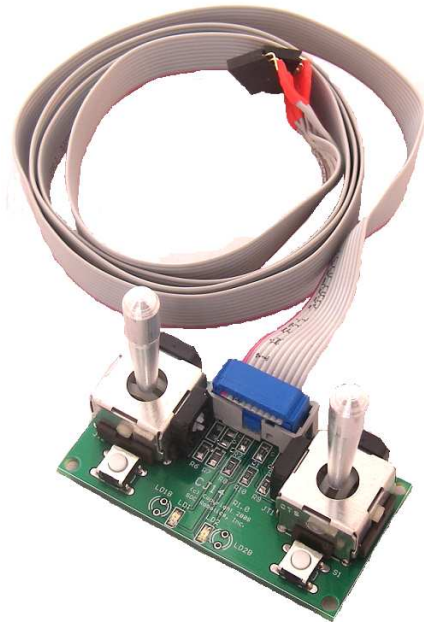


CJ14 4-Axis Joystick

Technical Reference Manual

PCB Rev 1.0



www.soc-robotics.com

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1.0 Description

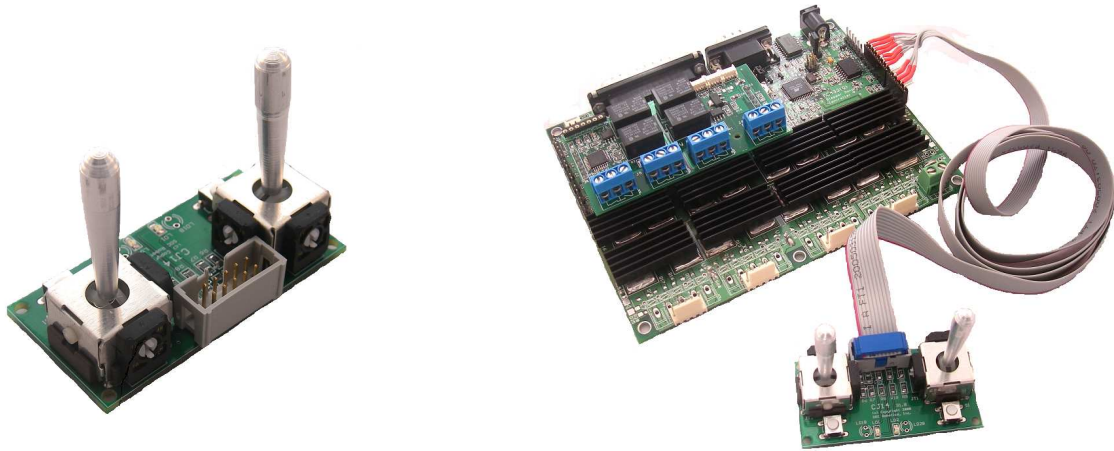
1.1 Features

- Four independent joysticks on two control knobs
- Two switches
- Two LEDs
- 30 inch ribbon cable
- Enclosure included
- Compatible with SmartLCD and LED84
- Compatible with MC433G stepper motor controller
- Compatible with MK54/MK200 controllers

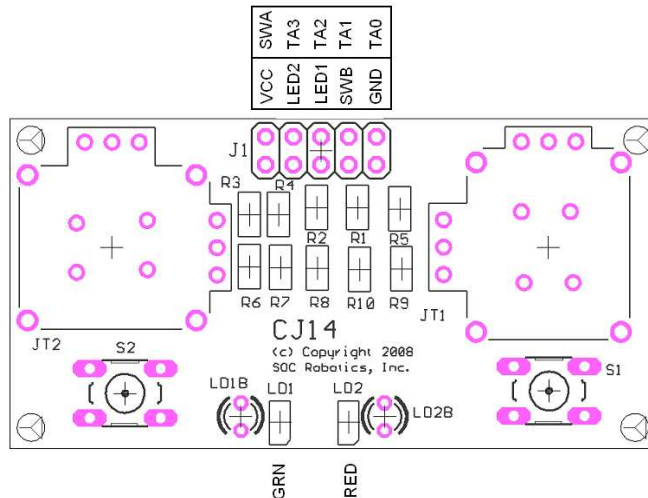


1.2 Introduction

The CJ14 is a 4-axis/2 switch joystick controller that attaches to the MC433G or MK54 stepper controllers. The two switches enable/disable joystick operation and provide context sensitive feedback to the G Step controller. A 30 inch ribbon cable attaches the CJ14 to the controller.



