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Multigig Announces Validation of New Clock Technology

Business : Shawn Lunn

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Multigig – developers of a unique new power-saving clock technology – today announced the successful silicon validation of a semiconductor IC that incorporates Multigig's revolutionary new RotaryWave™ on-chip clock technology.

The high-speed, computationally-intensive chip was developed in partnership with a leading IC company and verifies the significant power consumption advantages of Multigig's RotaryWave clock technology. Specifically, the dynamic power consumption of the chip is 50% below the expected CV2F of conventional clocking alternatives. A further 20% clock power savings is possible using Multigig's own flip-flop designs.

The 1.6GHz chip was produced on a standard 90nm CMOS process and was developed with standard EDA design tools and standard library cells, as well as being tested using standard scan-test methodology.

"This chip is demonstrable proof that despite the innovative nature of RotaryWave technology, it can readily be incorporated into complex digital chips to achieve very large power savings with existing EDA tools, design flows and manufacturing processes," said Haris Basit, Managing Director of Multigig.

"The timeliness of Multigig's technology is notable with the industry focused on power efficiency. Multigig's RotaryWave architecture holds great potential for the needs of today's energy-hungry devices," said Tony Massimini, Chief of Technology for Semico (Phoenix, AZ), a semiconductor research firm. "Being able to save 50% of clock power is a huge achievement, and one that will have far-reaching ramifications for the industry."

Multigig plans to soon introduce a broad range of leading-edge clock and data converter semiconductor chips that leverage its proprietary RotaryWave technology, and is in active development of several new RotaryWave-based devices. For further details, email Multigig at info@multigig.com.

RotaryWave Details

RotaryWave is the first major advance in semiconductor clock design in the last several decades. The RotaryWave clock enables semiconductors to achieve their maximum performance by delivering extremely precise, high-resolution, low-noise timing signals with far less power than is associated with standard clock designs.

RotaryWave is a fundamental technology that works on all existing manufacturing processes - zero manufacturing changes are required to implement RotaryWave clocks into a design. RotaryWave clocks also scale well with advanced processes. Furthermore, this technology has excellent signal integrity with very robust tolerance to substrate, power supply and radiated noise.

Utilizing a unique transmission line structure with 'Mobius termination' as both a clock generation and clock distribution system, RotaryWave technology is ideally suited for products as diverse as RF/analog, mixed signal and high-speed digital. Under development in 'stealth mode' since 1999, the RotaryWave clock can be readily utilized in most high-performance semiconductor projects using standard design tools and process technologies.

RotaryWave clocks are ideal for markets such as mobile telecommunications, imaging and military applications where standard clock technology has proven inadequate or too power-hungry. RotaryWave is considered to be a fundamental necessity for enabling high-performance, low-power silicon with sub-picosecond accurate clock signals. The patents granted and pending deal with a wide range of fundamental technology advances associated with this breakthrough.