

ADNK-2623

Optical Mouse Designer's Kit



Product Overview

Description

Avago Technologies and Cypress Semiconductor have once again collaborated efforts to produce a new optical mouse reference design kit. Based on the new compact Avago ADNS-2620 optical mouse sensor and the powerful Cypress CY7C63723 enCoRe™ USB microcontroller, this reference design kit provides a low cost and yet, feature-rich solution in one neat package.

The Avago ADNS-2620 optical mouse sensor is a new small form factor, entry-level sensor built with performance features. This part enables more compact designs and performance enhancements. Housed in an 8-pin package, this sensor has programmable features such as frame speeds (from 500 to 2300 fps), automatic power conservation when idle, and LED strobing for lower power consumption, enhancing navigation performance. With an open serial interface, it can communicate with most common microcontrollers.

The Cypress enCoRe CY7C63723 is a revolutionary chip that integrates numerous common components, including breakthrough crystal-less oscillator. The result is an overall reduction in board components and reduced system cost. The EPROM based microcontroller allows easy firmware modification, as well as storage of Vendor and Product ID™s without an external EEPROM.

This kit is connectable to a PC via the USB or PS/2 ports. A single cable with a USB connector and a PS/2 adapter is also provided. The design automatically detects the type of interface is attached, allowing further development of a USB or PS/2 only mouse.

Features

- Complete optical mouse reference design kit
- New Avago ADNS-2620 optical mouse sensor
- Precise optical navigation technology for smoother and accurate surface navigation
- No mechanical moving parts for easy maintenance and high reliability
- Programmable frame speed up to 2300 frames per second (fps)
- High speed motion detector with accurate motion up to 12 inches-per-second (ips) and 400 counts-per-inch (cpi) resolution
- Open serial interface for communication with microcontrollers
- Power conservation mode during times of no movement
- Serial port registers for programming and data transfer
- Cypress enCoRe™ CY7C63723 USB controller
- USB and PS/2 interface combination for PC connection
- Proprietary 8-bit RISC processor, USB and PS/2-optimized interfaces for high system performance
- 8K Bytes of internal EPROM provided to enable easy customization of firmware and lower cost
- Conforms to USB suspend mode specifications