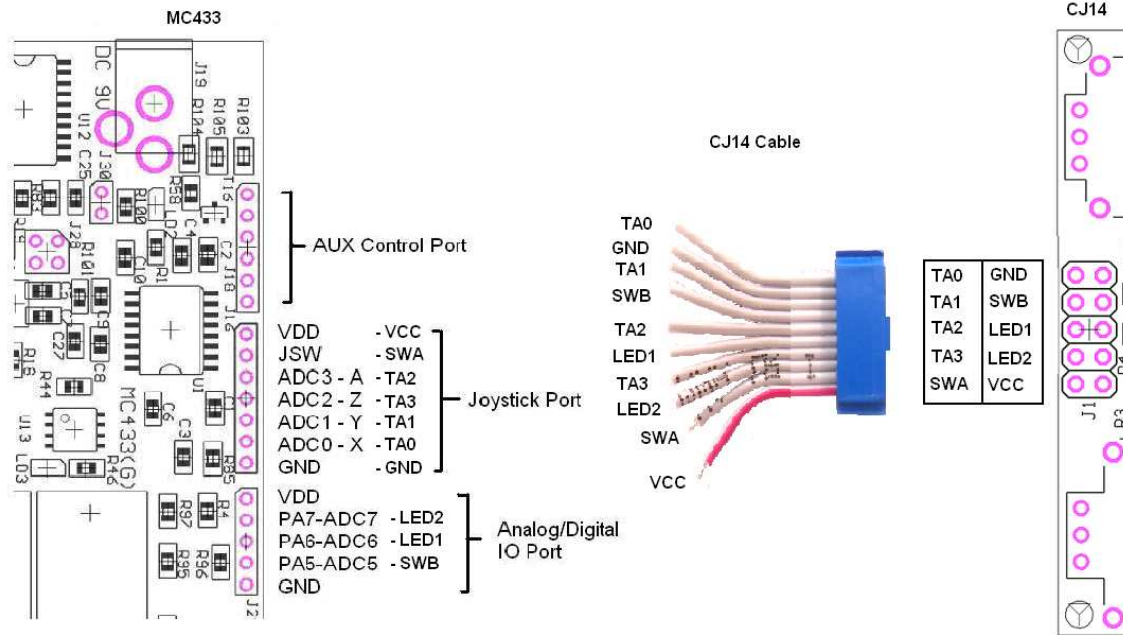
CJ14 Connector Assignment



Connection To MC433G

The CJ14 connects to the MC433G using a 30 inch 10 line flat ribbon cable with two female header connectors on one end (5 pin and 7 pin) and a quick connect 10 pin header on the other end. The 10 pin header attaches to the CJ14 while the other two headers attach to MC433G connectors J16 and J2 respectively.

The picture below shows the wiring scheme between the CJ14 and MC433G.



1.3 Operation

The CJ14 interacts with special control software that runs on the MC433G/MK54 controllers. Pressing the right joystick left or right moves the X-Axis right or left. Pressing the right joystick forward or backwards moves the Y-axis in or out. Pressing the left joystick right or left moves the Z-axis up or down while pressing the left joystick forward or backward controls the A-axis.

Pressing the left switch turns joystick mode on which lights the Green LED. The Green LED lights when the joystick is active and blinks at different rates to indicate current operating mode. Pressing the left switch again turns the joystick off. The right switch selects different operating modes such as waypoint position capture, position movement modes, etc – specific functions are controlled by controller software. Check the release version to determine what functions are supported.

The Red LED is supported by the MK54 and MK200 but not the MC433G. See MK54/MK200 Joystick control modes to learn more about Red LED status indication.

In combination with the LED84 or SmartLCD display the real time position of each axis is displayed as the controller follows the joystick position.

1.4 Software Overview

A detailed description of the various operating modes is provided with the latest release of the Gstep G Code software – see the GStep User Manual for a detailed description of features. Note that GStep Version 1.76 software is required to use this device.

A brief summary of operating modes is provided below.

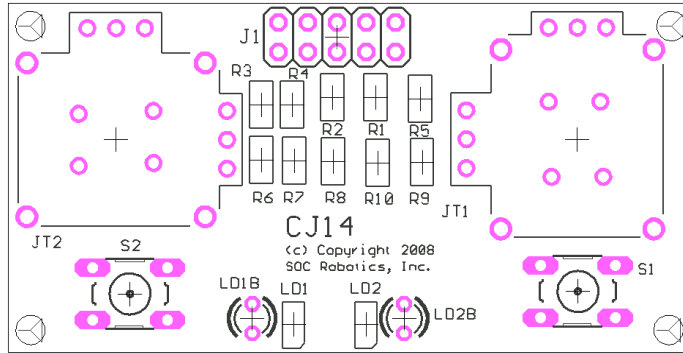
Operating Modes:

- Rapid Move on each axis
- Slow Move on each axis
- Single Step on each axis
- Waypoint capture
- Joystick enable/disable

2.0 Electrical and Mechanical Description

2.1 Component Layout

Components are mounted on both sides of the board. Not all components may be mounted. See the section on optional components for more information.



