

Tool Suite Addresses VoIP DSP Development



STMicroelectronics today announced how its successful collaboration with Target Compiler Technologies led to the creation of customized audio DSPs for its SC14452 Green VoIP processor. The DSPs combine extreme energy efficiency with high processing performance, enabling industry-leading audio quality and power consumption. Key components of the SC14452 that won a 2009 Frost and Sullivan Green Excellence Award, the DSPs were developed using Target's IP Designer reconfigurable tool suite.

Target's tools allowed STMicroelectronics to develop application-specific Green DSPs including a C-compiler, which means customers can program the DSPs themselves. The DSPs operate at low frequency to minimize energy consumption, yet provide high processing power. The SC14452 features two of these DSPs, which together deliver 160 MFPS. At the same time, they help minimize power consumption, enabling in-call power figures below 600 mW.

With these powerful DSPs on-board, the SC14452 delivers outstanding sound quality for crystal clear communications. It can support four concurrent IP connections, independent of the codec chosen. Currently supported codecs include G.711, G.729, G.726, ILBC and MP3. Highly integrated, this VoIP solution reduces the overall system bill of materials (BoM) for enterprise VoIP desktop phones and IP DECT base stations. It features integrated DECT, CAT-4, DECT 6.0 and iDECT support and a dedicated cryptography engine for complete call confidentiality.

"STMicroelectronics strives to create state-of-the-art chipsets for the cordless telephony and VoIP markets that deliver outstanding audio quality and performance while minimizing environmental impact," said Mark De Clercq, Product Marketing Manager at STMicroelectronics. "The Target tools have helped STMicroelectronics achieve this goal by enabling us to develop audio-specific DSPs that deliver lots of processing power while operating at low frequency."

"As a leading supplier of chipsets for cordless communications, STMicroelectronics' decision to use our IP Designer tool suite highlights the power and flexibility our tools offer. We are extremely pleased to have played a key role in the creation of a DSP that will enable more advanced and environmentally friendly communications products," said Carl Grossman, CEO of Target.

STMicroelectronics' drive towards more advanced and flexible System-on-Chip (SoC) solutions is the reason behind the company's choice of Target's tools. Target's IP Designer is the leading reconfigurable tool suite for the design, programming and verification of application-specific instruction-set processors (ASIPs).

About Green VoIP

Concerns over climate change and fossil fuel supplies have put energy efficiency of all products at the forefront of both consumer and government agendas. For example, the European Commission Regulation on ecodesign (implementing Directive 2005/32/EC) proposes limiting the standby power consumption of domestic and office devices initially to 2 W if the device has a display and 1 W otherwise. A future second phase will further tighten these limits to 1 W and 0.5 W. Similar legislation is currently making its way through Congress in the US.

To help customers respond to these concerns and regulations, STMicroelectronics launched the Green VoIP range in 2008. These energy-efficient ICs allow manufacturers to create VoIP solutions that are environmentally friendly and reduce electricity bills. The first Green VoIP product, the SC14450, reduced the net system power consumption for typical applications by 50% to around 800 mW during calls and 550 mW in idle mode. The next Green VoIP processor, the SC14452, pushed down power consumption even further to 550 and 300 mW respectively - meeting the most stringent proposed limits.

About STMicroelectronics NV

STMicroelectronics NV was established in June 2001, following a management buy-out from National Semiconductor Corporation. Headquartered in 's-Hertogenbosch, The Netherlands, STMicroelectronics is a global IC manufacturer with design centers in The Netherlands and Greece along with regional sales offices in Hong Kong, Japan and the U.S. The company specializes in the design, manufacturing and marketing of high-performance CMOS solutions for digital cordless and corded communication and is the world's number one DCT supplier for cordless voice, real-time data and VoIP.

For more information about STMicroelectronics, please visit <http://www.stmicro.com>.

For more information about Target Compiler Technologies, please visit <http://www.target.com>.

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