

# **USB Plug-in Card for the EVK2160A Demonstration Kit**

---

## **User Guide**







## Section 1

---

# Overview and Procedure

---

### 1.1 Introduction

This application note details how to set up the EVK2160A standalone evaluation board to connect to a PC using the USB plug-in card, in order to run EVK2160A demonstration software.

New users are recommended to work through the Quickstart guide to familiarise themselves with the kit and software before reading this User Guide.

For detailed information regarding these products, including the latest datasheet and demonstration software, go to [www.atmel.com](http://www.atmel.com).

**Note:** This User Guide should be read in conjunction with *Software GUI for the EVK2160A Demonstration Kit* User Guide.

---

### 1.2 Getting Started

#### 1.2.1 Components Required

The following components are required:

- 1 x EVK2160A Evaluation Board
- 1 x USB Plug-in Card 9206
- 1 x Soldering Iron
- 1 x Solder
- 1 x Tweezers
- Wire to fit

#### 1.2.2 EVK2160A Evaluation Board

The EVK2160A Evaluation Board comprises one AT42QT2160-MMU (QT2160 ) with 16 channels; these are configured as 8 capacitive sensing keys and one slider, made of a further 8 capacitive sensing keys (see [Figure 1-1 on page 1-2](#)).

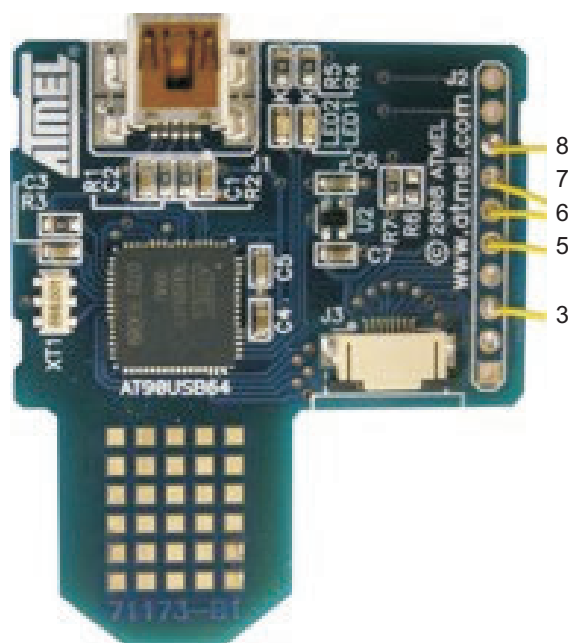
**Figure 1-1.** EVK2160A Evaluation Board



### 1.2.3 USB Plug-in Card

The USB plug-in card enables standalone evaluation boards such as the EVK2160A to connect to PC applications through a USB port, using I<sup>2</sup>C-compatible communications (see [Figure 1-2](#)).

