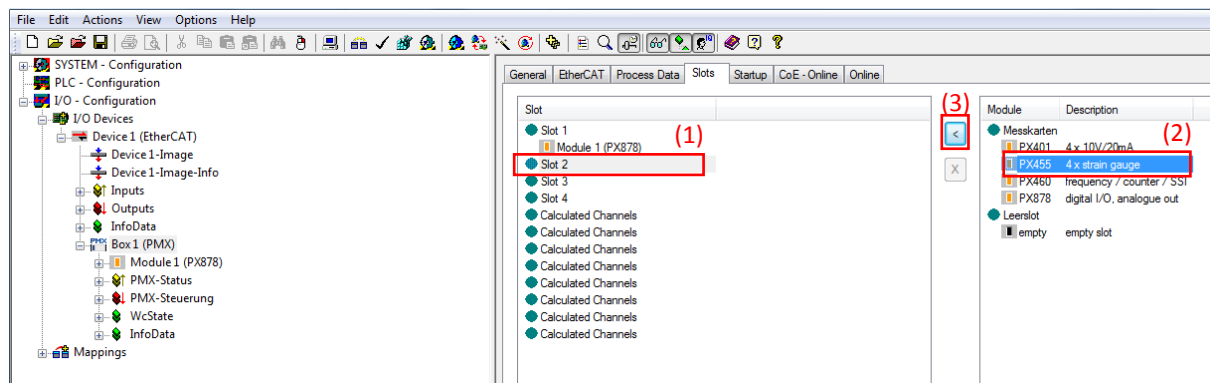


Hint: If you are using the device specific ESI file you can skip the device configuration in the software.

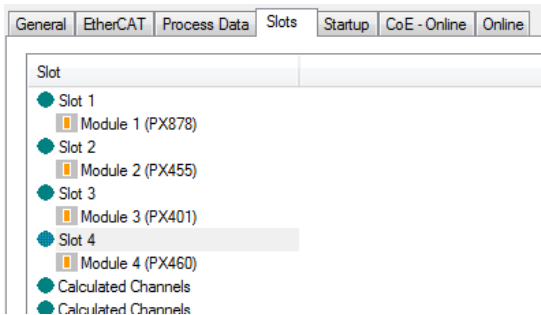
When the PMX system has been added to the hierarchy on the left-hand side, the slots need to be assigned to the respective measuring cards.



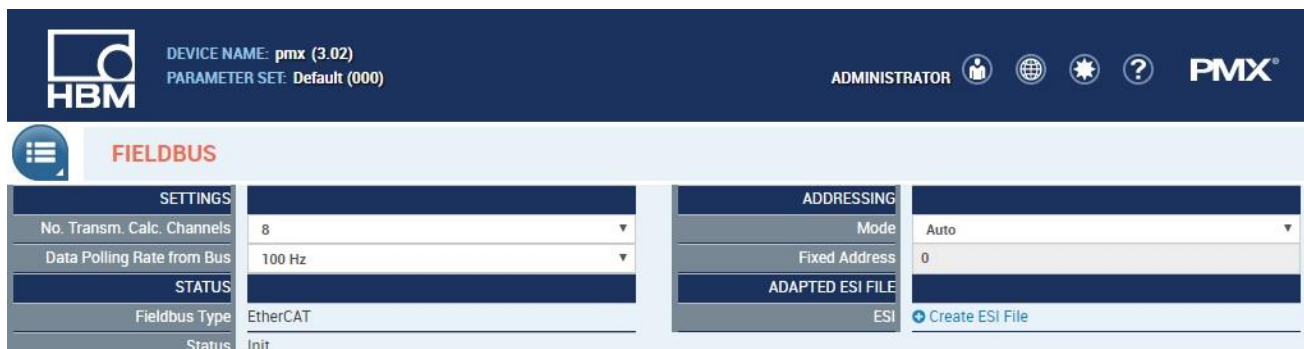
For this purpose, (1) select the slot, (2) select the measuring card inserted into the slot and (3) assign the measuring card to the slot. This results in the following overview:



