This is a testbench application developed in G-code (LabVIEW) to communicate with the embedded system(DUT) -GE appliance. It mainly simulates most of the major sensors used in the system programmatically through the LabVIEW UI.

The source code developed in LabVIEW performs the following main tasks:

- 1. For every Sensor value from a range of values, it generates an Analog output voltage according to the ADC raw and mapped value table for every sensor
- 2. Continuously detects user events on UI(sensors) and dynamic user events related to reception/sending of ERD messages (serial comm)
- 3. Parses the serial communication messages and performs the following tasks

Read req

Read response

Write req

Write response



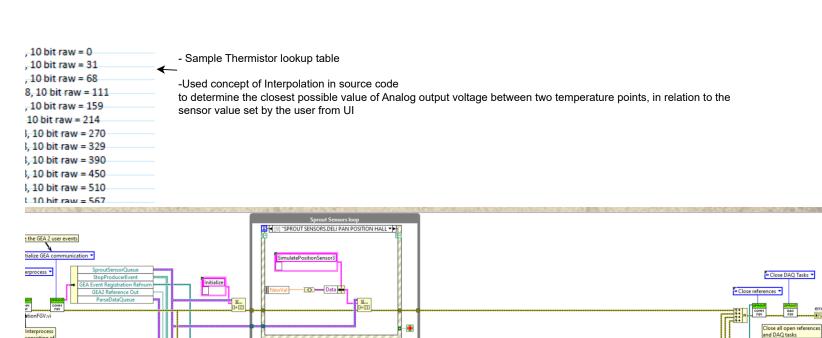
```
{ raw = 4992, mapped = -3994 }, -- offset = 78,
            { raw = 6976, mapped = -3147 }, -- offset = 78,
            { raw = 9344, mapped = -2245 }, -- offset = 78,
            { raw = 12096, mapped = -1343 }, -- offset = 7{
            { raw = 15168, mapped = -475 }, -- offset = 78,
            { raw = 18688, mapped = 405 }, -- offset = 78,
            { raw = 22272, mapped = 1231 }, -- offset = 78
            { raw = 26048, mapped = 2056 }, -- offset = 78
            { raw = 29952, mapped = 2893 }, -- offset = 78
            { raw = 33792, mapped = 3723 }, -- offset = 78
            { raw = 37632, mapped = 4585 }, -- offset = 78
            I raw = 41280 manned = 54583 -- offset = 78
                                                                Initialize
                                            Disable front panel unti
                     Wait for 5 sec
                                            intialize case is executed
                                                                  • Init

    Initialize Inte

    Disabled and Grayed Out

      error in (no error)
a pair of key value pairs which
denote the control label and the
                                                             Initialize the
                                                             all the Queue
control reference for every front pan
control of this VI
                                                             event referen
```

THIS IS NOT THE ACTUAL DEVELOPED APPLICATION, IT'S JUST AN INITIAL DEVELOPED SAMPLE OF A SW ARCHITECTURE AND FRAMEWORK FOR SIMULATION OF SOME OF THE SENSORS



Commar

InitializeFileIO ▼

• Initialize DAQ Tasks ▼

• ReadSensorTableFromFile •

◆ Enabled ▼

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RECV GEA2 GEA2 HSG

Tab Control

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Reg Events h

[2] <GEA Event Registration Refnum.Receive Data>: User Event

< A0..A3 ▼

Sending received message to Parsing data Loop for the following specific commands *AO- Read request

*A3- Write response Refer to top note on message structure

ANALOG_VOLTAGES

*A1- Read response *A2- Write Request GEALog