

Product Overview

Description

Avago Technologies has produced a new optical mouse reference design kit. Based on the new Avago Technologies ADNS-6010 high performance optical mouse sensor and the powerful Sunplus, SPCP825A USB microcontroller, this reference design kit provides a low cost and yet, feature-rich solution in one neat package.

The Avago Technologies ADNS-6010 optical mouse sensor, a 20-pin staggered dual in line package (DIP), is based on a new, faster architecture with improved navigation performance. It is able to measure changes in position by optically acquiring sequential surface images of over 6400 fps and mathematically determining the direction and magnitude of movement.

ADNB-6011-EV laser mouse bundle set is the world's first laser-illuminated navigation system. With laser navigation technology, the mouse can operate on many surfaces that prove difficult for traditional LED-based optical navigation. Its high-performance architecture is capable of sensing high-speed mouse motion -- velocities up to 45 inches per second and accelerations up to 20g.

The ADNS-6010 sensor along with the ADNS-6120 lens, ADNS-6230-001 clip and ADNV-6340 laser diode form a complete and compact laser mouse tracking system. There are no moving parts, which means high reliability and less maintenance for the end user. In addition, precision optical alignment is not required, facilitating high volume assembly. The ADNS-6010 enables up to 2000cpi performance.

The Sunplus, SPCP825A 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. A single cable with a USB connector adapter is also provided. The design automatically detects the type of interface is attached, allowing further development of a USB mouse.

Features

- Complete optical mouse reference design kit
- ADNS-6010 high performance optical mouse sensor
- High speed motion detection – up to 45 ips and 20g
- New LaserStream™ architecture for greatly improved optical navigation technology
- No mechanical moving parts for easy maintenance and high reliability
- Programmable frame rate over 7080 frames per second
- SmartSpeed self-adjusting frame rate for optimum performance
- Serial port burst mode for fast data transfer
- 400, 800, 1600 and 2000 cpi selectable resolution
- Single 3.3 volt power supply
- Four-wire serial port along with Power Down, and Reset pins
- LASER fault detect circuitry on-chip
- Sunplus, SPCP825A USB controller
- USB interface for PC connection
- 8K Bytes of internal EPROM provided to enable easy customization of firmware and lower cost
- Conforms to USB suspend mode specifications