Avago Technologies in partnership with



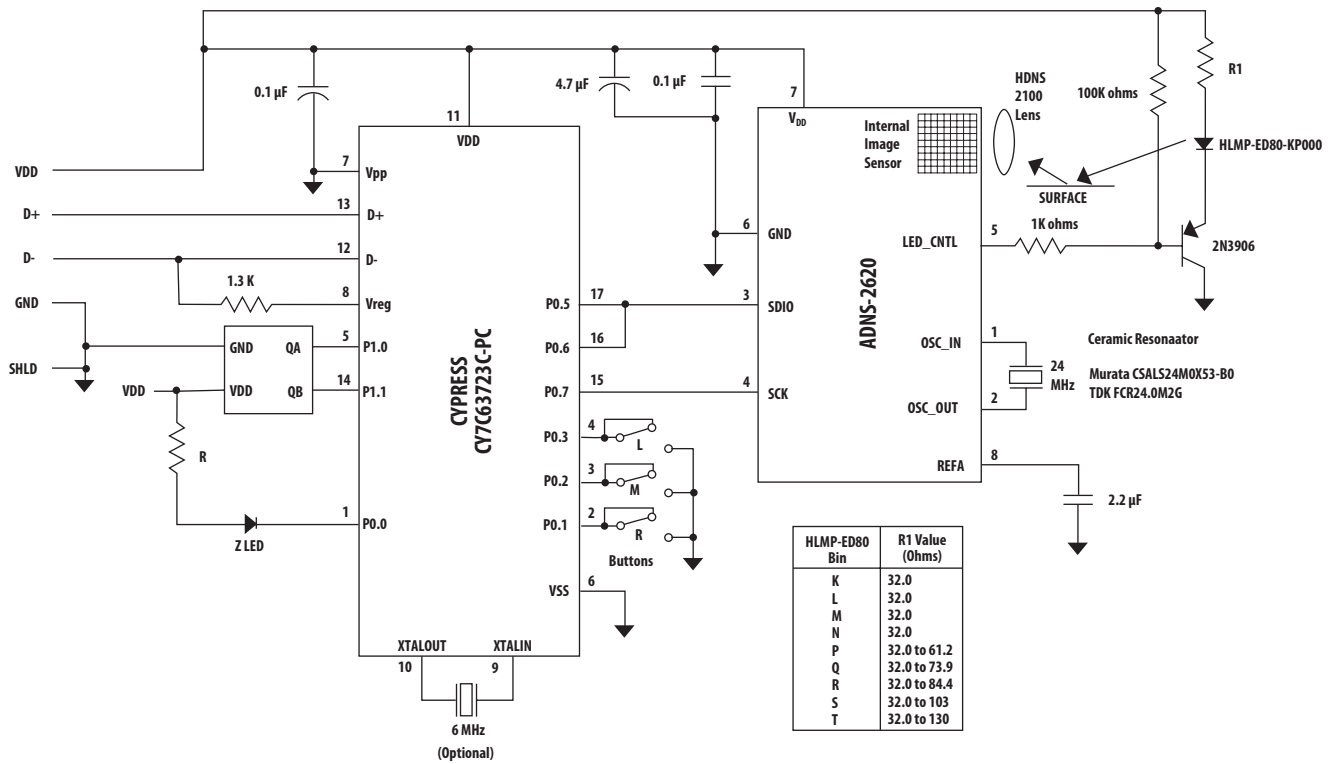


Figure 1. Circuit block diagram for ADNK-2623 designer's kit optical mouse using the Avago ADNS-2620 optical mouse sensor and Cypress CY7C63723 enCoRe Controller.

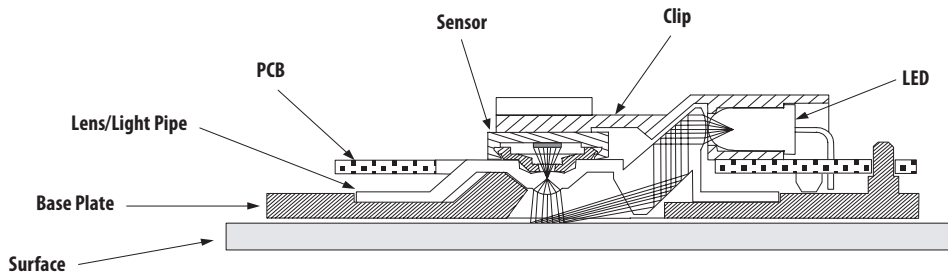


Figure 2. Sectional view of PCB assembly highlighting optical mouse components (optical mouse sensor, clip, lens, LED, PCB and base plate).

Kit Components

This designer's kit contains the following components:

Part Number	Description	Name	Quantity
ADNK-2623	Optical Mouse Reference Design Unit Includes: <ul style="list-style-type: none">• Avago ADNS-2620 optical mouse sensor• Cypress CY7C63723 enCoRe USB controller	Reference Design Unit	1
ADNS-2620	Optical Mouse Sensor	Sensor	5
CY7C63723-PC	Cypress USB Controller	USB Controller	5
HDNS-2100	Round Lens Plate	Lens	5
HDNS-2100#001	Trimmed Lens Plate	Lens	5
HDNS-2200	LED Assembly Clip (Black)	LED Clip	5
HDNS-2200#001	LED Assembly Clip (Transparent)	LED Clip	5
HLMP-ED80-KP000	639 nm T1 $\frac{3}{4}$ (5 mm) Diameter LED	LED	5
ADNK-2623 CD-ROM	Includes Documentation and Support Files for ADNK-2623 <ul style="list-style-type: none">• Documentation<ul style="list-style-type: none">a. ADNS-2620 Data Sheetb. CY7C63723 Data Sheetc. HDNS-2100 Data Sheetd. HDNS-2200 Data Sheete. HLMP-ED80-XXXXX Data Sheetf. Application Note 1282• Hardware Support Files<ul style="list-style-type: none">a. ADNK-2623 BOM Listb. ADNK-2623 Schematicc. Base Plate Feature IGES File• Software Support Files<ul style="list-style-type: none">a. Microcontroller Firmware		1
Cypress LAB™ CD-ROM	Includes Development Tools and Support Files for CY7C63723-PC <ul style="list-style-type: none">• CY Debugger• CYASM Assembler Software• Code Examples• Users Manual		1

Ordering Information

For ordering information, please contact your local Avago sales representative.

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