TECH NOTE :: QuantumX Integration into ControlDesk from dSPACE

Version: 2020-06-23

Status: public

Abstract

This Tech Note describes how to integrate QuantumX / SomatXR into ControlDesk software set up as XCP master via standardized xCP-on-Ethernet.

Intro

dSPACE ControlDesk software can be used as a cockpit for Rapid-Controller Prototyping (RCP), Hardware- in-the-Loop (HiL) device testing, but also as Measurement, Calibration, Diagnosis (MCD) software optimizing embedded software running on ECUs.

In addition to this it is possible acquiring data from any sensor connected to QuantumX / SomatXR modules via xCP-on-Ethernet service running under ControlDesk.

System Setup Preparation Latest version of the for free HBM software MX Assistant software

- dSPACE ControlDesk with activated licenses for **ECU Interface Module**

You will need: QuantumX CX27C gateway and any measurement module

Hint: As we constantly improve our software, please keep QuantumX embedded and PC software always up to date.
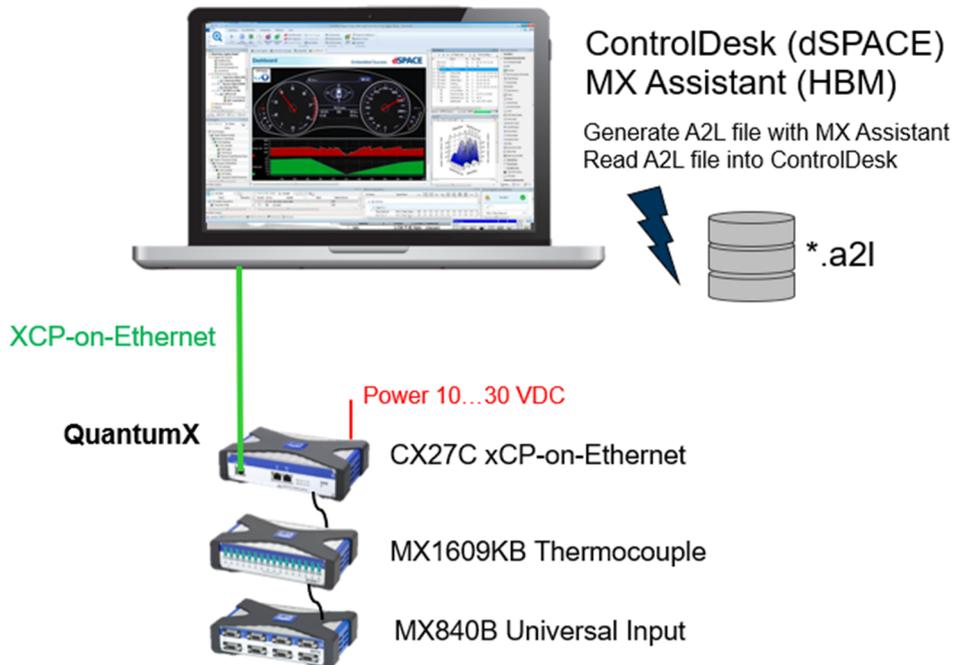
Connect all measurement modules to CX27C via cable type KAB272-x or pack all devices into a backplane (BPX). Connect the Ethernet cable to front or rear side