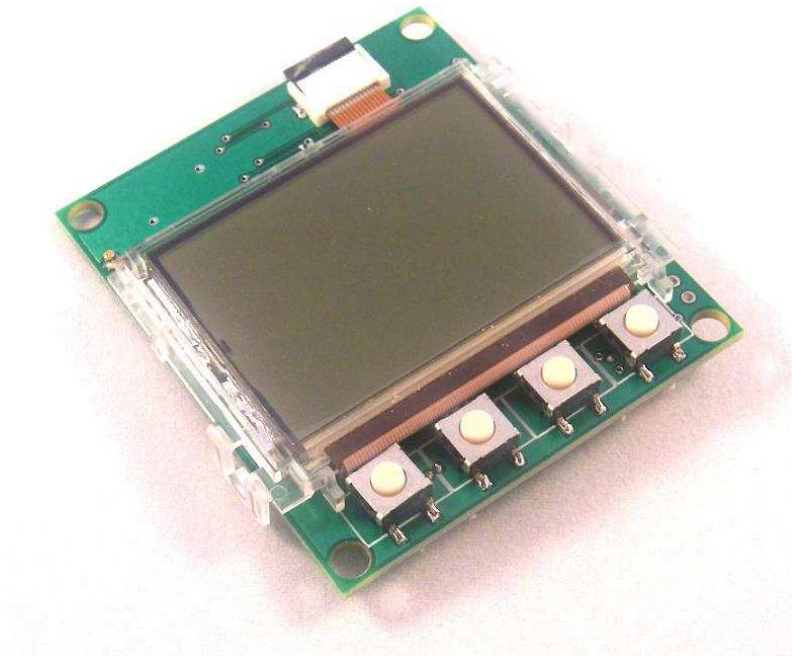


# SmartLCD Display Controller

## Technical Reference Guide

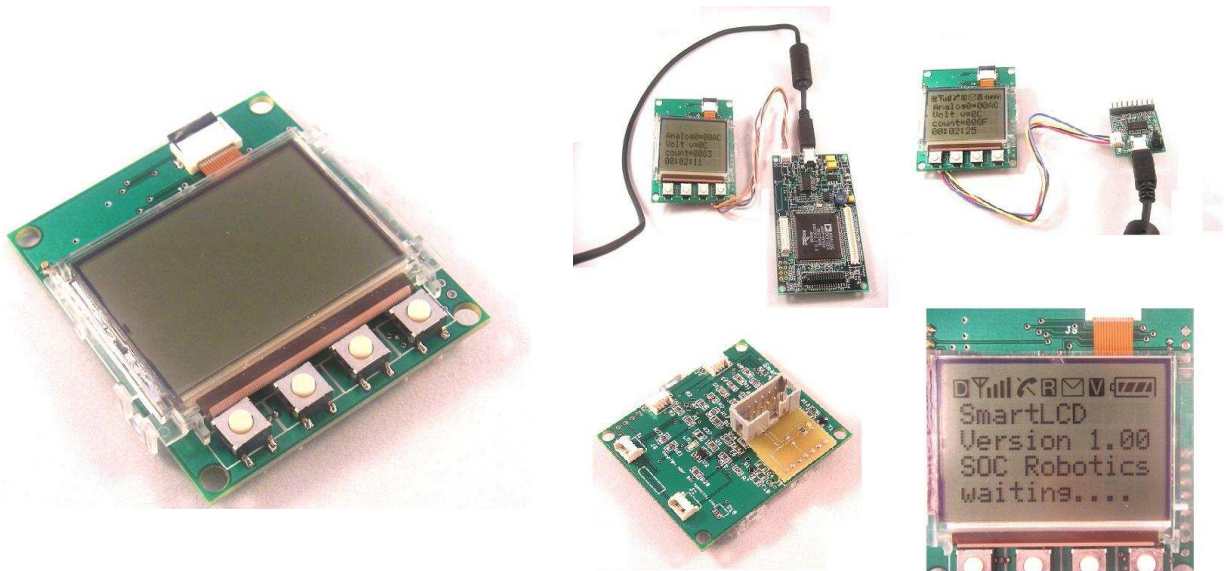
PCB Rev 1.0



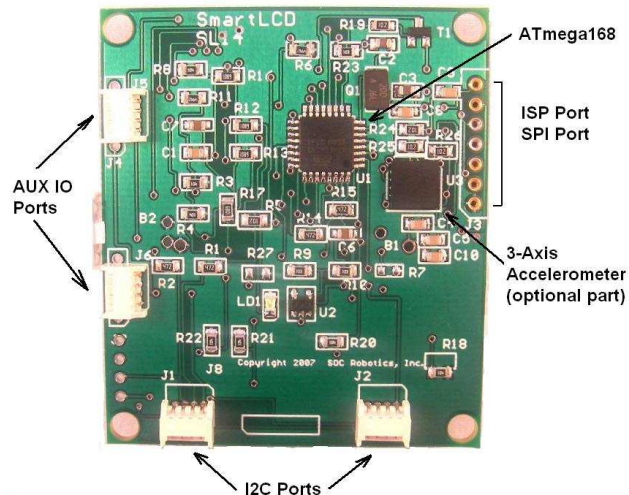
# SmartLCD Technical Reference Guide

## Introduction

The **SmartLCD** is a 4x12 character monochrome LCD with its own 8 bit RISC processor Atmega168 that can be programmed by the user. The LCD display has a set of symbols along the top row of the display that can be turned on or off individually under program control. An onboard 32.768KHz crystal provides a real time clock function. A pad is provided for an optional 3-axis accelerometer. Two I2C connectors provide connection to other I2C devices. Two A/D input are brought out to a connector along with a