

Hillcrest Labs Introduces Open Source Library to Enable Development of a Wide Variety of Freespace® Motion Control Applications

- *Developers Can Easily Add Motion Control to New Applications and Devices*
- *New libfreespace Open Source Library Supports Linux, Mac® and Windows*
- *New Freespace Reference Kit Version 3.1 Includes a Six-Axis Motion Control Module as Small as a U.S. Quarter*

September 17, 2009 – Rockville, Md. – Hillcrest Labs' Freespace® Division today announced the availability of two new products designed to help developers easily create applications and products that incorporate Freespace in-air pointing and motion control technology. Hillcrest's new products let software and hardware developers quickly create highly accurate motion control applications and devices without requiring any prior motion experience. Freespace motion control can transform a wide variety of devices including: TV remote controls and user interfaces, video game systems, wireless presenters, smartphones, medical diagnostic devices, wearable computers, virtual reality systems, interactive toys, fitness devices and more.

The two new Freespace products introduced today are the libfreespace open source library and the Freespace Reference Kit Version 3.1. Together, they provide all the hardware and software engineers need to incorporate motion control. Companies that have licensed Hillcrest Labs' patented Freespace technology for use in their products include: Eastman Kodak, Logitech, Universal Electronics (UEI), ZillionTV, and others. Freespace technology is also used in Hillcrest's award-winning Loop™ pointer, an in-air mouse designed for consumers who connect a PC or Mac® to the TV to watch videos, play games or surf the Web.

"The development community can now take advantage of the open source library to develop software applications that interact with Freespace in-air pointing and motion control devices," said Chad Lucien, Vice President of Freespace Products for Hillcrest Labs. "Both our libfreespace library and our new Freespace Reference Kit will open the door to innovation and development across various industries seeking highly accurate motion control solutions."

The libfreespace Open Source Library

Hillcrest's libfreespace is an open source library that enables rapid development of software applications for use with a wide range of Freespace devices. Motion control can now be added to product categories beyond TV remote controls, game controllers and PC accessories, including: wireless presenters, smartphones, medical diagnostic devices, body-worn computers, virtual reality systems, interactive toys, fitness devices and others. The new library supports the Linux, Mac OS X, Windows XP, Windows Vista and Windows 7.0 operating systems. Freespace devices interface to these operating systems as a Human Interface Device (HID) using mouse, keyboard, consumer page or vendor specific messages. libfreespace provides access to the vendor specific messages that are unique to Freespace products. The additional data includes:

- Calibrated linear acceleration and angular velocity measurements
- Calibrated angular position (orientation)
- Device statistics including battery life

The unique control functions for Freespace devices include:

- Device discovery and connection
- Device configuration and firmware update
- Host LED control

The libfreespace library works with many existing products which use Hillcrest's Freespace technology, including: Hillcrest's Loop pointer, Hillcrest's Freespace Reference Kit, Kodak Theatre HD Player and remote controls from UEI. libfreespace is available for free via download at <http://libfreespace.hillcrestlabs.com>.

Freespace Reference Kit Version 3.1

Hillcrest also today announced the availability of its Freespace Reference Kit (FSRK) Version 3.1. Hillcrest's FSRK allows prospective customers to easily evaluate the technology for use in devices that require in-air pointing or motion control. The FSRK gives product designers and software developers all the components, tools and documentation needed to create motion control devices.

The newly released FSRK Version 3.1 is the lowest-cost Freespace solution so far, with more features, lower power and a dramatically smaller form factor using the first commercially available in-plane sensing solution, which is ideal for small-form-factor devices.

Key features of FSRK 3.1 include:

- High Performance Pointing:** Exceptional inertial pointing algorithms provide high accuracy, low latency, adaptive tremor removal, and orientation compensation.
- Six Degrees of Freedom:** Complete inertial motion control solution for in-air pointing, gestures, and 3D motion tracking applications, with no external sensors and no line of sight requirement.
- Configurable Software:** Customize button configurations, LED behavior, and wake-on-motion behavior for use in a variety of applications.
- Low Power:** A full-featured power management system provides extended battery life eliminating the need for expensive battery recharging technology.
- Production-ready Modules:** An embedded sensor module, measuring 0.9" (L) x 0.9" (W) or the size of a U.S. Quarter, and a complete 2.4GHz pointing remote control module, measuring 1.8" (L) x 0.9" (W), are included to facilitate rapid prototyping.
- Development Tools:** The Freespace Toolkit contains software tools to visualize 3D motion, log motion data, recognize gestures, conduct usability studies, upgrade firmware, and create custom device configurations.

The new FSRK includes the Freespace Sensor Module (FSM), the Freespace Remote Control Module (FRCM), the Hillcrest USB RF transceiver (RFT) and the Freespace Toolkit. The FRCM and RFT can be used together with libfreespace to create a wide range of new applications that take advantage of Hillcrest's state-of-the-art six-degree-of-freedom motion control algorithms.

For more details or to purchase the FSRK 3.1 visit
<http://www.hillcrestlabs.com/products/freespace-reference.php>.

Additional details about Freespace, or Hillcrest Labs, are available at www.hillcrestlabs.com.

About Hillcrest Labs

Hillcrest Laboratories (a.k.a. Hillcrest Labs) sells an interactive media system for TV called HōME™, which enables consumer electronics manufacturers and service providers to create unique interactive digital media products for TV and other digital media devices. Applications made with HōME are controlled by pointing and provide consumers an intuitive way to browse, discover, and interact with large volumes of digital media. Hillcrest Labs' pointing technology, called **Freespace**®, can be used in a wide range of consumer devices including remote controls, PC mice, and game controllers. Freespace technology is also used in Hillcrest's **Loop**™ pointer, a direct-to-consumer in-air mouse for TV that lets users control an on-screen cursor with a flick of the wrist and navigate the Web or their home media content on TV. The award-winning Loop pointer is round and ergonomic with just four buttons and a scroll wheel. HōME and Freespace have received numerous awards and recognitions including the CES Innovations Award, Popular Mechanics' Editors Choice, PC World's Greatest Tech Designs and others. Based in Rockville, Maryland, Hillcrest Labs was founded in 2001 by Dan Simpkins. The company is funded by NEA, AllianceBernstein, Columbia Capital, and Grotech Ventures. For additional information, visit www.hillcrestlabs.com.

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