

## 阅读申明

- 1.本站收集的数据手册和产品资料都来自互联网，版权归原作者所有。如读者和版权方有任何异议请及时告之，我们将妥善解决。
- 2.本站提供的中文数据手册是英文数据手册的中文翻译，其目的是协助用户阅读，该译文无法自动跟随原稿更新，同时也可能存在翻译上的不当。建议读者以英文原稿为参考以便获得更精准的信息。
- 3.本站提供的产品资料，来自厂商的技术支持或者使用者的心得体会等，其内容可能存在描述上的差异，建议读者做出适当判断。
- 4.如需与我们联系，请发邮件到marketing@iczoom.com，主题请标有“数据手册”字样。

## Read Statement

1. The datasheets and other product information on the site are all from network reference or other public materials, and the copyright belongs to the original author and original published source. If readers and copyright owners have any objections, please contact us and we will deal with it in a timely manner.
2. The Chinese datasheets provided on the website is a Chinese translation of the English datasheets. Its purpose is for reader's learning exchange only and do not involve commercial purposes. The translation cannot be automatically updated with the original manuscript, and there may also be improper translations. Readers are advised to use the English manuscript as a reference for more accurate information.
3. All product information provided on the website refer to solutions from manufacturers' technical support or users the contents may have differences in description, and readers are advised to take the original article as the standard.
4. If you have any questions, please contact us at marketing@iczoom.com and mark the subject with "Datasheets".

## Motor Control Starter Kit Information Sheet

The Motor Control Starter Kit is designed to facilitate the development of low-cost motor control applications using PIC24 microcontrollers and dsPIC33F digital signal controllers. The kit includes a BLDC motor, a three-phase inverter, an on-board Debugger/Programmer, a user-configurable switch, a two-channel mTouch™ slider with LED indicators for motor speed display, and a 9V power supply.

### Installing MPLAB® IDE and C Compilers

The MPLAB Integrated Development Environment (IDE) should be installed prior to using the Motor Control Starter Kit. While MPLAB IDE provides the assembler tools for development, most of the demos and code examples are written in the C language and require a C compiler to be installed. Microchip's MPLAB C Compiler seamlessly integrates into MPLAB IDE. Both the MPLAB IDE and MPLAB C compiler are free (see the note below) and are available for download at [www.microchip.com/MPLAB](http://www.microchip.com/MPLAB) and [www.microchip.com/compilers](http://www.microchip.com/compilers), respectively.

**Note:** Standard Evaluation (Free) – All optimization levels are enabled for 60 days, but then revert to optimization level 1 only.

### Code Examples and More Information

For code examples and more information, please visit <http://www.microchip.com/motor>. From the Development Tools menu, click Development and Evaluation Boards and from the list select dsPIC Motor Control Starter Kit DM330015. Then, from the Download section, select code for the starter kit. You can also visit <http://www.microchip.com/16bit>: from the left navigation menu select Find Development Tools and then choose Motor Control Starter Kit from the list. From the Download section, select the code for the starter kit.

### Running and Debugging Applications

After downloading the code example and installing the development tools, please use the following procedure to build and run your software:

1. Ensure the BLDC motor is properly connected to the Motor Control Starter Kit board and that the rotor is able to move freely.
2. Connect the 9V power supply to the Motor Control Starter Kit.
3. Connect the USB port on the board to a USB port on the development computer using a USB cable. This will power up the on-board Debugger/Programmer and connect it to the development computer.
4. Extract the Motor Control Starter Kit software from the archive file and load the software project into the development environment.
5. If using MPLAB 8.xx IDE, do the following; otherwise, skip to step 6:
  - a) Select **Programmer > Select Tool** and then choose the appropriate tool.
  - b) Build the project by selecting **Project > Build All**.
  - c) Download your code to the DSC or MCU by selecting **Programmer > Program**.
6. If using the MPLAB X IDE, do the following:
  - a) Select **Run > Set Project Configuration > Customize**.
  - b) Select the required tool under Hardware Tools, and then click **Apply** followed by **OK**.
  - c) Select **Run > Run Project** to download the code to the target device, and then click the **Reset Release** icon.
7. After the code is downloaded to the device, the USB connection can be removed. In Release mode, only the 9V power supply is needed. In Debug mode, both the 9V power supply and the USB connection must be used.
8. By pressing the S1 button, the motor will toggle between Run and Stop modes. If the rotor stops without pressing the button (due to external mechanical factors), it will try to restart on its own without requiring another button press.
9. Use the Capacitive Touch Slider to change the motor speed. The speed magnitude will be indicated by the three user LEDs on the board.