**Figure 1-2.** USB Plug-in Card

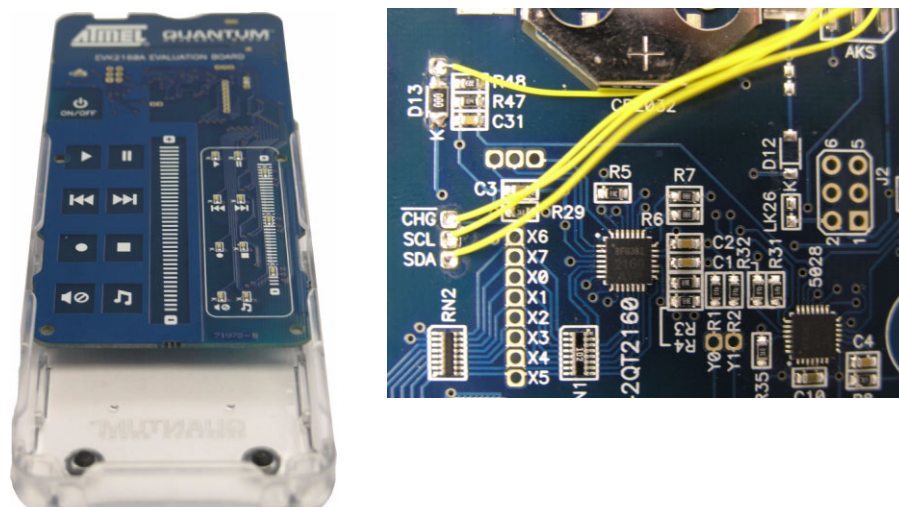


## 1.3 EVK2160A Preparation

The USB plug-in card is used to supply external power to the unit. To protect the unit from possible damage through cross-powering of external and battery power:

1. Slide out the EVK2160A PCB from the moulded case (see [Figure 1-3](#)).
2. Remove the battery from the EVK2160A evaluation board (if fitted).
3. Remove diode D13.
4. Remove the 0Ω resistor from D12 and fit to D13.

**Figure 1-3.** EVK2160A Adaptations



## 1.4 USB Plug-in Card Setup

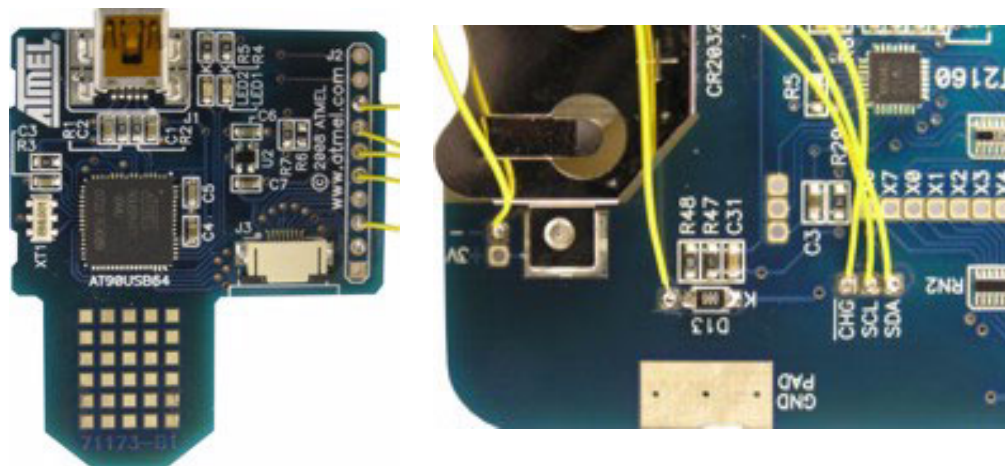
To communicate and provide power, see [Table 1-1](#) for the wires to attach between the USB plug-in card and the EVK2160A:

**Table 1-1.** Connections Between EVK2160A and the USB Plug-in Card

USB Plug-in Card Connector J2 Pin*	EVK2160A
3	$\overline{\text{CHG}}$
5	SDA
6	SDL
7	D13/TP17
8	- ve Pin or GND pad

Note: \* Pin one on J2 is denoted by a square pin (see [Figure 1-4 on page 1-4](#)).

