



June 12, 2006

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CSR is "changing the way the world connects"

The Certified Wireless USB Developer's Conference a hit

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Dear Kim,

The newsletter this week covers the interesting features of last week's ZigBee Alliance Open House in San Jose.

Later this week, look for a special issue to hit your inbox, 'Live from the Certified Wireless USB Developer's Conference'. We will feature evaluation of UWB companies like Alereon, Intel, Staccatto, and others.

CSR is "changing the way the world connects"

...that is almost all that needs to be said of them. CSR is the model which so many start-ups are emulating in hopes of approaching their success. CSR is maintaining 60% of all Bluetooth design wins, has achieved 52% of all mobile phone design wins, 84% of all EDR Bluetooth end products, and (yes) 100% of all all laptop design wins.

Given their success battling the likes of Broadcom, it is worth everyone's while to keep a close eye on their involvement in the UWB world. CSR's WiMedia UWB implementation uses the Bluetooth L2CAP layer over an UWB radio that enables their customers to use the existing Bluetooth profiles that they already use. Brilliant! But the next part makes it really interesting. Given that the

WiMedia UWB implementations can run as much as 500 mW in receive mode, 4-10 times the power consumption in send mode (yes UWB is a bit wacky that way), CSR estimates that the typical battery life of UWB fully functioning in a phone or other battery powered device would be a few hours. This is not a consumer- friendly solution. Thus CSR is using UWB to send bits and then turns the UWB portion of the radio off, maintaining a Bluetooth connection, which has very low power in idle, to wait for a signal from another device to turn on the UWB again. This means that you can also take advantage of the strong security built into Bluetooth to protect the connection during idle, which is when you are most likely to be wandering with your battery-powered Bluetooth device (this bit is my own supposition). Once more: "Bluetooth is used to find devices, discover services, initiate connections. When lots of data needs to be sent, turn on the UWB radio, configure UWB radio, send profile L2CAP data over UWB (taking advantage of UWB's low power per bit property). When transfer is complete, turn off UWB radio and use Bluetooth to stay synchronized (taking advantage of Bluetooth's low power when idle)." That gets an "absolutely brilliant". This is an implementation which I am looking forward to seeing in end products, and I have a feeling we don't have to wait all that long. Of course, those folks at CSR have not been idle; they are also talking about integrated Bluetooth-FM radio, Bluetooth-WiFi (they were the first and likely will always remain the best at this), and Bluetooth- VoWiFi VoIP dongle for Skype applications. The company's slogan: "Changing the way the world connects" says it all.

[Find out more....](#)

The Certified Wireless USB Developer's Conference a hit

I have to admit that this conference was by far the most impressive Alliance-related event I have ever attended. The group has identified and distilled the key value propositions for developers. Nearly every one of the vendors is aligned with the WiMedia and Certified Wireless USB message.

The keynote by Jeff Ravencraft of Intel was on par with Bill Gates' keynote at this year's WinHEC. It was clear, well-organized, direct and to the point, but above all very interesting. And this is why:

Jeff Ravencraft spoke of the WiMedia architecture as 'one radio - multiple protocols'. These protocols he identified as

Certified Wireless USB, Bluetooth, and WiNET, clarifying that in truth all three protocols will use the same PHY and MAC, while each will have a unique Protocol Adaption Layer, or PAL. This coexistence strategy enables end product companies to capitalize further on the economies of scale to be gained by widening the applicability of the UWB radio solution whether it be a multi-chip grouping, a SIP, or the coveted single chip.

Given this simple and elegant solution, the Certified Wireless USB specification allows for up to 127 addressable devices (plenty for most installations); it also includes support for legacy USB (both host and device) and, given its focus as a USB wire technology, is primarily implemented as a hub-and-spoke connection (essentially point-to-point between the host and a given peripheral).

In order to spark the market, the group's initial strategy is to produce host wire adaptors which are nothing more than USB dongles that plug into your computer, and device wire adaptors which are both wireless and wired. The device wire adaptor includes a USB cable connection to any peripherals, given that it is unlikely that UWB is built into all the camcorders out there, and given that the wireless USB connectivity to the host wire adaptor is likely plugged into your computer. This is solid, enabling strategy.

This is not drawing-board stuff. The USB-IF has Certified Wireless USB test specifications in place, and 3rd party test houses such as TDK have been preparing for a couple years have streamlined their processes, and claim that the first compliant product will be released in the second half of this year. This is where skepticism creeps in, regarding anything on shelves until 2007, but I would not mind if the group proves me wrong.

On that note: Jeff Ravenscraft used data from a market research study forecasting shipments for CWUSB to reach 289 million units in 2010. Given that this is less than four years away, I remain unconvinced that the market can realistically get this big. As attractive as a hockey stick adoption curve looks, this is one of the few places where Metcalfe's Law of does not apply. Before we reach these mass adoption levels, there needs to be an as of yet absent market infrastructure: significant consumer education, sales channel training, inevitable 'bugs' worked out of the products, etc. etc. Our forecast calls for the market to reach 84 million units shipped in 2010. Given that we update and revisit these forecasts quarterly and re-issue our market report quarterly, we will adjust the forecast should we see product released this year....but I still don't see how it can reach 289 million units.

On another note: WiQuest Communications told us that

their reference designs, based on their WQST110/101 Integrated Wireless USB MAC and PHY enable their customers to get to volume production for aftermarket product within 90 days.

We also spoke with Alereon where we heard that the FCC certification has been reduced to roughly 2 months. Alereon also has a unique strategy: they produce the PHY and license it to OEMs and also to companies who add their MAC and sell chips, such as Synopsis. In fact Synopsis, an Alereon customer, implemented a full WiMedia MAC and has already gone through interoperability testing with several 3rd party WiMedia UWB PHYs including Realtek and, of course, Alereon.

Staccato was showing an ever more impressive array of customer products and also a new partner program which includes TDK, Tektronix, Taiyo Yuden, LeCroy, Fujitsu Components, Omron, Anritsu, and others. One thing to be said of Staccato; they have a solid focused business plan and are busily executing against it. That is their focus, not who is doing what to whom. Their latest product is a complete, full system-in-Package (SIP). All you need to add is an antenna. This provides real value to OEMs who want to implement Certified Wireless USB without becoming RF experts.

Finally, seeing companies like Tektronix getting involved is an excellent sign that the market is rapidly maturing. Engineers will soon be developing products that include Certified Wireless USB and there will be a lot of them.

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Promotions

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- Forecast methodology is based on proven track record. WTRS was the first analyst firm to correctly forecast the shift in dominance of the MBOA membership in WiMedia Alliance and other Industry Groups which led to the eventual formation of the wireless USB I/F.
- WTRS reports offer superior quality & excellent value.

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Cheers,

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