Introduction

This Quick Start Guide acquaints users with Zilog's ZMOTION Detection and Control Development Kit Revision E or later, and provides instructions for setting up and using the kit to demonstrate its basic operation[1]. The following topics are covered:

- Getting Started: the quickest way to get the board up and running; see page 2
- Lens Mounting Options – see page 4
- Attaching the Circuit Board Lens – see page 4

Kit Contents

- ZMOTION Detection and Control Development Board
- USB SmartCable Debugger
- 0.9" focal flat lens holder
- 0.77" focal circular lens holder
- Selection of lenses (see Table 1 on page 4)
- Selection of pyroelectric sensors (RE200B-P is preinstalled on the Board)
- Mini-USB serial cable
- Wall-mount power supply
- Various mounting hardware

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[1] For a more in-depth approach to assembling and configuring your ZMOTION Detection and Control Development Kit, Zilog recommends the ZMOTION Detection and Control Development Kit User Manual (UM0230).

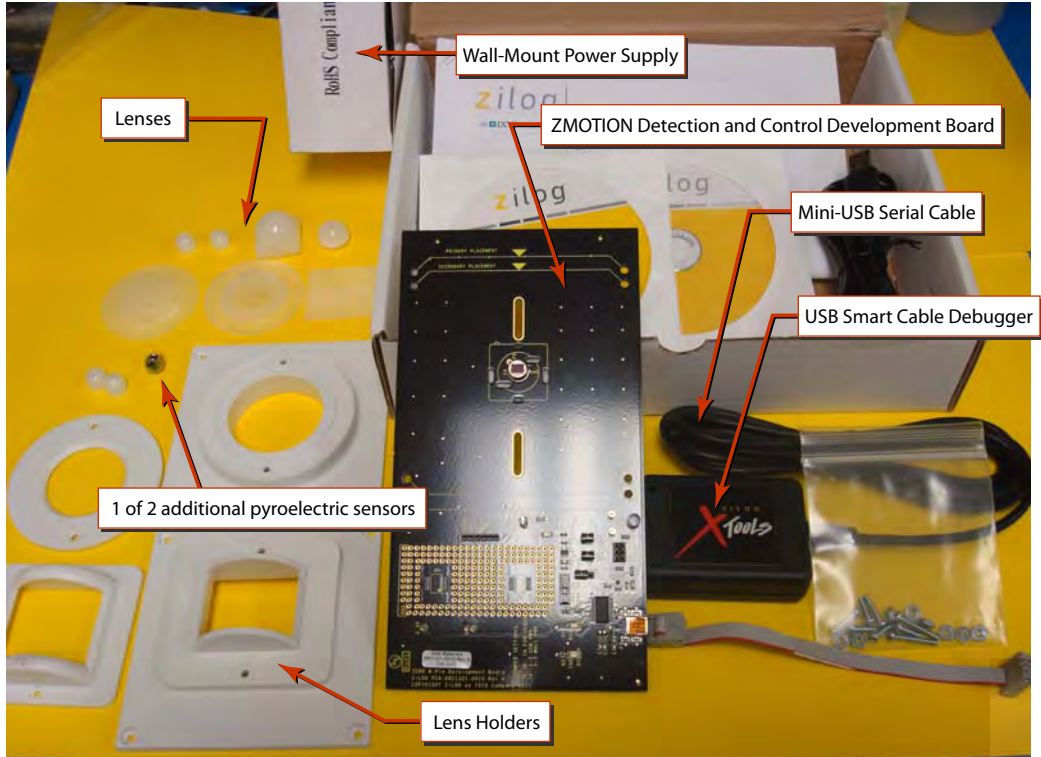Figure 1 shows the components of the kit, plus the sensors and lenses it contains.

Figure 1. ZMOTION Detection and Control Development Kit Components

Getting Started

The kit contains a number of lens options. To provide a quick method of getting the kit up and running, the ZMOTION MCU is initially programmed with a ZMOTION_Serial_Config project using the CWM 0.5 GI V1 lens. By installing the lens and then applying power, the basic operation of the kit can be observed.

To get started with the kit, observe the following brief procedure.

1. Install the CWM 0.5 GI V1 lens, as described on page 4.

2. Ensure that jumper J3 is in the WALL position and that the Power Switch (SW1) is in the OFF position.

3. Install the AC plug adapter appropriate for your region into the wall-mount USB power supply.

4. Plug the wall-mount power supply into a suitable AC outlet.

5. Insert the power supply output connector into Mini-USB Plug P1 on the ZMOTION Detection and Control Development Board.