**Figure 1-4.** USB Plug-in Card and EVK2160A Connections

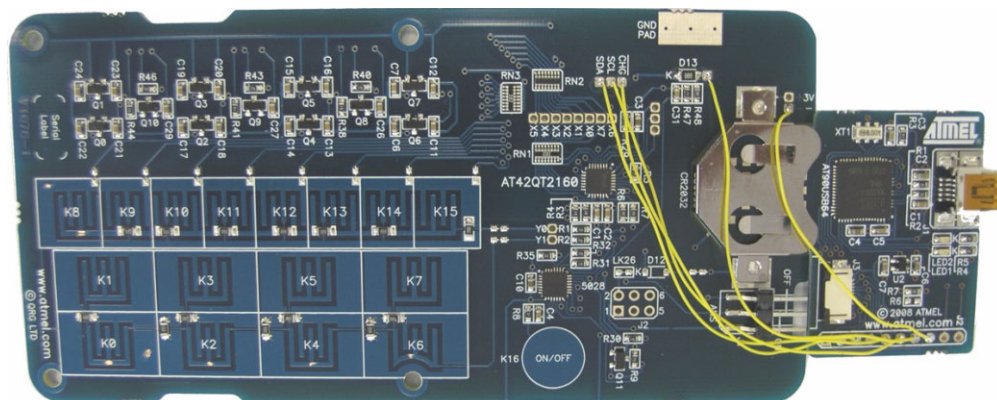


## 1.5 EVK2160A and USB Plug-in Card Assembly

To assemble the EVK2160A and USB Plug-in Card:

1. Slide the USB plug-in card into the battery slot on the EVK2160A PCB (see [Figure 1-5](#)).

**Figure 1-5.** USB Plug-in Card and EVK2160A Connections



2. Slide the EVK2160A assembly into the moulded case (see [Figure 1-6 on page 1-5](#)). The assembly setup for connection to PC software is now complete.
3. Refer to the *Software GUI for the EVK2160A User Guide* for details of the software GUI interface.

**Figure 1-6.** USB Plug-in Card and EVK2160A Setup Complete



Figure 1-7. EVK2160A Demonstration Board Schematic (sheet 1 of 71078-1)

