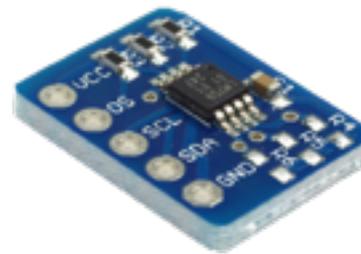
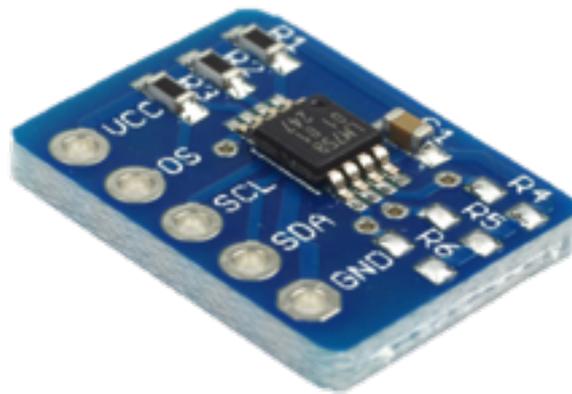


第2回目

mbedで温度を確認する
(シリアルコンソール編)



使用する温度センサ



I2C接続の温度センサ LM75B

スイッチサイエンスで販売しています。

<https://www.switch-science.com/catalog/1813/>

Components

Components

Add a component

The Component Database hosts reusable libraries for different hardware, middleware and IoT services that you can use with ARM Microcontrollers. These components can be used as building blocks for quickly developing prototypes and products.

Components and the associated libraries, examples and documentation are created and added to the database by mbed developers, component manufacturers and service providers. The goal is to create a canonical database of rock-solid code and resources for every useful component that can be used with ARM microcontrollers.



Actuators



Communication



Display



Expansion boards



Internet of Things



Online Services



Robotics



Sensors



Storage



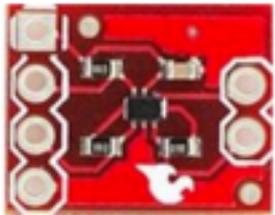
Other

mbedサイトのコンポーネンツページにはセンサなどの部品を繋げるためのライブラリとサンプルプログラムが公開されている

Components

Temperature

Add a component



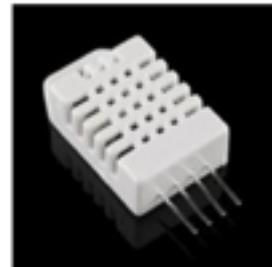
TMP102 Temperature Sensor



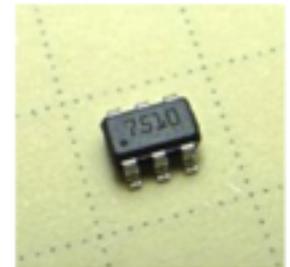
LM75B Temperature Sensor



LM61 and TMP36 Analog Temperature Sensors



RHT03



STTS751 Temperature Sensor

今回使用するI2C接続の温度センサ LM75Bもコンポーネンツページの温度センサのカテゴリの中にある

Components

LM75B Temperature Sensor

 Edit this component

The LM75B is an I2C digital temperature sensor that is available in various packages. It has a range of -55°C to +125°C, with a 0.125°C resolution. It also features a configurable OS pin that can be used as an interrupt or comparator.

Hello World

サンプルプログラム

 LM75B_HelloWorld

Import program

A simple serial test program for the LM75B library.

