

Stonestreet One enables tomorrow's technologies with help from Ellisys.

Client

Stonestreet One

A World Leader in
Short Range Wireless
Software Solutions

www.stonestreetone.com



Challenge

Helping electronics and computer manufacturers successfully incorporate cutting-edge wireless technologies into their products.

Solution

Stonestreet One uses both the Ellisys USB Explorer 200 PRO and Ellisys WiMedia Explorer 300 Analyzer when they develop and debug applications.

Benefits

Both analyzers help Stonestreet One ensure full-featured, stable and protocol-compliant software.

Quote

"Ellisys analyzers increase our productivity by at least a factor of ten."

Randy Erman,
Manager of Software Engineering,
Stonestreet One Inc.

Founded by former Motorola employee Tim Reilly, Louisville, Kentucky-based Stonestreet One Inc. created Bluetooth offerings for the 1.0 and 1.1 specification that were embedded in Symbol and Kodak devices. After later embedded 802.11 successes, Stonestreet One chose market leadership in ultra-wideband software as its new mission. UWB, a modern high-data-rate personal area network (PAN) technology, is a pillar of certified wireless USB products as well as WLP and Bluetooth 3.0.

Every day and every hour matters

Leading-edge technologies like Bluetooth 3.0 have proven very attractive to industry players. Development time matters to application creators using this emerging technology as they race to become suppliers of choice to major OEMs and ODMs. "Companies that are out there right now are looking to win sockets, to get their solution designed in customers products and win the next OEM or ODM contract," said Stonestreet One's Manager of Software Engineering Randy Erman.



The intense competitive pressure in this budding market filters back to suppliers like Stonestreet One, whose technology underpins that of their clients. "As a software provider, we have to be ready to go with software that is robust, stable and feature-complete," said Erman.

Erman mentioned a fourth, sometimes-overlooked requirement: the whole set of driver functionality must be protocol-compliant.

To ensure its software is ready for customer use, Stonestreet One uses both the Ellisys USB Explorer 200 PRO and Ellisys WiMedia Explorer 300 Analyzer during development.

"The Ellisys analyzer definitely helps us to become protocol-compliant, partly by showing us where devices in development are not protocol-compliant," Erman explained.

"In general, what the Ellisys really helps with is the protocol decoding, the class decoding, and not only over the air but also on the bus. This decoding definitely helps speed up the identification of issues in the system."

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.



Stonestreet One provides software that simplifies the wireless experience. Stonestreet One software solutions for ultra-wideband (UWB) are the industry standard for quality and performance, and include drivers for HWA, DWA, WHCI, and WLP. Stonestreet One's premier wireless management application, WiCenter®, is groundbreaking in its capacity to manage multiple radios with a single user experience.

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"One of the most interesting things you can do," Erman continued, "when you work with wireless technology, is analyze the protocol real time as it occurs over the air. This is much more advantageous than doing post-mortem analysis."

"That's what the Ellisis solution does for us, essentially. It gives us the ability to watch the over-the-air transactions on the fly and discern what the problems are on the system."

"We have a quicker turnaround time on bugs sent to us regarding combinations of our drivers with hardware," Erman said. "If we're doing something incorrectly from a protocol standpoint, it's much quicker to look at the logs and identify where the problem is."

Dramatic speed increases

"Some activities that take me three minutes to do with the Ellisis analyzer would have taken me 30 minutes to do without the Ellisis," he stated.

The complexity of information in wireless transactions makes engineers covet sophisticated analyzer tracking software - another Ellisis strength. "The software gives us the ability to see a large set of information using the Ellisis user interface, plus the ability to detect protocol errors," said Erman.

"The graphical user interface shows you a considerable amount of the information you need to quickly detect the problem"

"The software shows a frame view as well as a transfer level view where you get a lot of data," Erman continued. "For instance, you can look at 60 transfers on one screen and that quickly lets you see where you are in the protocol and where the problem occurred."

"One of the other features that I enjoy a great deal is the Instant Beacon view, which allows you to quickly identify if a device is drifting compared to other wireless devices in the wireless network."

Long debugs, large log files - no problem

On long debug scenarios, the low CPU and memory requirements of Ellisis analyzers proves particularly advantageous. "We take very large logs," Erman explained. "Some of these problems don't show themselves until two hours in."

"In the past, if you let an analyzer run for any sizable amount of time, you would walk back and your system would be completely frozen, because there would be no more memory left. On top of that, chances are the application would not offload results to the file correctly."

Low resource requirements are especially important when Stonestreet One engineers work away from the office. "We have to do a lot of onsite," Erman said. "We can't bring our development desktops with us, so most of the time we deal with laptops that might not have as much memory available in them."

Stonestreet One has ambitious plans for the future and Ellisis products will continue to support the company's success. "When you look at our company's expertise in Bluetooth and UWB, it makes sense to put Bluetooth 3.0, which is the synergy of those two technologies, on our roadmap," said Erman.

"I really do enjoy the Ellisis products. I think Ellisis has done a fantastic job," said Erman. "I look forward to seeing what Ellisis comes up with next." 🎧



This screenshot shows the intuitive user interface of WiCenter®, Stonestreet One's original wireless device management application

"It's also easier to identify other people's bugs, whether it's an over-the-air protocol error, where a platform is scheduling transmits and receives too early or too late or if there's drift in the beacon group from one particular device which takes the beacon group out of sync."

Ellisis analyzers facilitate collaboration between Stonestreet One, its customers and its customers' other suppliers. "Ellisis products tend to be well-received throughout the industry," Erman said. "People either ask for or require that you send them this type of log when you show them bugs with their hardware."

Erman has become bullish on the efficiency of Ellisis-based analysis. "Post-mortem decoding simply takes more time," he said. "Just having to do all the decoding of all the bits on a printed page as opposed to having it all displayed in a graphical user interface like the Ellisis solution provides - the Ellisis increases productivity by at least a factor of ten."



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