

mbed LPC1114FN28の紹介

TSUBOI Yoshihiro (@ytsuboi)

自己紹介



坪井義浩 (つぼいよしひろ) @ytsuboi
薬屋、ときどきインフラ屋や文筆業
Make:は趣味。スイッチサイエンスお友達



2009



2010-



2012-

Maker Conference Tokyo

海外事例から学ぶ、大企業とスタートアップそれぞれのMakerビジネス
- mbedのはじまりの話。



秋葉原ツアーア

Chrisを秋葉原に連れて行ってみた。

千石、秋月、マルツ、スイッチサイエンス



衝撃の事実

Chris、

LPCIII4FN28を
はじめて知る。

衝撃の事実

Chris



NXP are a lead partner on the mbed project, supporting its solution, based on the NXP LPC1768 Cortex-M3 MCU.

YOSHINOBU HANNO

よし、やるぞ！

でも、僕、Cortex-Mの深いとこよく知らない...
詳しい人を仲間にしないと...



@toyowata

portingの仕方

<http://mbed.org/handbook/mbed-SDK-porting>

The screenshot shows the mbed.org handbook page for "mbed SDK porting". The page has a navigation bar at the top with links for Home, Handbook (which is highlighted in blue), Cookbook, Platforms, Components, Code, Questions, and Forum. Below the navigation bar is the mbed logo and a search bar with the placeholder "Search mbed.org...". A "Go" button is located to the right of the search bar. The main content area has a breadcrumb trail "Handbook > mbed SDK porting". The title "mbed SDK porting" is displayed in large blue text. Below the title, a text block states: "The porting of the mbed SDK to a new target is divided in four steps:". An ordered list follows: 1. Add the new target to the build system, 2. Add a CMSIS module for the given target, 3. Implement the mbed HAL API for the given target, 4. Validate the new target with the test suite. To the right of the main content is a "Table of Contents" sidebar with a light blue background. It contains a header "Table of Contents" with a blue info icon, followed by a numbered list of five items: 1. Build System, 2. CMSIS Module, 3. mbed HAL, 4. Testing, 5. Contributing. At the bottom of the page, there is a note: "Before starting the mbed SDK porting, you might want to familiarize with the [mbed library internals](#) first." and "For discussing the development of the mbed SDK itself (Addition/support of microcontrollers/toolchains, build and test system, Hardware Abstraction Layer API, etc) please join our [mbed-devel mailing list](#)".

Handbook > mbed SDK porting

mbed SDK porting

The porting of the mbed SDK to a new target is divided in four steps:

1. Add the new target to the build system
2. Add a CMSIS module for the given target
3. Implement the mbed HAL API for the given target
4. Validate the new target with the test suite

The source code of the mbed SDK (tools + libraries) is available in this repository:
<https://github.com/mbedmicro/mbed>

Before starting the mbed SDK porting, you might want to familiarize with the [mbed library internals](#) first.

For discussing the development of the mbed SDK itself (Addition/support of microcontrollers/toolchains, build and test system, Hardware Abstraction Layer API, etc) please join our [mbed-devel mailing list](#).

Build System

portingに必要なもの

- やる気情熱

ターゲットによって、割とめんどくさいです。
僕は舐めてた。

- Cortex-Mの知識

StackとかScatterとかInterruptとか...

