

STMicroelectronics Incorporates CWS' SiPEX in the RF PDK H9 SOI FEM

CWS and STMicroelectronics partner to close the gap between simulation and silicon measurements, further enhancing RF SOI designs for next generation communication chips

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PARIS & SAN JOSE, Calif. --Coupling Wave Solutions, S.A. (CWS), a leader in solutions for interference analysis in complex chip designs incorporating RF and analog blocks, and STMicroelectronics (NYSE:STM), a global semiconductor leader serving customers across the spectrum of electronics applications, today announced that they partnered together to reduce time-to-market for high-performance radio frequency (RF) silicon-on-insulator (SOI) designs. RF Designers and design managers will now be able to enhance their designs of RF SOI switches that propel the next generation cellular and Wi-Fi communication chips. STMicroelectronics' product development kits with SiPEX are available immediately.

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"We are thrilled to partner with STMicroelectronics to provide our customers with a breakthrough design productivity solution," said Brieuc Turluche, chairman of the board of directors and chief executive officer of CWS. "SiPEX™ accurately models interactions between devices, back-end-of-line, and silicon on insulator (SOI) substrates enabling RF Front End Module designers to fully simulate layout and design changes in less than 15 minutes, an accomplishment not possible until now. Our tool also helps simulation take into account physical effects that were only measurable on silicon in the past. This enhanced capability is fundamental to successfully designing high-performance RF SOI switches for the next generation communication chips."

For the first time ever, with STMicroelectronics' product development kits, customers can simulate the impact of layout geometry on RF switch losses and non-linearities (H2/H3 distortions), including active devices, metal interconnects, and substrate contributions. This design capability is empowered by the interaction of Spice models, Mentor XRC tool, and the SiPEX substrate simulation tool. This is significant because customers will now be able to design RF SOI Switches reaching a level of performance never achieved before.

"RF front-end components are complex to design. The right design tool is critical for our RF SOI customers to close the gap between simulation and silicon measurements, and optimize the layout to achieve the best linearity in their chips. Partnering with CWS allows our customers to eliminate design re-spins and accelerate time-to-market," said Cyril Colin-Madan, head of Design Platform at STMicroelectronics.

Thanks to the SiPEX tool, substrate-aware RF switch simulation flow is now part of the H9 SOI FEM PDK design kit which supports RF SOI designs integrated in H9 SOI FEM technology for Cellular and Wi-Fi applications.

"By combining H9 SOI STM technology with substrate modeling via the CWS tool, we produce the world's highest performance SOI Switches for IoT and Smart Phone applications," said Greg Caltabiano, CEO of ACCO Semiconductor.

Availability

SiPEX™ is available as a plug-in for generic interconnect parasitic extraction tools including Mentor Graphics' Calibre®.

About CWS

CWS is the leading provider of parasitic extraction and activity modeling tools for system-level interference analysis of complex designs incorporating RF and analog blocks, targeting SOI applications or advanced bulk process nodes including 28nm and below. CWS' unique harmonic analysis approach allows for controlling and managing noise issues throughout the design cycle from components, to packages, up to and including board design. Wrapped in an "easy-to-deploy" software bundle, WaveIntegrity™ is used by

chip architects and designers to drive the chip design floorplanning, and by package and PCB designers to integrate the noise-related design constraints in the final chip operational environment. Founded in 2003, CWS' offices are located in Paris and Grenoble, France, and San Jose, CA, USA. More information about the company, its products, and services is available at www.cwseda.com.

About STMicroelectronics

ST is a global semiconductor leader delivering intelligent and energy-efficient products and solutions that power the electronics at the heart of everyday life. ST's products are found everywhere today, and together with our customers, we are enabling smarter driving and smarter factories, cities and homes, along with the next generation of mobile and Internet of Things devices. By getting more from technology to get more from life, ST stands for life.augmented.

In 2015, the Company's net revenues were \$6.90 billion, serving more than 100,000 customers worldwide. Further information can be found at www.st.com.

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