connector of the CX27C and to the device where the xCP master is running. Run MX Assistant and switch the module to for example "PROFINET" fieldbus mode. Reboot the module if necessary.
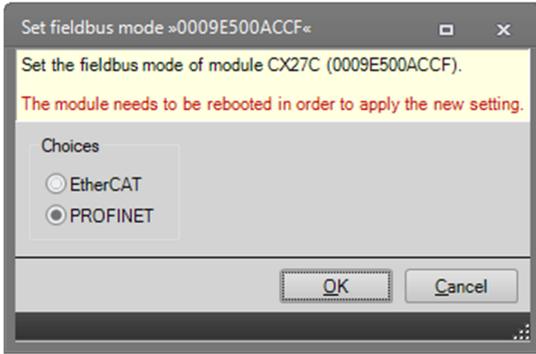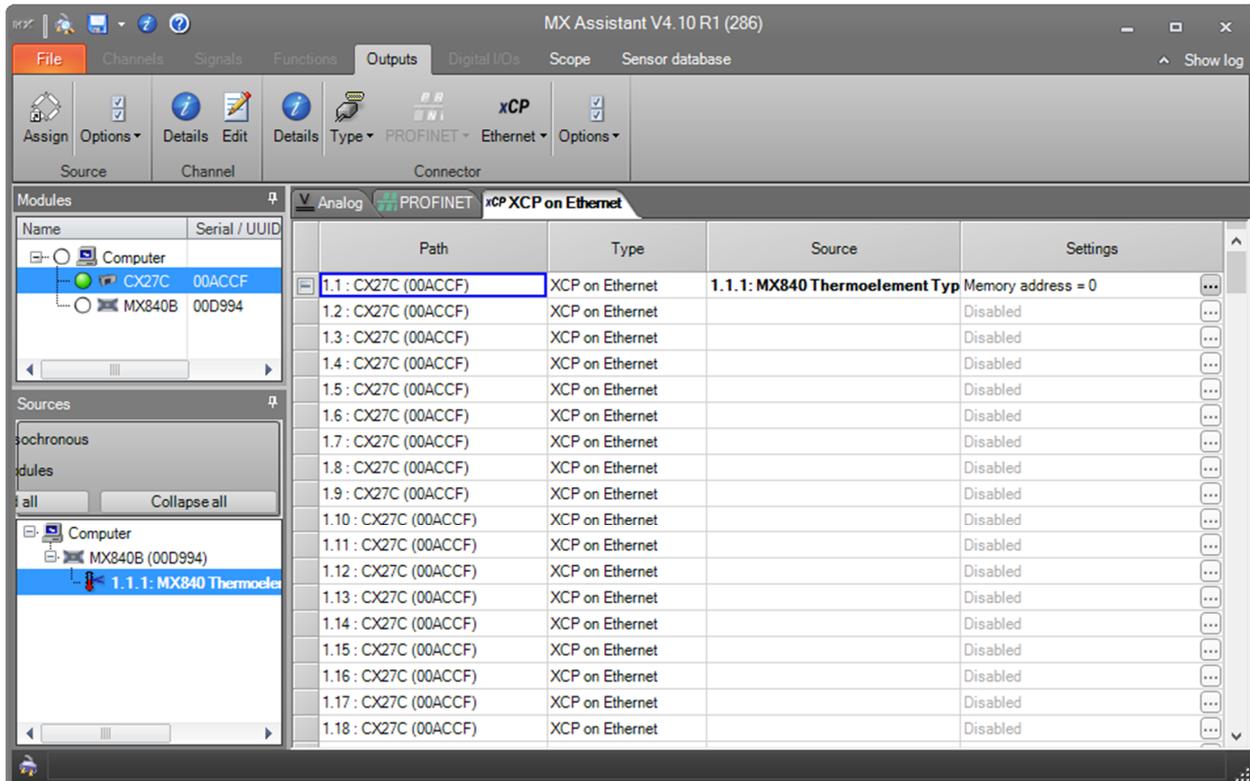
Configure all channels via sensor database or automatically via smart sensors (TEDS), set the individual data rates and low pass filters and activate isochronous real-time data transfer.
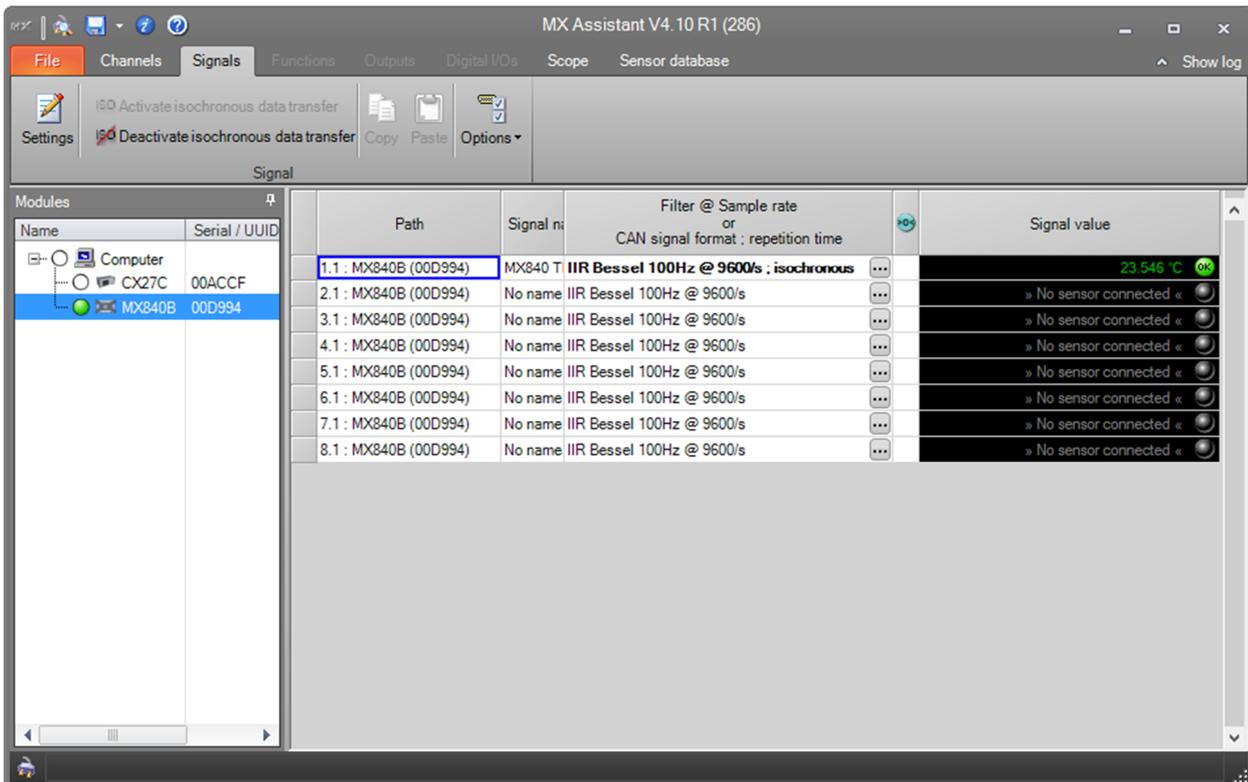
Mark CX27C or Computer on the left, go to **output** and **activate xCP-on-Ethernet** in the **Ethernet** menu.

