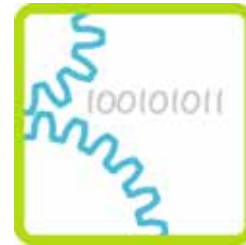


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XE8000EV104 Evaluation Board for the XE8805MI028

User Guide V1.0

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1 General Introduction

1.1 Introduction

This first chapter contains general information that will be useful to know before using the XE8000EV104 with your XE8805AMI028.

1.1.1 Highlights

The information you will gain from this chapter:

- About this Guide
- Recommended Reading
- Troubleshooting
- The Semtech Web Site
- Customer Support

1.2 About this Guide

This document describes how to use The XE8000EV104 as an evaluation board to develop and debug programs on the XE8805 microcontroller in LQFP64 package (the XE8805AMI028).

The manual Layout is as follows:

- Chapter 2 : Overview and Installation
- Chapter 3 : Electrical specifications and hardware description
- Chapter 4 : Troubleshooting
- Chapter 5 : Schematics

1.3 Documentation Updates

All documentation evolves and this User's Guide is no exception. Since XE8000EV104 and other Semtech tools are constantly evolving to meet customer needs, some tool descriptions may differ from those in this document. Please refer to our web site at www.Semtech.com to obtain the latest documentation available.

1.4 Recommended Reading

This user's guide describes how to use The XE8000EV104. Other useful documents are listed below:

- XE8805A Datasheet.
- ProStart II (XE8000MP) users guide
- SEMTECH' Application notes (AN8000.xx).

These can be found on our web site www.Semtech.com/products/XE8000

1.5 Troubleshooting

See Chapter 4 for information on common problems.

1.6 The Semtech Web Site

Semtech provides on line support on the Semtech World Wide Web site. The web site is used by Semtech as a means to make files and information easily available to customers. It is at <http://www.semtech.com>

1.7 Customer Support

Customers should call their distributor, representative or field application engineer for support. Users of Semtech products can receive assistance through several channels:

- Distributors or Representative, Local Sales Office
- Field Application Engineer (FAE)
- Third party for source code

2 Overview and Installation

2.1 Introduction

This chapter gives you an overview of the XE8000EV104 evaluation board and then explains how to install the system hardware.

2.2 Highlights

The items discussed in this chapter include:

- What is XE8000EV104
- XE8000EV104 components
- How XE8000EV104 helps you
- Installing XE8000EV104 hardware
-

2.3 What is XE8000EV104

The XE8000EV104 is the evaluation board for XE8805 microcontroller packaged in the LQFP64. This board is also designed to be interfaced with the XE8000MP board. Note that the combination of a XE8000MP, an XE8000SW and any XE8000EV1xx constitutes the ProStart II system. The XE8000EV104 allows the user access to every pin of the chip, and provides external actuators and indicators such as LEDs and buttons.

2.4 XE8000EV104 components

The XE8000EV104 is delivered separately, with 3 XE8805AMI028 samples. However you need to have the XE8000MP and the XE8000SW to program these samples. Since one XE8000MP fits for the whole XE8000 family, this allows you to have multiple XE8000EVxxx without having to buy another XE8000MP.

XE8000EV104 packages contents:

- 1 XE8000EV104 board
- 1 Box
- 3 Samples

2.5 How XE8000EV104 helps you

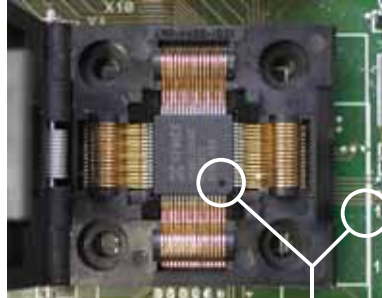
XE8000EV104 allows you to:

- Create an action on an input port with buttons (note that jumpers can disable this feature)
- Reset the circuit
- See an action on an output port with LED (note that jumpers can disable this feature)
- Interface a RS232 line driver (with the help of the XE8000MP) to the UART peripheral.
- Use an on board 32 kHz watch Xtal, or an external clock source.
- Measure the current consumption of the circuit
- Power the board with three different sources :
 - An external power supply.
 - A button type battery.
 - The XE8000MP.

2.6 Installing XE8000EV104 hardware

2.6.1 Placing the chip on the ZIF socket

The XE8805 must be placed with its pin 1 marker aligned with the board pin 1 marker. See picture below:



pin 1 marker

Figure 1 : Position of the chip in the ZIF socket

2.6.2 Using an external power supply

To use an external power supply, the user must connect the pins on the header named "EXT POWER" near the battery carrier with a regulated 1.2 to 5.5 Volts power supply. "+" is the pin nearest to the battery.

The switch must be in the "on" position.

Warning this power source is not protected by a fuse! The user should limit the current of the power supply source to prevent damage to board/chip.

