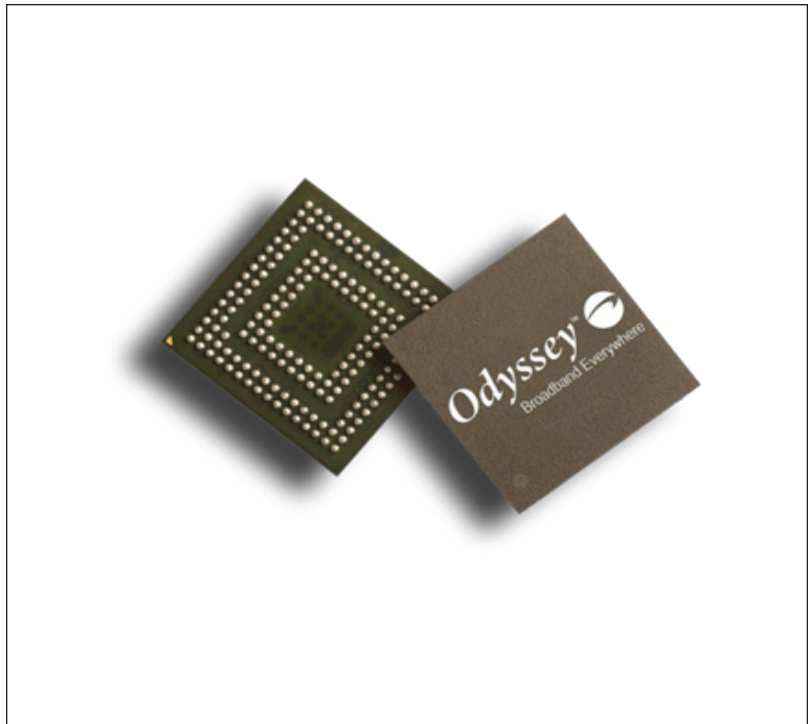


Wavesat's high-performance 4G broadband chipsets enabled by the Nucleus RTOS

Wavesat Inc., a global leader in mobile broadband, is on the cutting edge of 4G solutions for the world's leading carrier and mobile device manufacturers. Based on Wavesat's technical expertise and smart, flexible technologies, this fabless semiconductor company is well-positioned as a leader in emerging 4G solutions – where wireless, broadband, and consumer technologies converge.

Innovative mobile devices such as the Apple iPhone are changing the way portable devices communicate and interact. Advanced functionality requirements and the emergence of highly competitive technology protocols such as LTE, WiMAX, and XG-PHS are driving new trends forward. Device multi-functionality and support for these protocols are forcing heavy demands on chipset developers; as a result, companies like Wavesat must stay several steps ahead of the competition.

Wavesat provides silicon, software, and reference designs to help their customers deploy the latest in multiple broadband wireless technologies, which also includes seamless migration to 4G technologies. Jonathan Labs, Wavesat Chief Technology Officer, described his company's involvement this way



Wavesat's Odyssey 9000 family of chips is one example of the company's commitment to the 4G platform.

“4G technologies are quickly emerging, so handset and terminal availability for multiple protocols are critical – not to mention key factors, like power consumption, footprint, and performance for end-user devices, which are also critical issues for our customers.” The Wavesat Odyssey 9000 family of chips is one example of Wavesat's commitment to the 4G platform. Odyssey delivers industry-leading performance along with the latest in broadband technology. Innovative chips like the Odyssey enable OEMs and ODMs to maximize their return-on-investment, reduce risk and

product development time, and lower overall BOM which ultimately results in faster time-to-market schedules.

Pushing the Technology Envelope for 4G

Labs has a long history in helping to architect Wavesat's 4G products, so he clearly understands what the OEMs require in today's most popular devices. With the 4G platform, developers are dealing with highly competitive protocols – WiMAX for Intel and XG-PHS for Japan both of which, have an OFDMA as the core technology. Wavesat is deeply involved

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— JONATHAN LABS
CHIEF TECHNOLOGY OFFICER
WAVESAT, INC.

integrating the latest protocols with innovative design techniques, which is a distinction from their competitors. “We provide a flexible architecture that’s ‘protocol agnostic,’ which is really difficult to do when small form factor is the requirement,” said Labs. “But we developed a form factor that provides flexibility and still supports these multiple protocols so nothing is compromised.”

Wavesat works closely with European, Korean, and Japanese companies that are pushing the technology envelope for early product development and new protocols for devices, such as LTE and XG-PHS. As a result, Wavesat can apply their developing technologies and test them out with their strategic alliance partners.

Small, Scalable Footprint: Key to Performance Success

So what is enabling this capability to develop innovative 4G silicon? Labs stated that robust embedded software products are important. Previously at Wavesat, the development team was using a mix of embedded software, including open source. His team also encountered size and memory constraint issues when using the existing

embedded software tools. Labs advised the team to use the Mentor Graphics® Nucleus® RTOS for Wavesat’s Odyssey device, based on the positive evaluation of both the Nucleus OS and Mentor’s USB device drivers. “The Nucleus RTOS is easy to use, so it took no effort at all for our engineers to get up-to-speed on the tool,” said Labs.

The overall experience and end-result using Mentor’s embedded software technologies was a positive one for Labs’ team. “Programmability is effortless in the Nucleus environment, and its small footprint allowed us to successfully deploy our product development plans,” remarked Labs. “The superior performance of Nucleus and its scalability were clear benefits in using the Mentor RTOS.”

A Flexible Model for Business Success

Wavesat’s business strategy is also a model for success. Labs stated that the company can target and customize Wavesat devices for specific application areas using the same piece of silicon. With today’s uncertain economic

climate, the ability to program their devices in embedded software, tailored to specific vertical market applications, provides great flexibility. “This business model, where we can retool our devices easily, allows us to be efficient and profitable despite the ups and downs in this volatile economy,” said Labs.

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The combination of developing next-generation devices for the emerging 4G market, the ability to provide a protocol agnostic technology, and adapt the devices for vertical applications are key factors in Wavesat’s success.

However, Labs adds, “Time-to-market is critical. In terms of success, having a company like Mentor for superior embedded tools and timely

support is critical for us – enabling product efficiency, easy-of-use, scalability, are contributions that Nucleus provides.”

Labs states that he will continue to seek out embedded software offerings from Mentor based on his previous and current experiences, and he has great expectations for the future, as Wavesat and Mentor continue to develop innovative solutions together.

“In terms of success, having a company like Mentor for superior embedded tools and timely support is critical for us. ”

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WAVESAT, INC.

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