



Getting Started with the Atmel ATA6844-DK BLDC Motor Control Kit

Atmel ATA6844-DK Getting Started

Kit Contents

- 1 BLDC motor application board Atmel® ATA6844-DK
- 1 Atmel controller board ATA6844-DK3 with Atmel BLDC microcontroller ATmega32M1 and Atmel USB microcontroller ATmega32U2
- 1 brushless DC motor ref: FL42BLS01-001 (3 phases, 8 poles, 12VDC)
- “Getting Started” Application Note

Prepare Connections

Before starting, the following preparations need to be done:

1. Connect the motor application board X4 to the controller board X101.
2. Connect the motor according to [Table 1 on page 2](#). For the given example, only the 3-phase wire (3 thick wires on pins 1 to 3) are needed, the other wires (5 thin wires on pins 4 to 8) do not need to be connected.
3. Check all jumpers: Set WDD (default), VMODE to 5V (default), SCREF to microcontroller (default), set RESET (default) and UART mode to LIN.

In case of no USB connection, the jumpers at USB-UART bridge and J105 are not relevant, the USB connector J104 is not necessary.

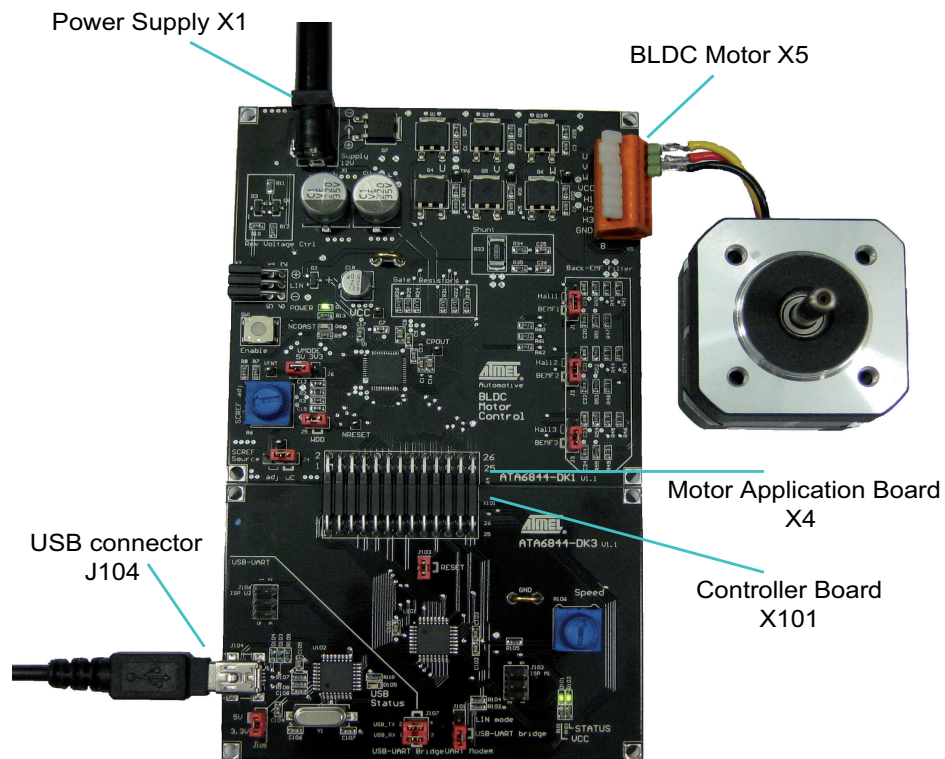
For USB operation, please refer to the “Atmel ATA6844-DK BLDC Motor Control Kit” Application Note (<http://www.atmel.com/Images/doc9236.pdf>).