Drag-and-drop the sensor signals into the XCP on Ethernet signal list.

Use the Ethernet pull-down menu and select the "**Export to ASAM MCD-2 MC database file (A2L)**" option that will allow you to generate the overall configuration as **A2L file**.
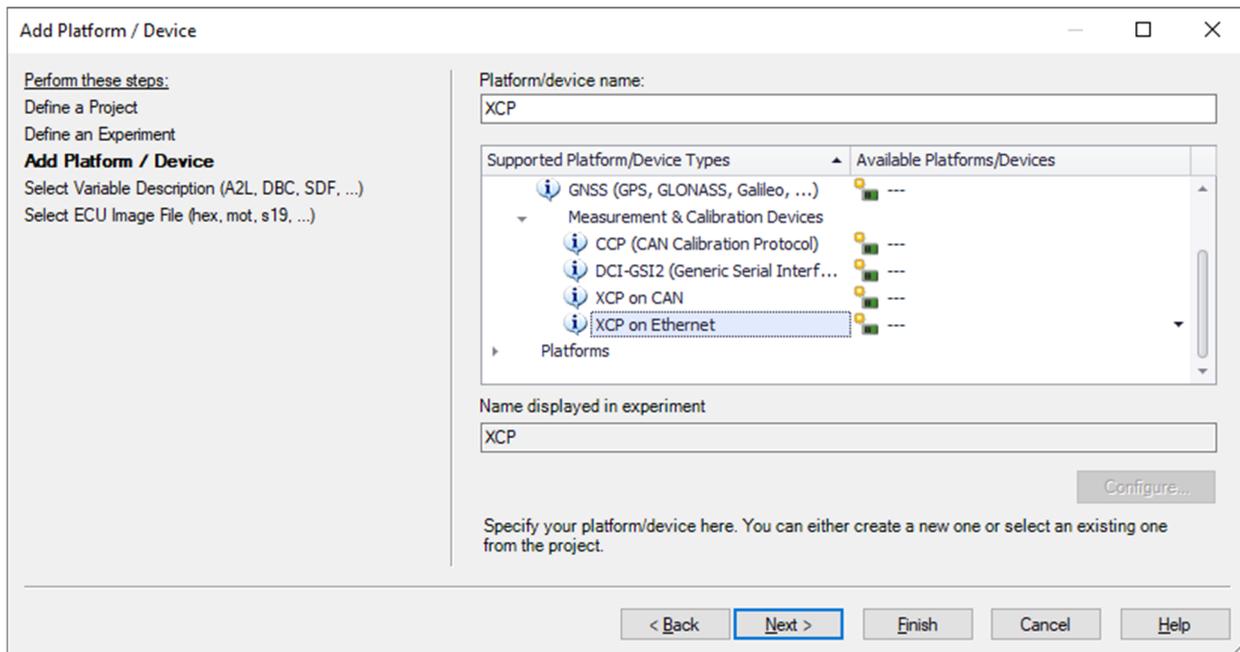
ControlDesk Setup