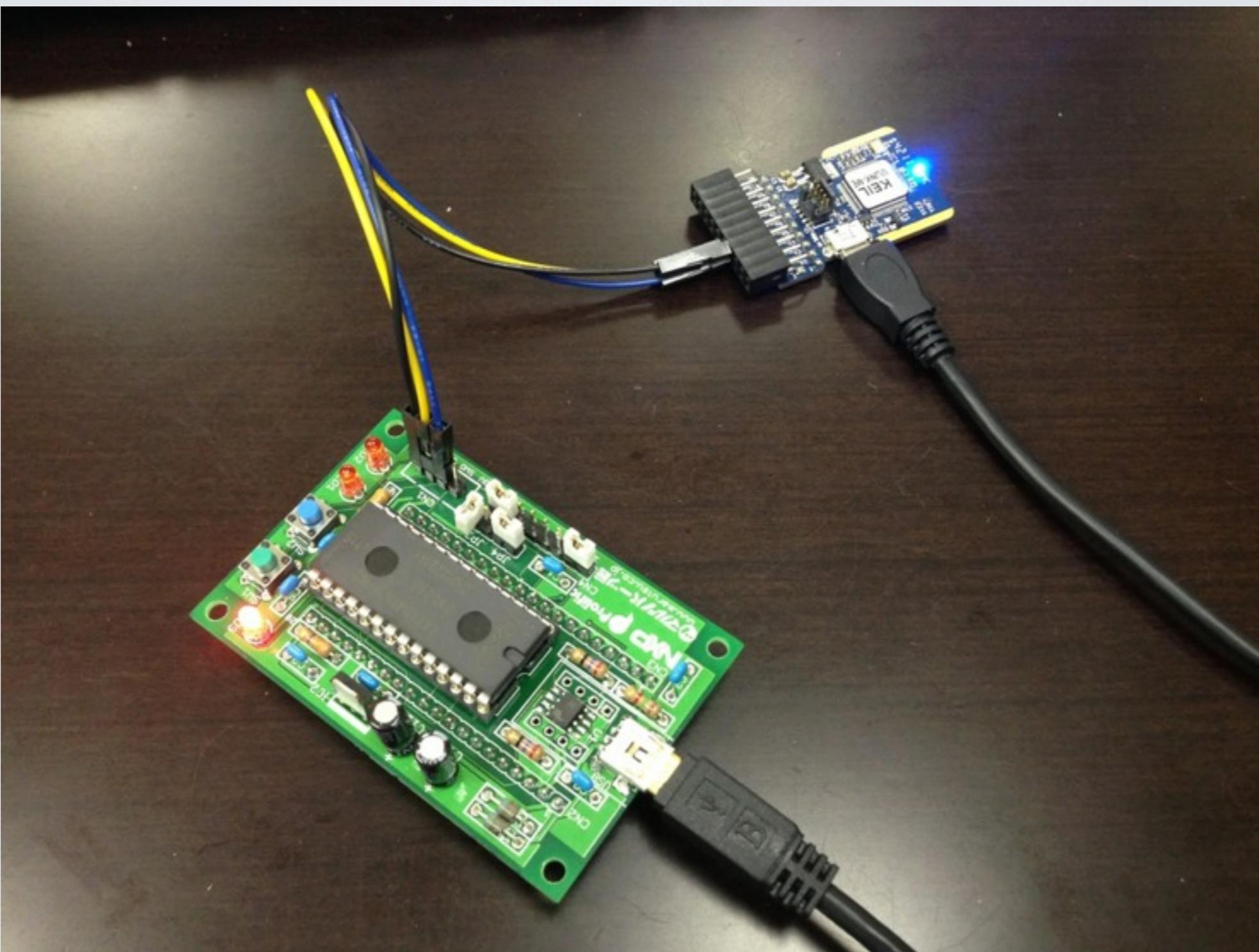
- git というかgithub

- Python

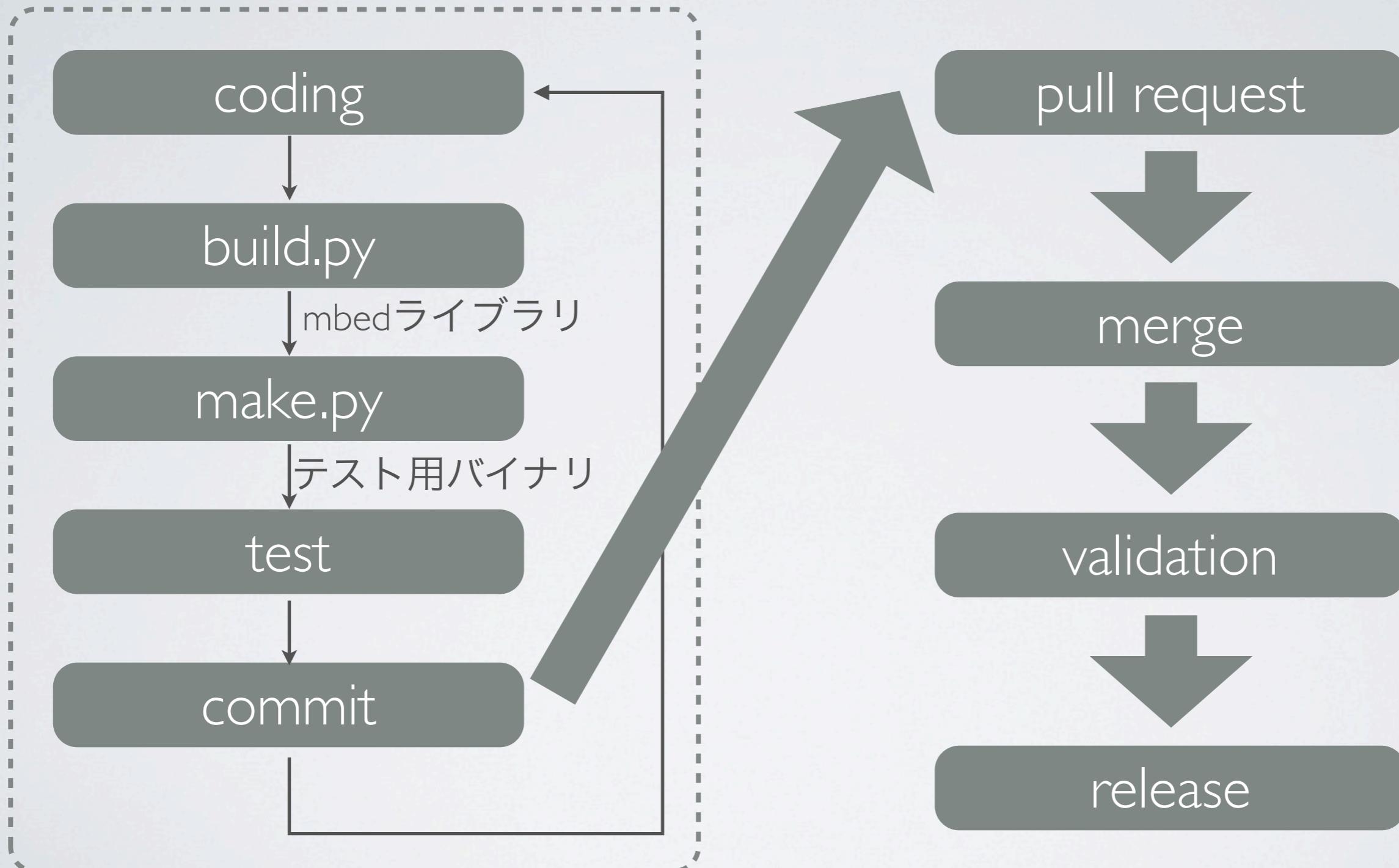
- Toolchain -- MDKが無いと辛い(ターゲットによる)

OS Xとかgccでもいけなくはない。デバッガ欲しい。

開発の様子



開発の流れ



プロジェクトの難関登場

ビルド通るようにしてから

commitしろよ！

テストしろよ！

いうまでもなく…

品質大事！

ゆきだるま怖い！



OMG!!

Date: Fri, 2 Aug 2013 17:23:34 +0100

xxxxxxx (in Cc) will do a new official release of the mbed library on Monday morning.

OMG!!

Wed, 14 Aug 2013 11:24:24 +0100

Hi Yoshi-san, Watarai-san,

Just to inform you that our deadline for releasing the first build of the LPC1114 is **next Monday.**

RELEASE!!

