A Brief Update on Wide Bandwidth Technologies

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In the past months, we have reported on progress in Ultra Wideband (UWB) and its applications. While planning our technology news coverage for 2006, we felt that there would be significant progress by the time this report was written. While there is certainly serious recent activity in UWB, there has been little in the way of major news stories. For example, last year's announcement of imminent release of wireless USB ports using UWB was not followed by the introduction of products for the hot holiday shopping season.

UWB at the Consumer Electronics Show

The annual Consumer Electronics Show is the foremost venue for the announcement and demonstration of new technologies. The WiMedia Alliance, an industry group promoting UWB, had its own "TechZone" booth, with demonstrations of wireless USB, UWB over HomePlug, and several versions of High Definition Television (HDTV) distribution systems.

Several chip vendors, software companies, manufacturers and marketers of computing and entertainment equipment were present, showing the audience the capabilities of UWB. Although the new products may not have been available this past Christmas, they will certainly be offered soon.

The HDTV aspect of UWB is expected to help drive demand for this technology. With a firm deadline of 2009 now in place for total conversion to digital television broadcast, the market for accessory products is expected to accelerate. In a parallel development, high definition DVD recording has been in the news, with new initiatives by Microsoft and others recently announced. This would provide yet another programming source requiring distribution via a high data rate system such as UWB.

Hardware Activity

The main news from the WiMedia Alliance is that interoperability testing is underway. This means that working hardware, at least in "final prototype" form, has been developed. Numerous announcements of new devices, operating systems, reference designs and cooperative development agreements have been released through both industry groups promoting the technology: the WiMedia Alliance and the UWB Forum.

Some dissent remains, particularly in the implementation of UWB-enabled wireless replacements for existing wired systems like USB. Different approaches, such as whether the wireless drivers should be in the host computer or embedded in the wireless interface device, are among the technical issues in discussion. Also being discussed and developed are various schemes for detection of other wireless services and adaptive schemes for minimizing the potential for interference to and from the UWB system.

Information Resources

Readers interested in following the developments of UWB can find out more from these sources:

WiMedia Alliance industry group— www.wimedia.org
UWB Forum industry group— www.uwbforum.org
Intel Corporation— www.intel.com
Freescale Semiconductor— www.freescale.com
Microsoft Corporation— www.microsoft.com
Ultrawideband Planet— www.ultrawidebandplanet.com
Time Domain Corporation— www.timedomain.com
Radar Vision (UWB radar)— www.uwb.org
MultiSpectral Solutions Inc.— www.multispectral.com
Aetherwire & Location Inc.— www.aetherwire.com
Palo Wireless— www.palowireless.com
Federal Communications Commission— www.fcc.gov

The above list is only a few of the sources of UWB information. These resources will lead you to additional news stories, references and companies.

Predictions?

With few "real" UWB products demonstrated at the recent Consumer Electronics Show, we cannot expect to find them soon in our local electronics retail store. However, it is not likely to take much longer for UWB-based wireless USB products to reach the market, since there is a competitive product available, using Bluetooth technology.

High performance UWB for military and public safety ground-penetrating radar and through-wall imaging is already available, with its higher price and unique capabilities. Although not a mass-production set of products, the market for such devices is developing.

As noted earlier, we expect high definition video distribution to be the strongest UWB application, since no other wireless technology can easily handle the required bandwidth. By the time the 2009 FCC deadline approaches and all HD media providers heavily promote their program offerings, consumers will have plenty of hardware choices to go with it, much of it based on UWB.