Start ControlDesk and activate license for the **ECU Interface Module** via dSPACE Installation Manager if not already done before.
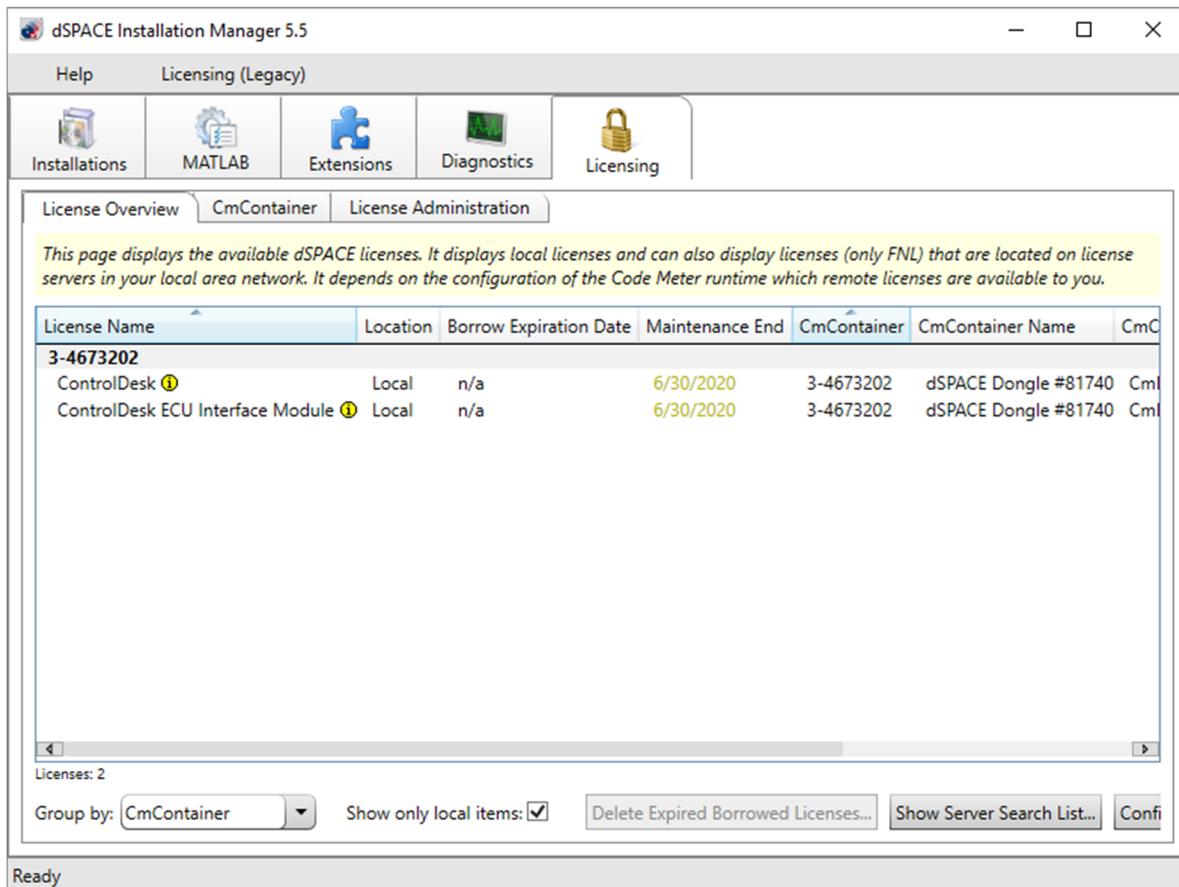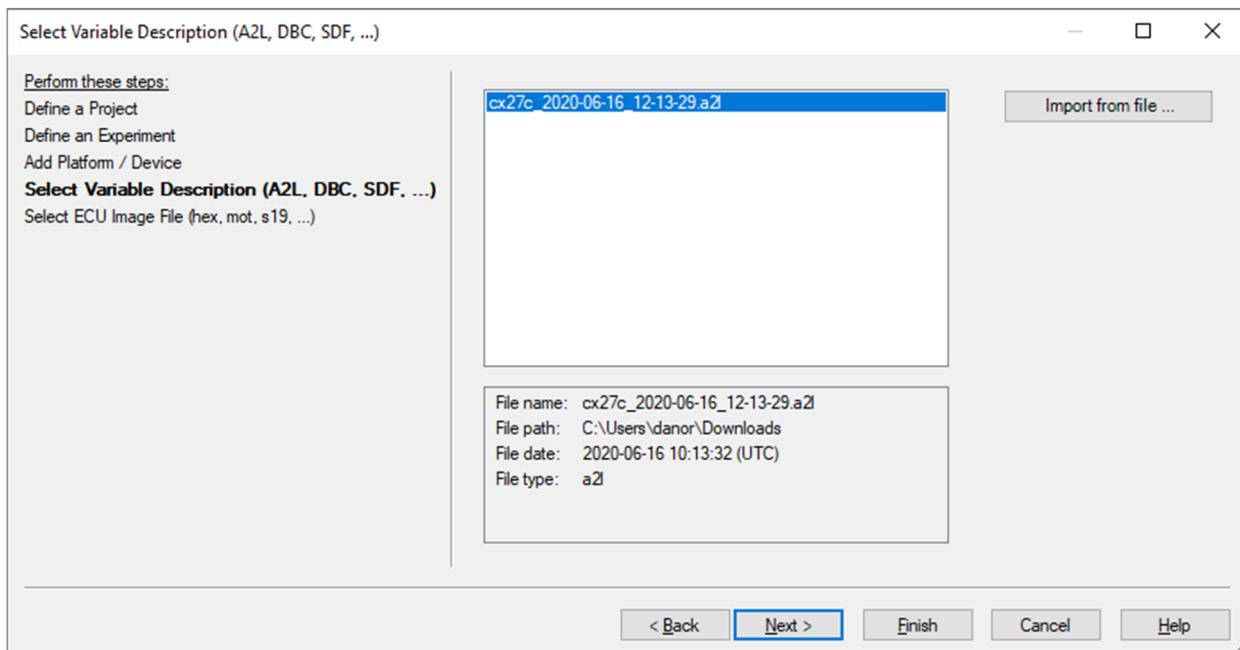