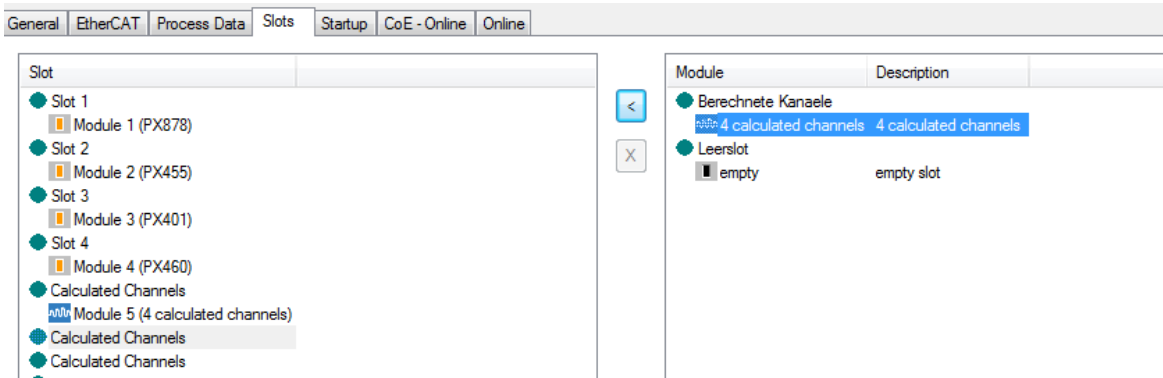
Repeat these steps for all other slots.



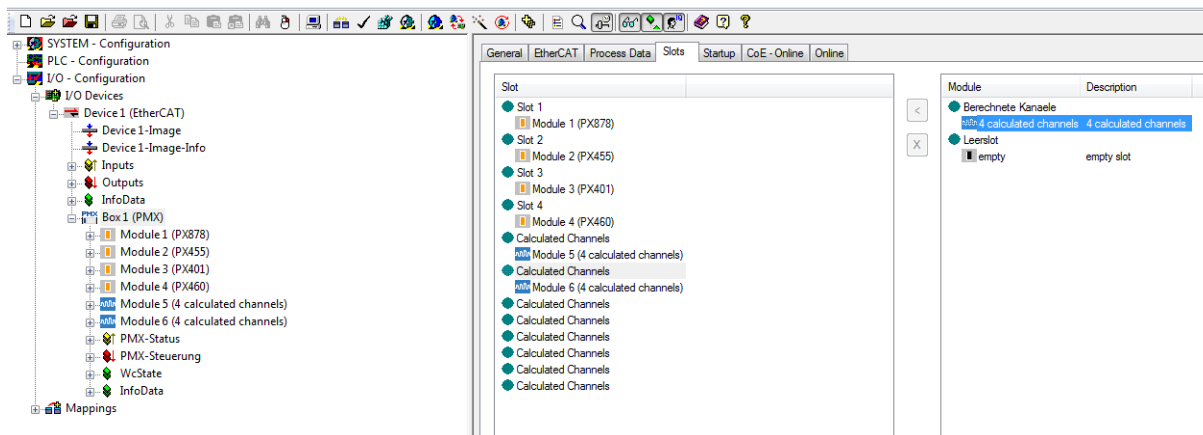
The next step is to assign the Calculated Channels. It is essential to make sure that the number of channels set in TwinCat is equal to the number of calculated channels in the PMX web browser. (In this case: 8 channels)