6. Apply power to the Board by sliding Power Switch SW1 to the PWR ON position.

7. The blue 3.3 V power LED (LED1) will illuminate and the red motion LED (LED3) will initially illuminate and remain on until the pyroelectric sensor stabilizes – a period of approximately 5 to 30 seconds.

8. After the PIR sensor has stabilized, the red motion LED turns OFF and will turn ON only when motion is detected.

9. Wave your hand over the lens and observe the red motion LED turning ON for approximately 0.5 seconds.

10. For more information about ZMOTION lens configurations, downloading the ZDS II application code and additional details, please refer to the ZMOTION Detection and Control Development Kit User Manual (UM0230).

11. ZMOTION software and documentation are available as a downloadable file from the Zilog Store. Observe the following steps to install this software.

    a. In a web browser, visit zilog.com/store. At the top left, under Categories, click **Downloadable Software** to present a list of the available software in the Zilog Store. In this list, click **ZMOTION Software and Documentation**; the Product ID for this software is SD00025. On the Product Details page, click the **Add to Cart** button and complete the Checkout process to download the ZMOTION Software and Documentation files to your hard drive. (If you are a first-time visitor to the Zilog Store, you will be required to register before downloading this software).

    b. When the download is complete, unzip the file to your hard drive, double-click to launch the ZMOTIONL100ZCOG_<version>.exe installation file, and follow the on-screen instructions.

    c. When the installation is complete, the user manual can be viewed in the following path:

    ```
    C:\Program Files\Zilog\ZMOTIONL100ZCOG_<version>\ZMOTION
    Lighting Documentation
    ```

Lens Mounting Options

The ZMOTION Detection and Control Development Board supports four lens mounting options, as indicated in Table 1. For detailed drawings and information about the lenses, please refer to the [ZMOTION Lens and Pyroelectric Sensor Product Specification (PS0286)](#).

Table 1. Lens Mounting Options

Lens Mounting	Lens Supported
PIR Sensor Clip On	NCL-9(26)
	NCL-3B
	NCL3R
	NCL-10S
	NCL-10IL
Circuit Board Clip In	CWM 0.5 GI V1
Circular Lens Holder 0.77 Focal	CM 0.77 GI V3
	CM 0.77 GI V5
Flat Lens Holder 0.9 Focal	AA 0.9 GI T1

> **Note:** When mounting the ZMOTION Detection and Control Development Board vertically or from the ceiling, special consideration should be taken regarding the height and levelness of the board. Be sure to follow the lens manufacturer's recommended height requirements to ensure optimal performance.

Attaching the Circuit Board Lens

This *clip-in* lens style clips directly into the circuit board over the top of the PIR sensor. There are 4 mounting clips on the lens that are aligned with the slots in the circuit board. Note the locating tab on the side of the lens is to be aligned with the silkscreened tab, as indicated in Figure 2.

**Figure 2. Assembled Clip-In Lens Installed on the
ZMOTION Detection and Control Development Board**

References

Refer to the documentation in Table 2 for additional information about Zilog's ZMOTION products.

Table 2. ZMOTION Documentation

Document Number	Description
ZMOTION Detection and Control Documentation	
PB0225	ZMOTION Detection and Control Product Brief
PS0285	ZMOTION Detection and Control Product Specification
QS0076	This ZMOTION Detection and Control Development Kit Quick Start Guide
UM0230	ZMOTION Detection and Control Development Kit User Manual
Additional ZMOTION Documentation	
PS0286	ZMOTION Lens and Pyroelectric Sensor Product Specification
PB0223	ZMOTION Detection Module Product Brief
PS0284	ZMOTION Detection Module Product Specification
PB0230	ZMOTION Intrusion Detection Product Brief
PS0288	ZMOTION Intrusion Detection Product Specification
RD0001	ZMOTION Intrusion Detection Reference Design
RD0001-SC01	Source code for the ZMOTION Intrusion Detection Reference Design
WP0017	ZMOTION: A New PIR Motion Detection Architecture White Paper
WP0018	ZMOTION Detection Lens and Pyro Sensor Configuration Guide
AN0301	Power Management and Customer Sensing with Zilog's ZMOTION Detection Module
AN0307	ZMOTION Detection Module Application Walkthrough
AN0319	Controlling Power with the ZMOTION Detection Module and Clare Solid State Relays

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