Device: MOD-1005

This document Version: 2

Date: March 2013

Description: Real Time Clock Module

Matches module version: [16 Dec 2012 v5]

Table of Contents

Introduction

The MOD-1005 is an I2C based Real Time Clock (RTC) module.

Features

The MOD-1005 features the M41T81S from ST, pull-up resistors, battery backup from the RTC and 32.768kHz crystal.

Hackability

The MOD-1005 is 100% hackable.

At Embedded Adventures, we believe you have the most fun when you have the most control over your hardware. For the MOD-1005 we provide a datasheet, complete schematic and complete source code. After that, it's all up to you. We'd love to hear about the projects you're using it for – send us information and photos to myproject@embeddedadventures.com

Construction

It's all pre-built! Just add female or male header pins, or solder directly to the board, and away you go.

Connections

The MOD-1005 has one connection port.

VCC	Positive supply. 3V – 5V.
SDA	I2C serial data
SCL	I2C serial clock
GND	Ground (Vss) connection.

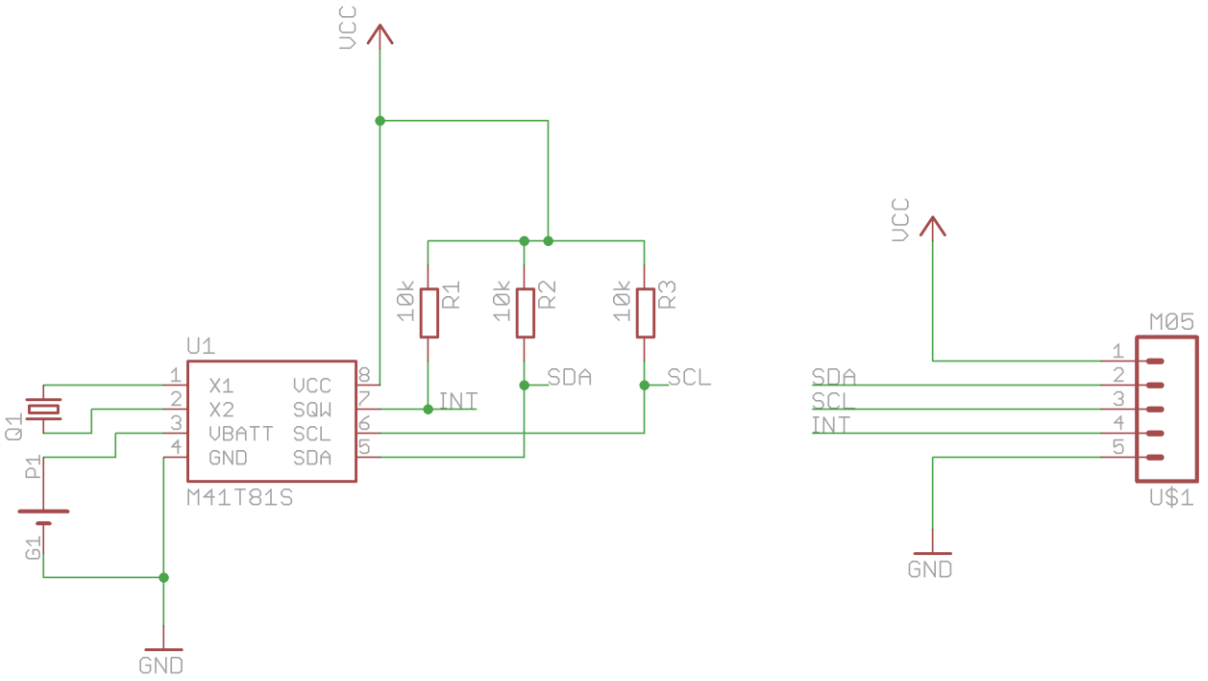
Power

The MOD-1005 can be powered from 3V – 5V.

Pull up resistors

I2C requires the use of pull-up resistors. If you are connecting to an existing I2C buss that already has pull-up resistors, or you are using internal pull-ups in your microcontroller, you can unsolder the 10k pull-up resistors from the board.

