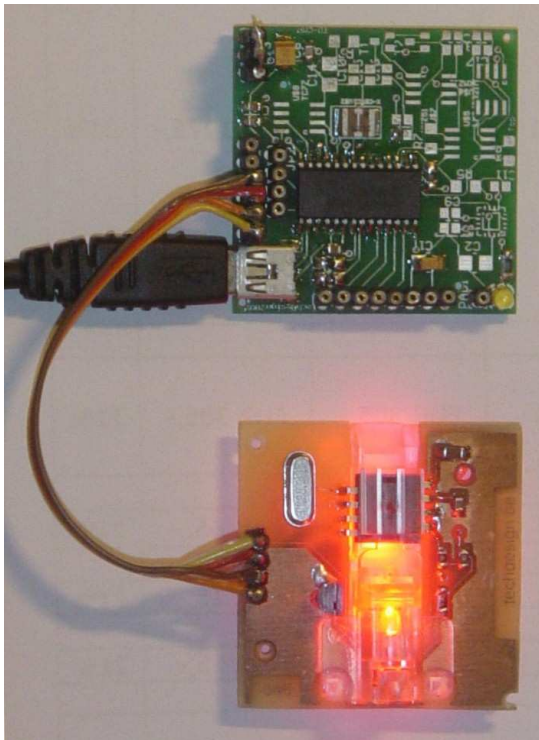


## TD-USB-01: ADNS-2620 mouse interface

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TD-USB-01 (green pcb on top)

Mouse sensor board (046) (bottom pcb, top view)

### TD-USB-01 interface with mouse sensor board.

This is an example USB project showing how to interface an optical mouse sensor (the ADNS-2620) with a standard XP/Vista computer.

The TD-USB-01 board with a PIC18F2550 communicates with:

- the PC: USB 2.0 through a mini-B connector.
- the mouse sensor board: SPI over 4-wire flatcable.

Here are the **technical specifications**:

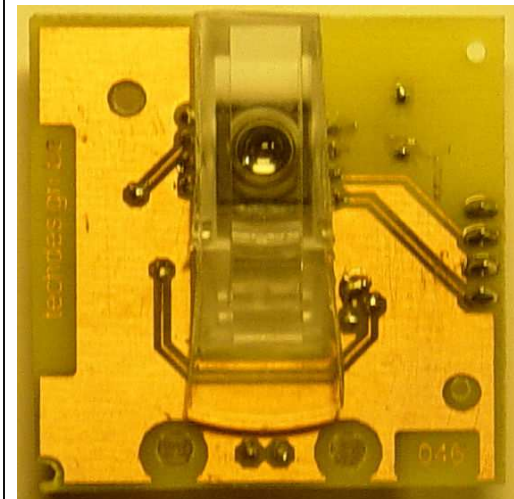
- **PC Win XP/Vista interface** application with Visual C# 2008 Express: free download.
- TD-USB-01 (green pcb on top) with PIC18F2550 USB HID setup.
- Mouse sensor board (046) with ADNS-2620.
- USB Bus powered, no external power supply needed.
- ADNS-2620 registers selection stored in the windows registry.
- Refresh rate from 1mS up.
- Data bits & bytes details.
- Real mouse functionality.
- Sensor CCD 324 pixels: image displayed: 18x18, 6-bit greyscale.
- TD-USB-01 software is **100% upgradable** with a simple RS232 bootloader.
- RS232 interface for raw data readings.
- PCB Dimensions: 40 x 41 mm or 1"57 x 1"61

These assembled boards are available from our [online shop](#).

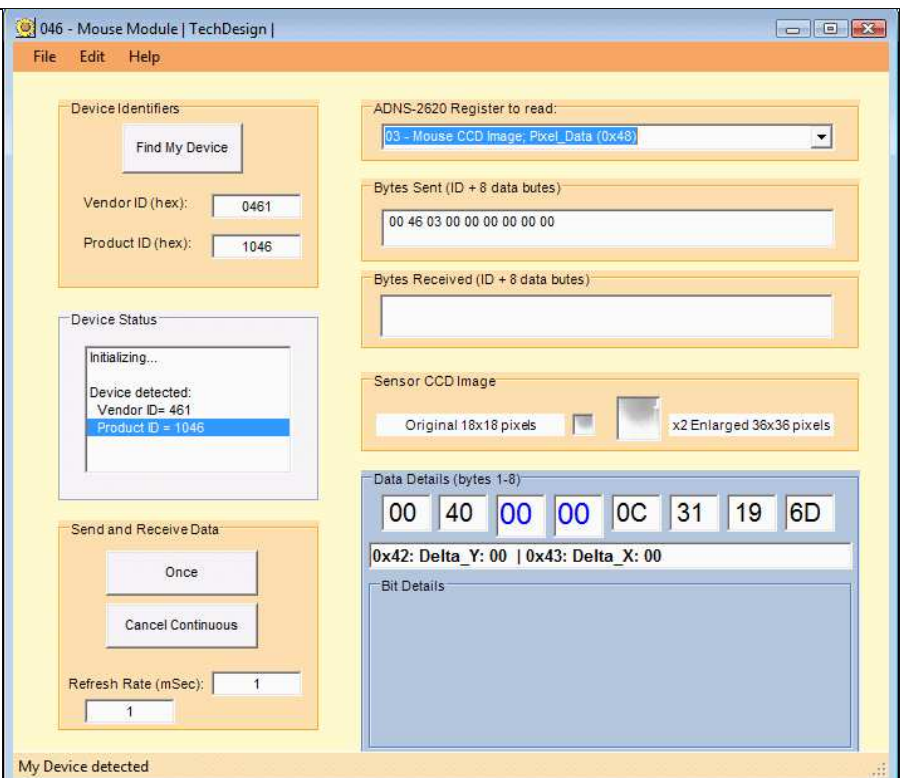
**Source code** (CCS C and Visual C#) can be [purchased](#) separately.