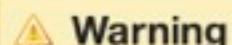
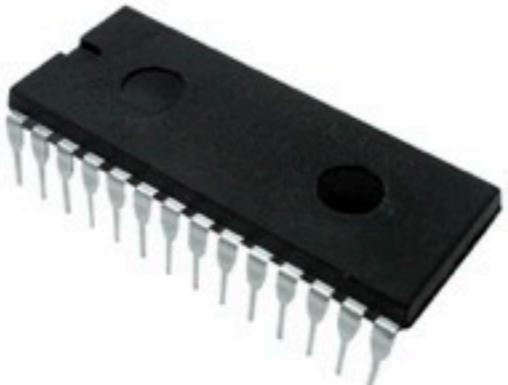
[Handbook](#)[Cookbook](#)[Platforms](#)[Components](#)[Code](#)[Questions](#)[Forum](#)

mbed

[Go](#)[Platforms](#) » [LPC1114FN28](#)

LPC1114FN28

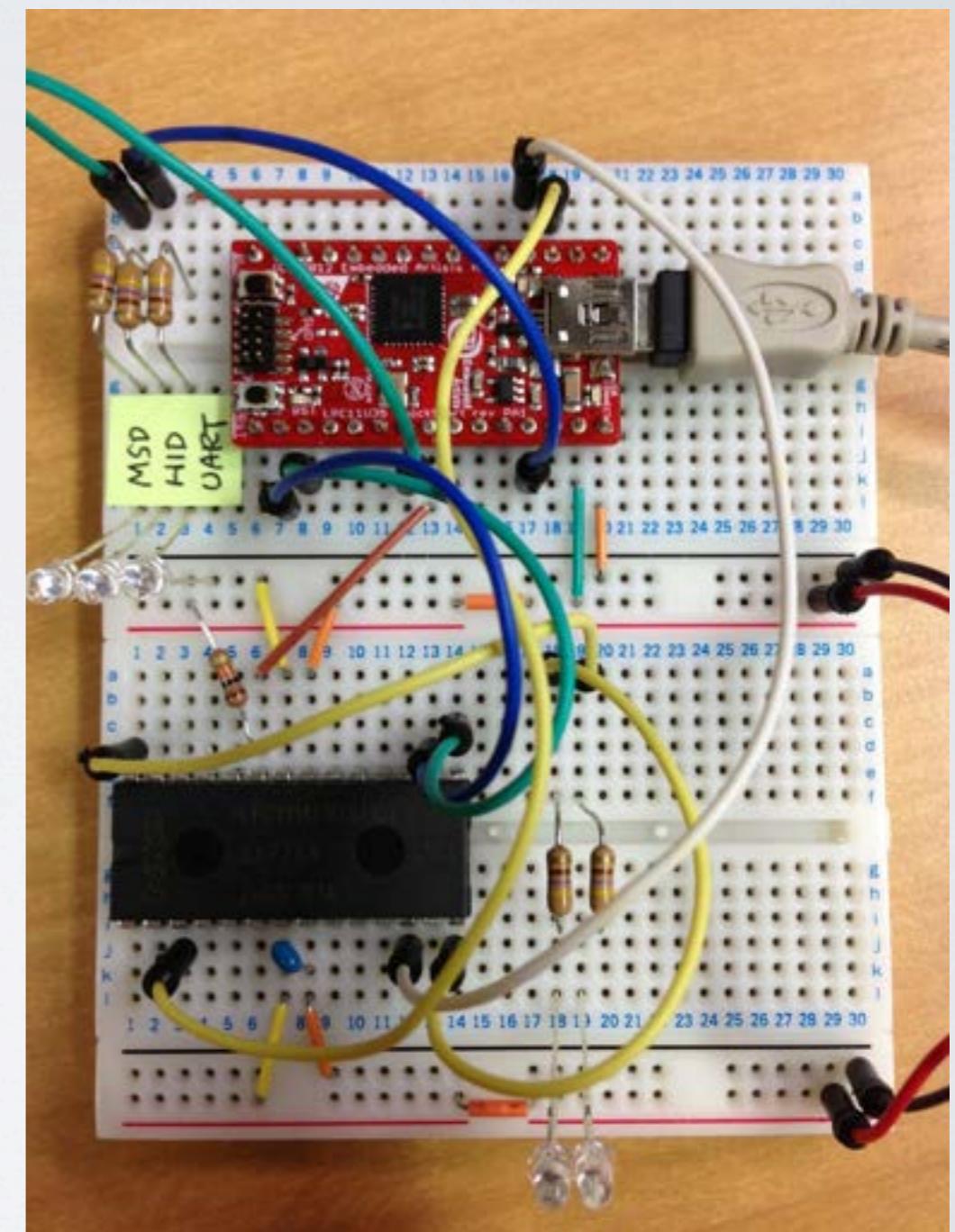
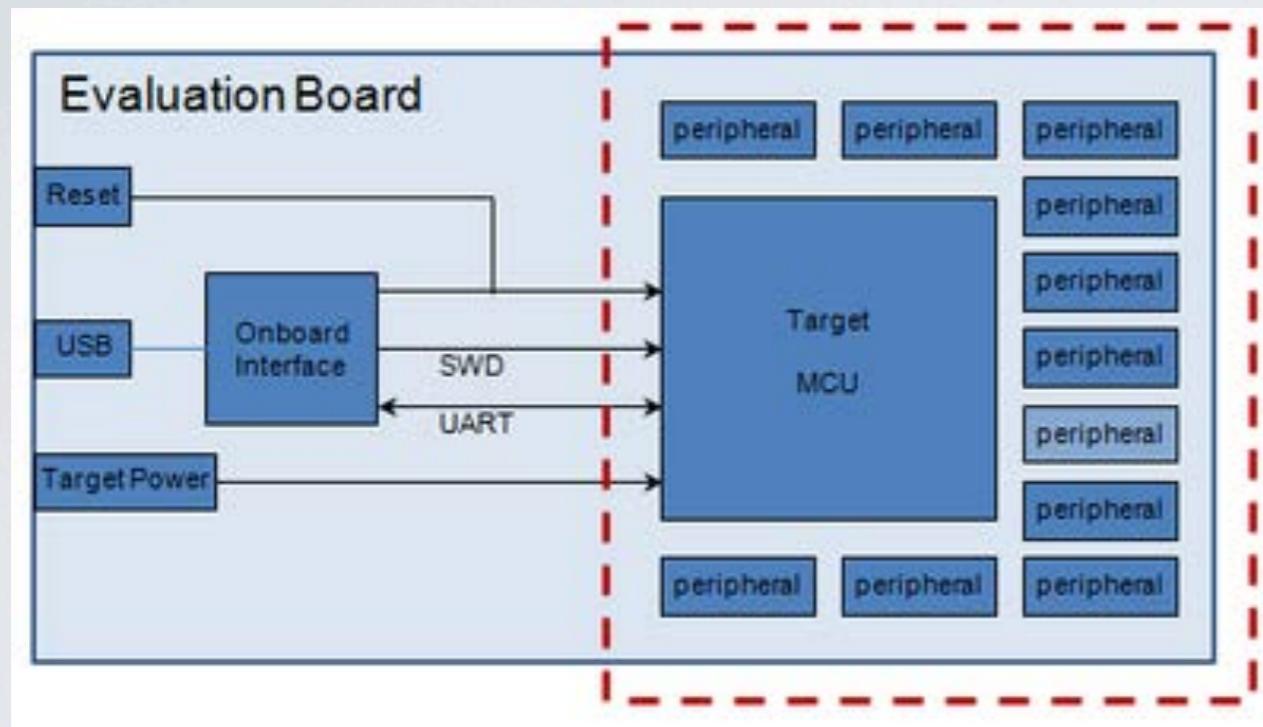
The LPC1114FN28 is an ARM Cortex-M0 based, low-cost 32-bit MCU, designed for 8/16-bit microcontroller applications, offering performance, low power, simple instruction set and memory addressing together with reduced code size compared to existing 8/16-bit architectures.