Table 1. BLDC Motor Connections to Screwless Row Connector X5

Pin Number	Signal Names on PCB Bottom	Function	Motor Wire	Remark	Direction
1	Ph_A	Motor phase A	Yellow	Thick wire	Output
2	Ph_B	Motor phase B	Red	Thick wire	Output
3	Ph_C	Motor phase C	Black	Thick wire	Output
4	5V	Power 5V	Red	Thin wire ⁽¹⁾	Output
5	HALL_A	Hall A	Blue	Thin wire ⁽¹⁾	Input
6	HALL_B	Hall B	Green	Thin wire ⁽¹⁾	Input
7	HALL_C	Hall C	White	Thin wire ⁽¹⁾	Input
8	GND	Power GND	Black	Thin wire ⁽¹⁾	Output

Note: 1. Optional, not necessary for B-EMF feedback

Figure 1. Atmel ATA6844-DK



1. Operating

1.1 Software

The Atmel® ATmega32M1 is preloaded with a demo software that supports BLDC motor control with Back EMF (B-EMF) feedback. Since the B-EMF values measured by this software depend on the motor type, the software only runs with the motor included in the kit. To operate with other motor types than the one enclosed, the start parameters need to be calculated by means of the evaluation software.

1.2 Startup Procedure

To start the system, provide 12V to the power supply connector X1. The motor starts 5 seconds after powering the kit. First, the motor performs forced start-up. After a few milliseconds, the motor switches to locked loop mode. The target speed of the loop is defined by the potentiometer speed.

2. Revision History

Please note that the following page numbers referred to in this section refer to the specific revision mentioned, not to this document.

Revision No.	History
9233C-AUTO-06/12	<ul style="list-style-type: none">• Section “Prepare Connections” on page 1 updated
9233B-AUTO-08/11	<ul style="list-style-type: none">• ATA6844-DK1 in ATA6844-DK renamed• Figure 2-1 “Atmel ATA6844-DK” on page 2 updated



Enabling Unlimited Possibilities™

Atmel Corporation

2325 Orchard Parkway
San Jose, CA 95131
USA

Tel: (+1) (408) 441-0311

Fax: (+1) (408) 487-2600

www.atmel.com

Atmel Asia Limited

Unit 01-5 & 16, 19F
BEA Tower, Millennium City 5
418 Kwun Tong Roa
Kwun Tong, Kowloon

HONG KONG

Tel: (+852) 2245-6100

Fax: (+852) 2722-1369

Atmel Munich GmbH

Business Campus
Parkring 4
D-85748 Garching b. Munich
GERMANY

Tel: (+49) 89-31970-0

Fax: (+49) 89-3194621

Atmel Japan G.K.

16F Shin-Osaki Kangyo Building
1-6-4 Osaki
Shinagawa-ku, Tokyo 141-0032
JAPAN

Tel: (+81) (3) 6417-0300

Fax: (+81) (3) 6417-0370

© 2012 Atmel Corporation. All rights reserved. / Rev.: 9233C-AUTO-06/12

Atmel®, Atmel logo and combinations thereof, Enabling Unlimited Possibilities®, and others are registered trademarks or trademarks of Atmel Corporation or its subsidiaries. Other terms and product names may be trademarks of others.

Disclaimer: The information in this document is provided in connection with Atmel products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Atmel products. EXCEPT AS SET FORTH IN THE ATMEL TERMS AND CONDITIONS OF SALES LOCATED ON THE ATMEL WEBSITE, ATMEL ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL ATMEL BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS AND PROFITS, BUSINESS INTERRUPTION, OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF ATMEL HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Atmel makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and products descriptions at any time without notice. Atmel does not make any commitment to update the information contained herein. Unless specifically provided otherwise, Atmel products are not suitable for, and shall not be used in, automotive applications. Atmel products are not intended, authorized, or warranted for use as components in applications intended to support or sustain life.

AMEYA360

Components Supply Platform

Authorized Distribution Brand :



Website :

Welcome to visit www.ameya360.com

Contact Us :

➤ Address :

401 Building No.5, JiuGe Business Center, Lane 2301, Yishan Rd
Minhang District, Shanghai , China

➤ Sales :

Direct +86 (21) 6401-6692

Email amall@ameya360.com

QQ 800077892

Skype [ameyasales1](#) [ameyasales2](#)

➤ Customer Service :

Email service@ameya360.com

➤ Partnership :

Tel +86 (21) 64016692-8333

Email mkt@ameya360.com