

Setup

- ▶ MCC E-TC: Ethernet DAQ device for thermocouple
- ▶ Thermocouple (TC)
 - ▷ Product ID: Unknown. Type T??
 - ▷ E-TC is **not** connected to TC yet, but shows a reading. OK for readout test



- ▷ To be used at the target cave in the commissioning
- ▷ Could be replaced frequently when broken by radiation

- ▶ Remote access system:
E-TC – Home LAN – Win PC – LabVIEW

VI Code

- ▶ The maker software has to be installed
 - ▷ InstaCal = Configuration and communication of E-TC via Ethernet
 - ▷ ULx = LabVIEW library for E-TC and others
- ▶ The module created by Josh should be for MCC E-TC:

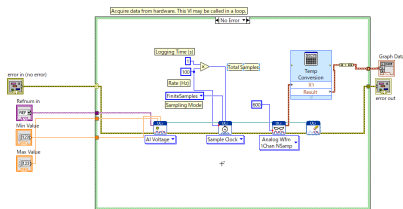
[https://github.com/UVA-LabVIEW-Projects/LabVIEW-Projects/tree/main/Delcaor%20\(Complete\)](https://github.com/UVA-LabVIEW-Projects/LabVIEW-Projects/tree/main/Delcaor%20(Complete))

- ▶ Based on CML DQMH
- ▶ Did not run properly as is ... details in *next page*
 - ▷▷ The input type was changed from “Voltage” to “Temperature”
 - ▷▷ The timestamp was not correct
 - ▷▷ The readout rate cannot be set ... not solved yet
- ▶ Due to version differences??
 - ▷▷ ULx version: 2.25.0.0 vs 2.10.0.0
 - ▷▷ LabVIEW version: 2020 vs 2018(?)
- ▶ Helpful if each module includes
 - ▷ README.md about requirements of external software, version, etc.
 - ▷ Document (on Confluence?) of test result

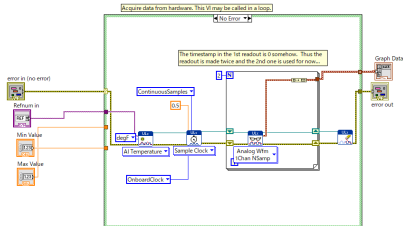
▶ Change in input device type

▶ Modules/Acquisition/HW calls/Acquire.vi

▶▶ Original



▶▶ Modified



▶ Interface VIs were modified accordingly

- ▶▶ SettingsEditor.lvlib/PublicAPI/Settings--cluster.ct1
- ▶▶ SettingsEditor.lvlib/Main.vi
- ▶▶ Testers/TestSettingsEditorAPI.vi

▶ Readout timestamp

- ▶ Included in the “waveform” data
- ▶ Is “0” (=1970-01-01) when read out first

▶ Readout rate

- ▶ Set to 0.5 Hz in Acquire.vi
- ▶ Not effective

Test Result

► Using the tester VI; Test Acquisition API.vi

The screenshot displays the LabVIEW interface for the 'Test Acquisition API.vi'. The window title is 'Test Acquisition API.vi' and the menu bar includes 'File', 'Edit', 'View', 'Project', 'Operate', 'Tools', 'Window', and 'Help'. The interface features several control buttons on the left: 'Start Module', 'Show Module Panel', 'Hide Module Panel', 'Show Block Diagram for Troubleshooting', 'Settings', 'Calibrate', 'Start Acquiring', 'Stop Acquiring', and 'Stop Module'. A 'HW ID' field contains 'Simulated DAQ'. On the right, a 'Waveform Chart' displays a step-like signal over time, with the y-axis ranging from 85.745 to 85.785 and the x-axis showing timestamps from 03:23:45 午後 to 03:23:50 午後. Below the chart is a 'Status' log with the following entries: 5: Acquisition: Acquiring..., 4: Acquisition: Panel hidden., 3: Acquisition: Panel shown., 2: Acquisition: Settings Updated, 1: Acquisition initialization succeeded. A 'Dev0/Ti0' indicator is visible in the top right of the chart area. At the bottom right, there is a 'status code' field with a green checkmark and the value '0', and an 'error out' field.

Questions

- ▶ Which is meant by the “Delacor framework” that we are mentioning?
 - ▷ “DQMH” = Delacor Queued Message Handler
 - ▷▷ Our template in 4David.zip is based on this
 - ▷▷ I tried this last week
 - ▷ “CML DQMH” = Continuous Measurement and Logging DQMH
 - ▷▷ The module created by Josh for MCC E-TC is based on this:
[https://github.com/UVA-LabVIEW-Projects/LabVIEW-Projects/tree/main/Delacor%20\(Complete\)](https://github.com/UVA-LabVIEW-Projects/LabVIEW-Projects/tree/main/Delacor%20(Complete))
 - ▷ CML DQMH seems more suitable for our uses
 - ▷ We had better definitize the “framework” that we use before developing each module
- ▶ How strictly do we manage the software versions?
 - ▷ LabVIEW 2020 on my home computer
 - ▷▷ Because it was the only version available for the “Evaluation” edition (i.e. before I activated the UVA license)
 - ▷ Is everyone using LabVIEW 2018 or saving each VI file for version 2018?