Warning

Note that support for this target is a beta release from the mbed community, and is not currently supported by the mbed team

D&Dが無い...orz



- mbedチップは近いうちに！
- ISP
- SWD

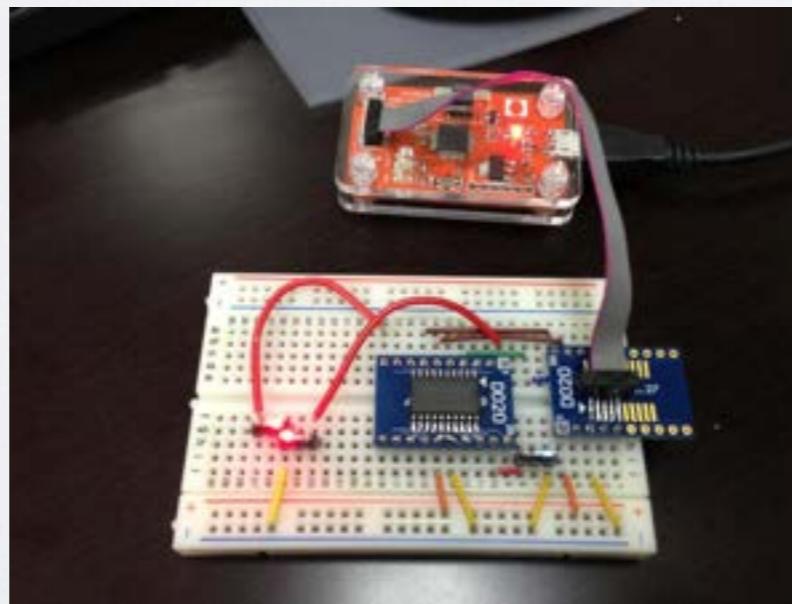
ISP

- LPCについての機能
- イカ醤油ポッポ焼き
mbedを使ってISP
- Flash Magic
BIN2HEXが必要
- lpc2lisp
要ビルド作業

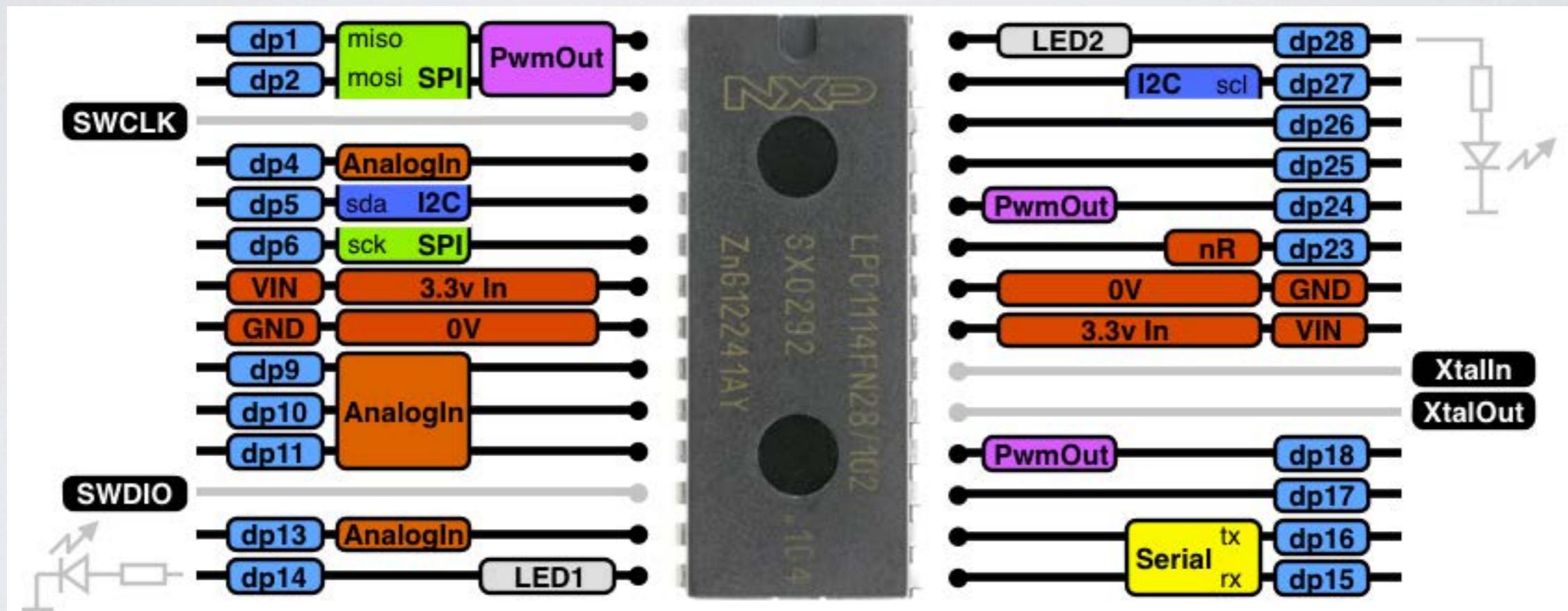


SWD

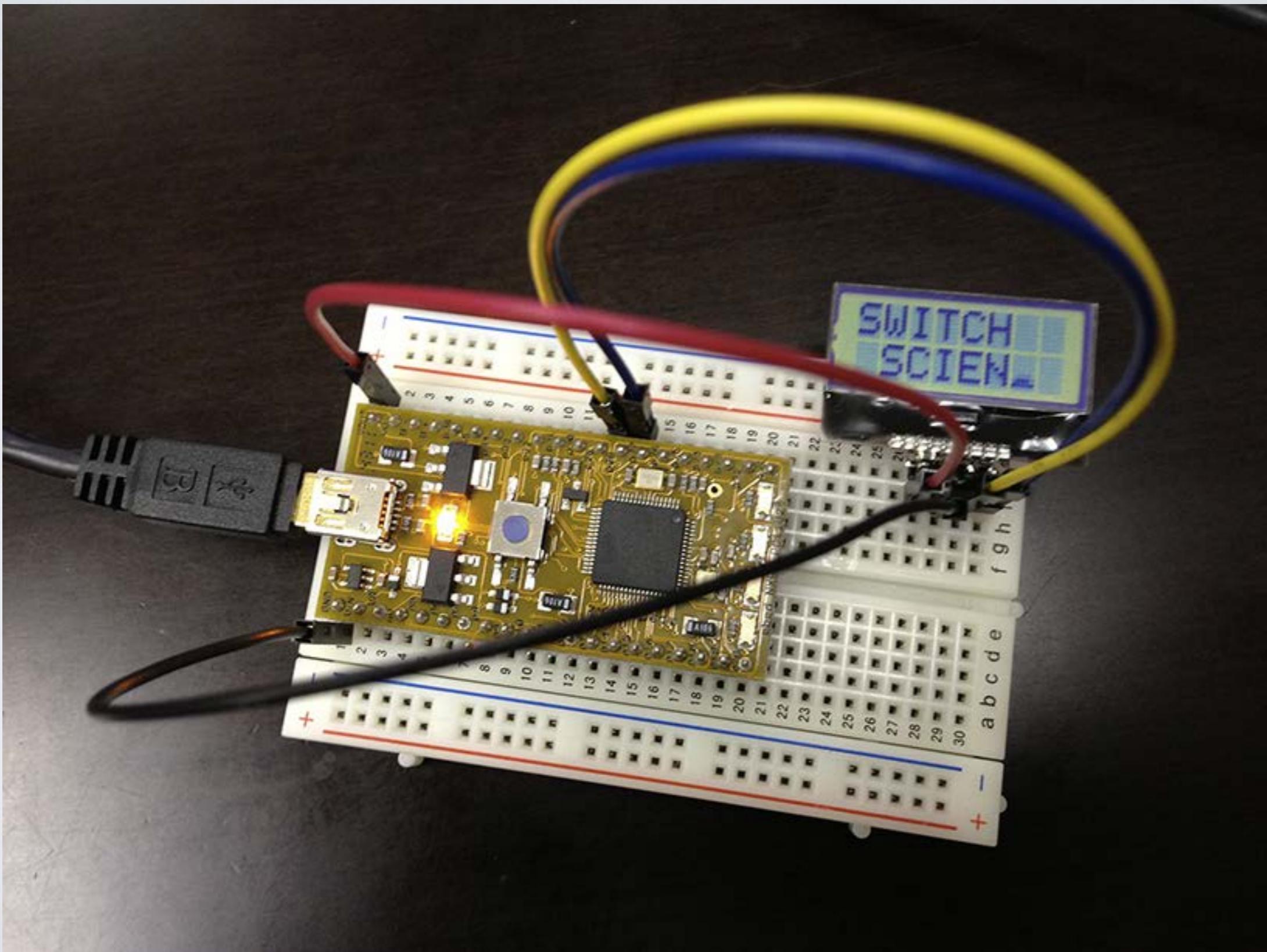
- シリアルワイヤデバッグ
いまだきのJTAG
- 書き込みツール(ソフト)も必要
MDK-ARM
- デバッガアダプタが必要
ツボLink
ULINK-ME
DSTREAM