2.6.3 Using a button type battery

To power the application with a battery, you may place a button battery of the type cr1620 on the carrier (+ on the top, diameter 16mm height 2.0mm). Since the carrier is flexible, the height can vary a little bit.

Warning this power source is not protected by a fuse!

2.6.4 Using the ProStart II as power supply and programmer

To use the XE8000EV104 with the ProStart II as a power supply or a programmer please refer to ProStart II user guide.

Note : When the ProStart II (XE8000MP) is connected all the other supply sources are bypassed, the default supply of the ProStart II (XE8000MP) is 3.0 Volts and the programming voltage is 5.0 Volts.

2.6.5 Using an external clock source

To use an external clock source, the user must disconnect the on board xtal by removing the "quartz" jumper, and place their own source on the pin XIN on the header.

3 Electrical Specifications and Hardware Description

3.1 Introduction

This chapter gives you a view of the main characteristics of the XE8000EV104 hardware.

3.2 Hardware layout

- The buttons, LED and pins names are printed on the circuit board.
- Buttons are connected to the chip port A via X90-X91 jumpers and pulled down with resistors R23-R30.
- LEDs are connected to the chip port B via X10-11 jumpers.
- Pull downs are connected to the chip port C via X20-21 jumpers.

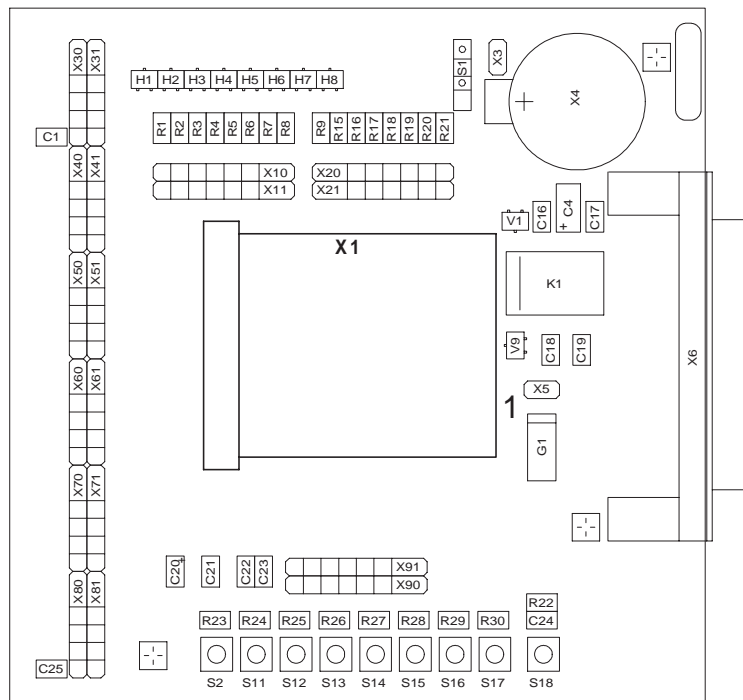


Figure 2 : XE8000EV104 implantation map

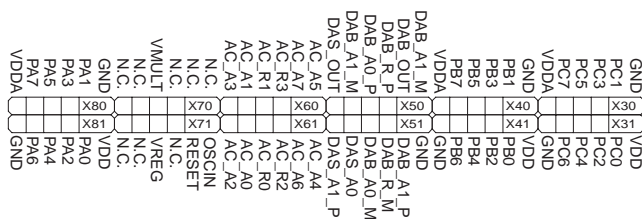


Figure 3 : XE8000EV104 connectors

4 Troubleshooting

4.1 Introduction

This section is intended to help the XE8000EV104 users to perform basic hardware debugging.

4.2 Highlights

This chapter contains the following points:

- XE8000EV104 functionality
- XE8000EV104 hardware

4.3 XE8000EV104 functionality

The software that should use the Xtal peripheral seems to be locked.	
Possible causes:	<ol style="list-style-type: none"> 1 The jumper "quartz" is removed 2 You have disturbed the xin and xout lines with an oscilloscope probe. 3 The Xtal is not correctly soldered on the board. 4 The Xtal is damaged.
When using the ProStart II (XE8000MP) as power supply, the VDDA seems to be unstable.	
Possible causes:	<ol style="list-style-type: none"> 1 When the PortB 7 is not used as UART RX and the RS232 line driver creates an output conflict, simply remove the RS232 cable from the ProStart II (XE8000MP) and the RS232 output will go to High Z. 2 The power consumption of your application is above 500mA

4.4 XE8000EV104 hardware

The board presents a short circuit between VDDA and GND.	
Possible causes:	<ol style="list-style-type: none"> 1 The battery carrier has been damaged and the + contact touches the - : just put a piece of paper between the two contacts 2 If you are measuring a signal on the board, be careful when using the ground connection on the headers
The power supply of the battery is not present on the VDDA line.	
Possible causes:	<ol style="list-style-type: none"> 1 The power switch is in the wrong position, to use the battery the switch must be off. 2 The board is connected to a XE8000MP, in this case user power supplies are bypassed.
The power supply of the external power supply is not present on the VDDA pin.	
Possible causes:	<ol style="list-style-type: none"> 1 The power switch is in the wrong position, to use the external power supply the switch must be on. 2 The board is connected to a XE8000MP, in this case, user power supplies are bypassed.

