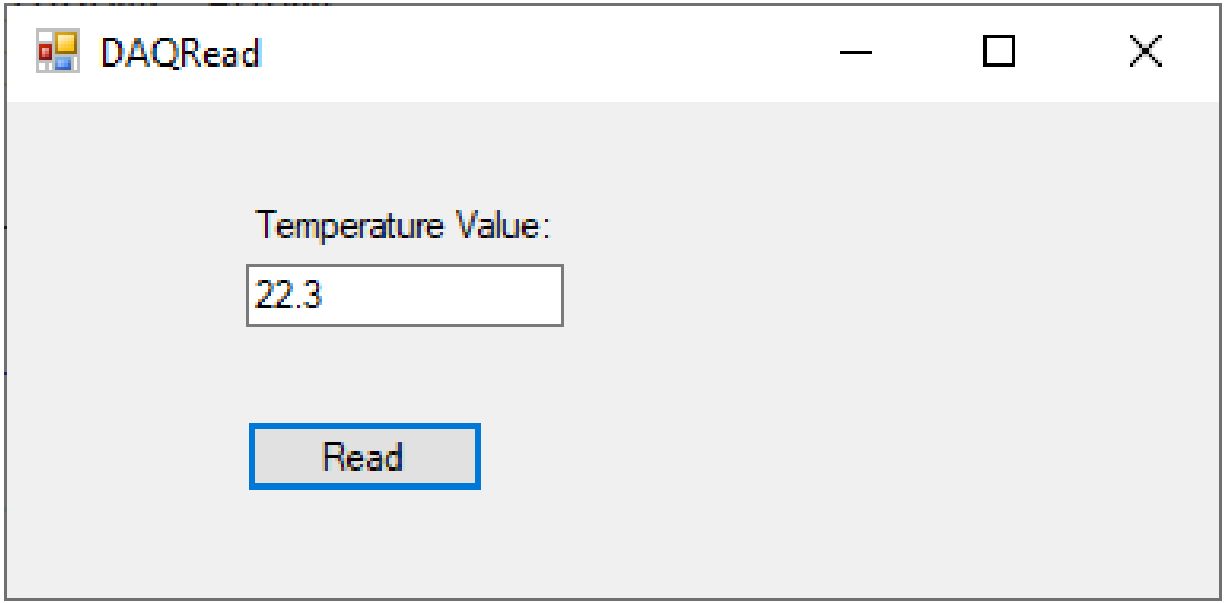
https://www.halvorsen.blog

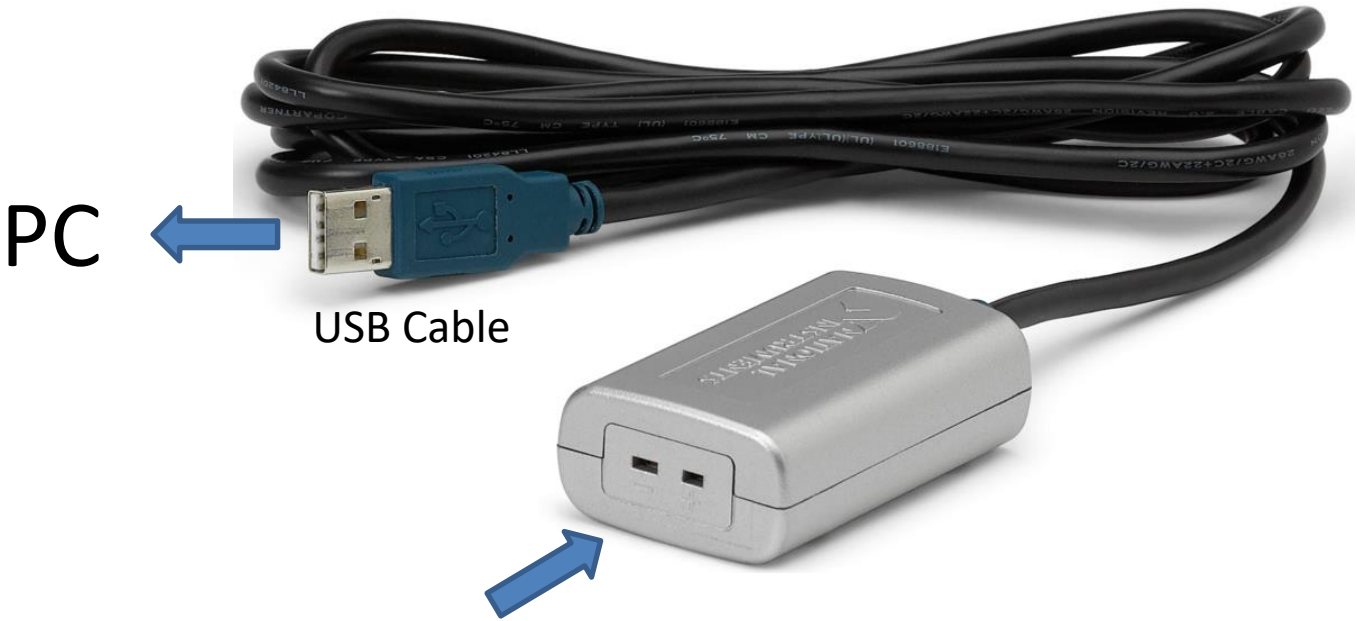
DAQ in Visual Studio using TC-01 and DAQmx

