2024

Controlling Numato Lab USB Relay/GPIO Modules using LabView

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1. Introduction

In today's interconnected world, the ability to control hardware devices remotely is a powerful capability. LabVIEW, renowned for its intuitive graphical programming environment, offers a seamless solution for managing complex systems with ease. Whether you're a seasoned engineer or a novice enthusiast, harnessing LabVIEW's capabilities to control USB Relay/GPIO module opens doors to countless possibilities.

2. Prerequisites

1. LabView (Download and Install LabView)

3. Fundamentals of communicating to the device through LabView

Once LabView is installed, we can start creating the block diagram.
The very first step is to add the Data communication protocol. Here, it is USB.
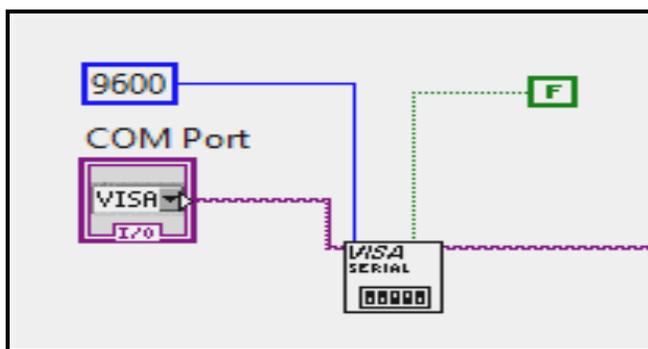
A configure serial block is added with 2 variables, the COM Port/VISA Resource name and the baud rate. VISA resource name control is used to specify the COM Port to which a VISA session will be opened. You can right-click on the VISA Serial configure block, and create a constant to select the COM Port and the baud rate.
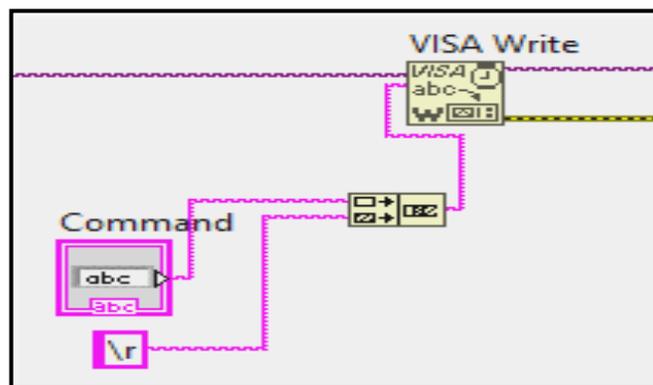
Once the connection is successful, we can send commands to the module.
VISA Write is used to write to the module. Here, the input will be the command followed by the CR - Carriage Return

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Create an input field using string control to enter commands. Concatenate the input field with CR- Carriage Return. Write this to the module using VISA Write.

Concatenate Strings from the string function is used to concatenate the command and CR. CR is created using a string constant.
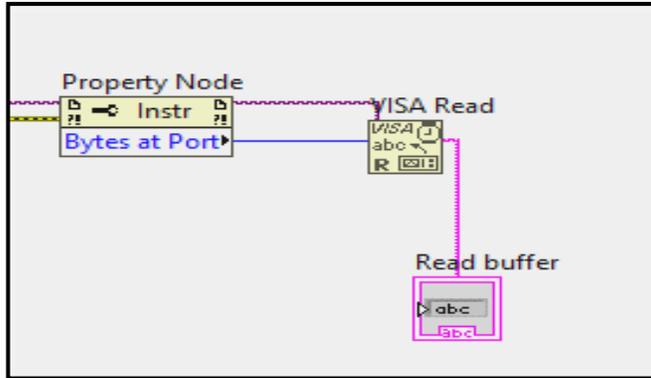
Read the response from the module using VISA Read and print the same using a string indicator.

4. LabView Sample Code and Result

Download Numato Lab USB Module LabView Sample Code, open the .vi file, and follow the instructions:

1. Please Enter the COM Port number and command to execute in the respective fields.
2. Press the run button on the Front panel.

Connection status and result will be displayed in the respective fields.
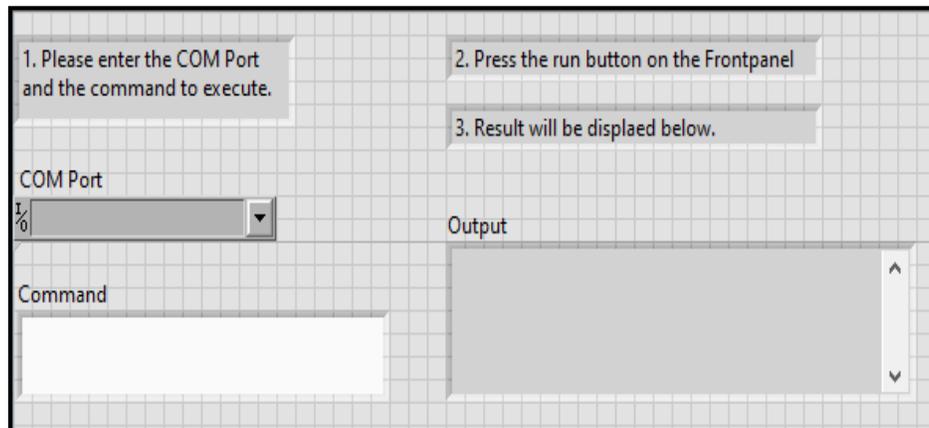
(Front Panel)
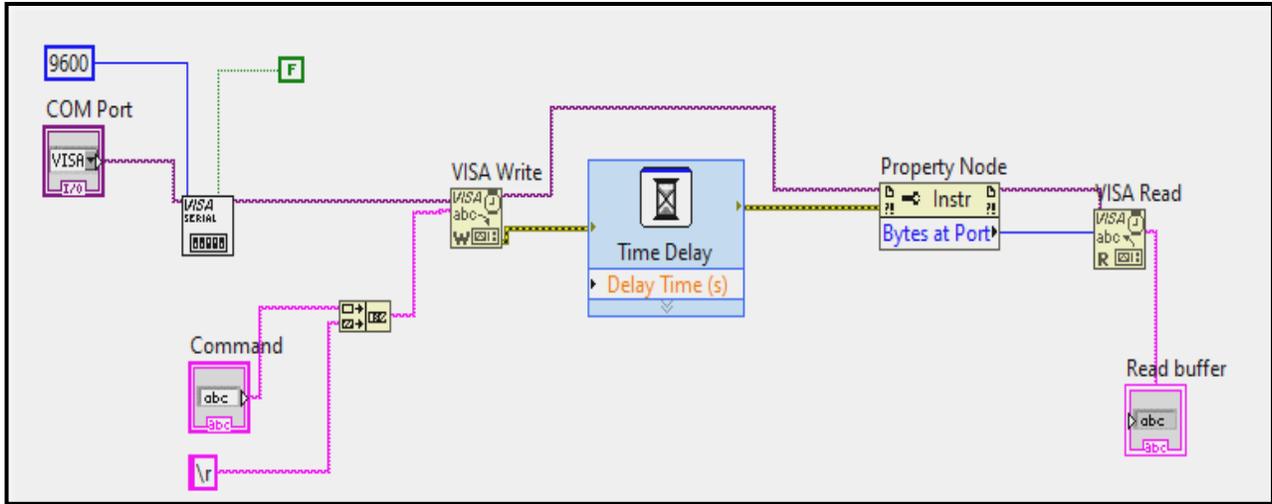
(Block Diagram of sample code)

(Result)