

# EAAR Prototyping Module Quick Start Guide

Last Modified: 9 February 2010  
Document Version: 1.0

Revision Number	Date	Revision
1.0	02/09/10	Initial Release

This document is provided "as is" with no warranties whatsoever, including any warranty of merchantability, non-infringement, fitness for any particular purpose, or any warranty otherwise arising out of any proposal, specification, or sample.

OmniVision Technologies, Inc. disclaims all liability, including liability for infringement of any proprietary rights, relating to the use of information in this document. No license, expressed or implied, by estoppel or otherwise, to any intellectual property rights is granted herein.

\* Third-party brands, names, and trademarks are the property of their respective owners.

**Note:**

The information contained in this document is considered proprietary to OmniVision Technologies, Inc. This information may be distributed only to individuals or organizations authorized by OmniVision Technologies, Inc. to receive said information. Individuals and/or organizations are not allowed to re-distribute said information

---

---

## Table of Contents

Section 1, Introduction .....	4
1.1 Intended Audience .....	4
1.2 Related Publications .....	4
1.3 Customer Support .....	4
1.4 Sales and Ordering Information .....	4
1.5 Safety Information .....	4
1.5.1 Electrostatic Discharge Prevention .....	5
Section 2, Getting Started .....	6
2.1 What You Get With Your Prototyping Kit .....	6
Section 3, Product Description .....	7
3.1 Overview .....	7
3.2 System Design Considerations .....	7
3.3 Module Schematic .....	7

## List of Figures

Figure 2-1 EAAR Prototyping Module ..... 6

# 1 Introduction

The primary objective of this document is to provide a description of the contents, setup, and operation of the EAAR Prototyping Module.

## 1.1 Intended Audience

This manual is intended for developers who want a convenient way to begin system development. It is assumed that the reader has a basic understanding of digital video and still capturing concepts.

## 1.2 Related Publications

For more information about using the Prototyping Module, refer to the following documents:

- *OmniVision Serial Camera Control Bus (SCCB) Functional Specification*
- *OmniVision Assembly Guidelines Technical Bulletin*

## 1.3 Customer Support

If you have questions about using any of the OmniVision image sensor family of products, first consult this document and the documents listed in [Section 1.2, Related Publications](#). If you still have questions regarding the setup and operation of this evaluation product, more information can be found at <http://www.ovt.com/support/>.

## 1.4 Sales and Ordering Information

Contact your local OmniVision sales representative for sales, ordering and general information:

- for additional information, visit <http://www.ovt.com/contact/salesmgt.php>

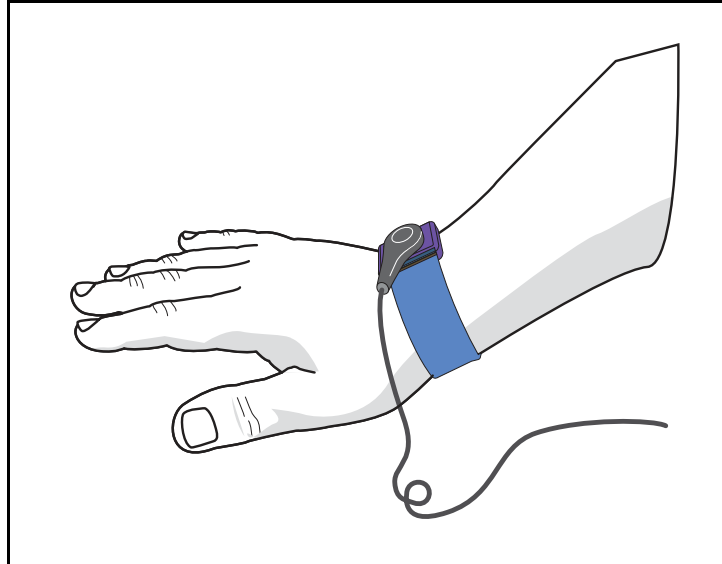
## 1.5 Safety Information

The equipment is designed and manufactured in compliance with several safety standards. However, the following precautions should be observed to ensure personal safety during installation or service, and to prevent damage to the equipment or the equipment to be connected.

Read and follow all warning notices and instructions marked on the product.