Define and create a new project:
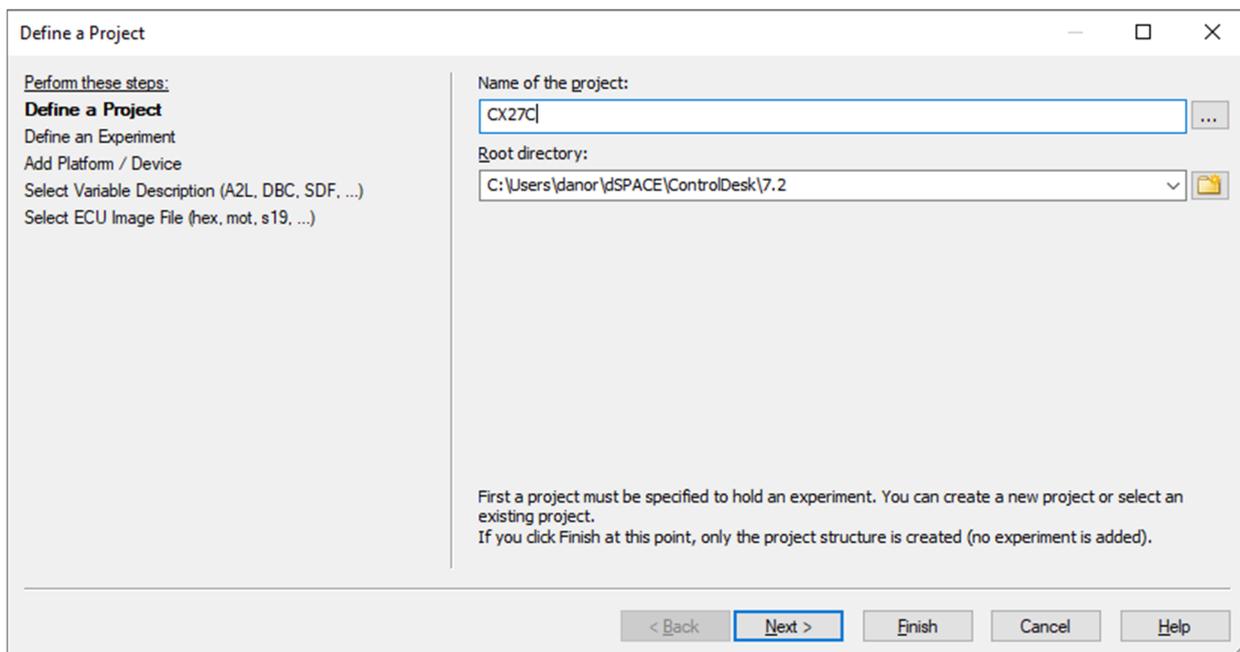
Add Platform / Device and select Measurement & Calibration Devices > XCP on Ethernet platform.
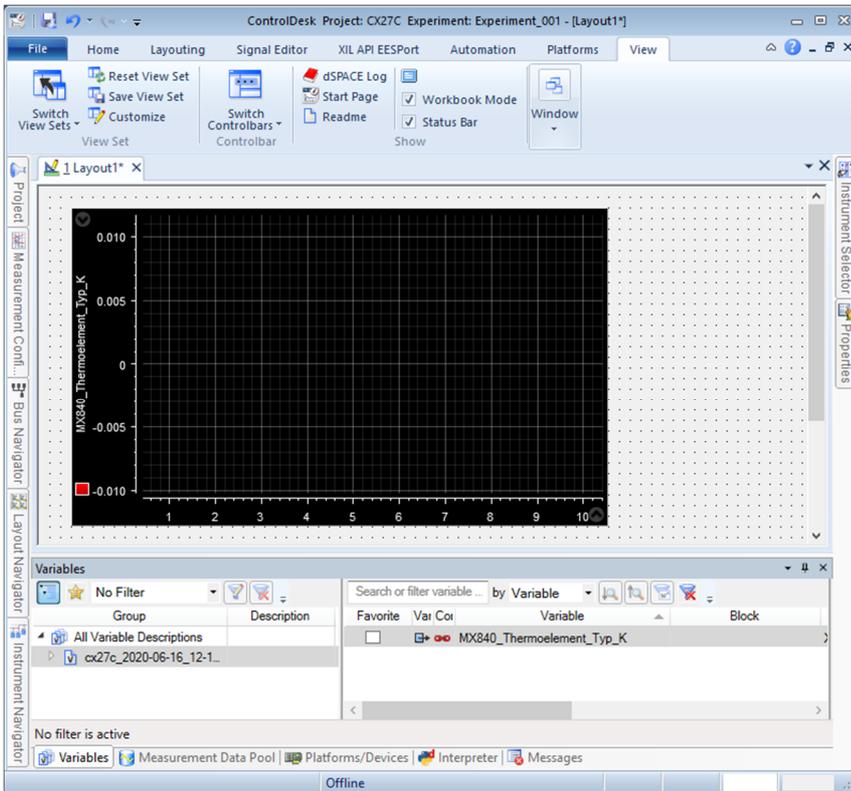