#### Americas

Atlanta - 678-957-9614  
Boston - 774-760-0087  
Chicago - 630-285-0071  
Cleveland - 216-447-0464  
Dallas - 972-818-7423  
Detroit - 248-538-2250  
Indianapolis - 317-773-8323  
Los Angeles - 949-462-9523  
Phoenix - 480-792-7200  
Santa Clara - 408-961-6444  
Toronto - 905-673-0699

#### Europe

Austria - Wels - 43-7242-2244-39  
Denmark - Copenhagen - 45-4450-2828  
France - Paris - 33-1-69-53-63-20  
Germany - Munich - 49-89-627-144-0  
Italy - Milan - 39-0331-742611  
Netherlands - Drunen - 31-416-690399  
Spain - Madrid - 34-91-708-08-90  
UK - Wokingham - 44-118-921-5869

#### Asia/Pacific

Australia - Sydney - 61-2-9868-6733  
China - Beijing - 86-10-8569-2100  
China - Chengdu - 86-28-8665-5511

#### Asia/Pacific (Continued)

China - Chongqing - 86-23-8980-9588  
China - Hangzhou - 86-571-2819-3180  
China - Hong Kong SAR - 852-2401-1200  
China - Nanjing - 86-25-8473-2460  
China - Qingdao - 86-532-8502-7355  
China - Shanghai - 86-21-5407-5533  
China - Shenyang - 86-24-2334-2829  
China - Shenzhen - 86-755-8203-2660  
China - Wuhan - 86-27-5980-5300  
China - Xiamen - 86-592-2388138  
China - Xian - 86-29-8833-7252  
China - Zhuhai - 86-756-3210040  
India - Bangalore - 91-80-3090-4444  
India - New Delhi - 91-11-4160-8631  
India - Pune - 91-20-2566-1512  
Japan - Yokohama - 81-45-471-6166  
Korea - Daegu - 82-53-744-4301  
Korea - Seoul - 82-2-554-7200  
Malaysia - Kuala Lumpur - 60-3-6201-9857  
Malaysia - Penang - 60-4-227-8870  
Philippines - Manila - 63-2-634-9065  
Singapore - 65-6334-8870  
Taiwan - Hsin Chu - 886-3-6578-300  
Taiwan - Kaohsiung - 886-7-213-7830  
Taiwan - Taipei - 886-2-2500-6610  
Thailand - Bangkok - 66-2-694-1351



**MICROCHIP**

Microchip Technology Inc. • 2355 West Chandler Blvd. • Chandler, AZ 85224-6199

[www.microchip.com](http://www.microchip.com)

The Microchip name and logo, the Microchip logo, and MPLAB are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries. All other trademarks mentioned herein are property of their respective companies. © 2011, Microchip Technology Incorporated, Printed in the U.S.A. All Rights Reserved. 08/10