Last commit 30 5月 2014 by  Neil Thiessen

Library

ライブラリ

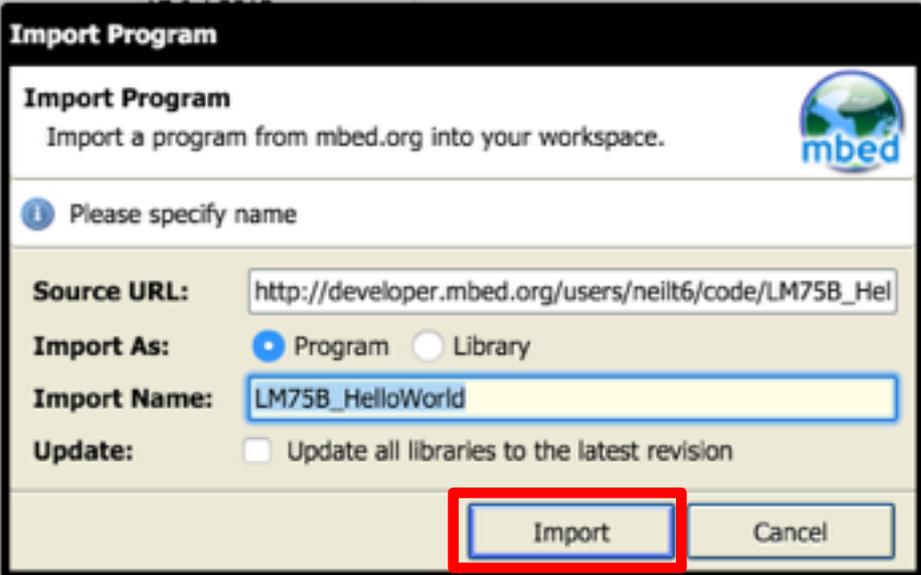
 LM75B

Import library

A feature complete driver for the LM75B temperature sensor from NXP.

Last commit 30 5月 2014 by  Neil Thiessen

プログラムを準備



Import Program

Import a program from mbed.org into your workspace.

Please specify name

Source URL:

Import As: Program Library

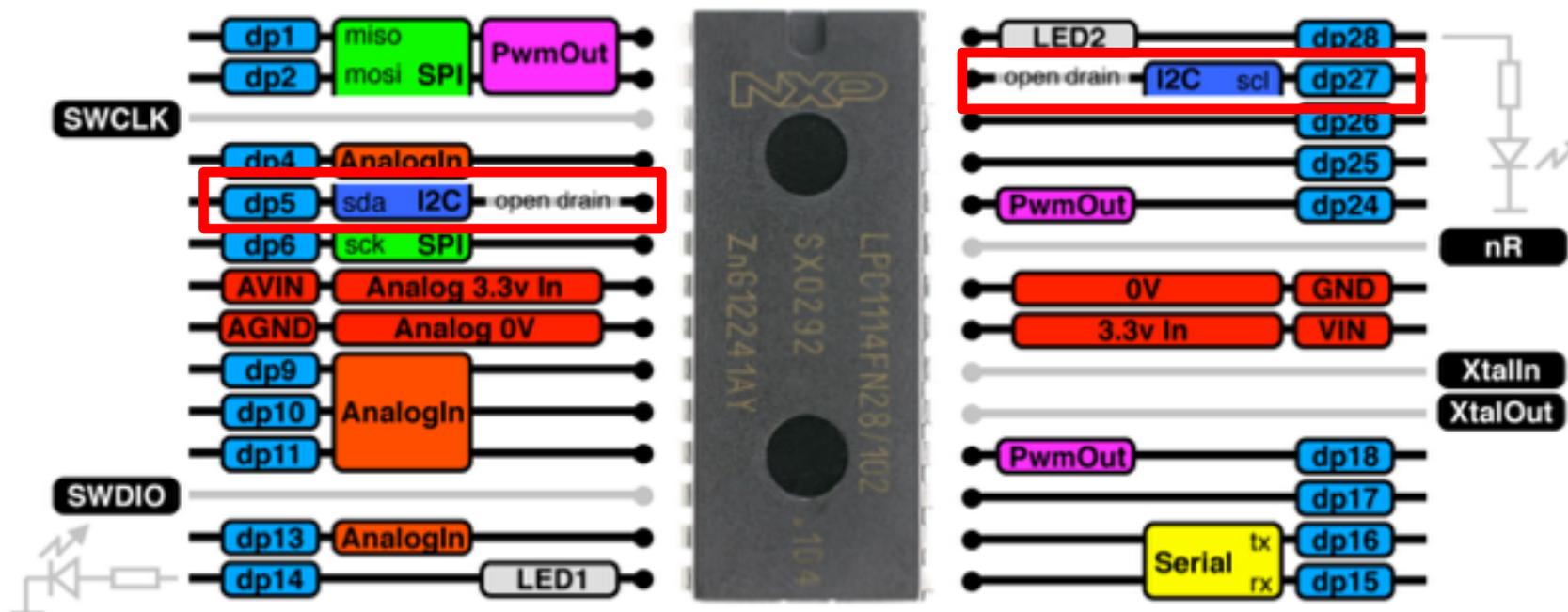
Import Name:

