



Grove - Starter Kit for mbed User Manual

Release date: 2015/9/22

Version: 1.0

Wiki: http://www.seeedstudio.com/wiki/Grove_Starter_Kit_for_mbed

Bazaar: http://www.seeedstudio.com/depot/Grove-Starter-Kit-for-mbed-p-2032.html?cPath=34_78

Document Revision History

Revision	Date	Author	Description
1.0	Sep 22, 2015	Loovee	Create file

Contents

Document Revision History	2
1. Introduction	2
2. Get Started	3
2.1 Hello, world	3
2.2 Fruit Piano	4
2.2.1 Hardware	5
2.2.2 Software	5
2.3 More, Step By Step	6

Disclaimer

For physical injuries and possessions loss caused by those reasons which are not related to product quality, such as operating without following manual guide, natural disasters or force majeure, we take no responsibility for that.

Under the supervision of Seeed Technology Inc., this manual has been compiled and published which covered the latest product description and specification. The content of this manual is subject to change without notice.

Copyright

The design of this product (including software) and its accessories is under tutelage of laws. Any action to violate relevant right of our product will be penalized through law. Please consciously observe relevant local laws in the use of this product.

1. Introduction

Mbed is an open source development platform for rapid prototyping with microcontrollers. It provides free software libraries, hardware designs and development tools to build projects very easily and fast.

Grove is a modular electronics platform for quick prototyping that does not involve soldering or bread boarding.

This kit is designed for you to get started with Mbed as soon as possible. It contains many plug-n-play Grove modules to start exploring the Mbed world. One goal is to have fun and build confidence with hardware and software in the journey.

2. Get Started

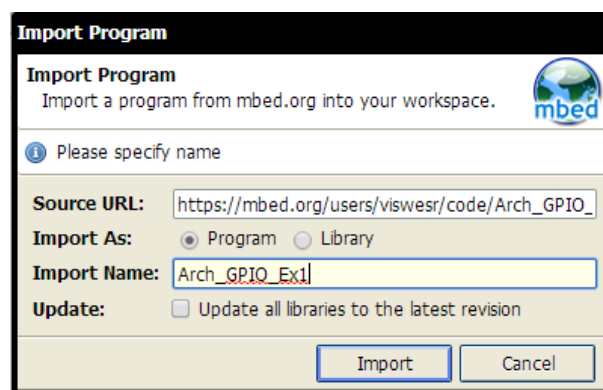
All the things to get started are:

- This kit
- [An Arch](#)
- [A USB Micro B cable](#)
- A computer with Internet

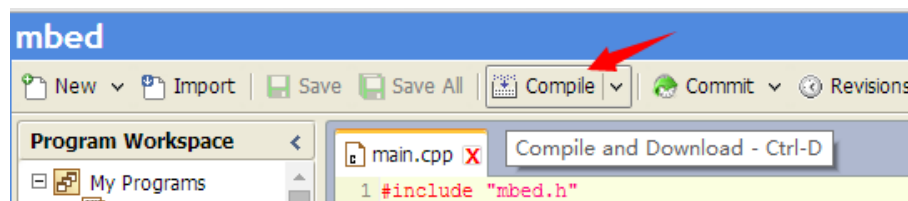
2.1 Hello, world

- Click [this link](#) to **signup or login mbed**, then you will get the mbed online compiler.

Import the program and open main.cpp, you will see the code.



- On mbed online IDE, click "Compile" of the top toolbar (or use CTRL + D) to compile the code and the binary file - Arch_GPIO_Ex1_LPC11U24.bin.



- Connect the Arch board to the computer and **long press** the button, a USB drive named CRP DISABLD will pop up.
- Delete firmware.bin and copy Arch_GPIO_Ex1_LPC11U24.bin to the USB drive.
- **Quick press** the button, the program will be running, an LED will be blinking.

```
#include "mbed.h"

/* Configure a GPIO pin as output for controlling a LED. 'led' is user assigned name and
'LED1' is a internal name given to a port pin P1_8 in this Arch platform. */
DigitalOut led(LED1);

int main()
{
    while(1) {
        led = 1;    // Switch ON the LED.
        wait(0.5);  // Wait for 0.5 Seconds.
        led = 0;    // Switch OFF the LED.
        wait(0.5);  // Wait for 0.5 Seconds.
    }
}
```

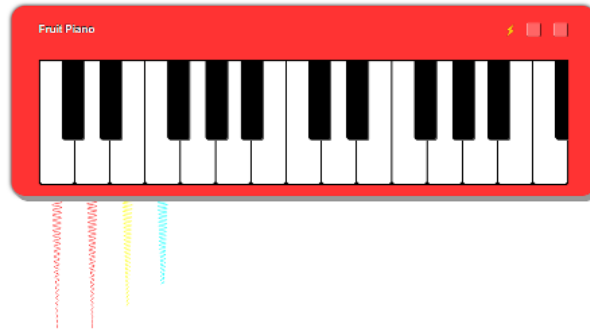
The above program uses **DigitalOut** class and **wait()** function of mbed C/C++ SDK. LED1 is an pseudonym of I/O pin **P1_8** and is labelled D1 in the Arch board. The state of LED1 is changed by writing either 0 or 1 to **led**. The **wait()** function produces a delay in seconds. The state of the **led** is continuous toggled every 0.5 seconds inside the endless **while()** loop.

More details of **DigitalOut** can be find in [DigitalOut page of mbed handbook](#). Similarly the **wait()** function is documented in [wait page](#).

2.2 Fruit Piano

A piano built with a basket of fruit, a microcontroller and a computer.

The idea is from [Makey Makey](#), but uses different hardware and software. An mbed enabled microcontroller with USB is used.



2.2.1 Hardware

- An Arch board
- A basket of fruit
- A computer with AC power
- Some wires

2.2.2 Software

- Click [this link](#) to import the program to Mbed online compiler.
- Compile the code and download the binary file - Fruit_Piano_LPC11U24.bin.
- Connect the Arch board to the computer and long press the button, a USB drive named CRP DISABLD will pop up.
- Delete firmware.bin and copy Arch_GPIO_Ex1_LPC11U24.bin to the USB drive.
- Quick press the button to run the program
- Wire some apples or bananas to A0 - A5 (P0_11 - P0_14, P0_16, P0_22) pins of the Arch board
- Open [Fruit Piano](#) and play

2.3 More, Step By Step

- [Digital Input - Button: use a button to control an LED](#)
- [Analog Input - Potentiometer: use a potentiometer to control the blinking of an LED](#)
- [Temperature Sensing: use a analog temperature sensor to make a thermometer](#)
- [PWM Output - Buzzer: use a buzzer to play a melody](#)
- [Display: make a digital clock](#)
- [A thermometer](#)
- [Infrared keyboard](#)
- [Colorful light](#)
- [Temperature controls color](#)



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.