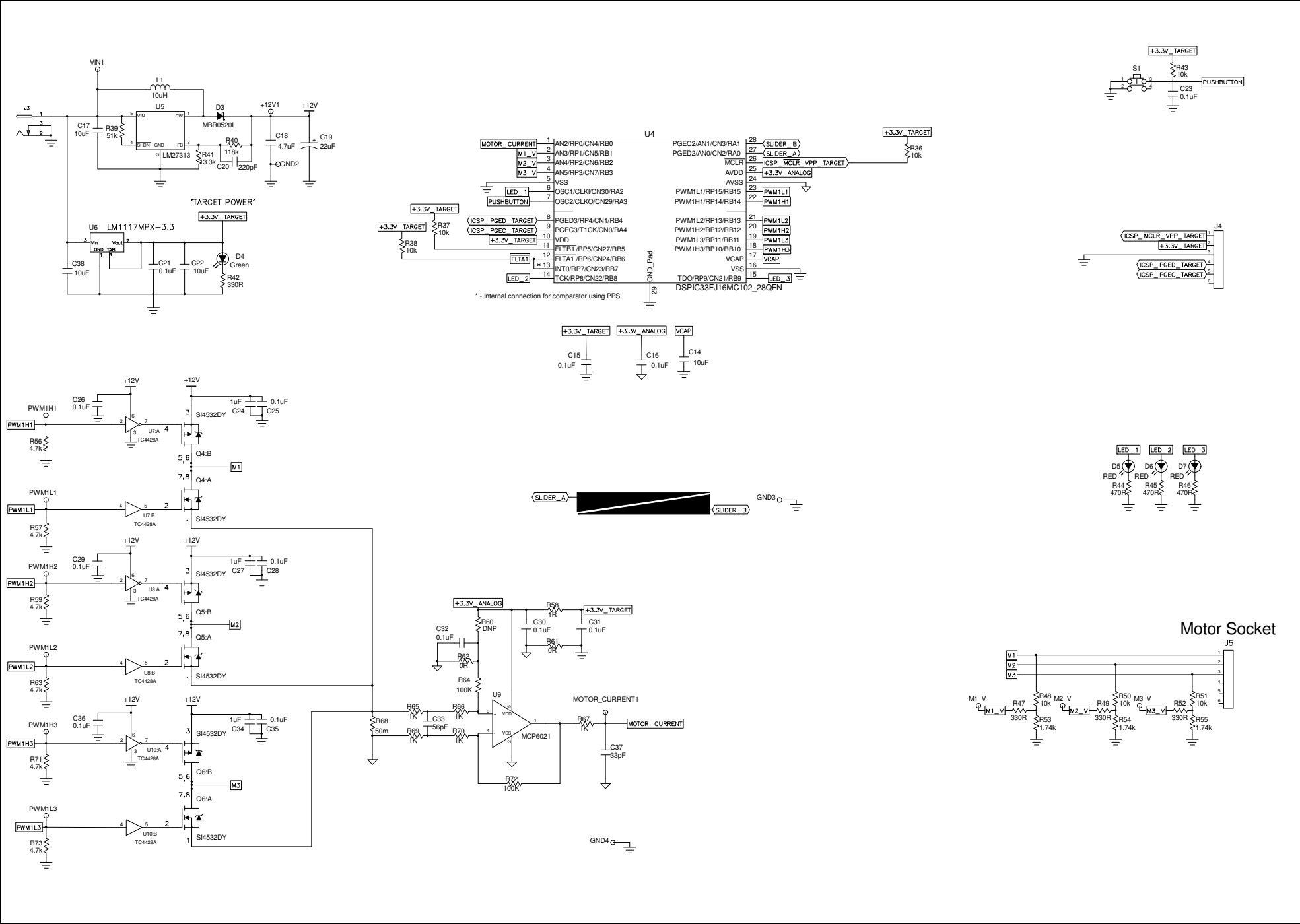
DS51991A



05/02/11

Motor Control Starter Kit Information Sheet

Application Hardware Schematics



## Debugger Schematics

The schematic diagram illustrates the internal circuitry of the USB to I2C module. It features a USB Mini-B connector (J1) with pins 1 (VUSB), 2 (D-), 3 (D+), 4 (ID), and 5 (ID NC). A diode (D1, MBR0520L) is connected between the D- and D+ lines. A 2.2uF capacitor (C9) is connected between the ID line and ground. The module is powered by a +3.3V supply, which is connected to the VOUT pin (pin 8) of the MCP1727 LDO regulator (U2). The regulator's output is connected to a 3.3V LED (D2, Green) through a 330R resistor (R12). The regulator is also connected to a 200K resistor (R11) and a 0.1uF capacitor (C10). The LED is connected to a 2.2K resistor (R10) and a 0.01uF capacitor (C12). The module has a GND1 connection point.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Microchip:](#)

[DM330015](#)