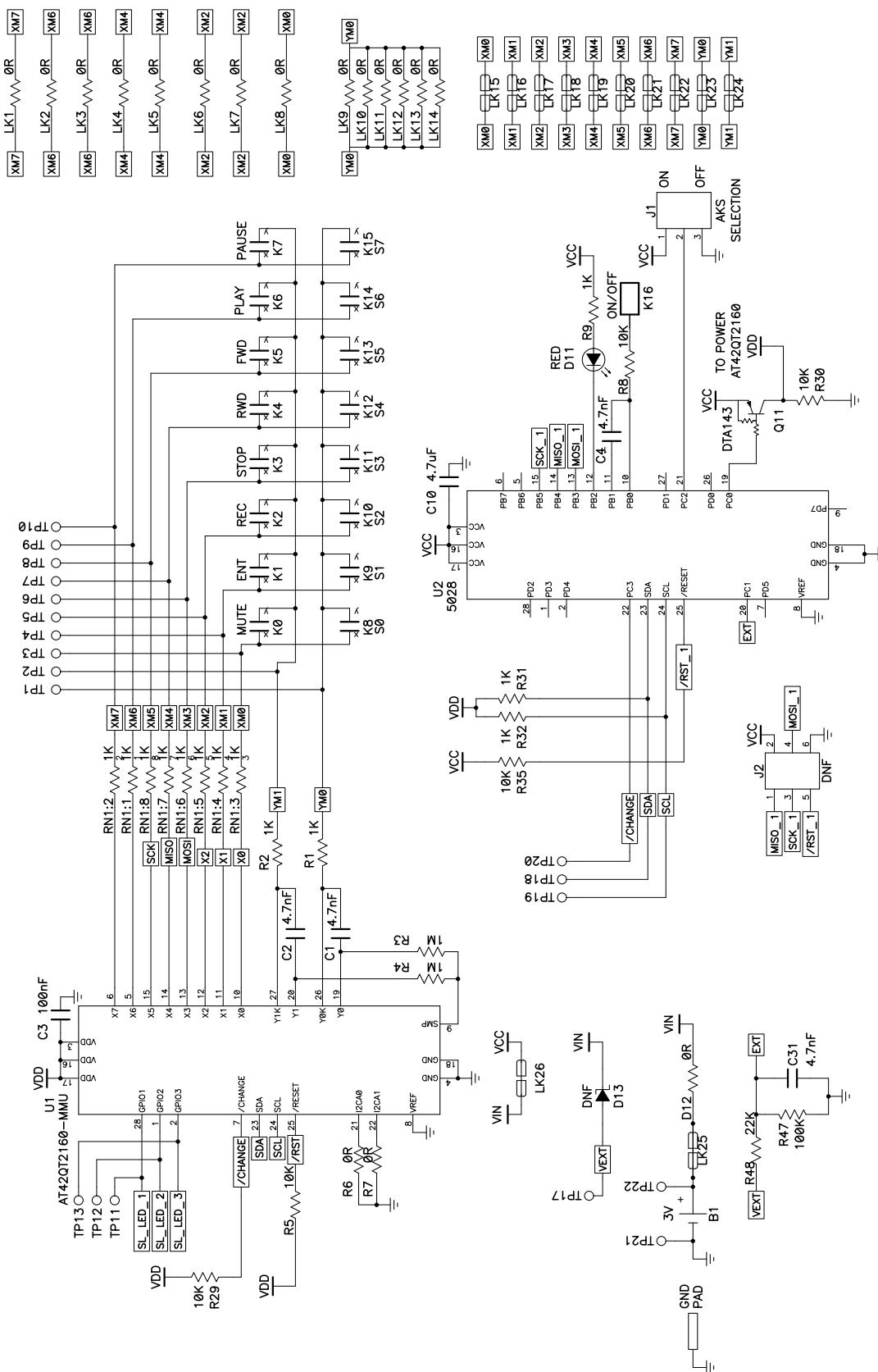




Figure 1-8. EVK2160A Demonstration Board Schematic (sheet 2 of 71078-1)

