PRESS RELEASE

X-FAB and Efabless Announce Successful First Silicon of Raven, An Open-Source RISC-V Microcontroller

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X-FAB Silicon Foundries, the leading analog/mixed-signal and specialty foundry, together with crowd-sourcing IC platform partner Efabless Corporation, today announced the successful first-silicon availability of the Efabless RISC-V System on Chip (SoC) reference design. This open-source semiconductor project went from design start to tape-out in less than three months using the Efabless design flow based on open-source tools. The mixed-signal SoC, called Raven, is based on the community developed ultra-low power PicoRV32 RISC-V core. Efabless has successfully bench-tested the Raven at 100MHz, and based on simulations the design should be able to operate at up to 150MHz.

Raven is unique in that the open-source top-level design utilizes X-FAB proprietary analog IP and is created with an open-source design flow. This hybrid open-source design brings the power of open innovation and at the same time protecting significant investment in proprietary IP.

Efabless and X-FAB chose to manufacture the Raven on X-FAB's high-reliability XH018 process. This is a flexible 180nm 6-metal process with a wide variety of options including a low power option, on-chip isolation for high voltages, and high-temperature flash memory. X-FAB's XH018 process meets automotive quality requirements and is popular in a wide range of automotive, industrial and medical applications.

The semiconductor design is fully functional and Efabless is now engaged with its initial customers on design of derivative offerings. To the Efabless community Raven is available from the Efabless marketplace as a reference design without license fee consequentially advancing the Efabless open innovation model of community design.

"The successful partnership with Efabless demonstrates X-FAB's continued commitment to open-source semiconductor development", said Ulrich Bretthauer, Product Marketing Manager at X-FAB. "Nearly 75% of Raven's die area is covered by X-FAB standard library blocks and macros. Using these proven IP blocks increased the reliability of the Raven while minimizing first-silicon risk."

According to Mohamed Kassem, Efabless co-founder and CTO, "This project would not have been possible without the support of X-FAB. They have been an early adopter of the Efabless open-innovation model and this project is the logical extension of our collaboration."

For companies that want to learn how to get started with open-source IP semiconductor design, X-FAB provides a series of free webinars including "Handling of Complex & Diverse IC Designs Made Easier",

"Design Robustness", and "IC Lifetime Calculation Made Easy". Design kits and PDKs for open source IP designs are available. Contact X-FAB for more information.

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About Efabless Corporation

Efabless.com is the world's first crowd-sourcing platform for semiconductors. Efabless' customers connect with a community of design firms and professionals and receive formal quotes for custom mixed signal IC and IP solutions. Efabless then provides its IC design community with a cloud-based platform offering everything needed to execute the designs. This includes a design flow based on open source tools; a marketplace featuring IP and full reference designs; access to foundry processes and MPW services to get to prototypes. The entire offering is designed to eliminate the cost and administrative barriers that have inhibited IC design in general and custom IC design in particular.

About X-FAB

X-FAB is the leading analog/mixed-signal and MEMS foundry group manufacturing silicon wafers for automotive, industrial, consumer, medical and other applications. Its customers worldwide benefit from the highest quality standards, manufacturing excellence and innovative solutions by using X-FAB's modular CMOS and SOI processes in geometries ranging from 1.0 to 0.13 µm, and its special SiC and MEMS long-lifetime processes. X-FAB's analog-digital integrated circuits (mixed-signal ICs), sensors and micro-electro-mechanical systems (MEMS) are manufactured at six production facilities in Germany, France, Malaysia and the U.S. X-FAB employs about 4,000 people worldwide. For more information, please visit www.xfab.com

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