*Sony is excited about the potential for Light Peak technology that Intel has been developing, and believe it could enable a new generation of high-speed device connectivity.”*   
**- Ryosuke Akahane, Vice President of VAIO Business Group, Sony**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | |  | | | Light Peak Overview |  | |  |  |  |  | | --- | | Light Peak is a new high-speed optical cable technology designed to connect your electronic devices to each other. Light Peak delivers high bandwidth starting at 10Gb/s with the potential ability to scale to 100Gb/s over the next decade. At 10Gb/s, you could transfer a full-length Blu-Ray movie in less than 30 seconds. Optical technology also allows for smaller connectors and longer, thinner, and more flexible cables than currently possible. Light Peak also has the ability to run multiple protocols simultaneously over a single cable, enabling the technology to connect devices such as peripherals, displays, disk drives, docking stations, and more. . Light Peak components are expected to begin to become available to customers in late 2010, and Intel expects to see Light Peak in PCs and peripherals in 2011.  Existing electrical cable technology in mainstream computing devices is approaching practical limits for speed and length, due to attenuation, noise, and other issues. However, optical technology, used extensively in data centers and telecom communications, does not have these limitations since it transmits data using light instead of electricity. Light Peak brings this optical technology to mainstream computing and consumer electronic devices in a cost-effective manner. | |  |  |  |  | | --- | --- | |  | | | Multi-Protocol Enables new and innovative usage models. |  | |  |  |  |  | | --- | | Light Peak consists of a controller chip and an optical module that would be included in platforms supporting this technology. The optical module performs the conversion from electricity to light and vice versa, using miniature lasers and photo detectors. Light Peak also includes a controller chip that Intel will provide. The controller chip provides protocol switching capabilities to support multiple protocols over a single cable. Today, if you want to plug a display into PC one needs a display cable plugged into a display connector. Likewise if one was to plug a projector into a PC a different projector cable and connector are needed. Not so with Light Peak, because the Light Peak controller implements multi-protocol.  The multi-protocol capability the controller implements is an innovative new technology that will enable new usage models like flexible system designs and thinner form factors, media creation and connectivity, faster media transfer and cable simplification. As end users rely more on their PC’s and CE devices as they go mobile, they want smaller and thinner form factors. | |  |  |  |  | | --- | --- | |  | | | A Collaborative Effort |  | |  |  |  |  | | --- | | Intel is planning to supply the controller chip and is working with optical component manufacturers to make Light Peak components ready to ship in late 2010, and expects complete systems in 2011. Light Peak is complementary to existing I/O technologies, as it enables them to run together on a single cable at higher speeds. The Light Peak initiative builds on Intel’s commitment in working with the industry on existing I/O standards, and provides a path to continued progress into the future. Some industry perspectives include:   *“Avid is impressed by the performance Intel Light Peak delivers, and believes it will enable workstation-level media creation on mobile for the first time.”* **- Max Gutnik, Director, Audio Product Management, Avid Technology**  *“LaCie is excited to support the advancement of Intel’s ground-breaking Light Peak technology. The new interface promises to deliver superior performance that we believe will create a new class of even faster, higher capacity storage solutions to keep up with the explosion of digital media.”*  **- Erwan Girard, Business Unit Manager for Professional Solutions, LaCie**   *“Intel’s Light Peak technology increases cable performance and simplicity, enabling both faster connections and innovative system designs. Compal is demonstrating these benefits in an existing Light Peak prototype, and looks forward to working with Intel and others in the industry to bring potential solutions to market in 2011.”*  **- Leonard Tsai, VP Innovation Design Technology, Compal** | |  |  |  |  | | --- | --- | |  | | | Photography |  | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | | |  |  |  |  | | --- | --- | --- | --- | | [http://techresearch.intel.com/spaw2/uploads/images/FullChip_LaserOff-sm.jpg](http://techresearch.intel.com/spaw2/uploads/images/FullChip_LaserOff.jpg) | [http://techresearch.intel.com/spaw2/uploads/images/Closeup_LaserOff-sm.jpg](http://techresearch.intel.com/spaw2/uploads/images/Closeup_LaserOff.jpg) | [http://techresearch.intel.com/spaw2/uploads/images/FullChip_LaserOn-sm.jpg](http://techresearch.intel.com/spaw2/uploads/images/FullChip_LaserOn.jpg) | [http://techresearch.intel.com/spaw2/uploads/images/Closeup_LaserOn-sm.jpg](http://techresearch.intel.com/spaw2/uploads/images/Closeup_LaserOn.jpg) |   **Click image for high-res. Photos from left to right:**   * Light Peak module with four fibers each capable of carrying 10Gb of data per second. * Close-up of the Light Peak module. * Light Peak module with laser light added for illustration (actual infrared light is invisible to the eye). * Light Peak module close-up with laser light added for illustration (actual infrared light is invisible to the eye). | |

**CES 2010 - Light Peak**

posted by [Ben Hacker](http://blogs.intel.com/technology/authors#ben_hacker) on [January 07, 2010](http://blogs.intel.com/technology/2010/01/ces_2010_-_light_peak.php)

I was overwhelmed by the interest received on my initial post on Light Peak a few months ago. Plenty of questions and ideas were raised on the potential of a single IO port for multiple protocols and support for power; all over an optical connector. Clearly there is a lot of excitement surrounding high speed optics, and the many benefits that can come to compute platforms we all use today.

With that said, I wanted to bring Light Peak up for some discussion again as it has just been demonstrated in Paul Otellini’s keynote at CES ‘10 as a link for high bandwidth 3-D video. I thought it might be a good time to provide an update on where Light Peak stands, and share a little bit more information.

***So what’s New?***

In the few months since Intel Developer Forum (IDF), we have been able to show an integration of Light Peak modules into a desktop system and monitor. At IDF the solution we were showing was an engineering version which was an early engineering prototype. One of the important things about Light Peak, in addition to high speed and multi-protocol support, is its ability to reach consumer form factors, and at CES we are showing how a standard normal form factor system can be equipped with this technology.

Additionally, as we move forward with the industry to ensure that Light Peak will evolve into a well supported standard, we have some additional supporters for the technology to help drive the vision and success of the technology. More announcements of support as well as standards activities will be coming over the coming months and quarters, but progress continues!

Driving a new IO technology standard will take time, but it’s key to make sure the final solution will meet the industries needs both from a cost and feature standpoint.

In other news, an exciting development for Light Peak was the announcement by PC Magazine that Light Peak won a technical excellence award for 2009. Very exciting!

Hopefully, many of you reading had a chance to attend CES and see Light Peak silicon in action, but for those who didn’t, please see the link below for more information.

Until next time!