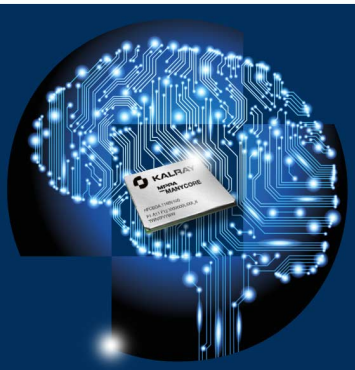
KALRAY

THE PROCESSOR AT THE HEART OF INTELLIGENT SYSTEMS



KALRAY ANNOUNCES THE TAPE-OUT OF COOLIDGE ON TSMC 16NM PROCESS TECHNOLOGY

Third generation of its MPPA® intelligent processor aiming to support company's ambitions on Data Center and Automotive markets

Grenoble – France, July 31, 2019 – Kalray (Euronext Growth Paris: ALKAL), pioneer in processors for new intelligent systems, today announced the tape-out of MPPA3 aka Coolidge™, its third generation of unique and patented MPPA® («Massively Parallel Processor Array») processor family, on TSMC 16nm FinFET process technology. The tape-out is an important milestone for a semiconductor company, as it indicates the completion of the design phase and the beginning of the manufacturing process.

As new generation of intelligent processors, Kalray MPPA processors have the capability to analyze on the fly, and in an intelligent manner, a very large amount of information to make decisions and interact in real time with the outside world.

Coolidge processor will support the company's ambitions on Data Center and Automotive markets. A broad range of high-performance applications will take advantage of Coolidge, including embedded applications, intelligent cars and autonomous vehicles, advanced driver assistance systems (ADAS), aerospace & defense, medical equipment robots, data center, networking, high performance computing, high performance storage, as well as, machine learning and artificial intelligence (AI) applications.

"I am proud to announce the tape-out of Coolidge, our third generation of intelligent processor", ***said Eric Baissus, CEO of Kalray.*** *"Since the IPO of Kalray in June 2018, it has been one of the main focus of the company to bring to life this new product. Autonomous vehicles, artificial intelligence and new intelligent data centers are driving a growing and demanding need for performance, lower power consumption, real time capabilities, combined with safety and security. Coolidge brings unique innovations and improvement to serve these needs. Numerous customers have identified the potential of our breakthrough solution and are eager to get the first samples of Coolidge™."*

Coolidge has been designed to address the challenges and constraints of the new generation of intelligent systems:

- High computing power with low energy consumption
- Open and easily programmable system
- Real Time data processing and deterministic behavior
- Concurrent execution of many heterogeneous critical tasks in parallel on a single chip
- Advanced security and safety mechanisms suitable for the most demanding systems, defined in collaboration with Kalray's partners in the aerospace, defense and automotive fields

Coolidge overcomes many limitations of alternative solutions. Its standard programmability and flexibility makes it an appealing choice versus FPGA, as requirements for updates in the field is growing and cost pressure is increasing. The ability to run simultaneously several real-time and compute-intensive heterogeneous applications on Coolidge within a low-power budget, brings a compelling advantage over solutions such as GPUs. The patented parallel architecture of Coolidge enables massive acceleration of many algorithms, low-latency protocols or Artificial Intelligence applications. Associating Coolidge with other multi-core processors provides the opportunity for system makers to massively improve performance and optimize their Total Cost of Ownership (TCO).

Coolidge will be produced using a 16nm FinFET technology. It includes 80 cores (Kalray 64-bit time predictable and energy efficient VLIW cores), and supports the unique capability to combine multiple Coolidge together in order to bring larger amount of cores depending the need of the targeted application. In addition, 80 patented co-processors are tightly integrated within each core to bring a blazing boost of performance for Artificial Intelligence and compute intensive applications, to reach up to 4 Tera FLOPS and 25 TOPS (which is about 25x the performance of the previous generation) with the total chip consuming less than 20W. This superior ratio makes Coolidge best-in-class for high performance embedded applications. Many advanced high-speed interfaces such as 100 GbE or PCIe Gen4, allow for the integration in high-performance systems, while specialized interfaces such as CAN assure seamless compatibility with targeted applications such as autonomous cars.

Coolidge will be delivered to Kalray customers and partners with an upgraded version of Kalray Software Development Kit, AccessCore™ including Kalray Artificial Intelligence code generation tool (KaNN) as well as reference boards.

ABOUT KALRAY

Kalray (Euronext Growth Paris — FR0010722819 — ALKAL) is the pioneer in processors for new intelligent systems. As a real technological breakthrough, "intelligent" processors have the capability to analyze on the fly, and in an intelligent manner, a very large amount of information, and to make decisions and interact in real time with the outside world. These intelligent processors will be deployed extensively in fast-growing sectors, such as new-generation networks (intelligent data centers) and autonomous vehicles, as well as healthcare equipment, drones, and robots. Kalray's offering encompasses both processors and complete solutions (electronic boards and software). Created in 2008 as a spin-off of CEA ("Commissariat à l'énergie atomique et aux énergies alternatives", the French Alternative Energies and Atomic Energy Commission), Kalray serves customers such as server manufacturers, intelligent system integrators, and consumer product manufacturers, including car makers. For more information, visit www.kalrayinc.com.

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