Schematic

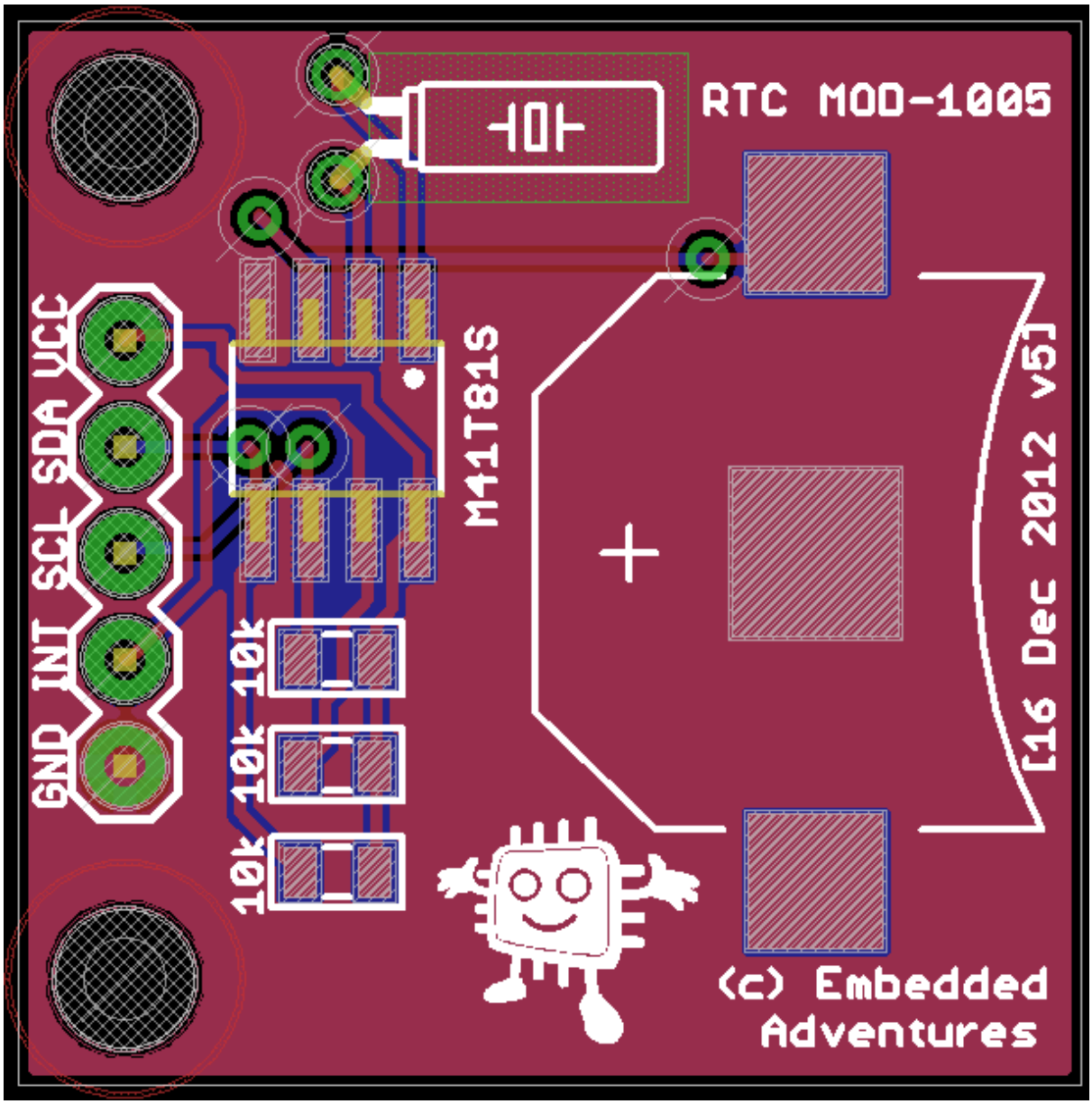


The MOD-1005 schematic is pretty straightforward. Don't forget to have a look at the M41T81S datasheet so you know how to get the most out of the RTC.

Programming

See m41t81s.c and m41t81s.h available in the PicPack library. These rely on the i2c.c and i2c.h software i2c libraries. The PicPack library can be downloaded from the Tutorials | Downloads section of www.embeddedadventures.com

PCB



Versions

Version	Date	Comments
Version 1.0	10 Apr 2011	Initial Version for board v4
Version 2	2 March 2013	Updated document for v5 board - Smaller, replaceable battery