Go to **Select Variable Description** tab and import the A2L file you just generated with MX Assistant software.
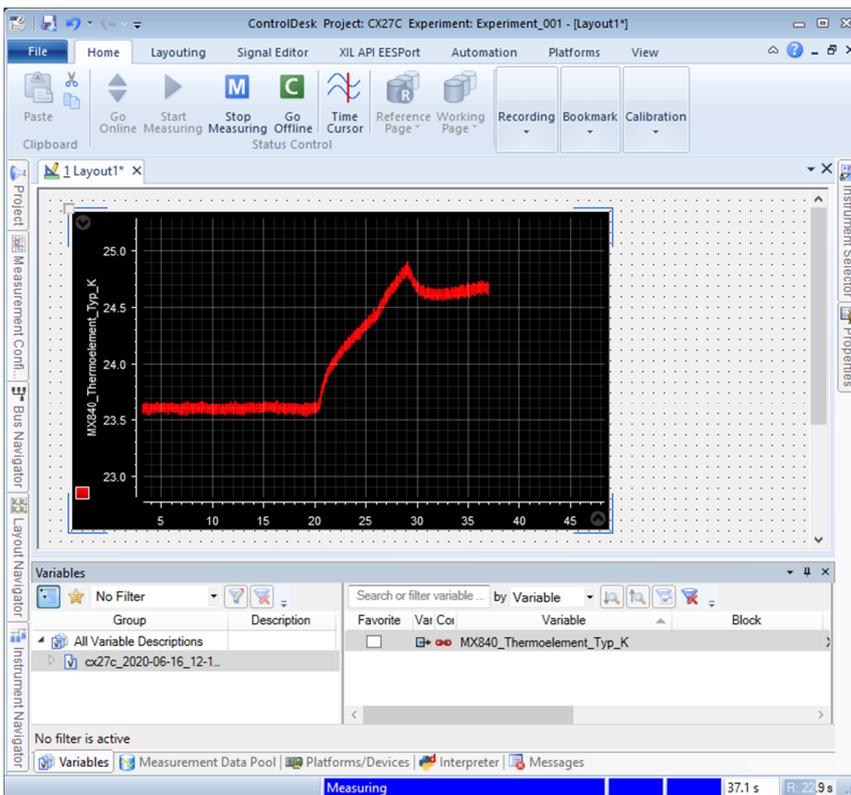

Leave the ECU Image File field blank and click Finish.

