

## The Intuitive Display Navigation Solution for Hand Held Devices

Smartphones and digital media players are entrenched in our everyday lives. We demand that more and more information (including maps, spreadsheets and Web pages) be packed into those tiny displays. Yet a key problem remains: How can the user easily navigate through a large amount of information using that tiny display?



### The RotoView® Evaluation System

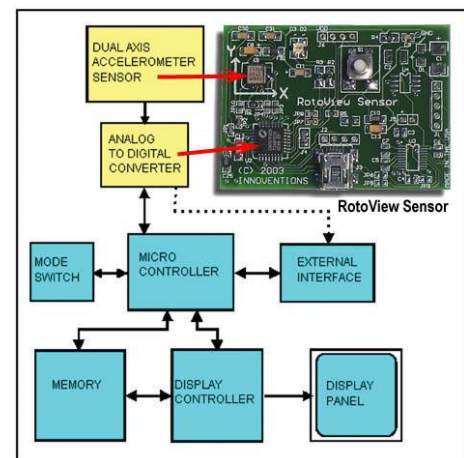
The patented RotoView technology solves this problem by allowing the user to “tilt” their way around the virtual display. During RotoView’s Navigation mode, the user can navigate a large stored virtual display by simply changing the orientation at which the device is held. In particular, it allows user to navigate a large display in all directions. With RotoView, the user can also command the unit to magnify or zoom out on the display simply by tilting the unit.

The RotoView PC-based evaluation system is an inexpensive test bed for developers and hobbyists who want to explore this new and unique navigation method. The RotoView module connects directly to your PC, and once the RotoView software is installed you can begin experimenting. The emulator display on the PC screen is navigated by tilting the RotoView sensor module.

### How It Works

Our patented RotoView relies on modern tilt sensors and unique Non-linear Dynamic Response (NLDR) algorithms. Using the RotoView technology, the hand-held device is entered into the Navigation mode. During Navigation mode, the user first rotates the device to the left and then rotates to the right to see beyond the boundaries of the display. At any time, the user can exit Navigation mode to fix the display (the Fixed mode), then resume Navigation mode and continue to rotate the device to view the remainder of the stored picture. The user can navigate in all directions, depending on how the user tilts the device.

RotoView relies on a dual-axis MEMS accelerometer to detect the changes in the spatial orientation at which the device is held. The sensor is mounted so that its X-axis and Y-axis generally coincide with the “pitch” and “roll” axes of the device. An optional Z-axis sensor may be used to improve performance. The sensor provides analog voltages or duty cycle modulator (DCM) signals that are responsive to the tilt of the sensor and hand accelerations along each axis. The sensor interface converts these analog signals to digital format.



During the view navigation mode, the micro-controller translates the changes in pitch and roll orientation to navigation commands that scroll the large virtual display stored in the memory. This process is controlled by the dynamically changing response curves of the RotoView navigation algorithm.

### RotoView Evaluation System Kit

The RotoView Evaluation System kit (p/n INN-8778) includes a fully assembled RotoView sensor module, a PC software package that allows you to interface the module to your PC, and a USB cable. It's perfect for electronics hobbyists, educators or use as a professional evaluation tool.

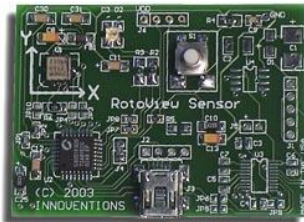
## Features and Specifications

The RotoView Evaluation System provides you with the essential tools you will need to evaluate RotoView on a convenient PC platform. In addition to view navigation demonstration, it allows you to develop the response curves and gesture captures which are at the heart of the RotoView technology.

RotoView technology can be easily integrated at the main chip set level of most modern hand held devices. A minimal sensor, two A/D channels and a software driver are all that are required for a mass production implementation.

While it is targeted for engineers and product line managers wishing to quickly evaluate RotoView technology, it's perfect for electronics hobbyists, educators and other researchers in the field.

## RotoView Sensor Module



The RotoView sensor module package measures 2.3" x 1.7". The board includes a dual-axis MEMS accelerometer, micro controller and other circuitry. No soldering or

other assembly is required.

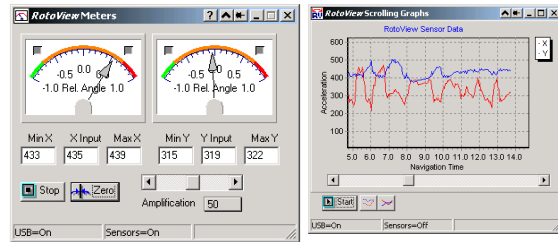
The module has a USB interface for direct connection to your PC. A highly flexible USB cable is included with the package.

## RotoView PC Software

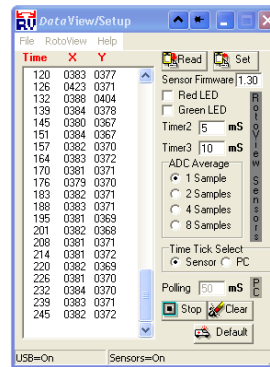


Included with the the RotoView Evaluation System is a special PC software package that makes it easy for you to experiment with this unique navigation concept. When activated, the software emulates a virtual hand held device which navigates a display based on the tilting of the RotoView sensor module.

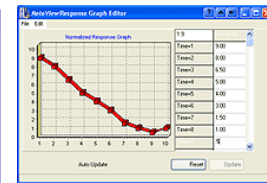
Different interfaces are available, giving you a wide range of choices for measuring changes in orientation of the RotoView sensor module.



**RotoView Angle Meter**     **RotoView Scrolling Graphs**



**Data View Setup Screen**



**Response Graph Editor**

The RotoView software is customizable, allowing you to choose your own images to navigate, change the sampling rate, and even change the “skin” of the interface. **(The RotoView software is supported by Windows 2000, XP and Vista only.)**

The RotoView Evaluation System (p/n INN-8778) is now available for \$195. The kit includes a fully assembled board for the RotoView electronics, a PC software package that allows you to interface the board to your PC, and a USB cable.

To order, please call INNOVENTIONS at 1 (281) 879-6226, fax 1 (281) 879-6415, e-mail [sales@innoventions.com](mailto:sales@innoventions.com).

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