UART port. The processor is programmed via the CISP port. A CISP to 10pin AVR ISP programming adapter is provided. A CD with ICCAVR sample applications is provided with the board.

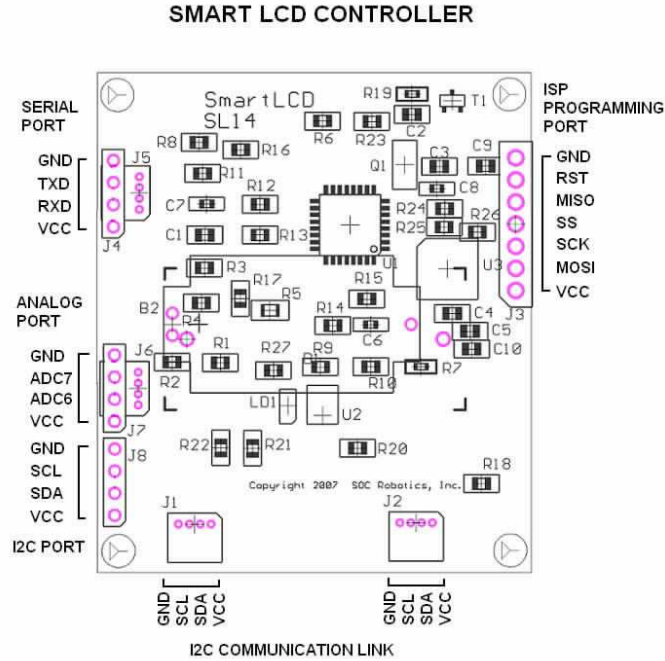


**SMARTLCD COMPONENTS**  
(Bottom View)

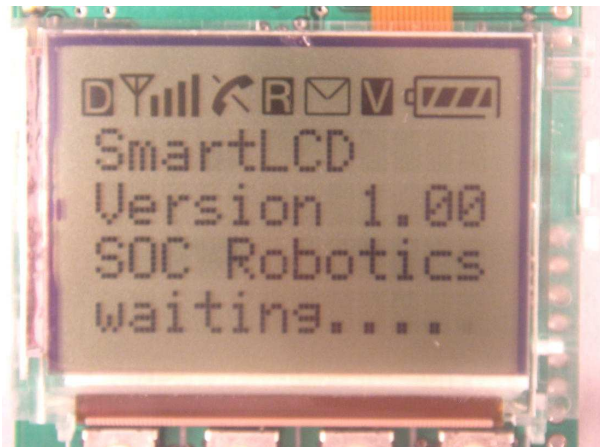


## SmartLCD Technical Reference Guide

Voltage is typically provided to the board through the I2C ports and should be in the range 2.7V to 3.6VDC. Display contrast is automatically adjusted with changes in voltage using a resistor divider referenced to the AVR's internal analog reference voltage.



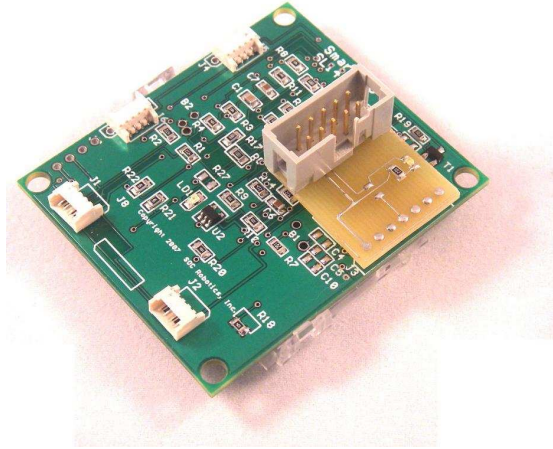
The LCD has a row of symbols on the top of the screen. Sample code is provided for tuning these symbols on or off.



