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**AR1100 Calibration Utility  
User's Guide**

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# AR1100 CALIBRATION UTILITY USER'S GUIDE

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**Preface**

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**NOTICE TO CUSTOMERS**

All documentation becomes dated, and this manual is no exception. Microchip tools and documentation are constantly evolving to meet customer needs, so some actual dialogs and/or tool descriptions may differ from those in this document. Please refer to our web site ([www.microchip.com](http://www.microchip.com)) to obtain the latest documentation available.

Documents are identified with a “DS” number. This number is located on the bottom of each page, in front of the page number. The numbering convention for the DS number is “DSXXXXA”, where “XXXX” is the document number and “A” is the revision level of the document.

For the most up-to-date information on development tools, see the MPLAB® IDE on-line help. Select the Help menu, and then Topics to open a list of available online help files.

**INTRODUCTION**

This chapter contains general information that will be useful to know before using the AR1100 Calibration Utility. Items discussed in this chapter include:

- Recommended Reading
- The Microchip Web Site
- Customer Support
- Document Revision History

**DOCUMENT LAYOUT**

This document describes the installation and use of the AR1100 Calibration Utility (ACU). The Utility is meant to be a quicker and easy to use alternative to the AR Configuration Utility, when all you need to do is perform a calibration. The manual layout is as follows:

- **Chapter 1. Getting Started**
- **Chapter 2. AR1100 Cal Config**
- **Chapter 3. ARCalibration**

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## RECOMMENDED READING

This user's guide describes how to use the AR1100 Calibration Utility. Other useful documents are listed below. The following Microchip documents are available and recommended as supplemental reference resources.

### Readme for AR1100 Calibration Utility

For the latest information on using AR1100 Calibration Utility, read the "Readme.txt" file (an ASCII text file) in the main installation directory. The Readme file contains updated information and known issues that may not be included in this user's guide.

### Readme Files

For the latest information on using other tools, read the tool-specific Readme files in the Readmes subdirectory of the MPLAB<sup>®</sup> IDE installation directory. The Readme files contain updated information and known issues that may not be included in this user's guide.

## THE MICROCHIP WEB SITE

Microchip provides online support via our web site at [www.microchip.com](http://www.microchip.com). This web site is used as a means to make files and information easily available to customers. Accessible by using your favorite Internet browser, the web site contains the following information:

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Technical support is available through the web site at: <http://support.microchip.com>

## DOCUMENT REVISION HISTORY

### Revision A (August 2011)

- Initial Release of this Document.



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## Chapter 1. Getting Started

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### 1.1 GETTING STARTED

Install the ACU by double-clicking on the installation zip file and following the on-screen instructions. Two executables will be installed; ARCalibration and AR1100 Cal Config. Both will have desktop and program menu shortcuts installed.

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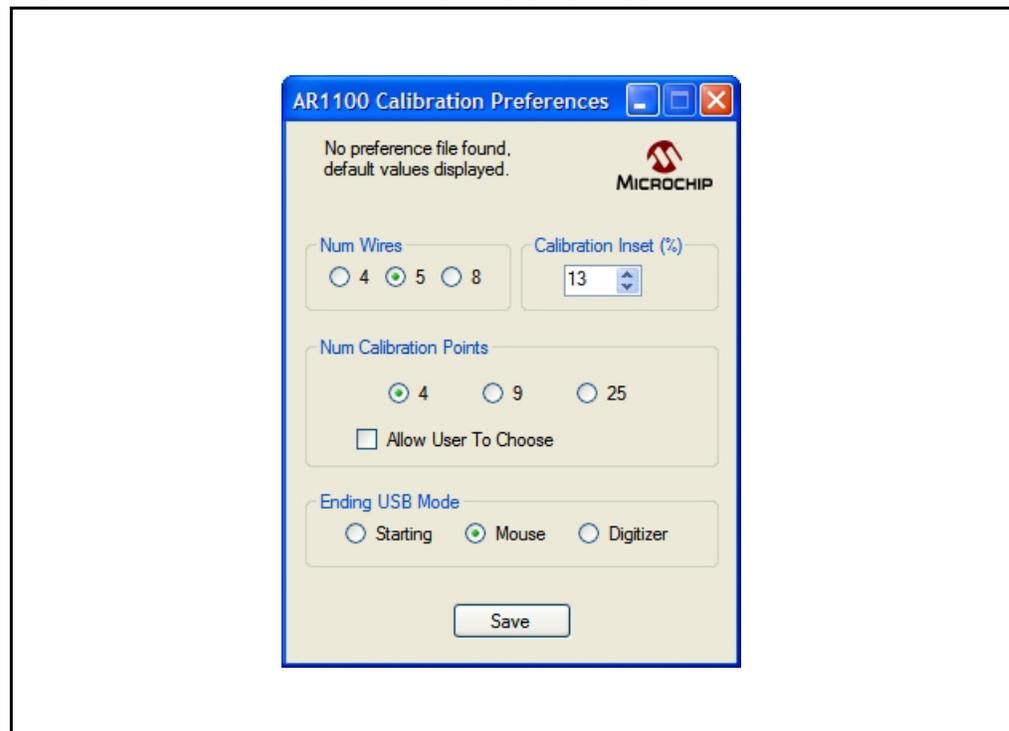
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**Chapter 2. AR1100 Cal Config**

