CoreWii

Issue: A (Preliminary)

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Introduction

CoreWii is a SExI-compliant adapter for the Wii Nunchuk and Wii Classic Controller. This module provides easy access to the Nunchuk communication and power lines. With this PCB users can access the built in accelerometer, joystick and buttons the Nunchuck provides

Features

- SExI-compliant footprint.
- Supported in CoreBASIC using the **`NUNCHUK-CONTROLLER`** and **`CLASSIC-CONTROLLER`** drivers
- User-controllable LED.

Applications

- Game controller
- Remote control

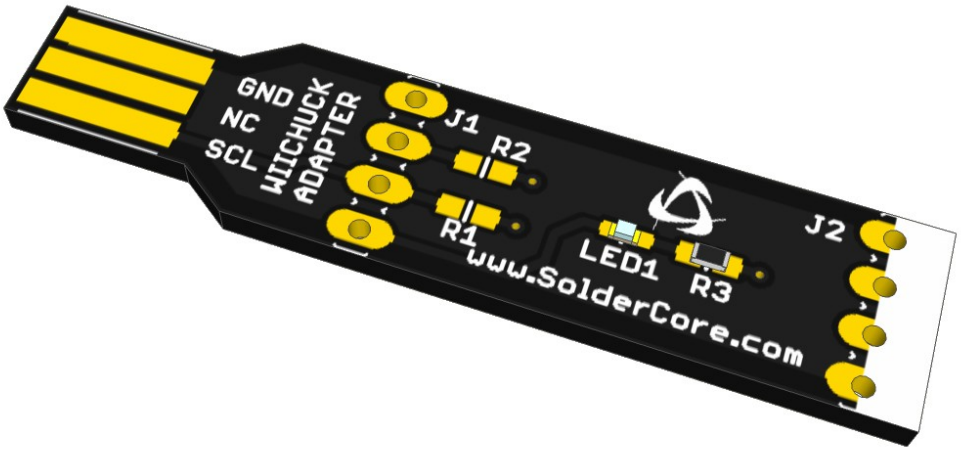

Figure 1. CoreWii Module.

Electrical

CoreWii uses the SExI interface (Appendix A: SolderCore Expansion Interface) for rapid integration into a hardware platform. The communications pins (I2C) are taken to the appropriate SExI connector pins, as are the power rails.

There is an LED on the CoreWii module that can be controlled using the DIO line.

Table 1 details the pin configuration. CoreMag uses the 3V3 rail and not 5V.

Left Con J1	Description	Right Con J2	Description
AN	NC	RX	NC
SDA	I2C Data	5V0	NC
SCL	I2C Clock	3V3	3.3V power supply rail
DIO	LED Indicator	0V	Power return path

Table 1. CoreWii pin Information

The pull-up resistors, R1 and R2, are not fitted to the board by default. You will need to fit both R1 and R2 if the external development platform does not provide I2C pull-up resistors.

Further Information

More information about CoreWii, including sample code and schematics please visit www.SolderCore.com.

Appendix A: SolderCore Expansion Interface

The SolderCore range of sensors use a standard interface named SExI (Sensor Expansion Interface). This 16-pin standard allows a single development hardware platform to be used to evaluate a range of sensors. SExI has been designed to make prototyping sensors simpler; the standard makes use of two 0.1" headers on a 0.1" grid for easy assembly on to bread or vero-board

SExI defines signals so that sensors that use I2C, SPI and simple UART can take advantage of a common footprint. SExI provides connections for two power rails, 3.3V and 5.0V. Figure 2 shows a dimensioned drawing of a full SExI device.

For sensors/devices that only support either I2C or SPI, it is not necessary to use a full 16 pin footprint. For SPI only sensors, only the top four rows of pins are required. For I2C based sensors, only the bottom four pins are required, in both instances the sensor foot print can be halved, saving board space and lowering cost. Sensors that utilize UART communications require a full 16 pin footprint.

The DIO signal (bottom left) can be used as a digital input or output. Many sensors use interrupt signals, to inform the external electronics/processor that an even has occurred. In most instances the interrupt line is taken to DIO pin.

The AN pin can be either a Digital IO or an Analog output pin. Sensors that output analog signals use this pin. The SenseCore shield routes the ANx signals to the ADC pins of the SolderCore / Arduino headers.

The right hand side of the PCB is marked with a thick white bar this identifies the power side of the connector.

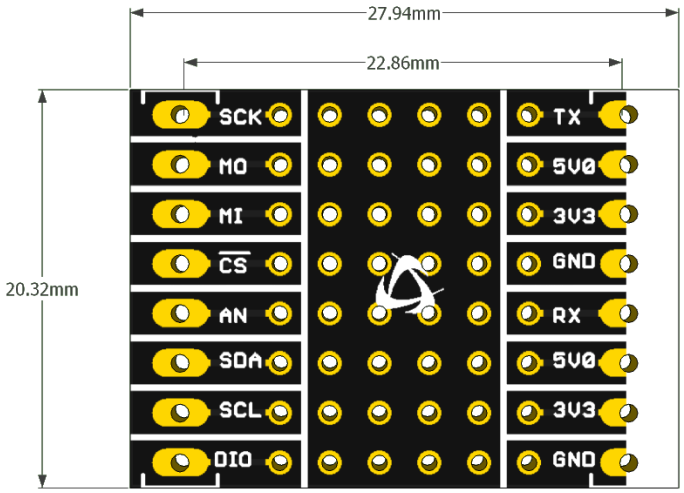

Figure 2. SExI device footprint.

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