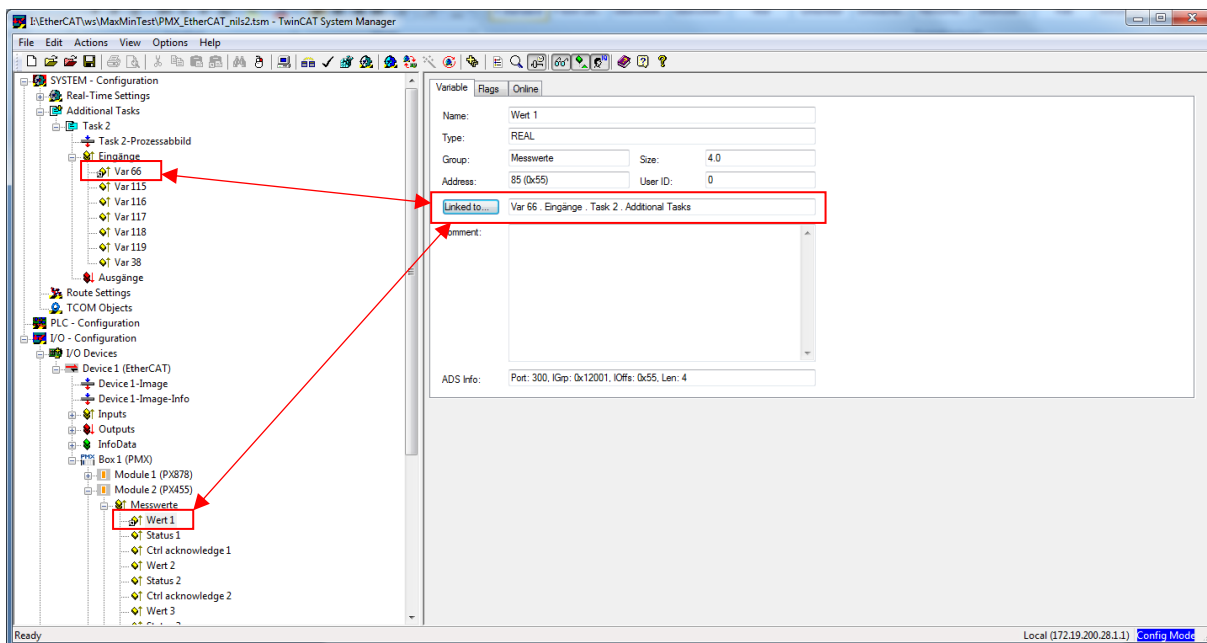
4 calculated channels are assigned per virtual "Calculated Channel".



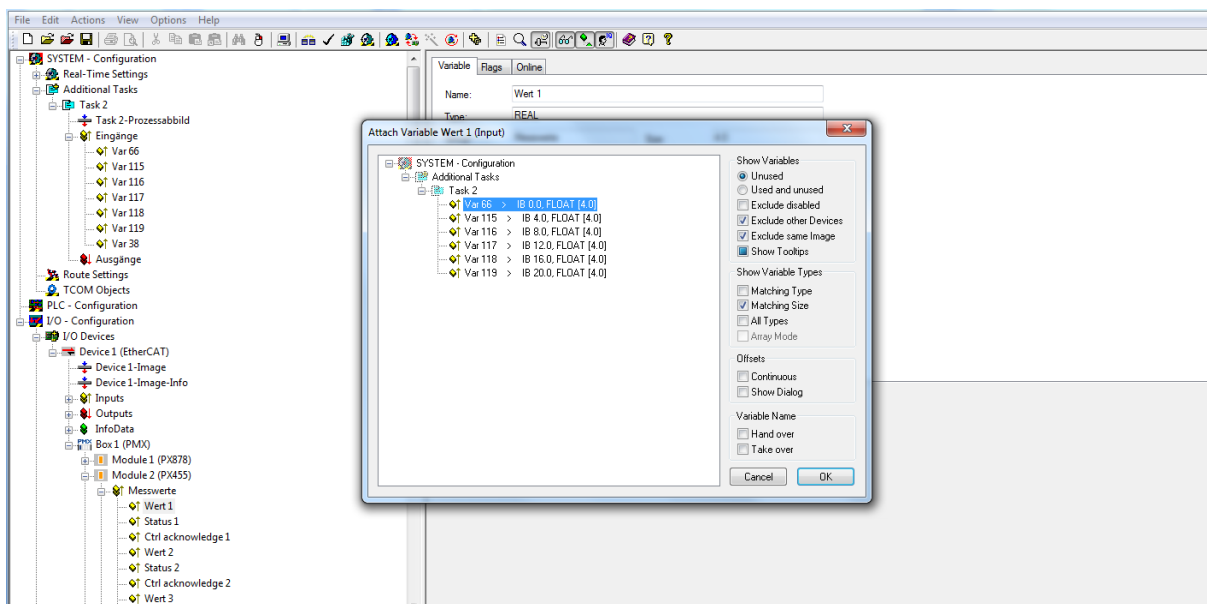
When all measuring cards and Calculated Channels have been assigned, our example provides the following overview:



Now the PMX values can be linked to the variables in the system configuration's Cyclical Data. In this case, "Wert 1" (value 1) is linked to "Var 66".