## 1.5.1 Electrostatic Discharge Prevention

The EAAR Prototyping Module contains components that could be damaged by electrostatic discharge. When handling the boards, wear a properly grounded wrist strap to prevent possible damage, or follow other suitable precautions to prevent equipment damage.



## 2 Getting Started

### 2.1 What You Get With Your Prototyping Kit

Your EAAR Prototyping Module kit should contain the following items (see [Figure 2-1](#)):

- EAAR Prototyping Module
- Documentation CD-ROM
  - Prototyping Module\_QSG (1.0)EAAR - *EAAR Prototyping Module Quick Start Guide*
  - SCCBSpec\_AN (2.2) - *OmniVision Serial Camera Control Bus (SCCB) Functional Specification*
  - AssyGuidelines\_TB (1.1) - *OmniVision Assembly Guidelines Technical Bulletin*

**Figure 2-1 EAAR Prototyping Module**



## 3 Product Description

### 3.1 Overview

OmniVision Technologies Inc. supplies prototyping and evaluation modules to demonstrate operation of the associated image sensor products, as well as to demonstrate associated companion back-end system ASICs, where required.

The EAAR Prototyping Module is intended for general design-in and evaluation purposes. The module provides a simple 32-pin header-connector interface to the relevant I/O and control registers of the Prototyping Module image sensor. The module includes the necessary 24 Mhz crystal, capacitors, and resistors.

The EAAR Prototyping Module can be directly connected to any companion back-end ASIC solution or system interface. The header-connector interface allows for access to the 10-bit digital output data, PCLK, vertical sync, and horizontal sync signals. The back-end interface can use the Serial Camera Control Bus (SCCB) interface software to adjust the control register values.

### 3.2 System Design Considerations

There are several implementation tips to consider for achieving the best results with the image sensor:

- Be certain to provide a clean power source to the image sensor, especially the AVDD and SVDD power pins.
- The image sensor may be adversely affected by transient heat produced by associated components on the PCB. Avoid placement of heat-producing components on the PCB directly adjacent to or on the back-side of the image sensor. This will limit heat transfer to the image sensor and reduce the possibility of a poor image and failed components.
- To minimize the resistance and inductance of the PCB traces, be certain to design the PCB with the coupling bypass capacitors as close as possible to the image sensor power pin(s).
- To avoid ground-plane noise issues, use a separate PCB trace for the AGND and the DGND pins. Connect the two ground traces at a single point to the system ground.
- Orient the image sensor on the PCB with pin 1 down when facing the chip. This application will result in normal image attributes (i.e., right-side up images).

### 3.3 Module Schematic

Please contact your local OmniVision FAE for a module schematic. The schematic assists the development engineer with incorporating the Prototyping Module image sensor into product designs. The schematic also includes the header-connector pin interface information of the Prototyping Module EAAA Prototyping Module for easy system integration and image sensor evaluation.

**Note:**

- *All information shown herein is current as of the revision and publication date. Please refer to the OmniVision web site (<http://www.ovt.com>) to obtain the current versions of all documentation.*
- *OmniVision Technologies, Inc. reserves the right to make changes to their products or to discontinue any product or service without further notice (It is advisable to obtain current product documentation prior to placing orders).*
- *Reproduction of information in OmniVision product documentation and specifications is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations and notices. In such cases, OmniVision is not responsible or liable for any information reproduced.*
- *This document is provided with no warranties whatsoever, including any warranty of merchantability, non-infringement, fitness for any particular purpose, or any warranty otherwise arising out of any proposal, specification or sample. Furthermore, OmniVision Technologies, Inc. disclaims all liability, including liability for infringement of any proprietary rights, relating to use of information in this document. No license, expressed or implied, by estoppels or otherwise, to any intellectual property rights is granted herein.*
- *'OmniVision' and the OmniVision logo are registered trademarks of OmniVision Technologies, Inc. All other trade, product or service names referenced in this release may be trademarks or registered trademarks of their respective holders. Third-party brands, names, and trademarks are the property of their respective owners.*

*For further information, please feel free to contact OmniVision at [info@ovt.com](mailto:info@ovt.com).*

**OmniVision Technologies, Inc.**  
**4275 Burton Drive**  
**Santa Clara, CA USA**  
**(408) 567-3000**