Hans-Petter Halvorsen

Desktop Application



TC-01



Here you can connect different Thermocouple Temperature Sensors

TC-01

J-Type Grounded Probe Thermocouple

https://www.halvorsen.blog

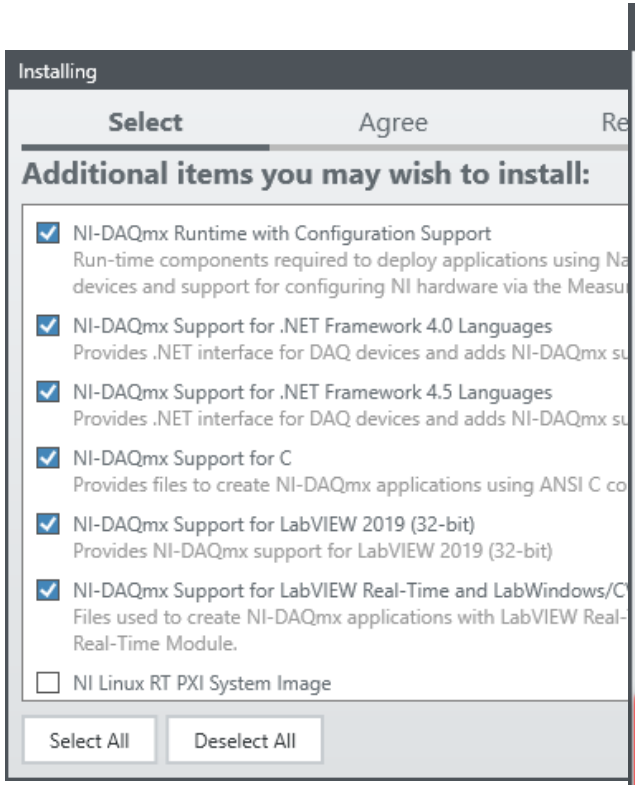
DAQmx

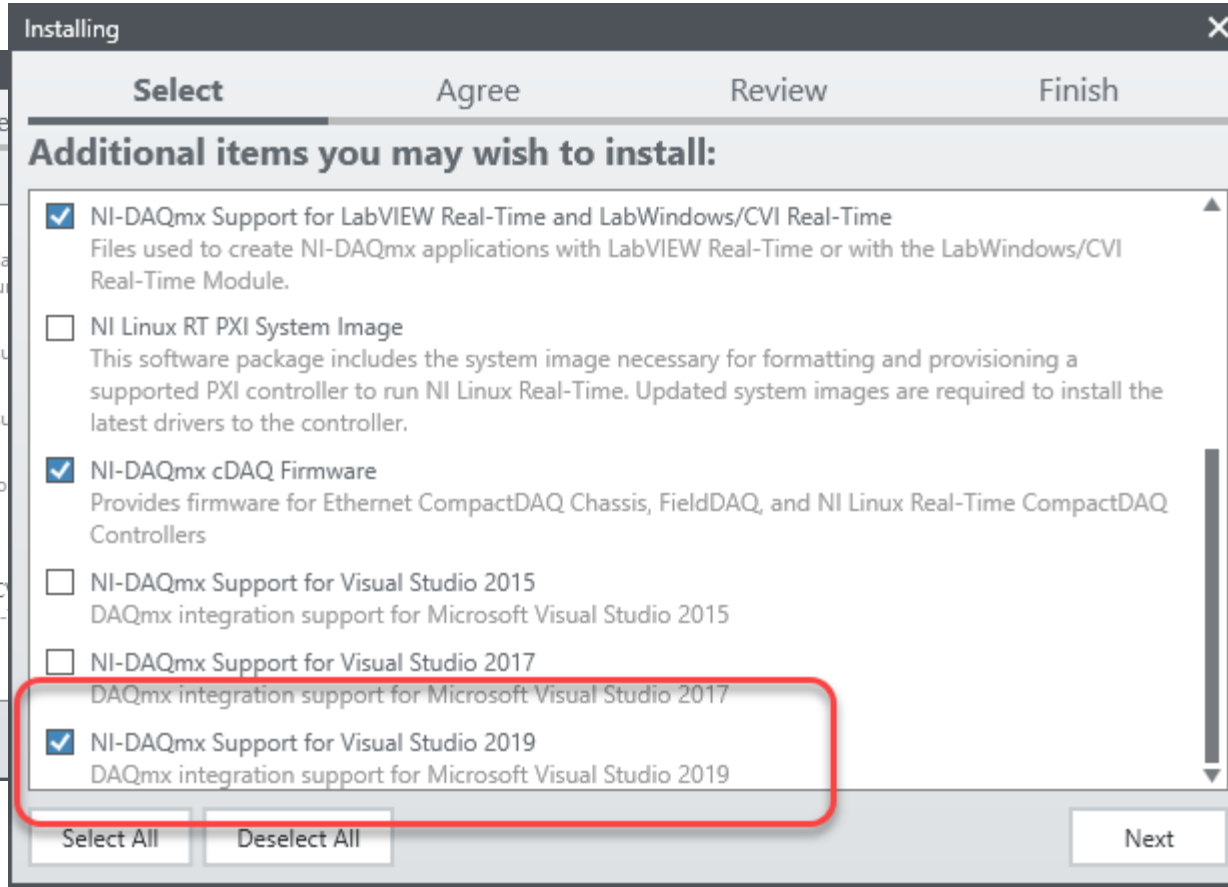
Hans-Petter Halvorsen

DAQmx

- Necessary Driver in order to use TC-01 in C# (or LabVIEW, etc)
- Free Download: https://www.ni.com/en-no/support/downloads/drivers/download.ni-daqmx.html
- Make sure to at least select "NI-DAQmx Support for .NET Framework 4.x" and "NI-DAQmx Support for Visual Studio 2019" during the installation of DAQmx.