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**2.1 AR1100 CAL CONFIG**

Double-click the AR1100 Cal Config shortcut. A single tab GUI will display as shown below:

**FIGURE 2-1: AR1100 CAL CONFIG SHORTCUT**

Use the controls on the GUI to save your preferences for calibration, as described below:

- Num Wires – Select 4, 5 or 8 wire sensor (default = 5).
- Calibration Inset – The percentage of screen size, measured from the two nearest edges of the monitor to where the calibration cross-hair appears. See the AR1100 data sheet for more information.
- Num Calibration points – Select the number of calibration points desired; 4, 9 or 25.
- Allows User To Choose – If checked, the user will be able to change the number of calibration points in the calibration executable. If not checked, the option is not available on the calibration executable (default = not checked).
- Ending USB Mode – In order to calibrate the AR1100, it must be put in a diagnostic mode. After calibration, it can be put back into any of the three USB modes. Select which USB mode you want the AR1100 to be in after calibration. 'Starting' means the AR1100 will be left in the same mode it was prior to calibration.

**Note:** This option has no effect if using Serial mode for the AR1100.

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After selecting your preferences, press the **Save** button. This will save your preferences to a text file that is stored in the working directory (default = C:\Program Files\Microchip\ARCalibration). This file is then read by the AR1100 Calibration Utility during start-up.

The calibration preference file is made using a separate executable (ARCal Config) so that a level of safety can be created that does not allow the person using the calibration GUI to accidentally change any preferences. In fact, once the preference file is created, the shortcut can be deleted from the desktop and program menu, if desired. Delete only the shortcuts, not the executable, in case you need to change preferences in the future.

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**Chapter 3. ARCalibration**

