

Alereon finds wireless protocol analyzer from Ellisys an indispensable tool

Client

Alereon
Austin, TX 
Fabless semiconductor startup
www.alereon.com

Challenge

To develop innovative chipsets that add low-cost, low-power, high-speed wireless features to portable electronics like cell phones, digital cameras, and MP3 players.

Solution

Alereon used an Ellisys Wireless Explorer 300 protocol analyzer for debugging and compliance testing on its new Wireless USB and WiMedia UWB chipsets.

Benefits

Alereon gets twice as much testing done in the same time, thanks to a more convenient software interface and more flexible timing diagrams.

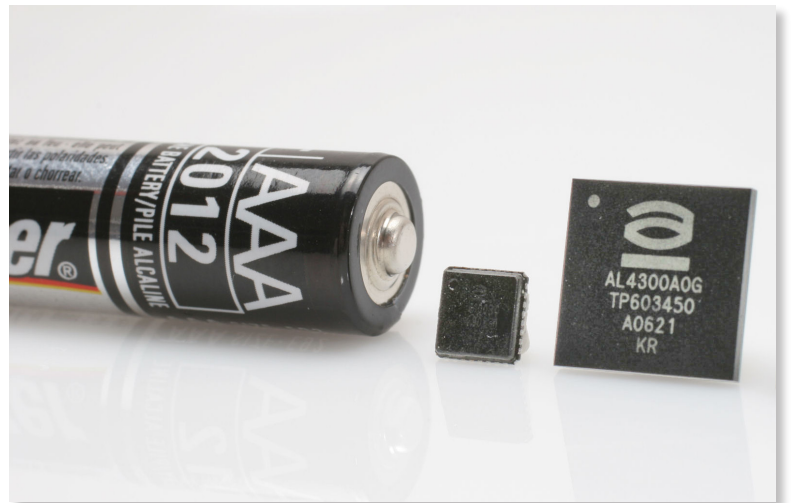
Quote

"Any time we do interoperability testing, the Ellisys serves as our independent broker to provide an unbiased view of what's going over the air. The Ellisys box helps us go a lot faster in analyzing any problems; the process typically goes about twice as fast with the Ellisys as with other products."

David Nix, Director of Software
Alereon

Alereon is a Texas-based fabless chipmaker with a tall order: to help add low-cost, low-power, high-speed wireless features to portable electronics such as digital cameras, MP3 players, and cell phones.

For any startup in such a fast-growing niche, time-to-market is critical — yet every offering must be carefully designed to be totally compliant with wireless standards.



Alereon meets these challenges with talent and technology. Both management and technical staff have deep roots in the industry. The company holds more UWB patents than any competitor.

And Alereon's engineers use an Ellisys Wireless Explorer 300 protocol analyzer that helps them do their testing twice as fast as other analyzers.

See everything at once

In mid-2006, Alereon's engineers already had a protocol analyzer from a competitor, but they liked the Ellisys units they saw at a trade show in Silicon Valley.

"I was very impressed with the difference in user interface versus the one we were using," says David Nix, Director of Software with Alereon.

"Ellisys gives all the views on the screen at once, so you can see your wireless USB protocol, your WiMedia protocol, your timing, and your physical counters all at the same time. With both the competitive units I'm aware of, you get one view at a time, so you have to switch back and forth, and write things down or remember them."

Alereon quickly acquired an Ellisys Wireless USB Explorer 300. Since then, someone on its seven-person firmware development team has used it almost every day, mainly for debugging and compliance testing.



Ellisys is a leading supplier of cutting-edge USB, Wireless USB and Ultrawideband Protocol Analyzers. The company's products help hardware, software and test engineers save development effort, improve quality, and accelerate time to market. Ellisys protocol analyzers range from simple and cost-effective tools to high-end fully-featured equipment.



Alereon, Inc. is a fabless semiconductor company that uses revolutionary ultrawideband (UWB) radio technology to develop high-bandwidth, low-power, low-cost Wireless USB and WiMedia UWB chipsets ideal for today's portable products, like digital cameras, MP3 players, and cell phones. The company's mission is to replace the complex tangle of wires that interconnect today's electronic devices with wireless links.

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"One place the analyzer is most useful is when we're doing interoperability testing," says Nix. This includes testing the links between Alereon's prototypes and the wireless hosts from vendors like Intel and NEC.