NI-DAQmx Driver



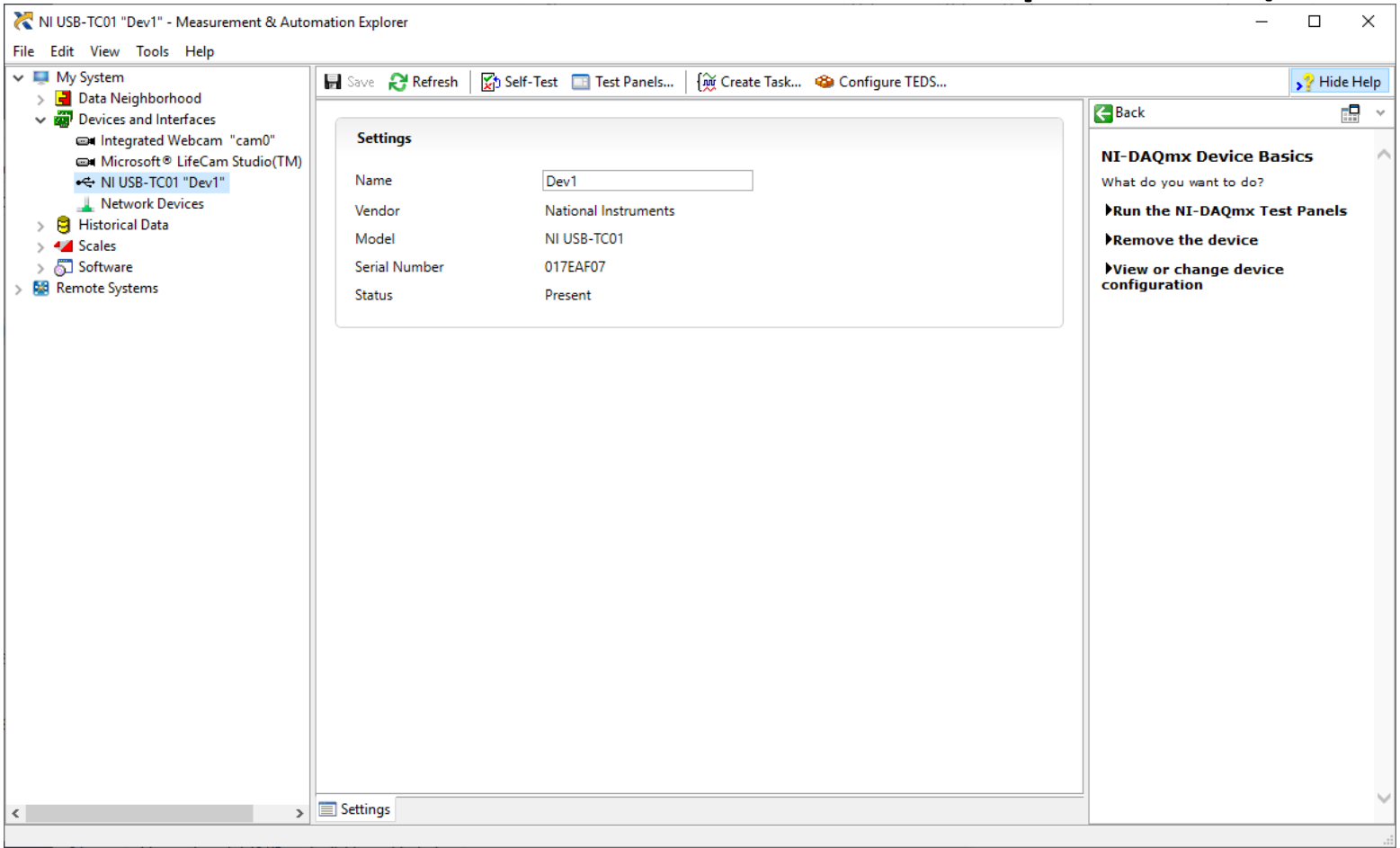


https://www.halvorsen.blog