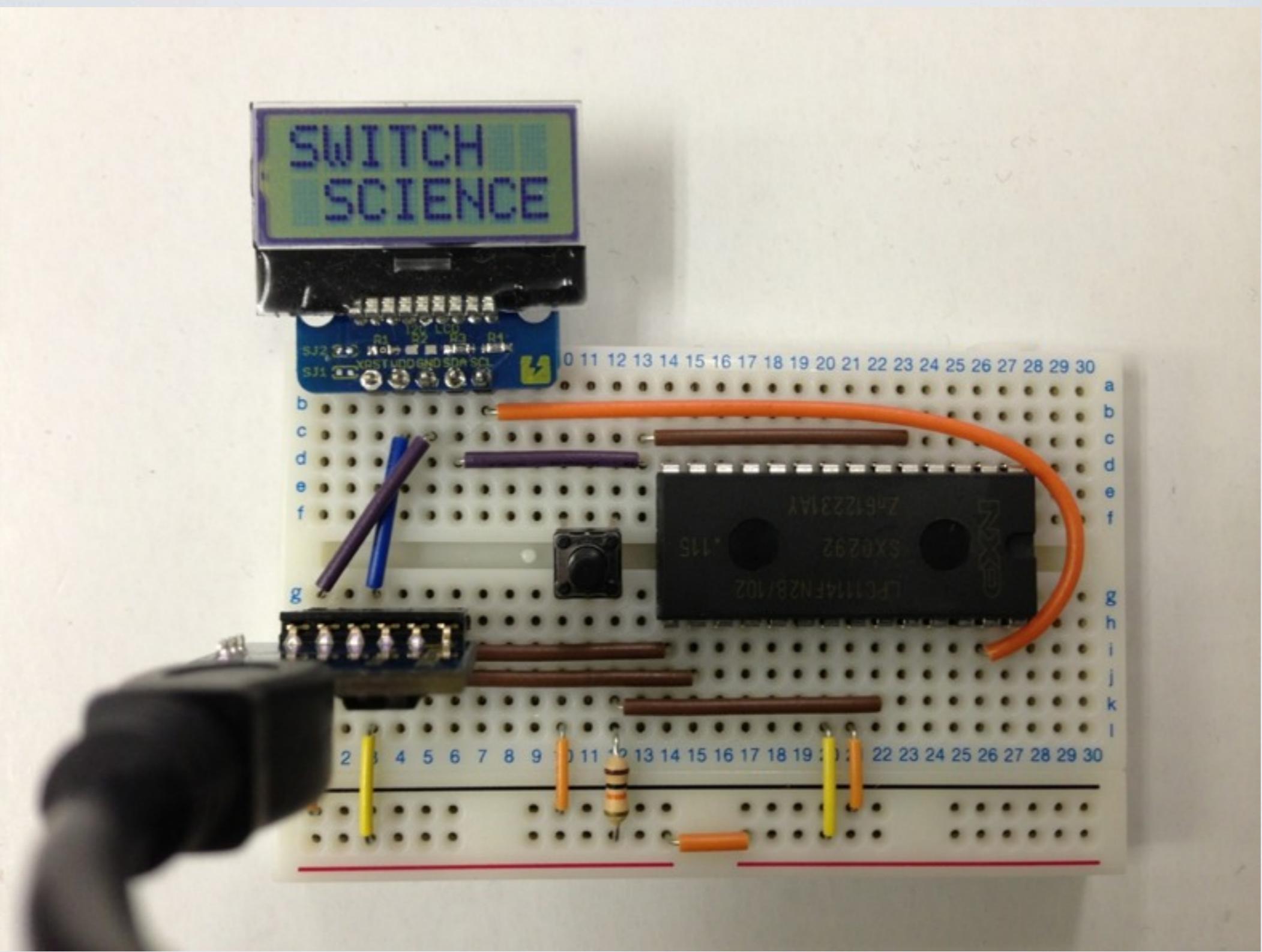
LPC1114FN28/102



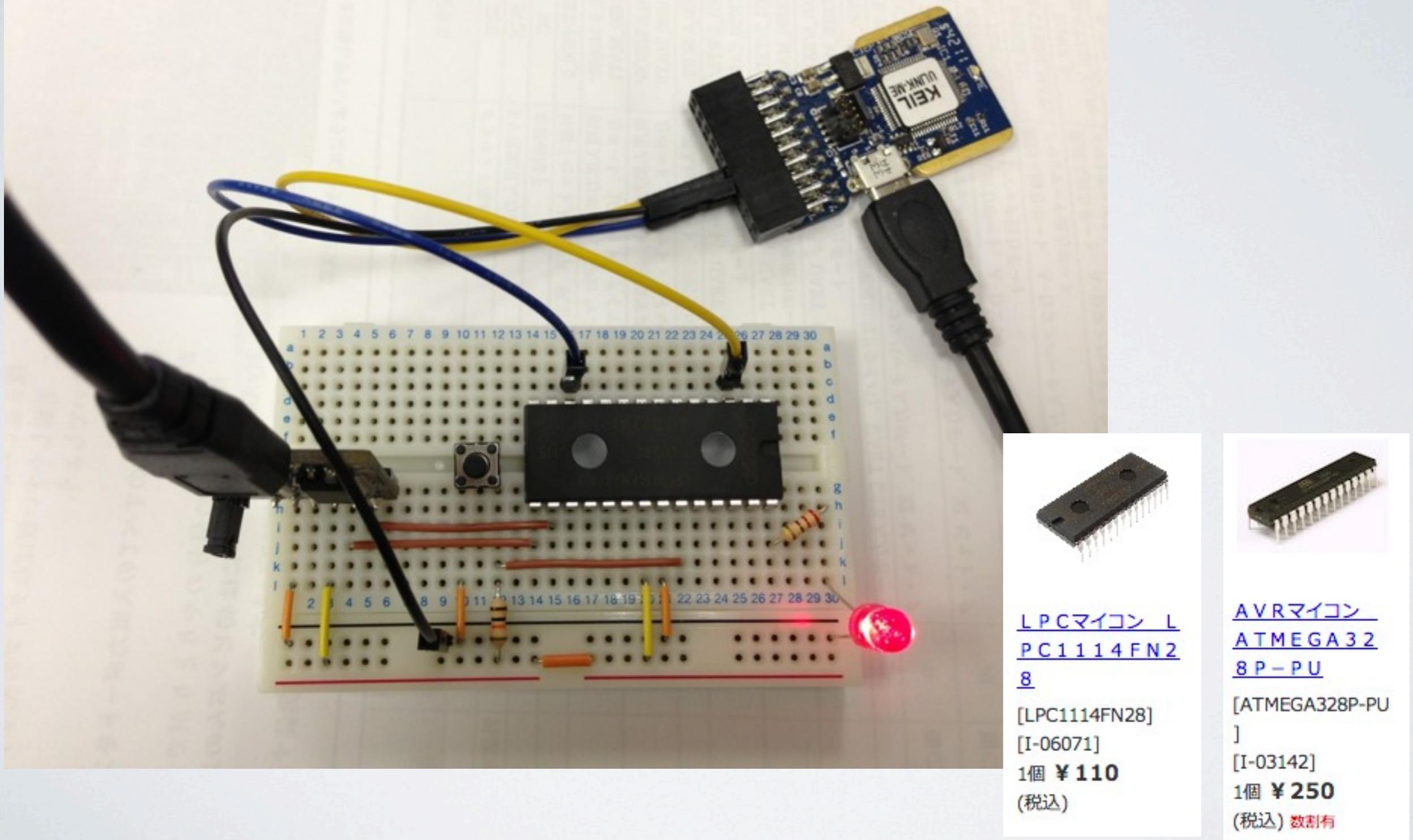
mbed凄い！



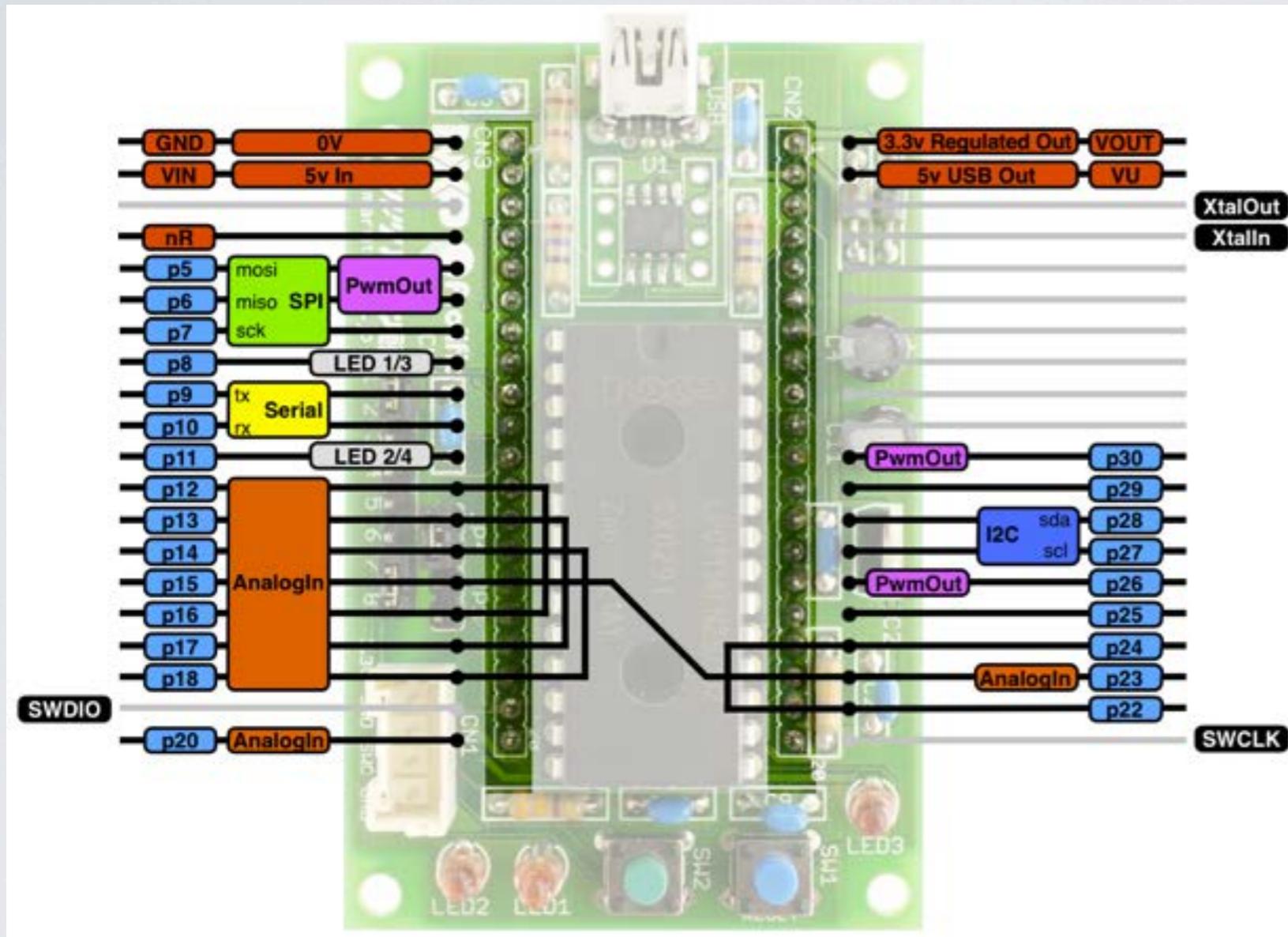
10秒で移植可能



DIP!! 110円!!



基板でも



あ、私も基板作るつもりです。

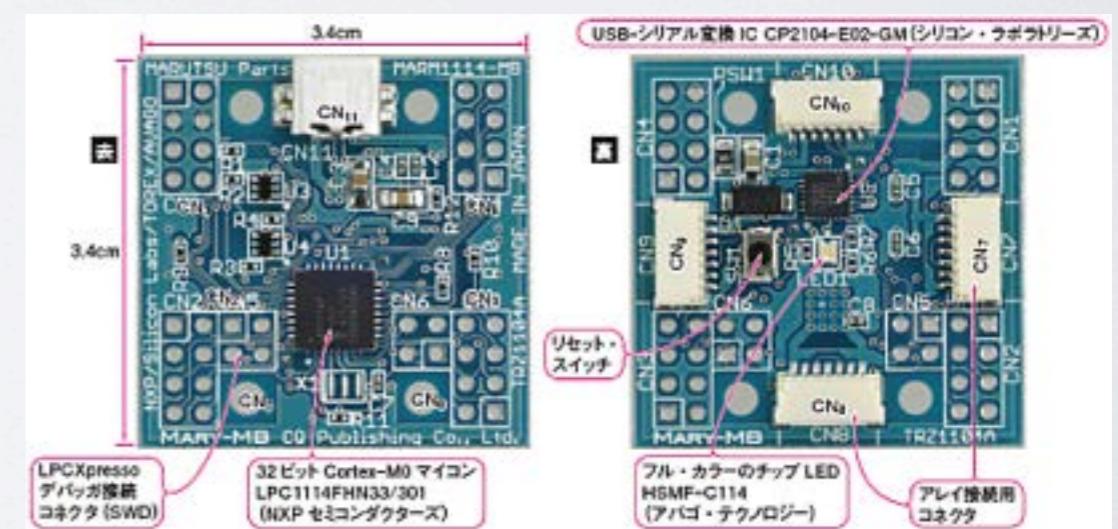
※CQさん、ご依頼をお待ちしております。

DIPじゃなくても

A photograph of a small black OLED display module. The screen displays the text "Hello World!" followed by "OUT_X=2", "OUT_Y=-2", and "OUT_Z=56". The display is mounted on a printed circuit board, which is partially visible at the bottom.

