Omega-GPIO-I2C-Arduino

Version 1.0.0 – 16 June 2016
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Document History		
Version	**Date**	**Change Details**
Version 1.0.0	16 June 2016	First version of Omega-GPIO-I2C-Arduino suite

1. Overview

Omega-GPIO-I2C-Arduino is a suite of libraries and programs that provide access on the Omega to GPIO pins, I2C devices and connected Arduino systems.

The components that make up the suite are:

- **libnewgpio** – a C++ library for access to Omega GPIO pins
- **libnewi2c** – a C++ library that provides Omega access to I2C devices
- **libarduino** – a C++ library that provides Omega access to Arduino systems connected via I2C; makes use of the **libnewi2c** library on the Omega and requires use of **arduino-omega** based code on the connected Arduino
- **arduino_omega** – source for an Arduino C++ library to run on an Arduino to allow access from the Omega **libarduino** code
- **iotemplate** – a template for a C++ program that can be used as the basis for user written code that makes use of **libnewgpio** and/or **libnewi2c** and/or **libarduino** libraries on the Omega
- **i2cscan** – a simple standalone program that scans for the existence of I2C devices connected to the Omega. Makes use of the **libnewi2c** library
- **gpioirq** – a simple standalone program that triggers execution of user supplied commands on interrupt(s) from Omega GPIO pins. Makes use of the **libnewgpio** library
- **gpioexpled** – a simple standalone program for control of the Omega Expansion Dock LED. Makes use of the **libnewgpio** library
- **omegaio** – a sophisticated standalone program that provides full command line access to the functionality in **libnewgpio**, **libnewi2c**, **libarduino** libraries on the Omega. Provides some basic scripting facilities

The code for each component is provided in appropriately named sub-directories along with associated documentation for each in **.pdf** files.

The full code for all components and documentation can be found at
https://github.com/KitBishop/Omega-GPIO-I2C-Arduino

All code comes with **NO GUARANTEES** ☺ but you are free to use it and do what you want with it.

2. Using Makefile

A **Makefile** is supplied that can be used to build all components.

The **Makefile** implements the following set of targets:

- **all**
  The default target. Builds all components

- **libnewgpio**
  libnewi2c
  libarduino
  arduino_omega
  iotemplate
  i2cscan
  gpioirq
  gpioexpled
  omegaio

  Performs a **make** on the individually named component

- **clean**
  Performs a **make clean** all components

- **libnewgpio-clean**
  libnewi2c-clean
  libarduino-clean
  arduino_omega-clean
  iotemplate-clean
  i2cscan-clean
  gpioirq-clean
  gpioexpled-clean
  omegaio-clean

  Performs a **make clean** on the individually named component