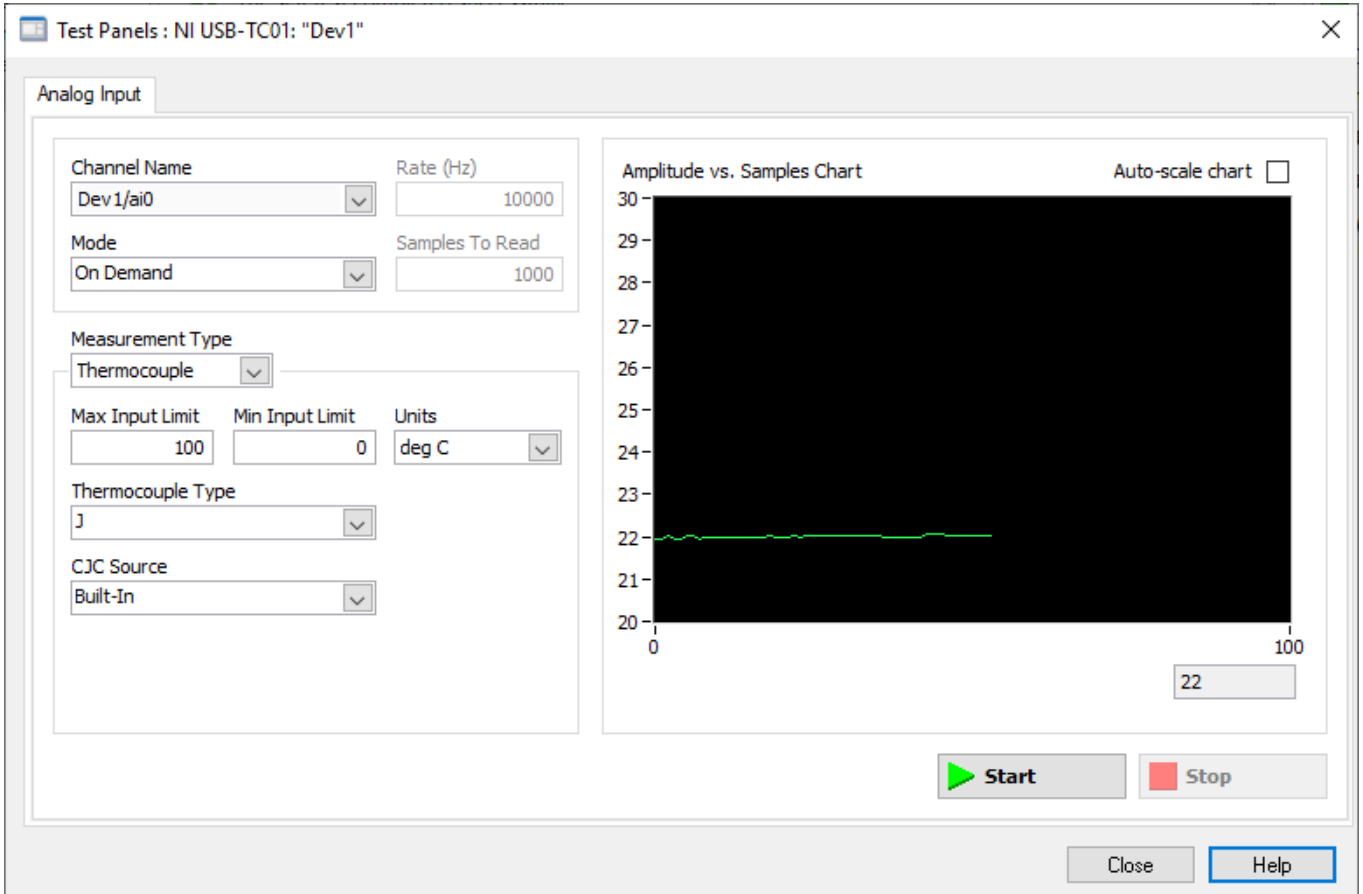
Measurement & Automation Explorer (MAX)