5 Schematics

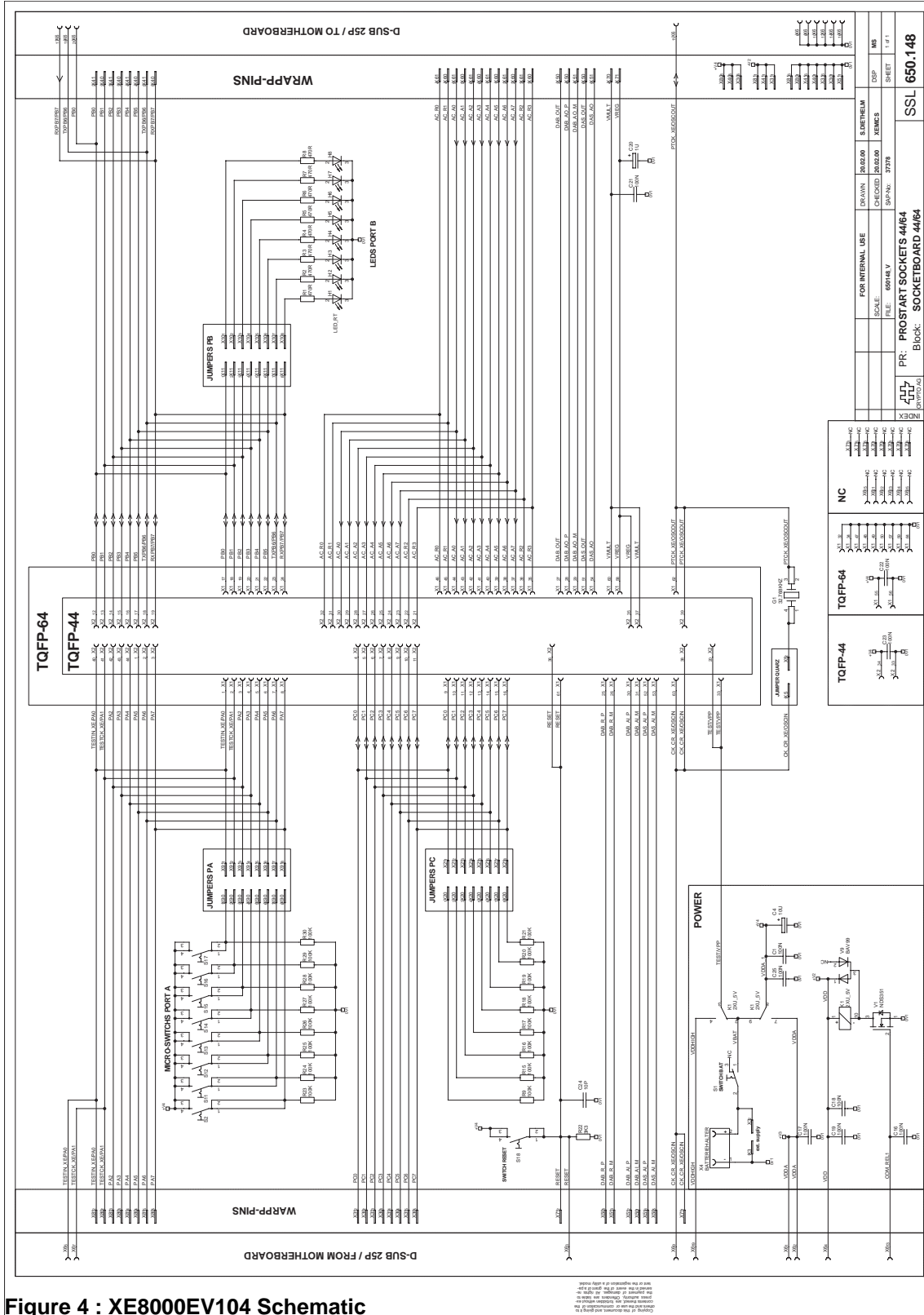


Figure 4 : XE8000EV104 Schematic

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Contact Information

Semtech Corporation
Wireless and Sensing Products Division
200 Flynn Road, Camarillo, CA 93012
Phone (805) 498-2111 Fax : (805) 498-3804