Update: Update all libraries to the latest revision

プログラムを準備

```
1 #include "mbed.h"
2 #include "LM75B.h"
3
4 //Create an LM75B object at the default address (ADDRESS_0)
5 LM75B sensor(p28, p27);
6
7 int main()
8 {
9     //Try to open the LM75B
10    if (sensor.open()) {
11        printf("Device detected!\n");
12
13        while (1) {
14            //Print the current temperature
15            printf("Temp = %.3f\n", (float)sensor);
16
17            //Sleep for 0.5 seconds
18            wait(0.5);
19        }
20    } else {
21        error("Device not detected!\n");
22    }
23 }
24
```

プログラムを準備



プログラムを準備

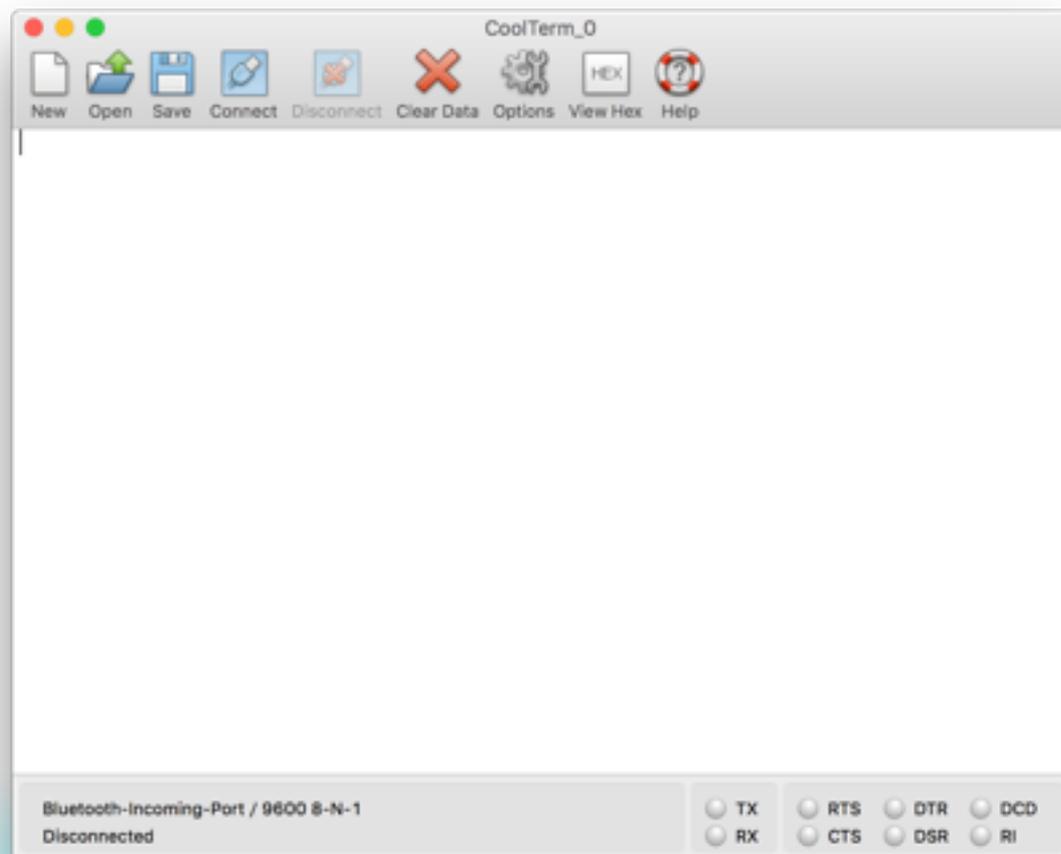
```
1 #include "mbed.h"
