EK-TM4C123GXL-BOOSTXL-BREAKOUT Firmware Development Package

USER'S GUIDE

SW-EK-TM4C123GXL-BOOSTXL-BREAKOUT-UG-2.1.2.111

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1 Introduction

This document describes the example applications that are provided for the EK-TM4C123GXL when paired with the BOOSTXL-IOBKOUT BoosterPack. The GPIO Breakout BoosterPack is a low-cost IO breakout board for the Texas Instruments® Tiva™ C Series LaunchPad BoosterPack XL pinout. Every available signal is connected to a 0.1-inch header position in addition to the majority being connected to 3.5-mm screw terminals for easy access when prototyping. Every digital signal is ESD protected and every analog signal is routed through a unity-gain amplifier to simplify development with a Tiva C Series Launchpad.

Features

- 3.5-mm screw terminal for all unused I/O
- 8 analog
- 22 digital
- 2 3.3-V terminals
- 4 ground terminals
- Analog channels equipped with unity-gain amplifiers
- ESD protection on every I/O signal and power rail
- 3-position user DIP switch
- Plated through-holes on a 0.1-inch grid for each I/O signal
- Six 0.125"-diameter mounting holes
- Dual HID gamepad demo

See the GPIO Breakout BoosterPack User's Guide for more detailed information on this booster pack at `http://www.ti.com/tool/boostxl-iobkout`

2 Example Applications

The example applications show how to use features of the Cortex-M4F microprocessor, the peripherals on the Tiva C Series microcontroller, and the drivers provided by the peripheral driver library. These applications are intended for demonstration and as a starting point for new applications.

There is an IAR workspace file (`ek-tm4c123gxl-boostxl-breakout.eww`) that contains the peripheral driver library project, USB library project, and all of the board example projects, in a single, easy to use workspace for use with Embedded Workbench version 6.

There is a Keil multi-project workspace file (`ek-tm4c123gxl-boostxl-breakout.mpw`) that contains the peripheral driver library project, USB library project, and all of the board example projects, in a single, easy to use workspace for use with uVision.

All of these examples reside in the `examples/boards/ek-tm4c123gxl-boostxl-breakout` subdirectory of the firmware development package source distribution.

2.1 USB HID Composite Gamepad (usb_dev_cgamepad)

This example application enables the evaluation board to act as a dual USB game pad device supported using the Human Interface Device class. The mapping of the analog pin to gamepad axis and GPIO to button inputs are listed below.

Analog Pin Mapping:

- Gamepad 1 X Axis - PE2/AIN1
- Gamepad 1 Y Axis - PE1/AIN2
- Gamepad 1 Z Axis - PD3/AIN4
- Gamepad 1 Rx Axis - PD2/AIN5
- Gamepad 2 X Axis - PD1/AIN6
- Gamepad 2 Y Axis - PD0/AIN7
- Gamepad 2 Z Axis - PE5/AIN8
- Gamepad 2 Ry Axis - PB5/AIN11

Button Pin Mapping.

- Gamepad 1 Button 1 - PF4
- Gamepad 1 Button 2 - PE0
- Gamepad 1 Button 3 - PE3
- Gamepad 1 Button 4 - PE4
- Gamepad 1 Button 5 - PB4
- Gamepad 1 Button 6 - PB3
- Gamepad 1 Button 7 - PB2
- Gamepad 1 Button 8 - PB0
- Gamepad 1 Button 9 - PB1
- Gamepad 1 Button 10 - PA6

- Gamepad 1 Button 11 - PA7

- Gamepad 2 Button 1 - PF0
- Gamepad 2 Button 2 - PC4
- Gamepad 2 Button 3 - PC5
- Gamepad 2 Button 4 - PC6
- Gamepad 2 Button 5 - PC7
- Gamepad 2 Button 6 - PD6
- Gamepad 2 Button 7 - PD7
- Gamepad 2 Button 8 - PA5
- Gamepad 2 Button 9 - PA4
- Gamepad 2 Button 10 - PA3
- Gamepad 2 Button 11 - PA2

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