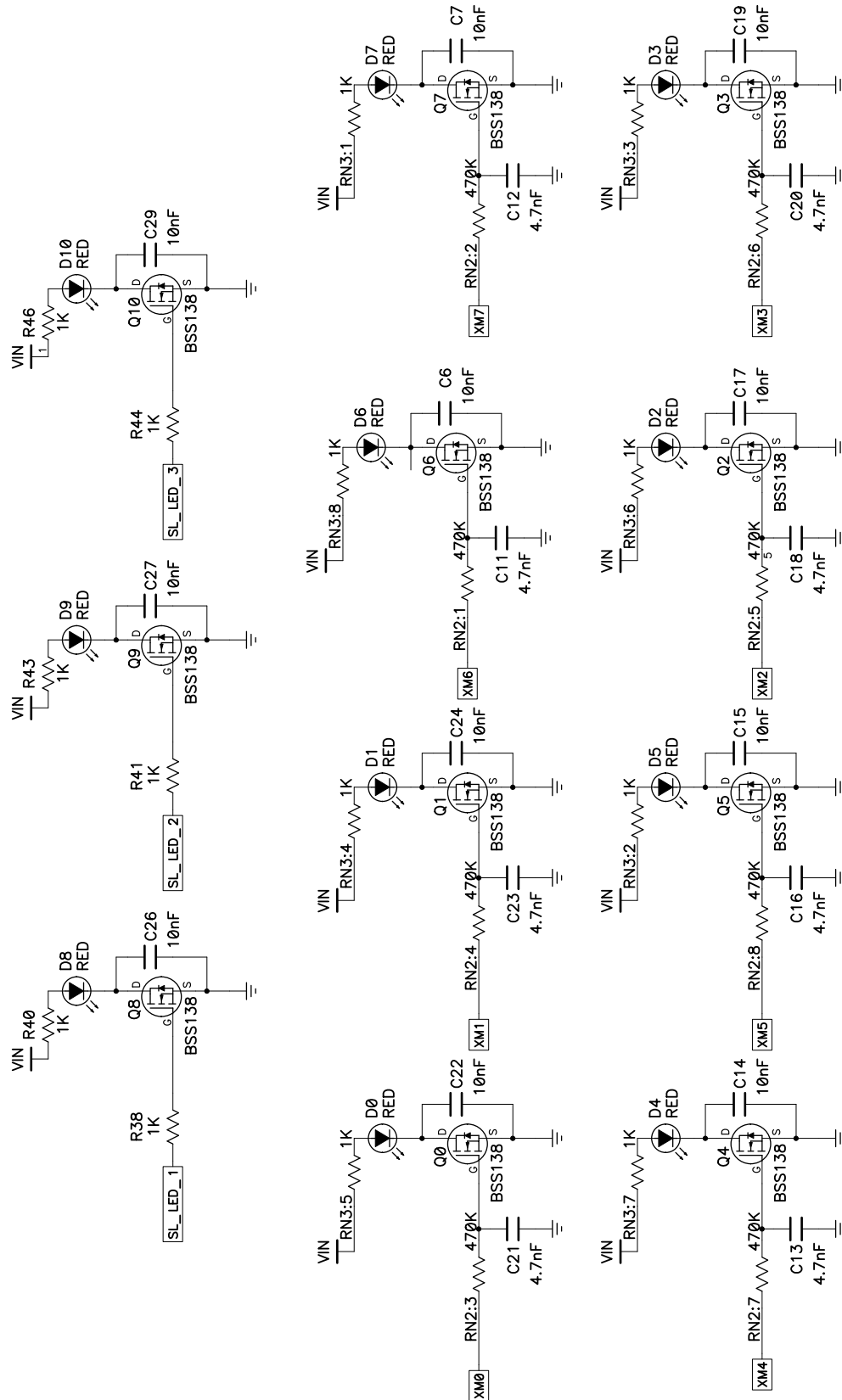
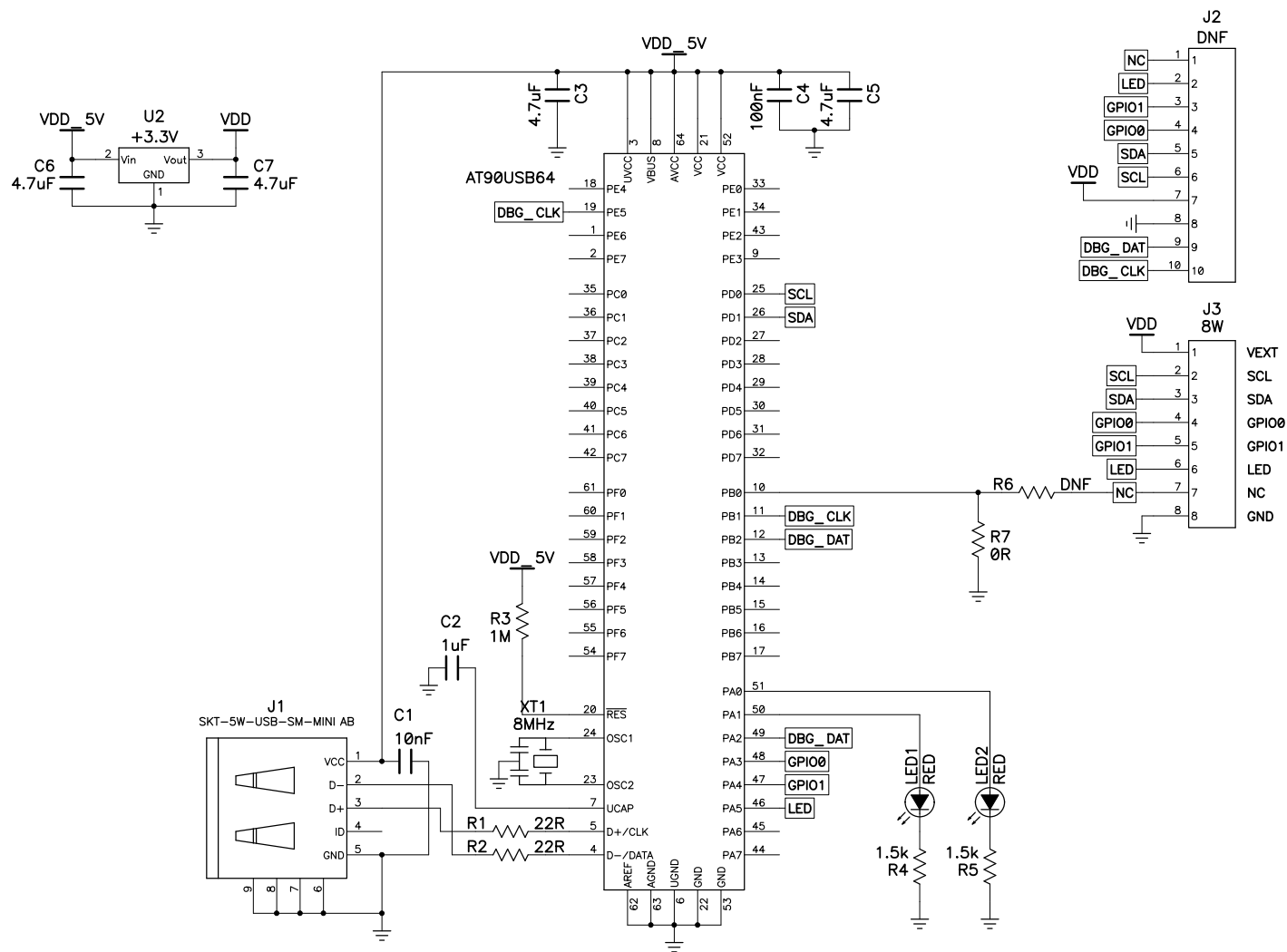


