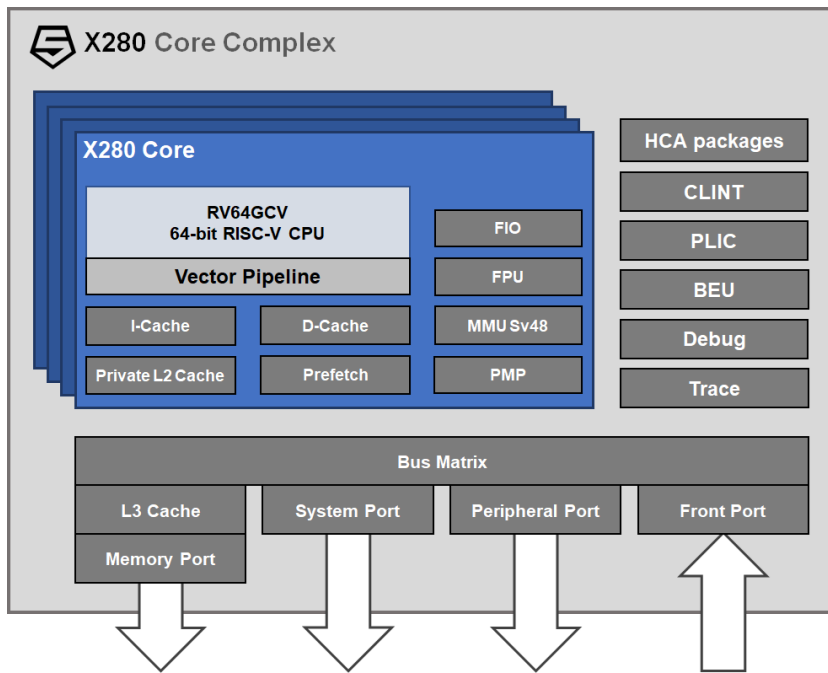## SiFive Intelligence X280 *for Space Applications*

The SiFive Intelligence X280 is a multi-core capable RISC-V processor with vector extensions and SiFive Intelligence Extensions and is optimized for AI/ML compute at the edge.

In addition to ML inferencing, it is ideal for applications requiring high-throughput, single-thread performance while under power constraints (e.g., AR, VR, sensor hubs, IVI systems, IP cameras, digital cameras, gaming devices).

X280 Key Features

- SiFive Intelligence Extensions for AI/ML workloads
    - BF16/FP16/FP32/FP64, int8 to 64 fixed-point data types
- 512-bit vector register length
    - Variable length operations, up to 512-bits of data per cycle
    - Ideal balance of control logic and data parallel compute
- Scalar processing built from silicon-proven U7 series core:
    - 64-bit RISC-V ISA
    - 8-stage dual-issue in-order pipeline
    - Coherent multi-core (up to four cores), Linux capable
- Performance
    - 5.7 CoreMarks/MHz   3.3 Dhrystone/MHz
    - 4.5 SpecINT2006/GHz 3.4 SpecFP2006/GHz (HiPerf config)
    - 2.3 TOPS (INT8 Matrix Multiplication)*
        - Multiple instantiations gives much higher TOPS
- High performance vector memory subsystem
    - Memory parallelism provides cache miss tolerance
    - Virtual memory support with precise exceptions
    - Up to 48-bit addressing

SiFive RISC-V in Space

- Stable, simple, efficient, flexible, secure, open ISA
- Expressly designed to support custom use cases
- Strong and rapidly growing open-source hardware and software ecosystem
- Strong and rapidly growing commercially supported hardware and software ecosystem
- Leading choice for new designs for AI/ML and security

* Based on architecture computation capability, 4-core configuration, running at 2.2GHz (typical)