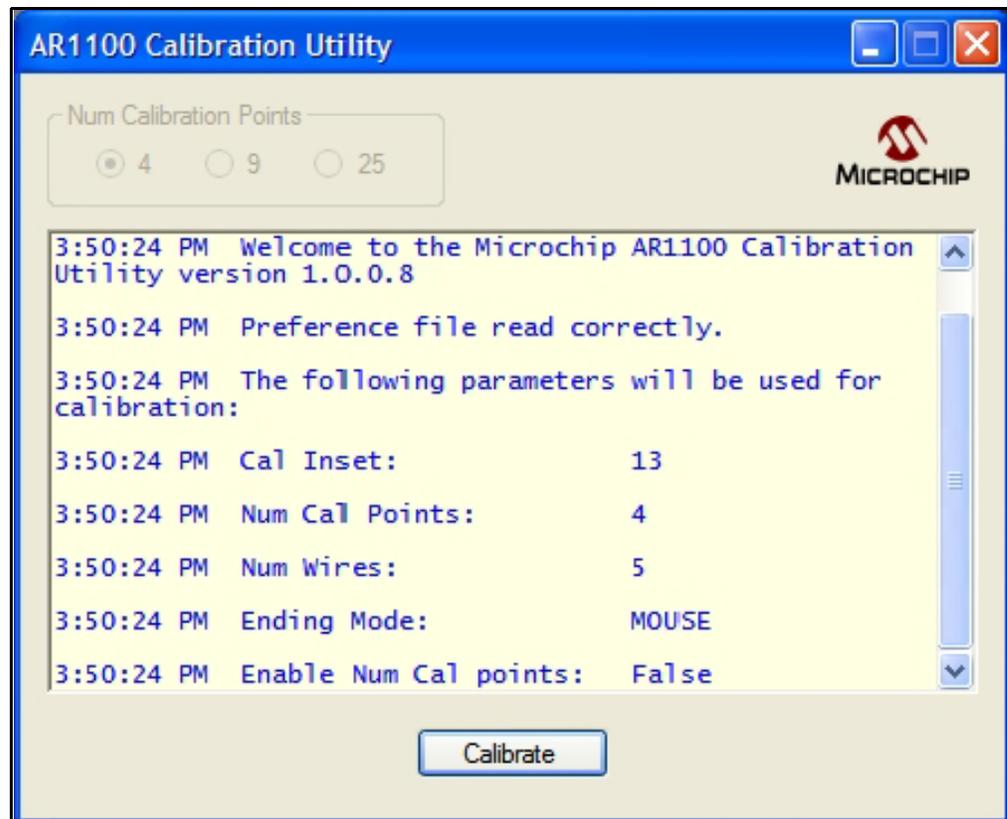
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**3.1 ARCALIBRATION**

Attach a sensor to the AR1100, making sure to use the same number of wires you selected during setup. Attach the AR1100 to the computer using either the USB or serial connector. If you are using a serial cable, apply 5V to the serial leads.

Double-click the ARCalibration shortcut. The calibration GUI will appear and should look similar to Figure 3-1.