Figure 1-9. USB Plug-in Card Schematic



## Associated Documents

- User Guide – *Software GUI for the EVK2160A Demonstration Kit*

## Revision History

Revision No.	History
Revision AX – June 2009	<ul style="list-style-type: none"><li>• Initial version for EVK2160A (71078-1) and USB Plug-in Card (71173-B1)</li></ul>





## Headquarters

---

**Atmel Corporation**  
2325 Orchard Parkway  
San Jose, CA 95131  
USA  
Tel: 1(408) 441-0311  
Fax: 1(408) 487-2600

## International

---

**Atmel Asia**  
Unit 01-05 & 16, 19/F  
BEA Tower, Millennium City 5  
418 Kwun Tong Road  
Kwun Tong  
Kowloon  
Hong Kong  
Tel: (852) 2245-6100  
Fax: (852) 2722-1369

**Atmel Europe**  
Le Krebs  
8, Rue Jean-Pierre Timbaud  
BP 309  
78054 Saint-Quentin-en-  
Yvelines Cedex  
France  
Tel: (33) 1-30-60-70-00  
Fax: (33) 1-30-60-71-11

**Atmel Japan**  
9F, Tonetsu Shinkawa Bldg.  
1-24-8 Shinkawa  
Chuo-ku, Tokyo 104-0033  
Japan  
Tel: (81) 3-3523-3551  
Fax: (81) 3-3523-7581

**Touch Technology Division**  
1 Mitchell Point  
Ensign Way  
Hamble  
Southampton  
Hampshire SO31 4RF  
United Kingdom  
Tel: (44) 23-8056-5600  
Fax: (44) 23-8045-3939

## Product Contact

---

**Web Site**  
[www.atmel.com](http://www.atmel.com)

**Technical Support**  
[touch@atmel.com](mailto:touch@atmel.com)

**Sales Contact**  
[www.atmel.com/contacts](http://www.atmel.com/contacts)

**Literature Requests**  
[www.atmel.com/literature](http://www.atmel.com/literature)

---

**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 ATMEL'S TERMS AND CONDITIONS OF SALE LOCATED ON ATMEL'S WEB SITE, 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 OF 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 product 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's products are not intended, authorized, or warranted for use as components in applications intended to support or sustain life.

© 2009 Atmel Corporation. All rights reserved. Atmel®, Atmel logo and combinations thereof, and others are registered trademarks. Other terms and product names may be registered trademarks or trademarks of others.

# Mouser Electronics

Authorized Distributor

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

[Microchip:](#)

[EVK2160A](#)