

# Single-Chip UWB Solution with Dual-Mode Wireless and Powerline Capability

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Artimi Inc., a fabless semiconductor company developing [Ultra Wideband](#) (UWB) silicon solutions, announced that it is demonstrating its patented dual-mode UWB semiconductor technology in a UWB over powerline demonstration in their suite during the 2005 International Consumer Electronics Show (CES) in Las Vegas this week.

Artimi further announced that the patented dual-mode wireless and powerline capability will be delivered in the industry's first single monolithic chip UWB device, the RTMI-100, in 0.18 micron silicon germanium (SiGe) BiCMOS. The digital portion of the device is implemented in CMOS and the high frequency section is implemented in SiGe. Samples of this product will be available Q2 2005.

The RTMI-100 can be used in either wireless or powerline systems. Artimi has developed low cost reference antennas for wireless applications. Artimi has also developed an innovative system whereby UWB pulses are coupled onto wiring such as mains power cables using a low cost patented coupling device.

Artimi's UWB over Powerline Demonstrator System shows the capabilities of this technology using a specially designed demonstrator platform. The digital sections of the RTMI 100 have been implemented in an FPGA on a PCI board. The high frequency section of Artimi's RTMI-100 has been implemented using discrete components on a second PCI board. Both boards are mounted in a PC

such that powerline communication can be established between two of these PCs using a pair of 4-way mains power cable blocks. Artimi has developed standard windows networking drivers for use with the RTMI-100 solution, and these are implemented on this demonstrator system without modification.

Gillian Ewers, Director Product Marketing, Artimi said, "Our demonstration system is a complete discrete implementation of the RTMI-100 chip. The RTMI-100 will be capable of transmission at up to 800Mb/s with complete conformance to the FCC emission regulations. We believe this will be the first single chip complete UWB solution, delivering unrivalled cost and performance. Our patented UWB over powerline technology allows access to places that other technologies can't reach, such as through foil lined walls. Applications include video and data transmission in the home, office and industrial applications."

## **About Ultra Wideband**

Ultra Wideband (UWB) is a method of sending information using high frequency low energy pulses. UWB has the potential of orders of magnitude greater spatial capacity compared to other current or emerging technologies, allowing much faster and denser wireless networks.

UWB is a wireless communication technology fundamentally different from all other radio frequency communications. It is unique in that it achieves wireless communications without using an RF carrier. Instead it uses modulated pulses of energy less than one nanosecond in duration.

Source: [Artimi Inc.](#)

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