In the Variables panel at the bottom of the workspace, drag-and-drop a signal into the display area. Select the display type (e.g., time plotter).
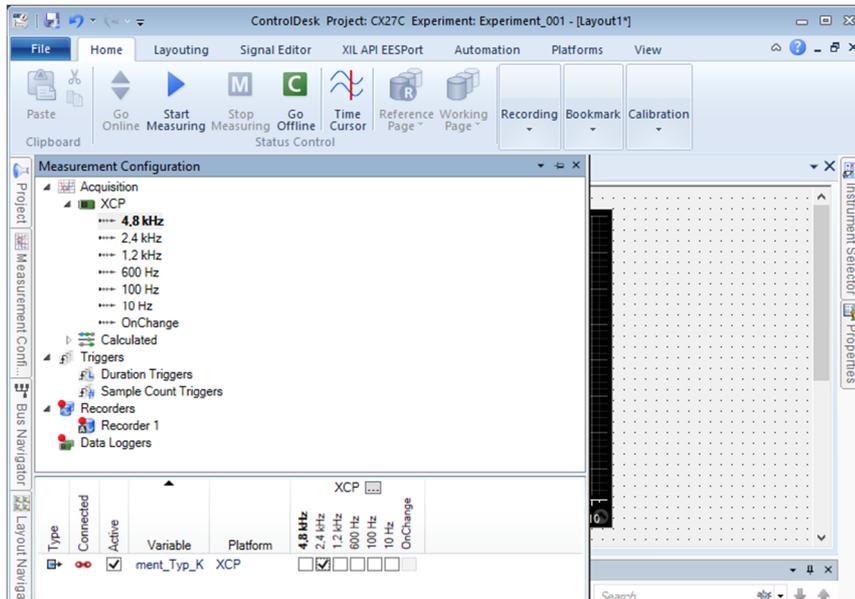

In the Home panel on the ribbon, click Go Online and Start Measuring. Sensor data should be displayed.
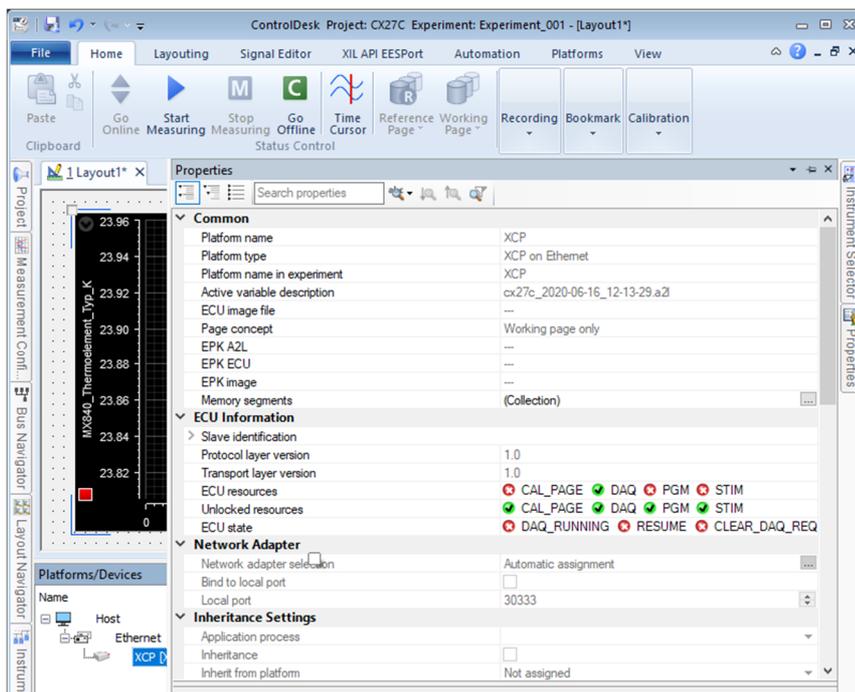
Configuration

Sample rates can be selected from the Measurement Configuration panel on the left side.

ECU information (mostly read-only, obtained from the A2L) can be viewed in the Properties panel on the right side, when the XCP device is selected in the Platforms/Devices panel at the bottom.

-- end

Legal Disclaimer: TECH NOTEs from HBK are designed to provide a quick overview to a specific topic beside the usual documentation. TECH NOTEs are continuously improved and so change frequently. HBM assumes no liability for the completeness of the descriptions. We reserve the right to make changes to the features and/or the descriptions at any time without prior notice.