Hans-Petter Halvorsen

Measurement & Automation Explorer (MAX)



Test Panel

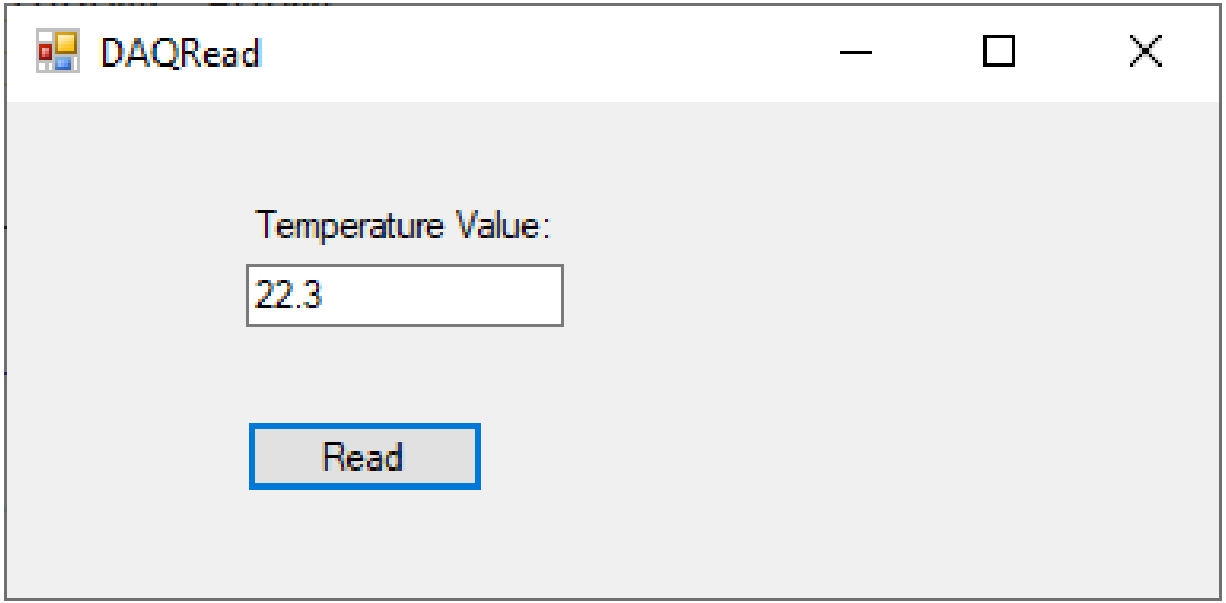

Test Panels : NI USB-TC01: "Dev1"
Analog Input
Channel Name
Dev1/ai0
Rate (Hz)
10000
Mode
On Demand
Samples To Read
1000
Measurement Type
Thermocouple
Max Input Limit
100
Min Input Limit
0
Units
deg C
Thermocouple Type
J
CJC Source
Built-In
Amplitude vs. Samples Chart
Auto-scale chart
30
29
28
27
26
25
24
23
22
21
20
0
100
22
Start
Stop
Close
Help

https://www.halvorsen.blog

Visual Studio

Hans-Petter Halvorsen

Desktop Application



```
using NationalInstruments.DAQmx;
…

Task temperatureTask = new Task();
AIChannel myAIChannel;

myAIChannel = temperatureTask.AIChannels.CreateThermocoupleChannel(
        "Dev1/ai0",
        "Temperature",
        0,
        100,
        AIThermocoupleType.J,
        AITemperatureUnits.DegreesC
        );

AnalogSingleChannelReader reader = new AnalogSingleChannelReader(temperatureTask.Stream);

double tempData = reader.ReadSingleSample();

txtTemperature.Text = tempData.ToString("0.0");
```

Hans-Petter Halvorsen

University of South-Eastern Norway

www.usn.no

E-mail: hans.p.halvorsen@usn.no

Web: https://www.halvorsen.blog