"We want everything we put out to be compliant, so that when people get the certification and logo they know exactly what it means. We use the Ellisys unit as an independent third-party analyzer giving us a second opinion on whether we're compliant or not."

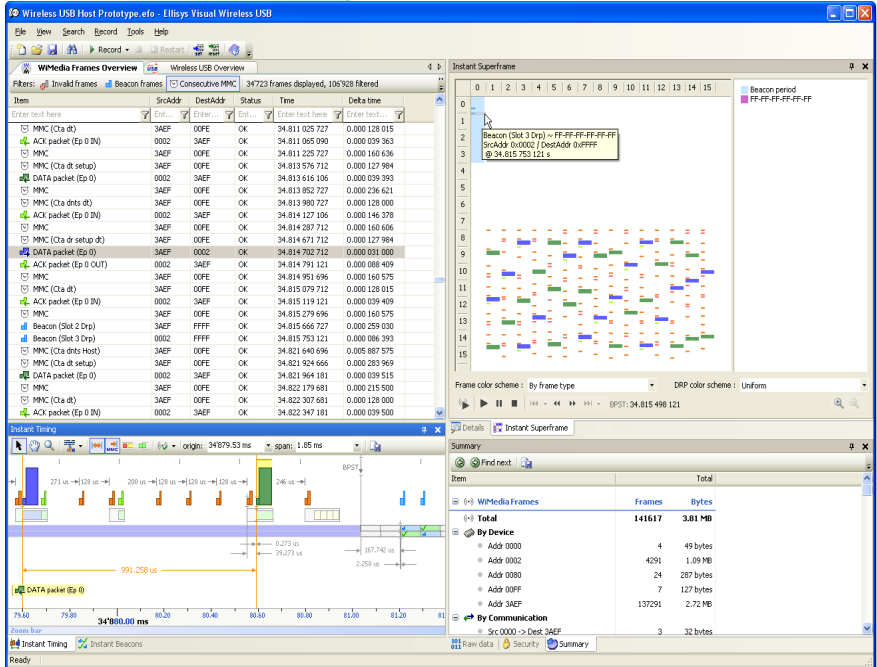
Alereon prototypes. This sophisticated scheme is designed to prevent conflicts in a wireless network.

The host sends each wireless device a packet called a beacon, with instructions to forward that packet at precise intervals. By detecting the beacon, every host within range can tell that another host is controlling that device.

"Directed beaconing protects a device from getting hammered from two different signals at the same time," says Nix.

But to achieve this co-operation, the transmission timing of the beacon must be perfect.

"It's not only a matter of is the packet going out correctly, but going out at exactly the right time," says Nix. "That timing feature on the Ellisys allows us to verify that, without having to break out the calculators to figure it out."



Twice as fast as other products

Speaking of timing, Nix says the Ellisys unit saves the company a lot of precious time.

"The analysis typically goes about twice as fast with the Ellisys as with the other products," he says. "You save all that time flipping back and forth between screens, trying to remember what you read on the other one."

In fact, he estimates that wireless testing goes twice as quickly with the Ellisys equipment, compared to other products they have used.

"In a typical day when we're doing heavy debugging, if we spend an hour looking at traces with a competitive box, with Ellisys we'll only spend 30 minutes," he notes.

This nimbleness is enhanced by the compact design of the Explorer 300.

"It's about half the size of competitive products. Any time we go to a customer or partner site, we like to take the Ellisys because it's easier to carry. It's USB-powered and doesn't require external power, so it's very handy," says Nix.

With a single-screen interface, flexible timing diagrams, better portability, and all-around faster results, the Ellisys wireless protocol analyzer has become an indispensable tool of the trade for Alereon. 🎧

The InstantTiming view enabled Alereon engineers to test a sophisticated "directed beaconing" feature that helps prevent conflicts in wireless networks.

Developers like InstantTiming

One thing the Alereon developers appreciate most is the InstantTiming screen in the Ellisys software, which provides a flexible view of everything sent and received on the wireless channels.

"This is something that's unique about the Ellisys," says Nix. "It can show a spread-out timing diagram of not only what you received, but when you received it. And you can scale that for longer or shorter, depending on what you want to look at. That's been extremely useful."

For example, InstantTiming was helpful in testing the directed beaconing feature of the



Ellisys
ch. du Grand-Puits 38
CH-1217 Meyrin, Geneva
Switzerland

Phone: +41 22 777 77 89
Fax: +41 22 777 77 90
Email: info@ellisys.com

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