**Sensor example Source code (CCS C)**, **sensor board pcb layout** and **schematics** (Eagle) available.

Last update: March 28, 2009.

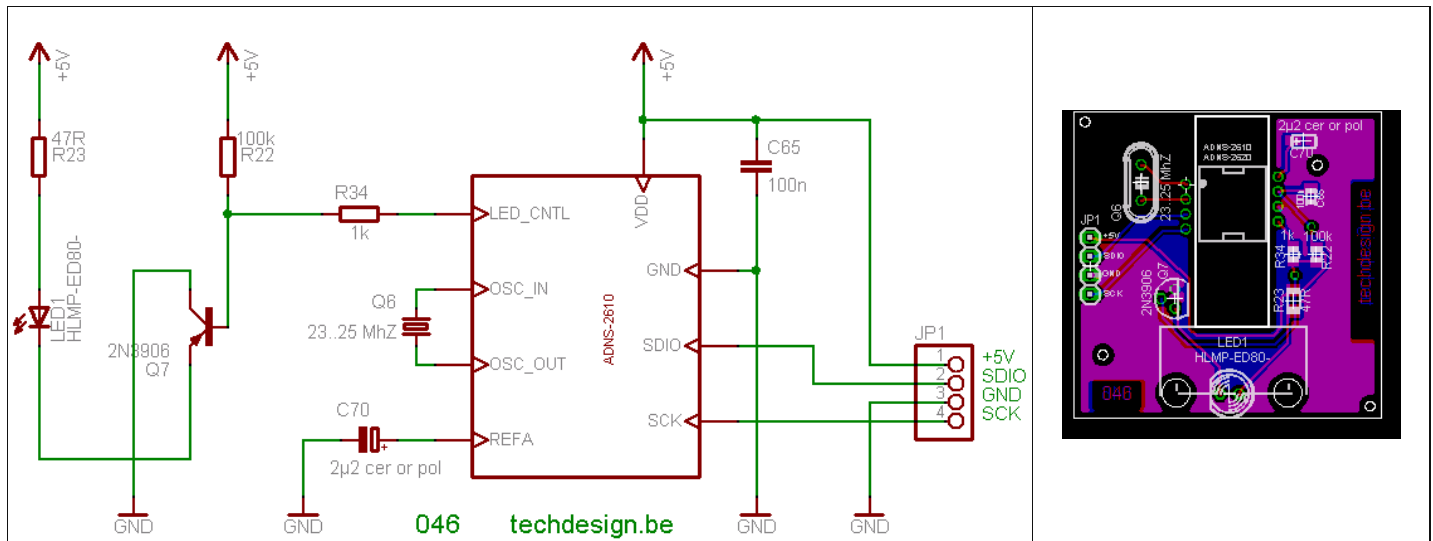


Mouse sensor board (046) (bottom view)

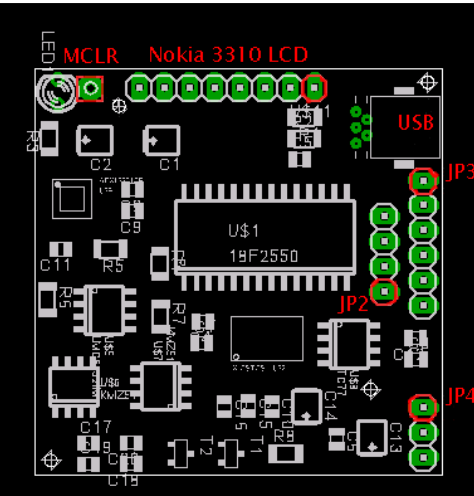


PC Win XP/Vista interface application with Visual C# 2008 Express

**Mouse sensor board: Schematic & PCB:** (right click & "save as" to get full resolution)



### TD-USB-01: Main Connections:

TD-USB-01 diagram		Header pinouts		
		Mouse sensor board (046)	SPI interface	TD-USB-01
		JP1 pins		JP3 pins
		1	+5V	1
		4	SCK, RB1	2
		2	SDIO, RB0	3
		3	GND	4
			no connect	5
			no connect	6
		TD-USB-01: JP2	RS232	
		1	+5V	
		2	RX	
		3	GND	
		4	TX	

### Downloads: right-click & save as

**WARNING:** may not be duplicated for any commercial use whatsoever without explicit consent from the author (c) Michel Bavin, TechDesign Electronics.