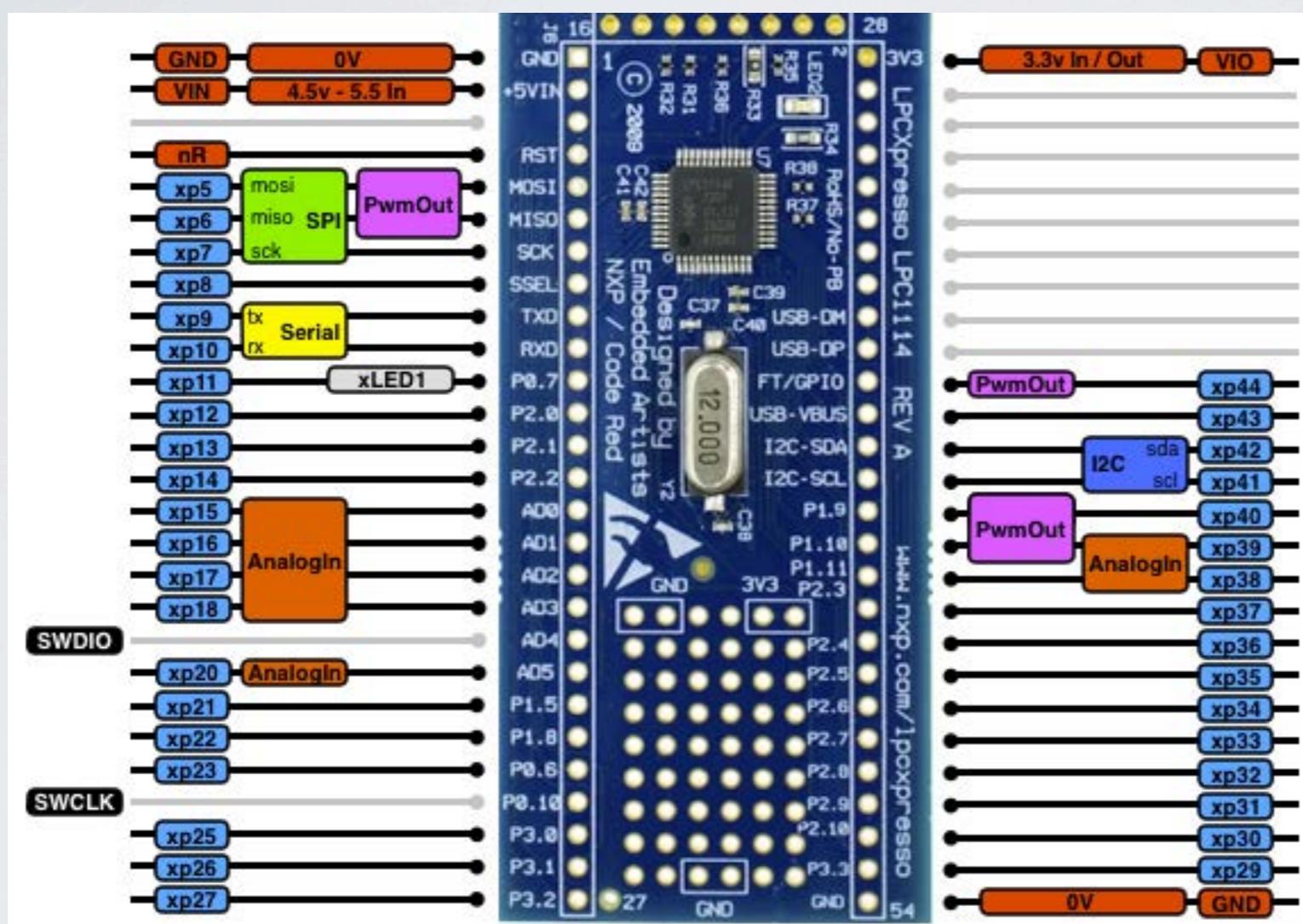


本 ¥3,000-



+ OLED基板 ¥3,480-

DIPじゃなくても



LPC1114評価 ボード mX-LP C1114-S

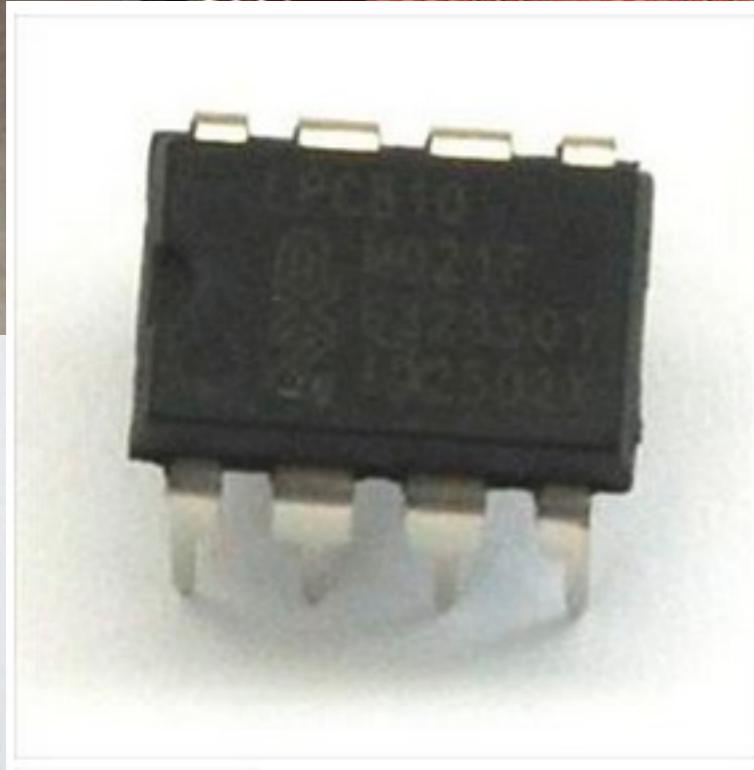
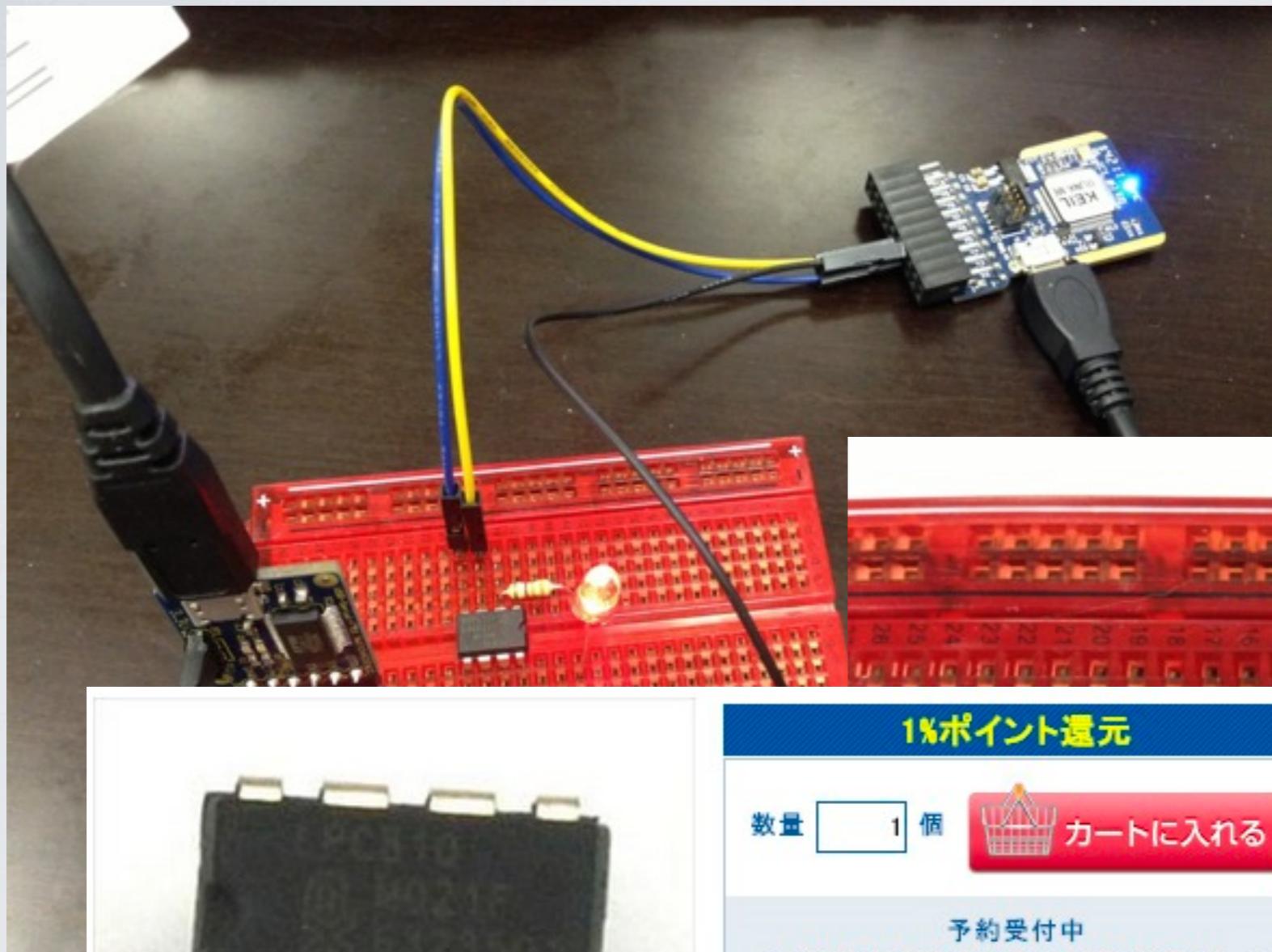
[M-06458]
1個 ¥ 2,000
(税込)

