# Programmable Gain Amplifier (PGA) example project 1.2

## Features

- Gain : 01
- Power : Medium Power

## General Description

This example project demonstrates the working of the PGA component with Gain 1 and Power mode set to Medium Power.

## Development kit configuration

1. Used CY8CKIT-001 DVK1 kit.
2. Build the project and program the hex file on to the target device using MiniProg3.
3. Connect pins as described below and power cycle the device.
4. Observe the results on a multi-meter on the pin specified in the design

## Project configuration

This project consists of PGA component with analog input and output pins. The input pin which is connected to I/O port P0[2] of CY8CKIT-001 is used to provide input to the PGA and output pin which is connected to I/O Port P0[3] is used to observe the output of the PGA. Character LCD is used to display the test name and Gain configuration.

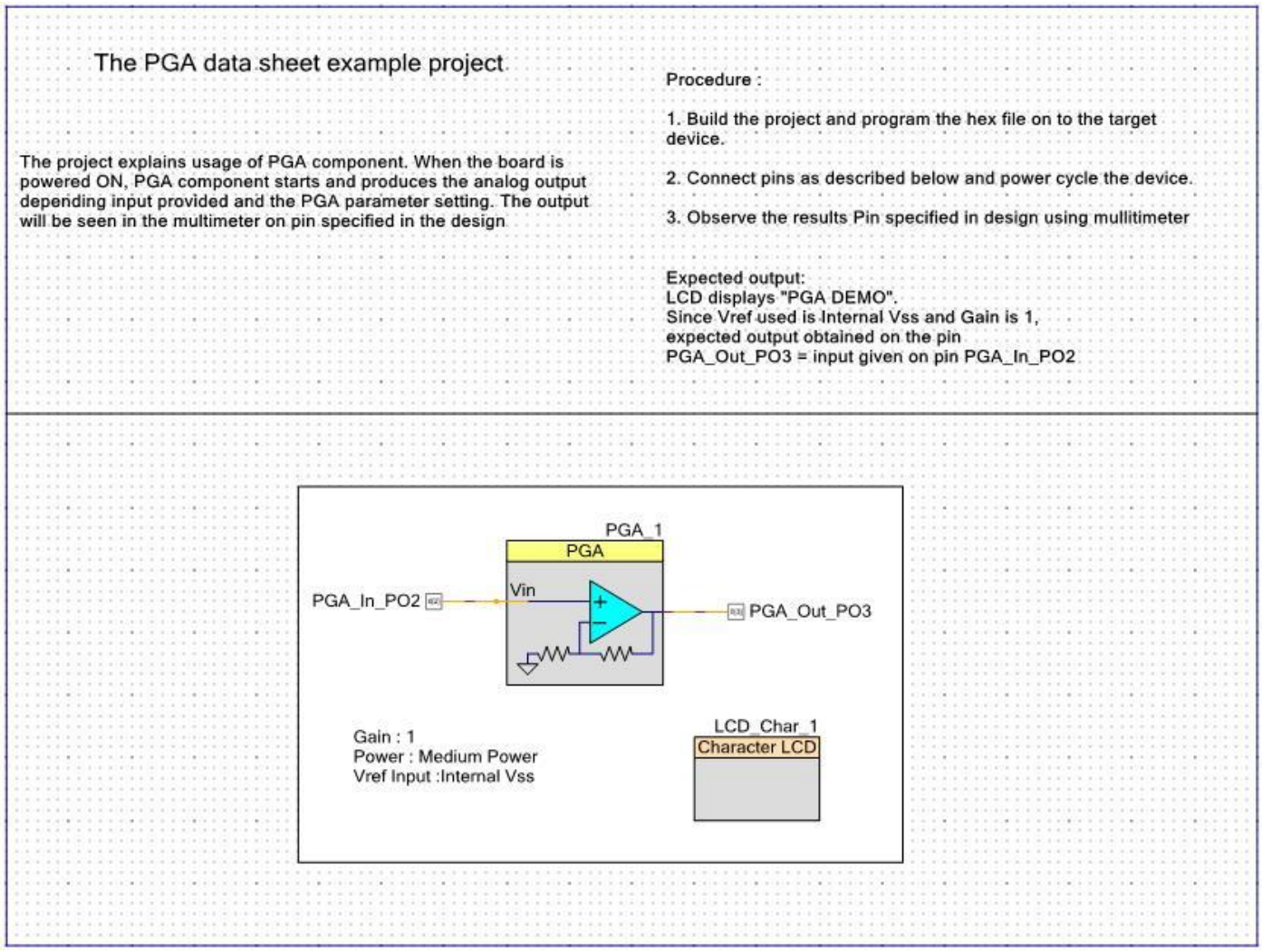


Figure 1. Top design schematic.

# Project description

In main function PGA component is started. PGA gain is set to 1 and power is set to Medium. In this example project PGA component is used with internal Vref. Vin is connected to the pin PO2 and output can be seen in pin PO3 as it is shown in Figure 1(Top design schematic). Multimeter is used to see the output.

# Expected Results

Character LCD displays the following:
PGA DEMO
Gain = 1

The PGA output should be equal to the voltage value, which is calculated using the formula

Vout = Vref +(Vin – Vref) * G,

Where Vout, Vin, Vref are termed as PGA output, input, reference voltages respectively. G is termed as PGA gain, which is a positive value. In this example project Vref is equal to 0 since it is internally connected to Vss.

Since Gain = 1, Vout = Vin.

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