



MCU SUBSYSTEM CHAMELEON

IP PLATFORM BRIEF

DOLPHIN DESIGN

Configurable MCU subsystem for energy efficient SoCs

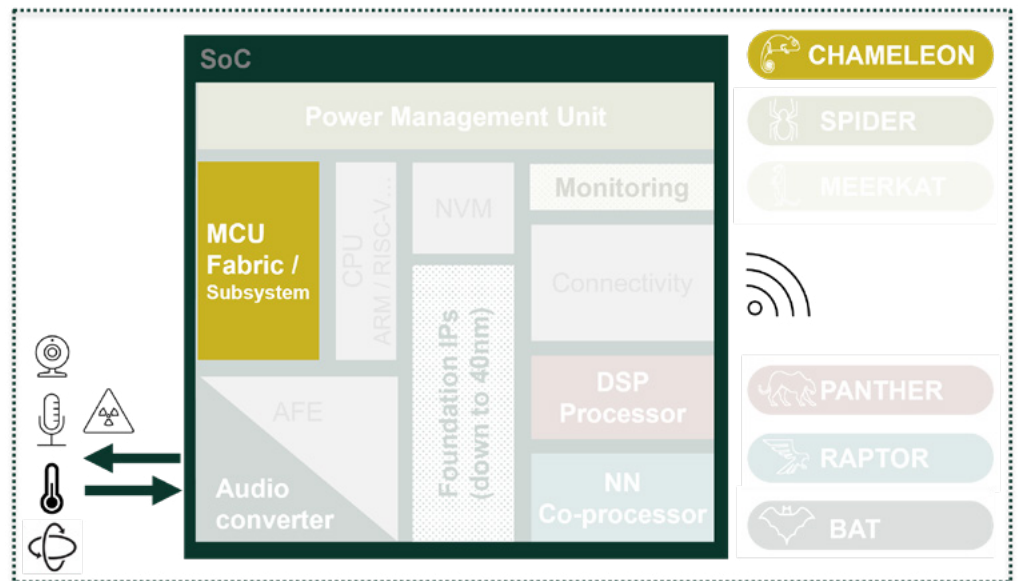
APPLICATIONS

- Connectivity and IoT end nodes (smartwatches, TWS, smartshoes)
- General Purpose and Low Power MCU
- Sensor based applications (audio, health, industrial, metrology)

CHAMELEON is a ready to go MCU subsystem IP platform with pre-integrated CPU cores to improve significantly energy efficiency of smart-devices. It incorporates two major innovations:

- Smart data & peripheral management subsystem allowing autonomous operation of peripherals (CPU-less)
- Smart low latency AHB system bus interconnect/XBAR with built-in interleaving engine granting the maximum bandwidth to each master without software efforts

CHAMELEON is provided as a user-configurable design platform enabling SoC designer to tailor the MCU subsystem to the needs.



KEY FIGURES

- Scalable solutions across all technology nodes
- uLPMark PP = 121
- x10 power efficiency
- 25% development lead time reduction

TECHNOLOGY FOR BETTER FUTURE

The solution to deal with data deluge, while preventing the increase of power consumed by data centers, is known as Edge AI. This solution consists in transferring most of the processing intelligence from the cloud to the sensor. It translates into an unprecedented need to increase performances of «smart devices» by a factor of 1,000 at constant energy consumption.

With its SPEED IP platform, Dolphin Design is positioned as THE provider of solutions for Edge AI System-on-Chip designers. We enable our customers to do much more with less energy resulting in major benefits on environment.

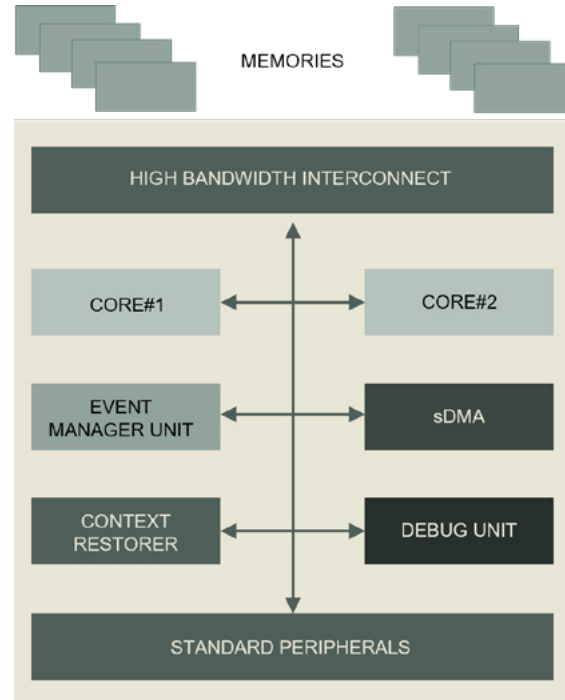
Dolphin Design's SPEED IP platform is labelled by the Solar Impulse Foundation among 1,000 solutions for tomorrow.





KEY BENEFITS

- Ultra low power consumption in sleep and active modes
- Fast wake-up from inactive modes
- Faster SoC design leadtime
- Predictable interconnect bandwidth regardless of the configuration
- Management of software complexity in hardware
- Optimized SDK and compatibility with the ecosystem



KEY FEATURES

- Pre-verified and highly configurable platform
- Flexible choice of CPU cores
- Flexible interconnect
- Autonomous and configurable sDMA
- Extensive list of standard peripherals
- Context restorer

MCU SUBSYSTEM FLEXIBILITY

CHAMELEON is a flexible MCU sub-system IP platform that any RTL designer can easily configure, through the selection of the type and the number of pre-integrated peripherals, the size of embedded RAMs...

CHAMELEON is ready to go for MCUs that rely on a single and dual CPU cores. Furthermore CHAMELEON accommodates with any CPU core of the market, most popular ones (ARM Cortex M series, RISC-V series) being already pre-integrated to reduce significantly the integration time and risks.

SMART ARCHITECTURE

CHAMELEON incorporates two major innovations:

- The autonomous data and event management operating without any support from the CPU in normal mode contributes to a breakthrough in terms of energy efficiency.
- The high bandwidth interconnect automatically controls the memory mapping to offer a guaranteed maximum bandwidth whatever the number of masters connected to the system without software efforts.

DELIVERABLE COMPLETENESS

CHAMELEON deliverables are composed of all RTL design views, synthesis guidelines and verification files and testbenches

CHAMELEON is also provided with a full SDK including Dolphin specific HAL drivers and documentation

TOOLS & SUPPORT

System developers have access to a virtual platform to develop, test and integrate their early software stacks.