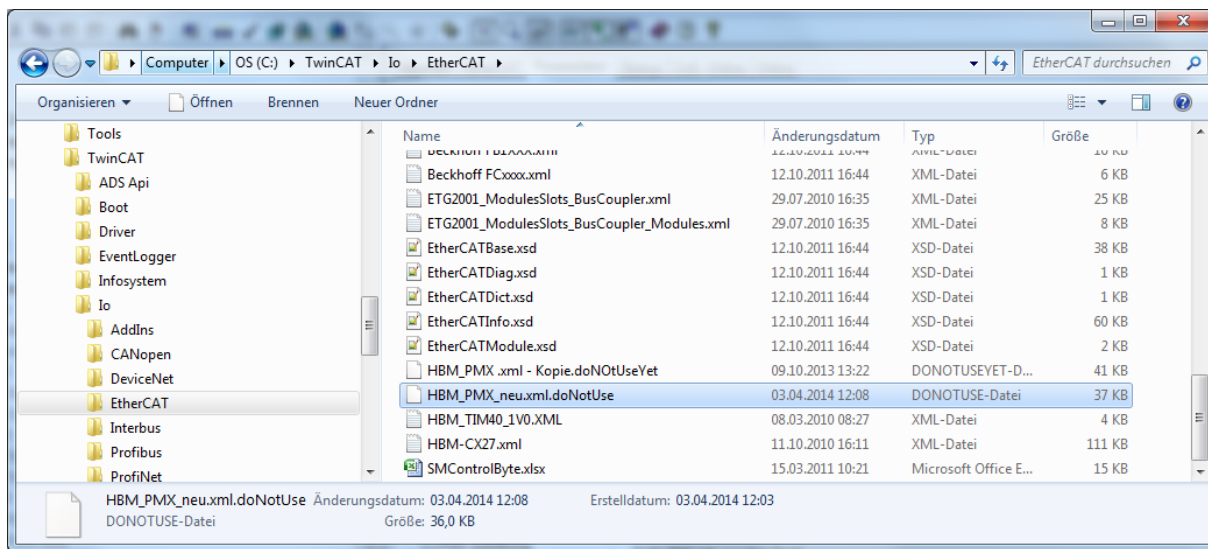
Click the "Linked to" button to get the following window, where you can select the variable to be linked.



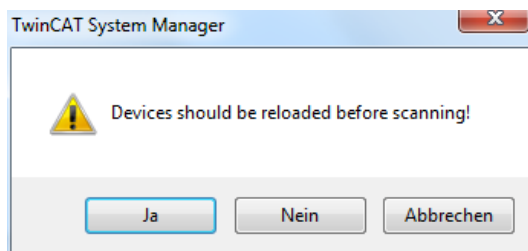
The 'Activate Configuration' icon starts data exchange. Diverse messages are displayed which have to be confirmed with 'Yes' or 'OK'.

2) Integrate PMX with "Scan for devices"