**Sensor Board (046): Eagle PCB layout:** [046\\_v002.brd](#) - Jan. 31, 2009.

**Sensor Board (046): Eagle Schematics:** [046\\_v002.sch](#) - Jan. 31, 2009.

**ADNS-2620: CCS c source code:** [optical\\_mouse\\_v03.c](#) - March 27, 2009.

**TD-USB-01:Hex file:** [046\\_v003.hex](#) bootloading for the PIC18F2550 - March 27, 2009.

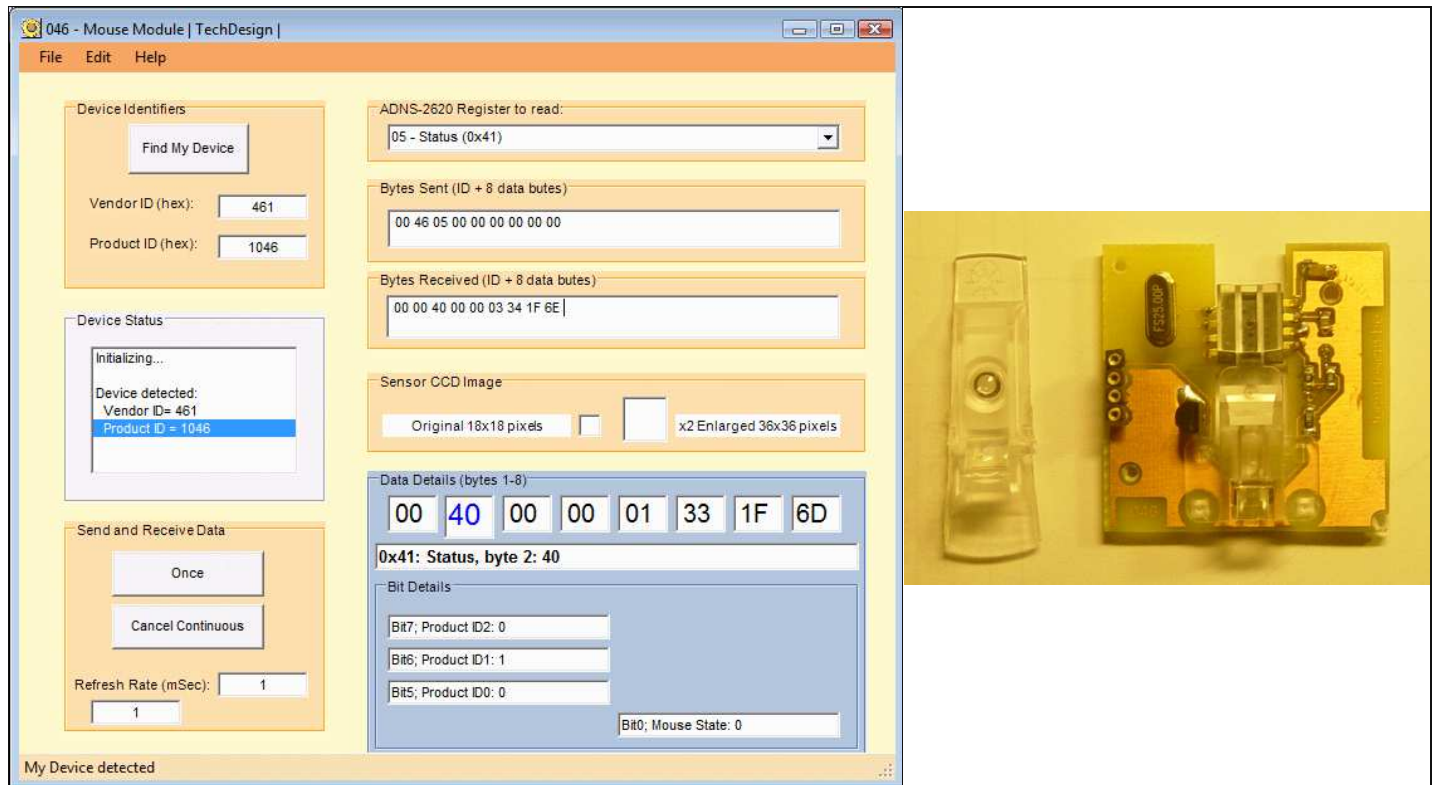
**Windows interface application setup:** [046\\_app\\_setup.zip](#) - March 27, 2009. Written in Visual C# 2008 Express, compatible with Windows XP and Vista.

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## Info & datasheet:

[ADNS-2620](#)[Generic\\_hid\\_cs](#)[Microsoft Visual C# 2008 Express Edition](#)

## Screenshots:



## Tools:

Check out our development [tools page](#).

The PIC code was made with the PCWH [CCS compiler](#) (\$500,-); you can install Microchip's [MPLAB IDE](#) (click on the link and you can get it for free) with it to get things running smoothly.

Bootloading of the PIC18F2550 can be done with the excellent [Tiny PIC bootloader](#), through RS232.

[Eagle 4.11e](#) was used for the schematic & PCB layout.

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