LPC1115評価 ボードLPCXpressoBoard

OM13035
[OM13035]
[M-06454]
1個 ￥2,000
(税込)

あれ？DIPは、もう一つ…

LPC810



1%ポイント還元

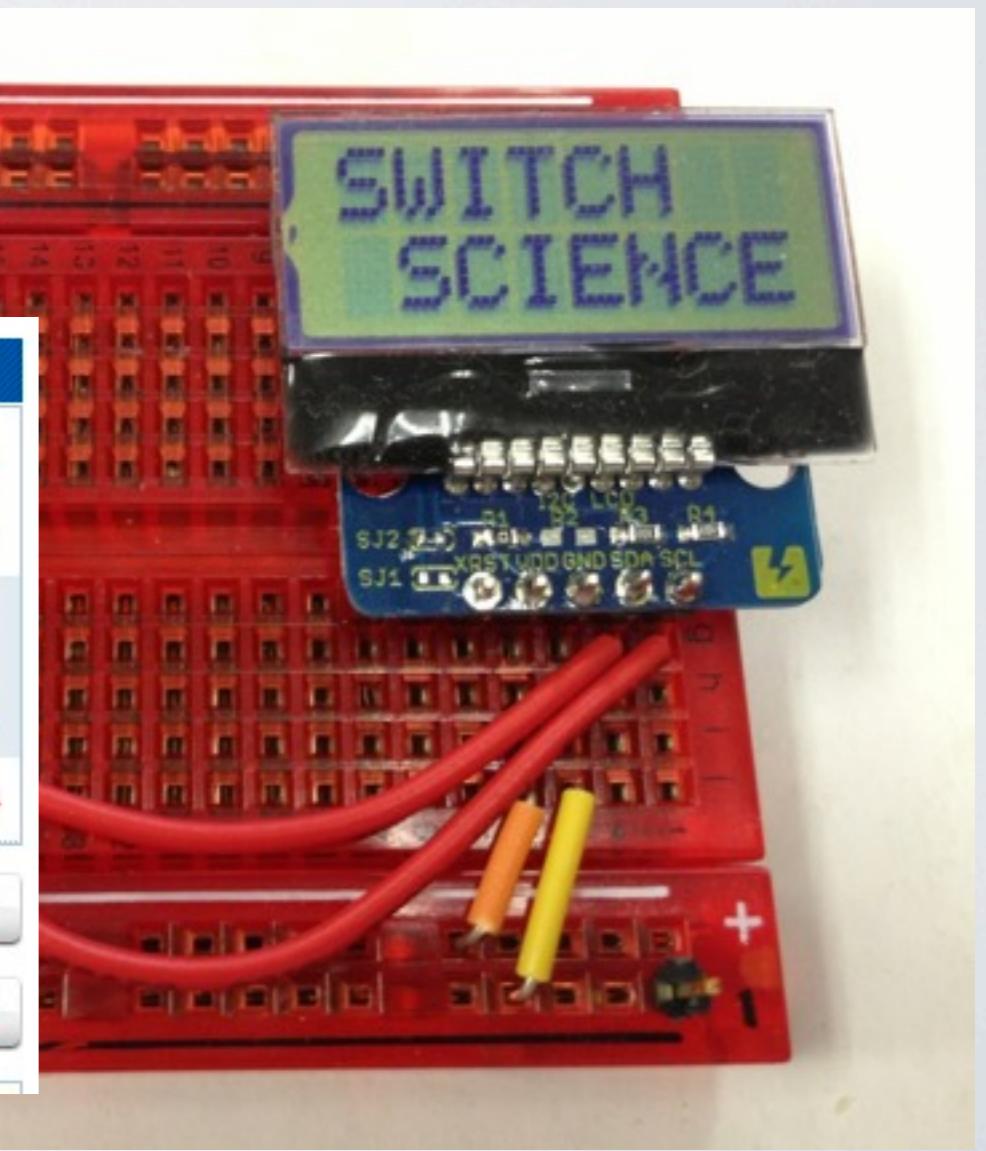
数量 個 カートに入れる

予約受付中
[お急ぎのお客様は納期をお問合せ下さい。]
※場合によって上記の通り出荷できない場合がございます。

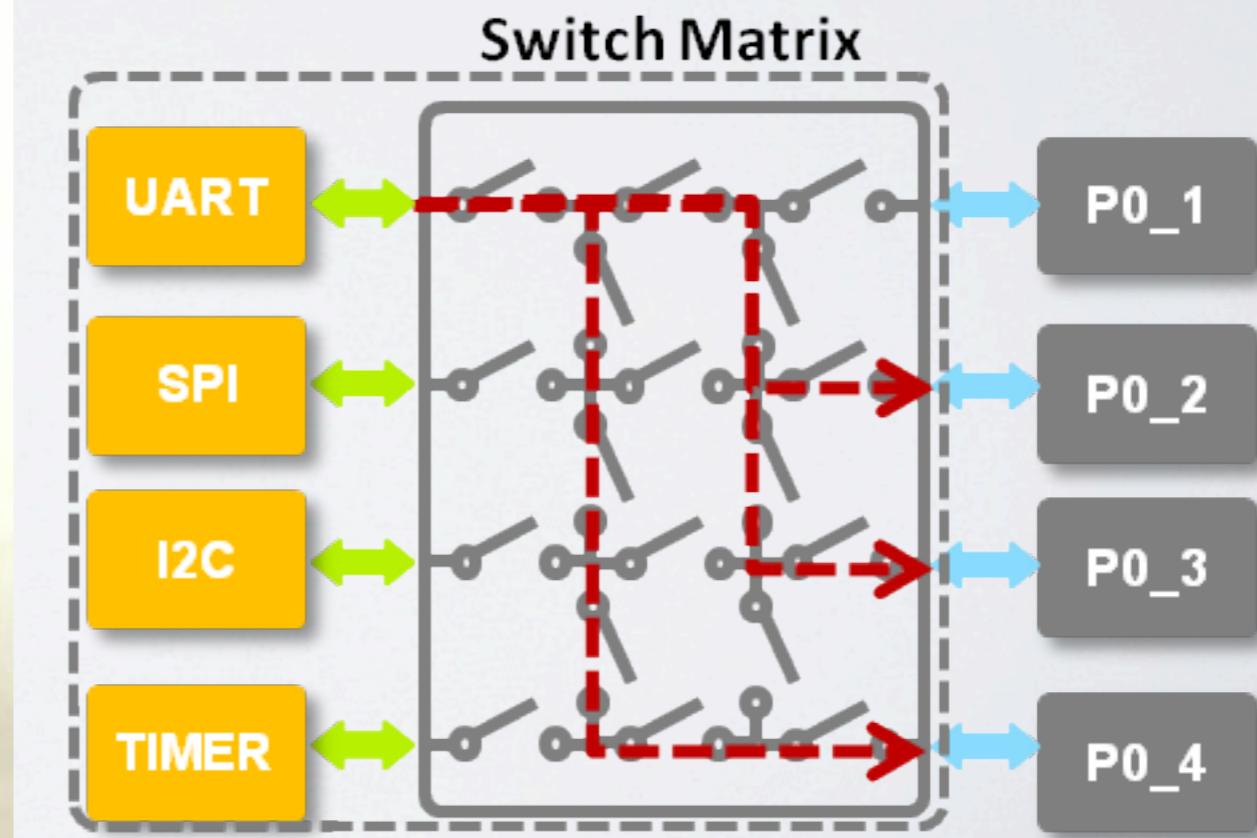
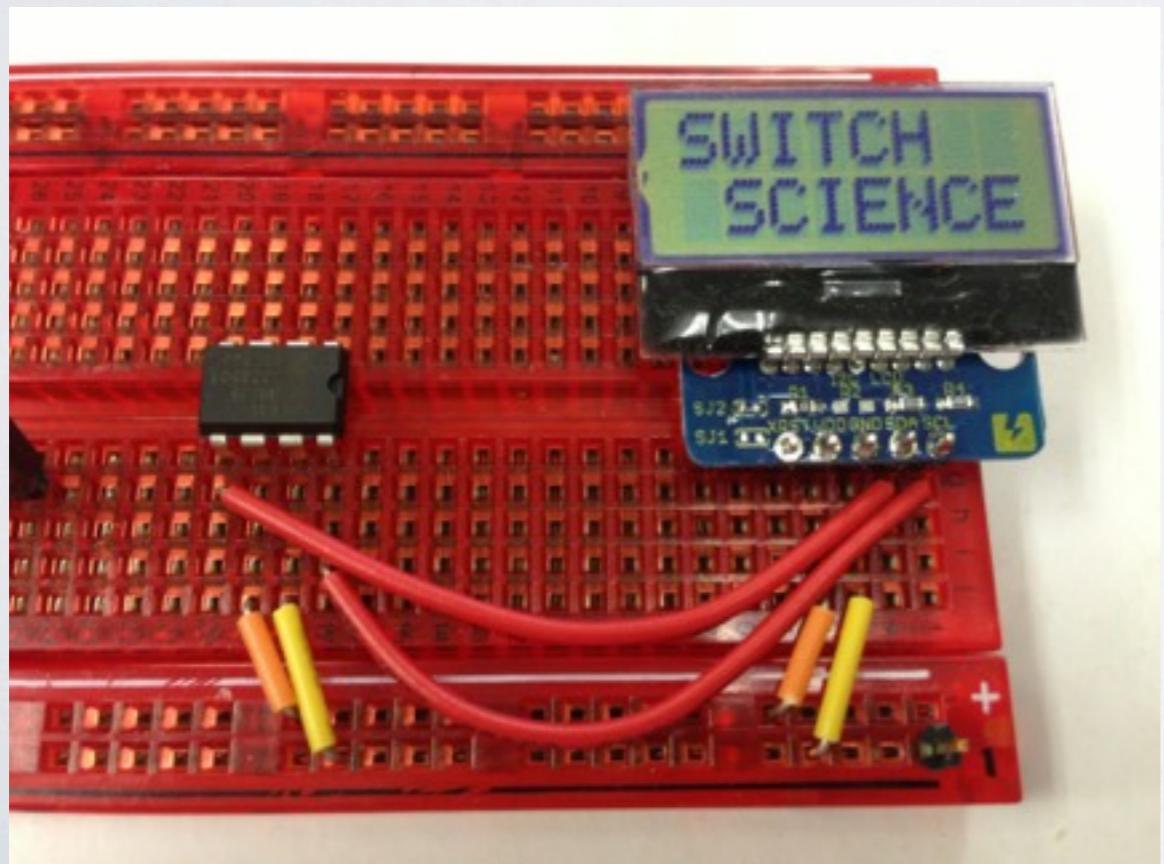
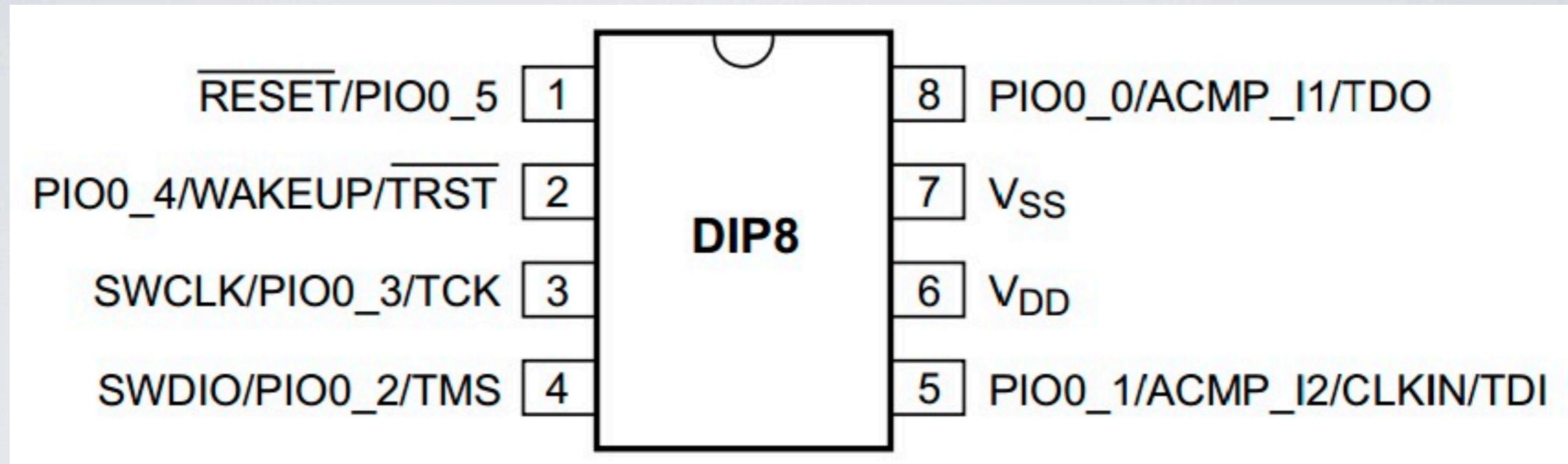
1個	¥84
----	-----

[納期・価格・仕様に関するお問い合わせ](#)

[free データシート](#) [印刷ページ](#)



ピンアウト



merged!!

 ytsuboi opened this pull request 10 days ago [Edit](#)

Added LPC810 support

No one is assigned No milestone

No description given.

2 participants  

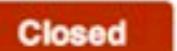
 ytsuboi added some commits 22 days ago

-  ytsuboi [LPC1114] fixed simple bugs on export templates 9ae383f
-  ytsuboi [LPC810] add LPC810 support 8dd6bdb
-  ytsuboi [LPC810] fixed scatter file 2e54966
-  ytsuboi Merge remote-tracking branch 'upstream/master' 0718c76
-  ytsuboi Merge remote-tracking branch 'upstream/master' 46003d4