## SmartLCD Technical Reference Guide

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The **SmartLCD** is programmed by attaching the supplied CISP adapter to the ISP programming port as shown in the picture below. The board can be programmed using any AVR ISP 10 pin programming adapter such as the ISP10 or the USB10.



The **SmartLCD** comes preprogrammed with a sample application that connects the four buttons to different application examples. The I2C port is currently not supported in the sample code but a newer version will be available from the web site [www.soc-machines.com](http://www.soc-machines.com).

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# Smart LCD Controller

## Rev 1.0

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Vancouver, BC

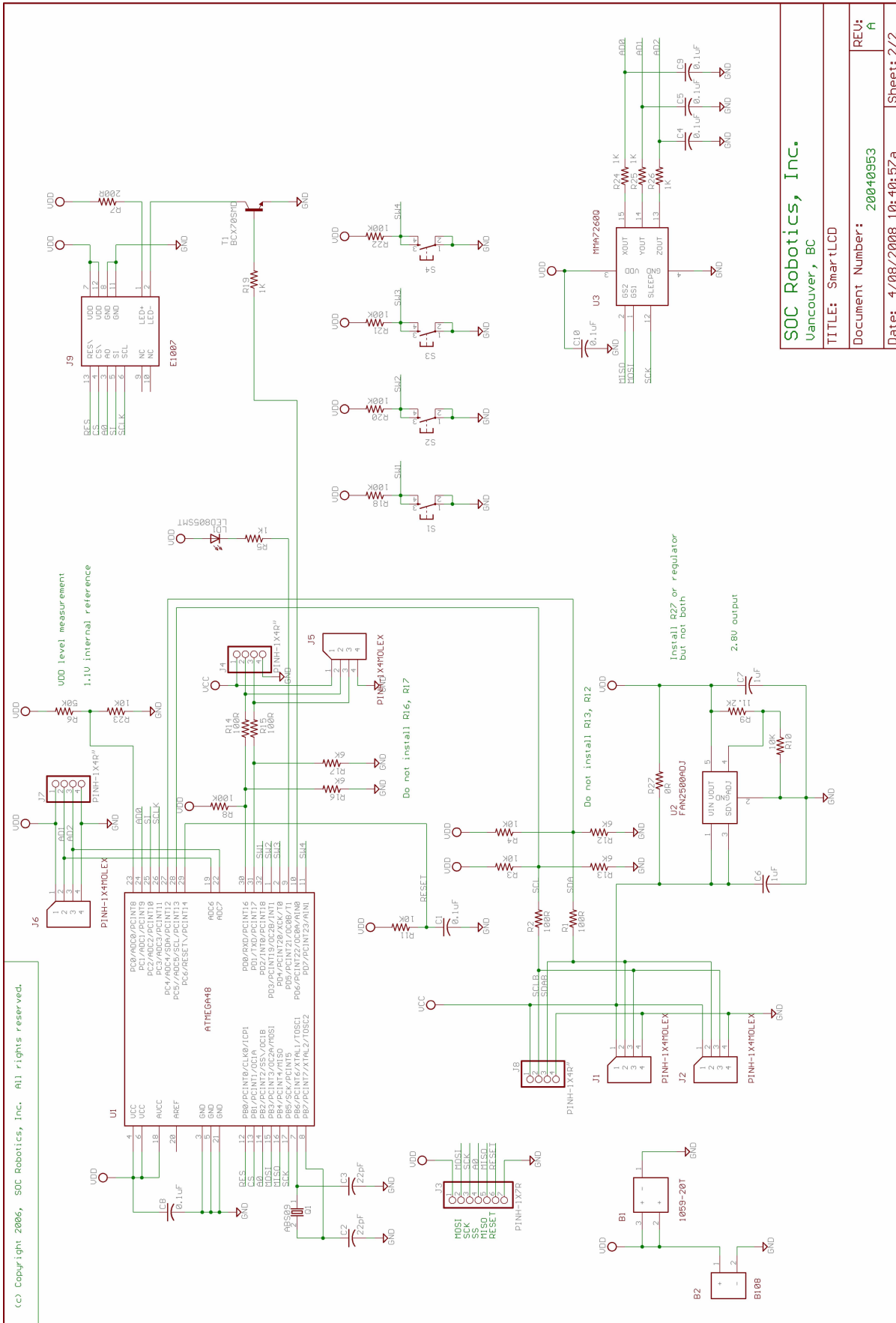
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