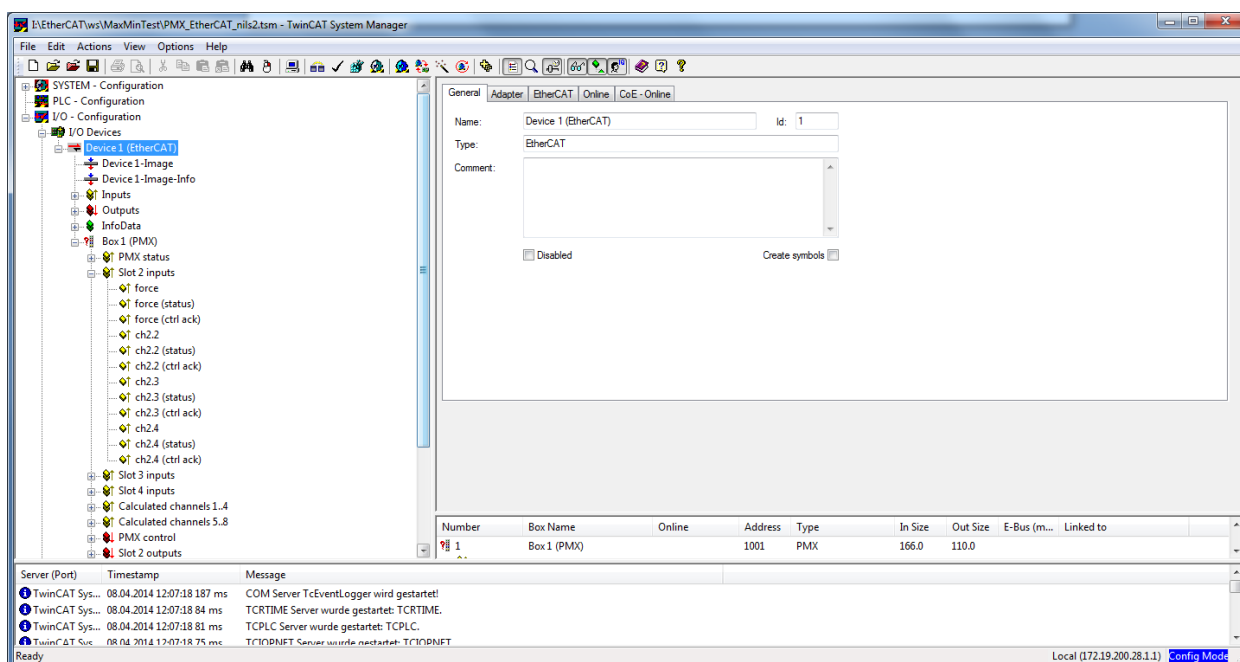
The XML file must not be loaded. It has to be renamed in the directory for this purpose. In this case, "doNotUse" has been added as file extension.



Scan for devices in TwinCAT by clicking this icon:

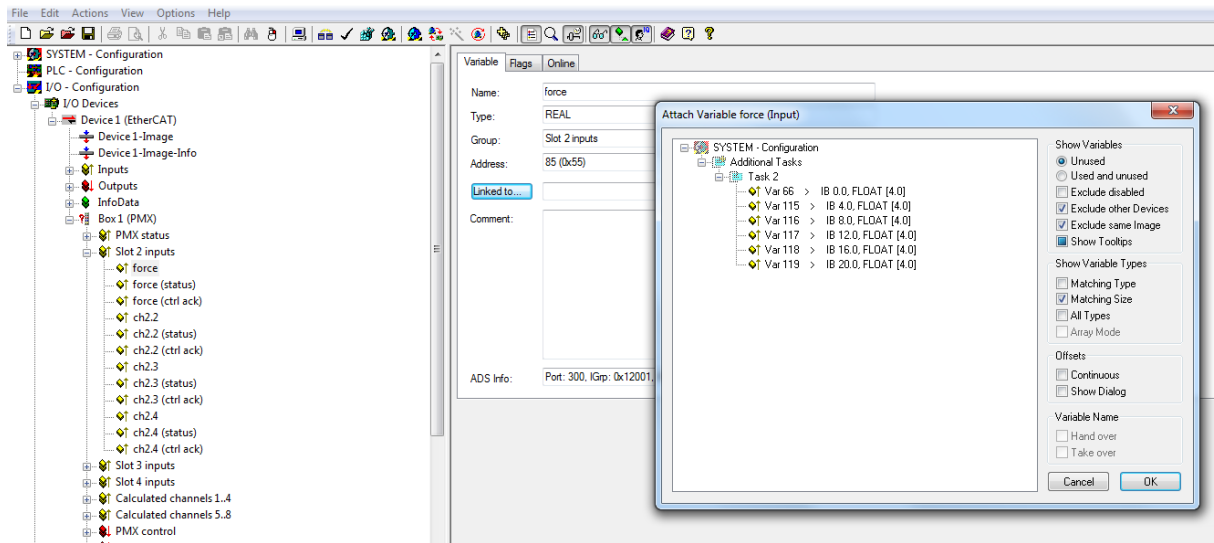


The PMX system is automatically found with the channels and measuring cards having already been configured.