2.2 Electrical Specifications

Electrical

Input power: 1.8-5VDC @ 2ma

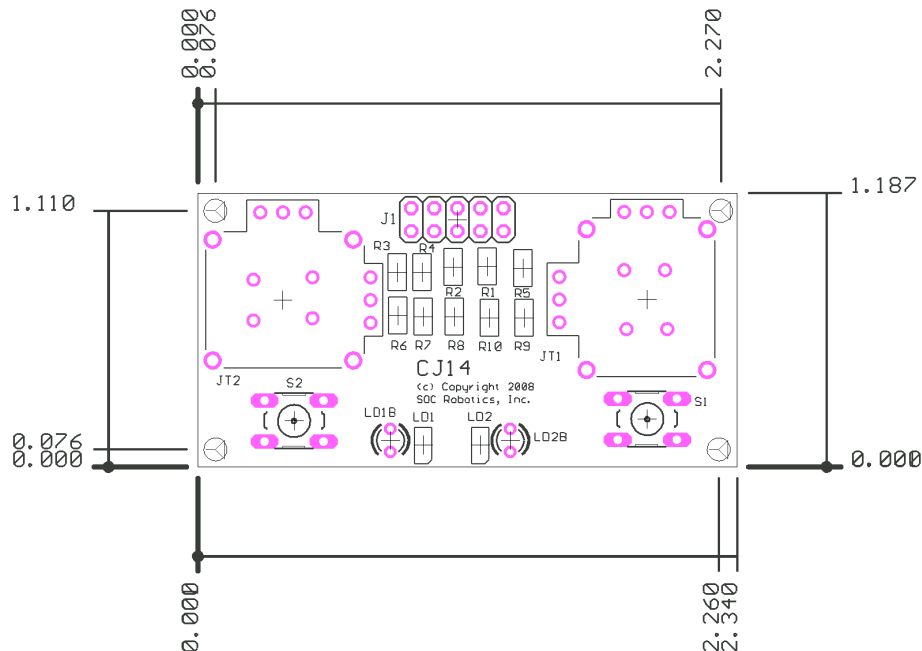
Mechanical

Dimensions: 2.34x1.187 in (four mounting holes)

Weight: 21 grams

2.3 Mechanical Dimensions

Board dimensions are stated in inches.