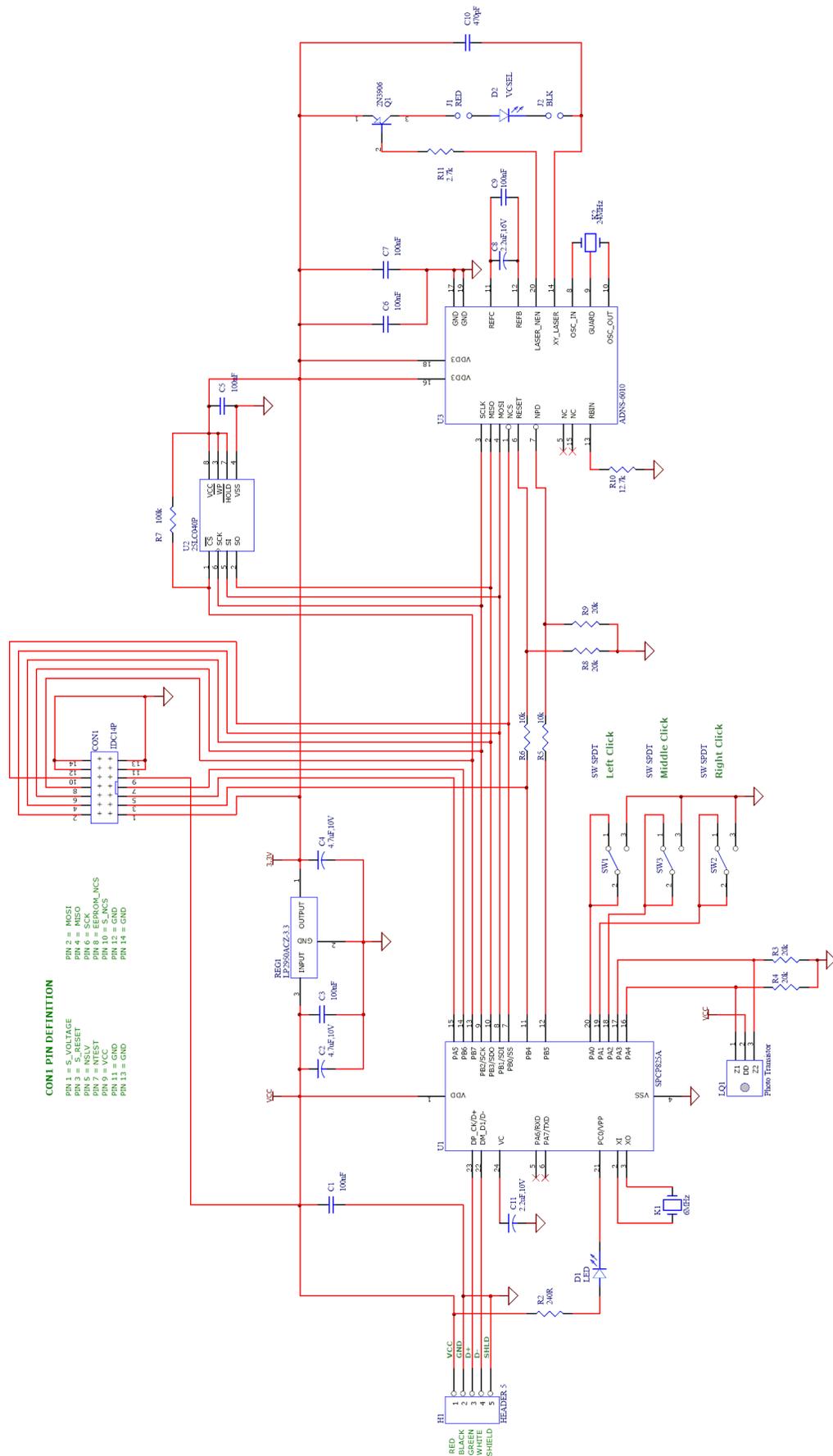


Figure 1. Circuit-level block diagram for ADNK-6013-SP01 designer's kit optical mouse using the Avago Technologies ADNS-6010 optical mouse sensor and Supplus, SPC825A USB Controller.

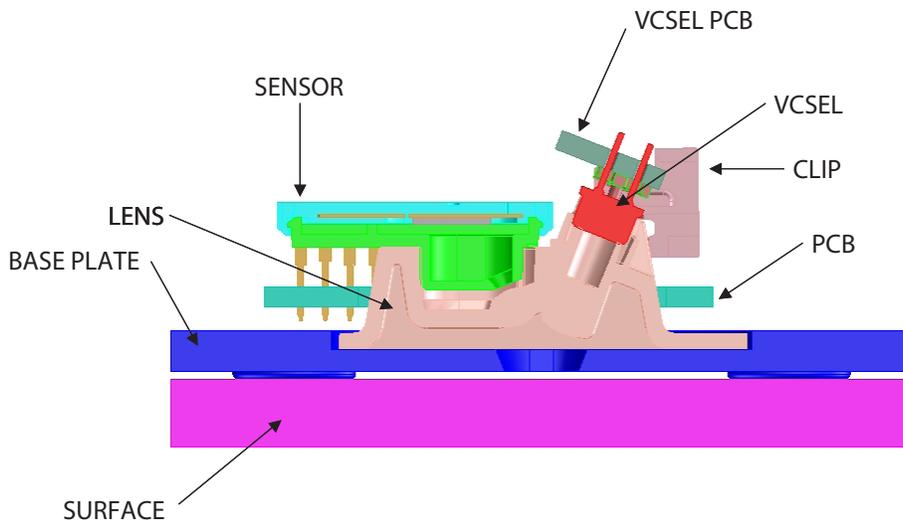


Figure 2. Sectional view of PCB assembly highlighting all optical mouse components (optical mouse sensor, clip, lens, LASER, PCB, and base plate).

Kit Components

The designer's kit contains components as follows:

Part Number	Description	Name	Quantity
ADNK-6013-SP01	Optical Mouse Reference Design Unit includes: - Avago Technologies ADNS-6010 Optical Mouse Sensor - Sunplus, SPCP825A USB controller	Reference Design Unit	1
ADNS-6010	Solid-State Optical Mouse Sensor	Sensor	5
ADNS-6120	Round Lens Plate	Lens	5
ADNS-6130-001	Trim Lens Plate	Lens	5
ADNS-6230-001	LASER Assembly Clip	LASER Clip	5
ADNV-6340	Single Mode Vertical Cavity Surface Emitting Laser	LASER	5
ADNK-6013-SP01 CD	Includes Documentation and Support Files for ADNK-6013-SP01 Documentation a. ADNB-6011-EV and ADNB-6012-EV Data Sheet b. AN-5088 LASER Mouse Sensor Eye Safety Calculations Hardware Support Files a. ADNK-6013-SP01 BOM List b. ADNK-6013-SP01 Schematic c. IGES Base Plate Feature File Software Support Files a. Microcontroller Firmware		1

Ordering Information

For ordering information, please contact your local Avago Technologies sales representative.
At Avago Technologies call (800)235-0312 or visit the website at www.avagotech.com

For product information and a complete list of distributors, please go to our web site: www.avagotech.com

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