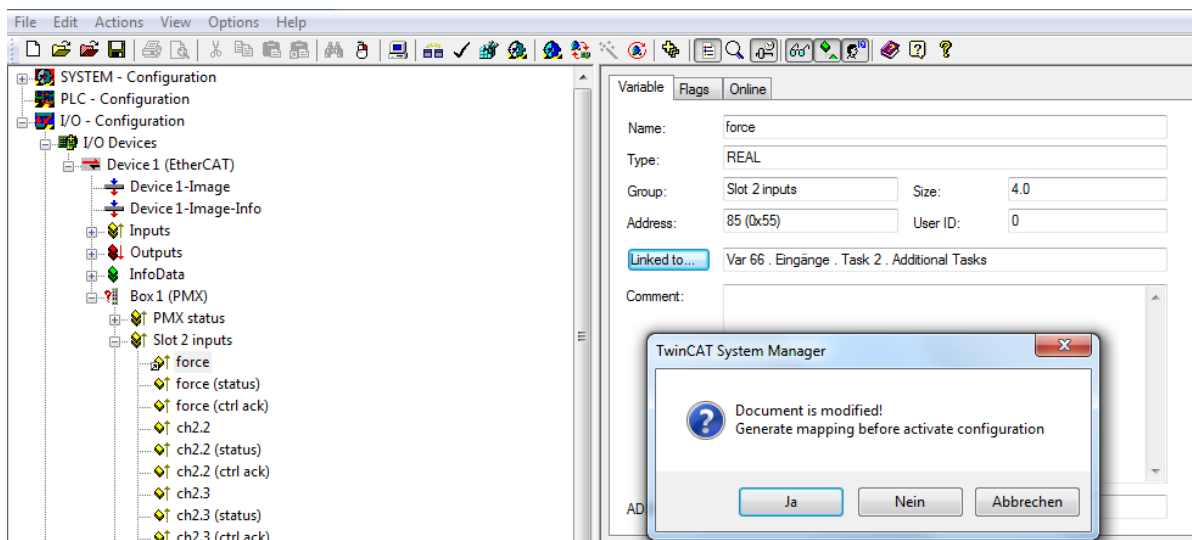


Display measurement values

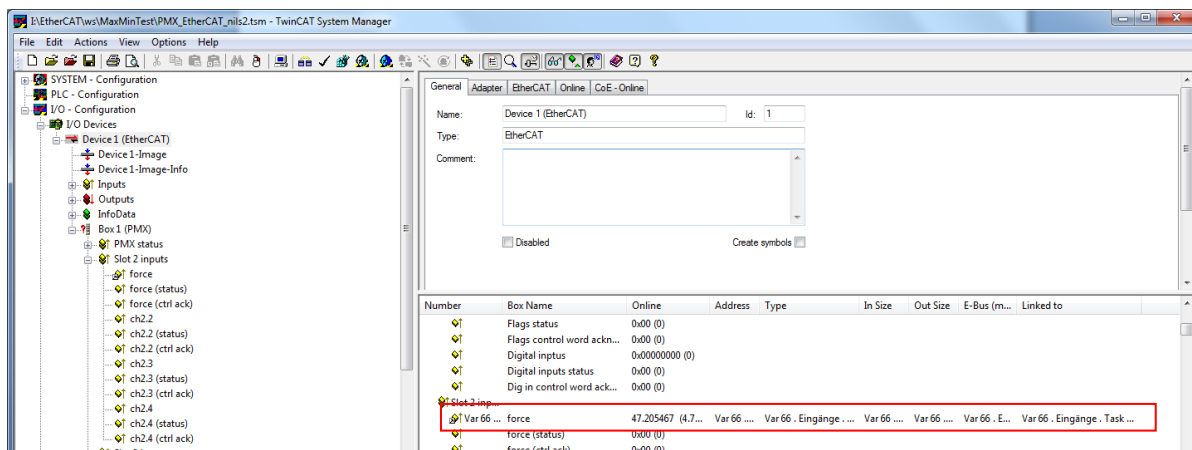
The measured values of the card must be linked to the variables.



Click 'Activate Configuration' to start data exchange.



The measured values are displayed.



Disclaimer

These examples are for illustrative purposes only. They cannot be used as the basis for any warranty or liability claims.