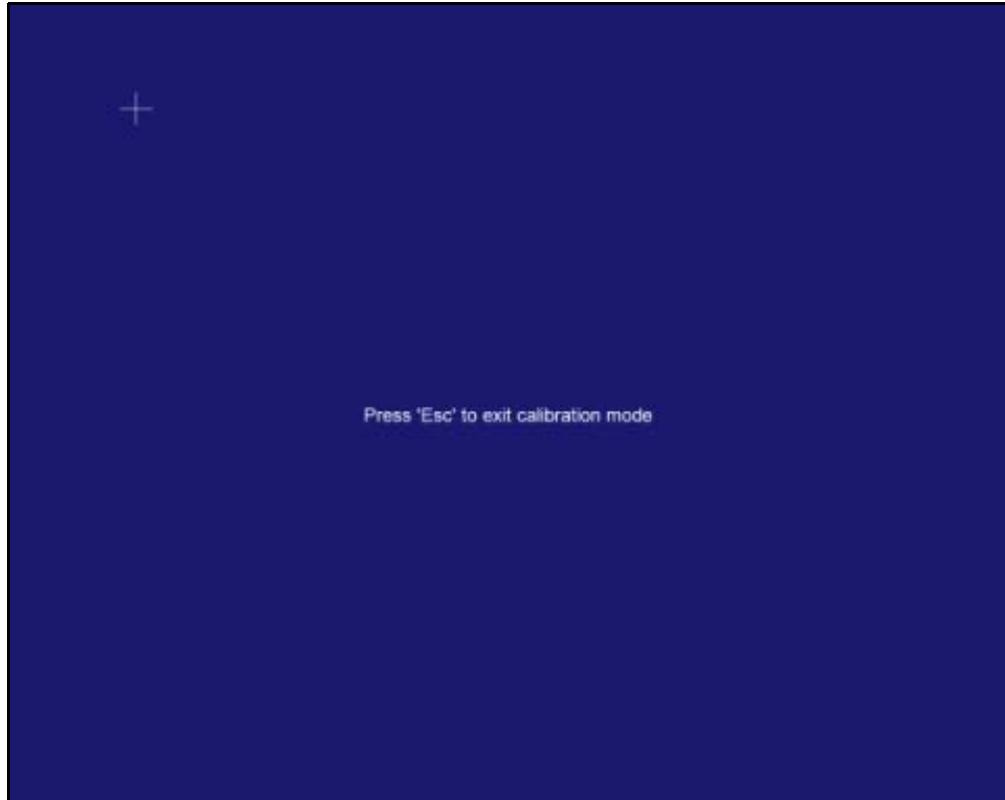
**FIGURE 3-1: ARCALIBRATION SHORTCUT**

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The preferences that you selected in the AR1100 Cal Config GUI will appear in the Transaction window. If the 'Allow User To Choose' option was checked, the Num Calibration Points group box will be editable. Press the **Calibrate** button to begin calibration. A full screen calibration window will appear.

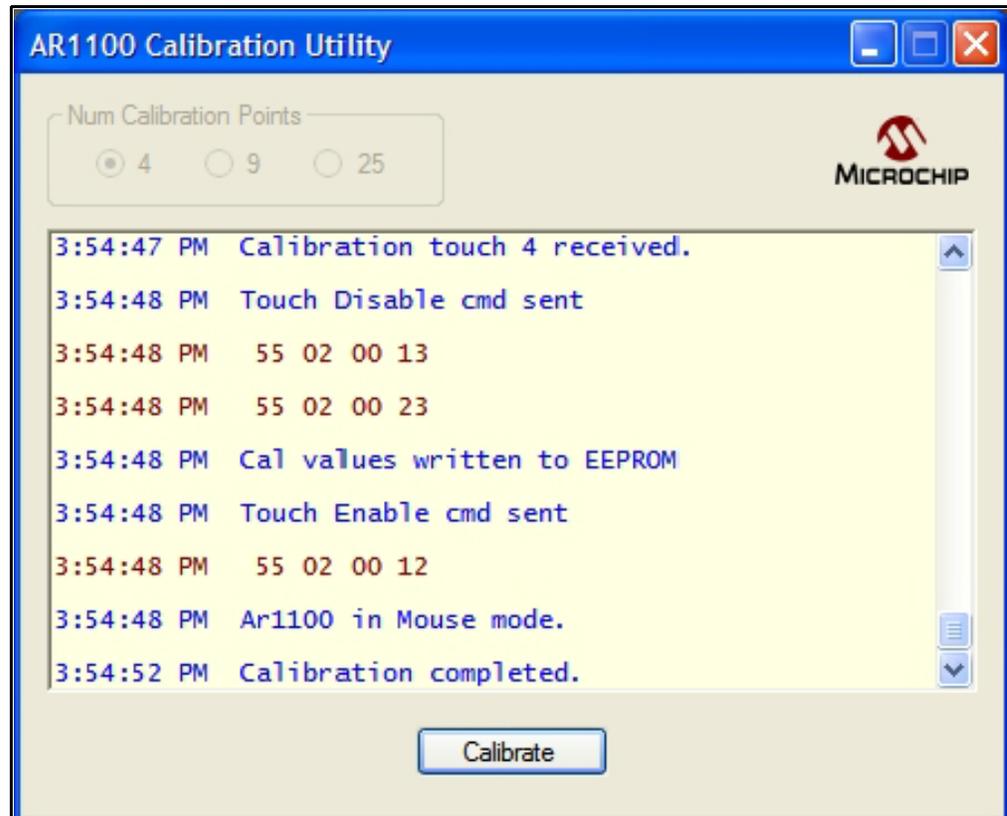
**FIGURE 3-2: FULL SCREEN CALIBRATION WINDOW**



Touch the cross-hairs as they appear on the screen.

After calibration, you should see messages stating that the calibration values have been written to EEPROM, which mode the AR1100 is currently in, and that calibration is complete.

**FIGURE 3-3: CALIBRATION VALUES SCREEN**



If calibration fails, it is typically hardware related. Check your connections and try again. If you still have trouble, close the ACU and start-up the AR Configuration Utility to help diagnose the problem.

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