 eLua ↵ bogdanm referenced this pull request from a commit 9 days ago

 bogdanm Merge pull request #54 from ytsuboi/master ... 233979e

  bogdanm merged commit 233979e into mbedmicro:master from ytsuboi:master 9 days ago

  bogdanm closed the pull request 9 days ago

pull requestとかいいの!?



TSUBOI Yoshihiro @ytsuboi

9月6日

ぬおお、 mbedチーム仕事早い。メールの反応なかったから2週間ほど寝かしてあったのをpull requestしたらmergeされて、今度はどうやってテストしたのか質問された。

[詳細](#)



金本茂 Shigeru KANEMOTO

@ssci



フォロー中

@ytsuboi Arduino IDEでも感じました。
GitHubじゃなかつた頃はパッチ送っても何それ状態だったんだけど、pull requestの対応は速い。技術屋はメールじゃなくて、コードで会話する。



返信



リツイートの取り消し



お気に入り



その他

情報源

- @ytsuboi @toyowata
portingのご相談もどうぞ
- mbed.orgにあるytsuboiのNotebook
mbed LPC1114での遊び方
<http://mbed.org/users/ytsuboi/notebook/>
- www.nxp-lpc.com
- 本スライド中の挿絵については、@lynxeyed_black師匠の
絵を無断利用させていただきました。サーセンm(_ _)m

LPCマイコンボード

- ⊕ LPCXPresso
- ⊕ LPC-Link2
- LPC800-Mini
- LPC800-MAX
- Xplorer
- ⊖ mbed
ノート
- ⊖ その他ボード
Android Open Accessory
- lpc lcd-LPC11U24
- LPCマイコンボード 技術情報 一覧