3.0 CJ14 Circuit Schematics

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4-Axis Joystick

CJ14

PCB Rev 1.0

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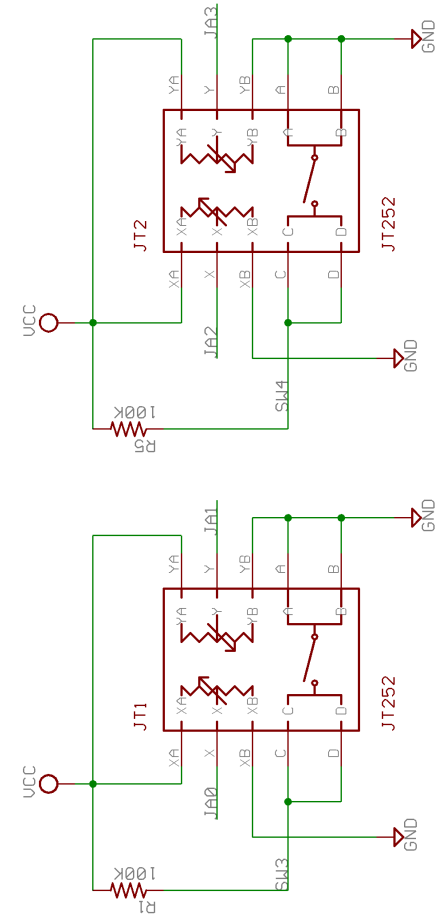
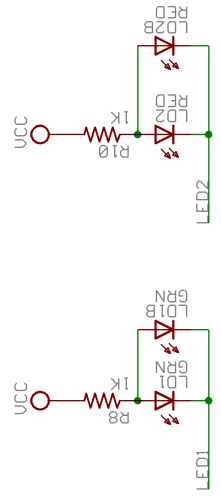
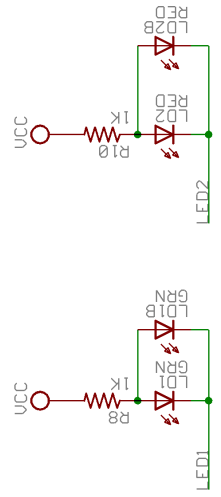
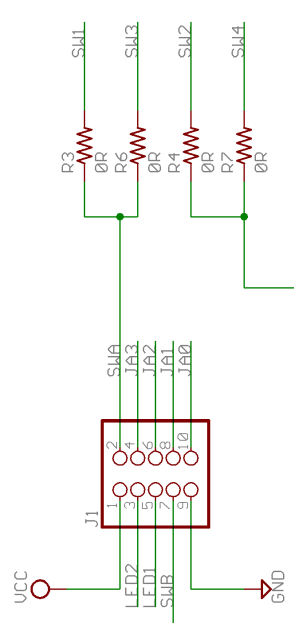
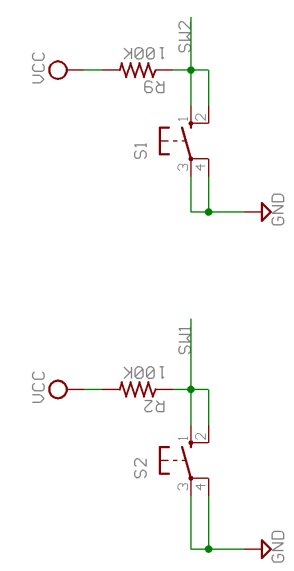
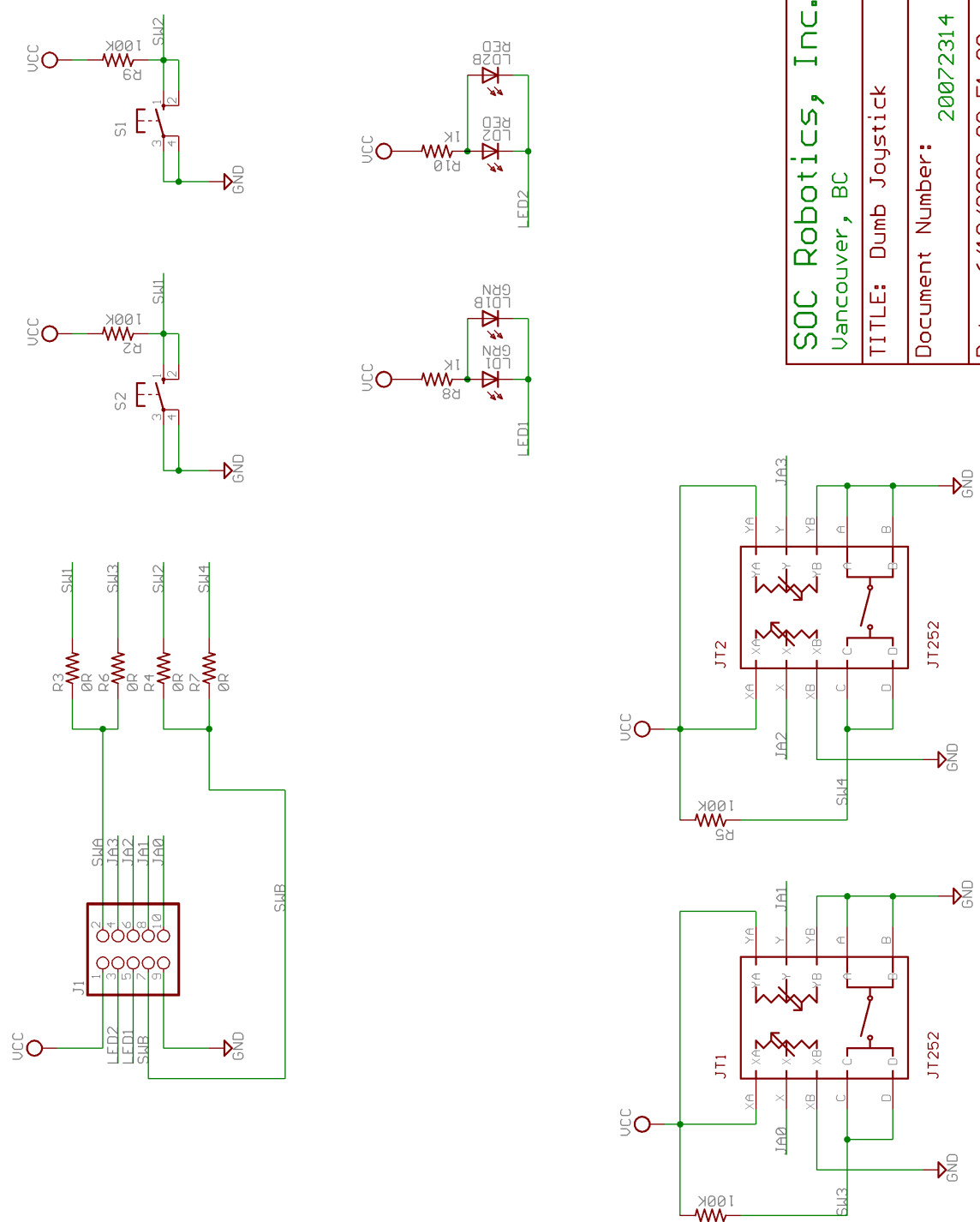
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