2 #include "LM75B.h"
3
4 //Create an LM75B object at the default address (ADDRESS_0)
5 LM75B sensor(dp5, dp27);
6
7 int main()
8 {
9     //Try to open the LM75B
10    if (sensor.open()) {
11        printf("Device detected!\n");
12
13        while (1) {
14            //Print the current temperature
15            printf("Temp = %.3f\n", (float)sensor);
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プログラムを準備

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```

シリアルコンソールを準備

CoolTermをダウンロードして、インストールする



シリアルコンソールを準備

Windowsの場合はドライバをインストールする

<https://developer.mbed.org/handbook/Windows-serial-configuration>

ARM[®] mbed™

Search developer.mbed.org...

Go

Handbook » Windows serial configuration

Windows serial configuration

The mbed serial port works by default on Mac and Linux, but Windows needs a driver. These instructions explain how to setup the mbed Microcontroller to use the USB serial port on Windows.

1. Download the mbed Windows serial port driver ¶

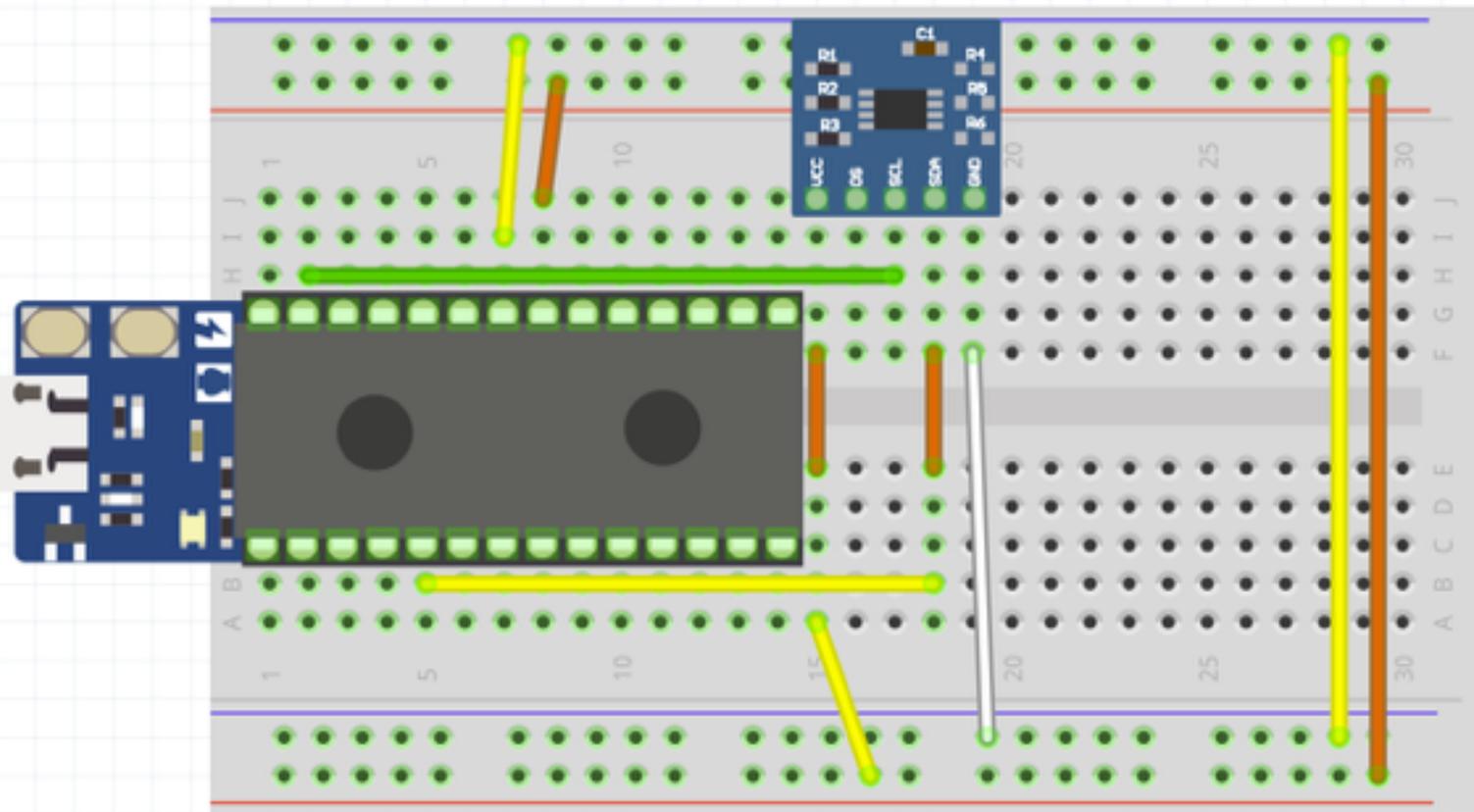
Download the installer to your PC, e.g. your desktop.

[Download latest driver](#)

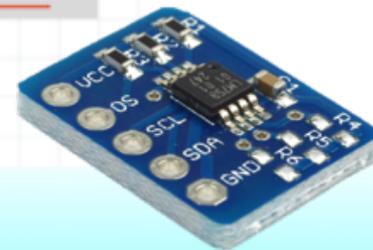
Table of Contents

1. Download the mbed Windows serial port driver
2. Run the installer

温度センサを繋げる

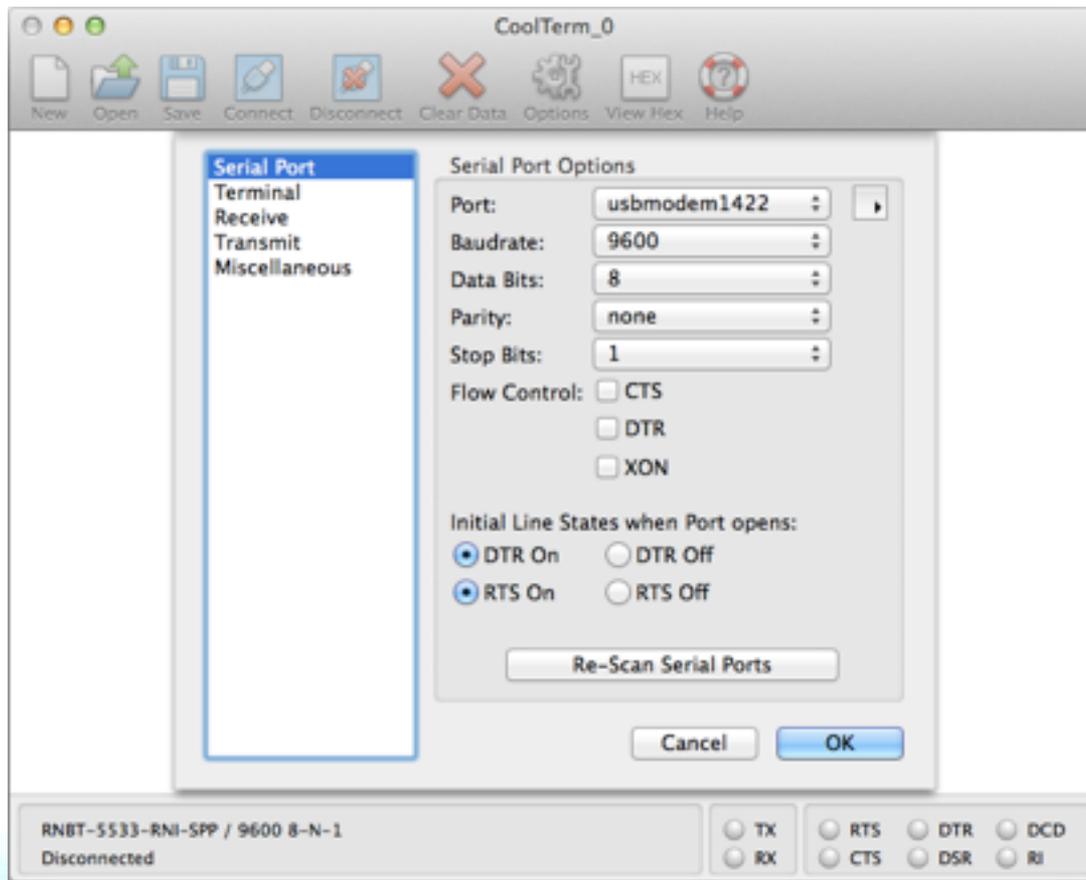


fritzing



シリアルコンソールを準備

シリアル通信の設定をする



コンソールで表示する