SiFive

RISC-V Core IP for Target Vertical Markets

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SiFive Core IP
Embedding Intelligence Everywhere

Consumer

AR/VR/Gaming devices

Smart Home

Imaging/Wearables

Storage/Networking/5G

SSD, SAN, NAS

Base Stations, Small cells, APs

Switches, Smart NICs, Offload cards

ML/Edge

Sensor Hubs, Gateways

Autonomous machines

IoT devices

SiFive

SiFive

U Cores

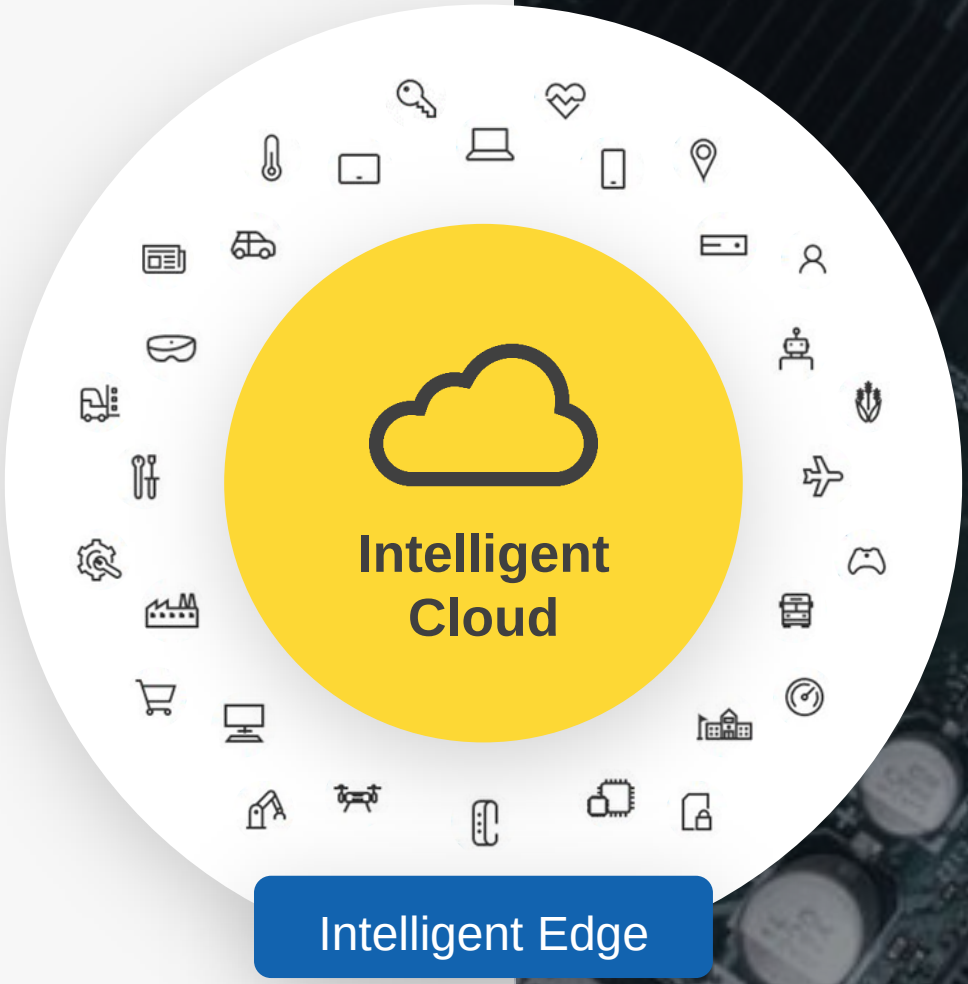
64-bit Application Processors

S Cores

64-bit Embedded Processors

E Cores

32-bit Embedded Processors



Embedding Intelligence from the Edge to the Cloud

SiFive Core IP 2 series:

SiFive's **smallest** and most **efficient** RISC-V processor IP

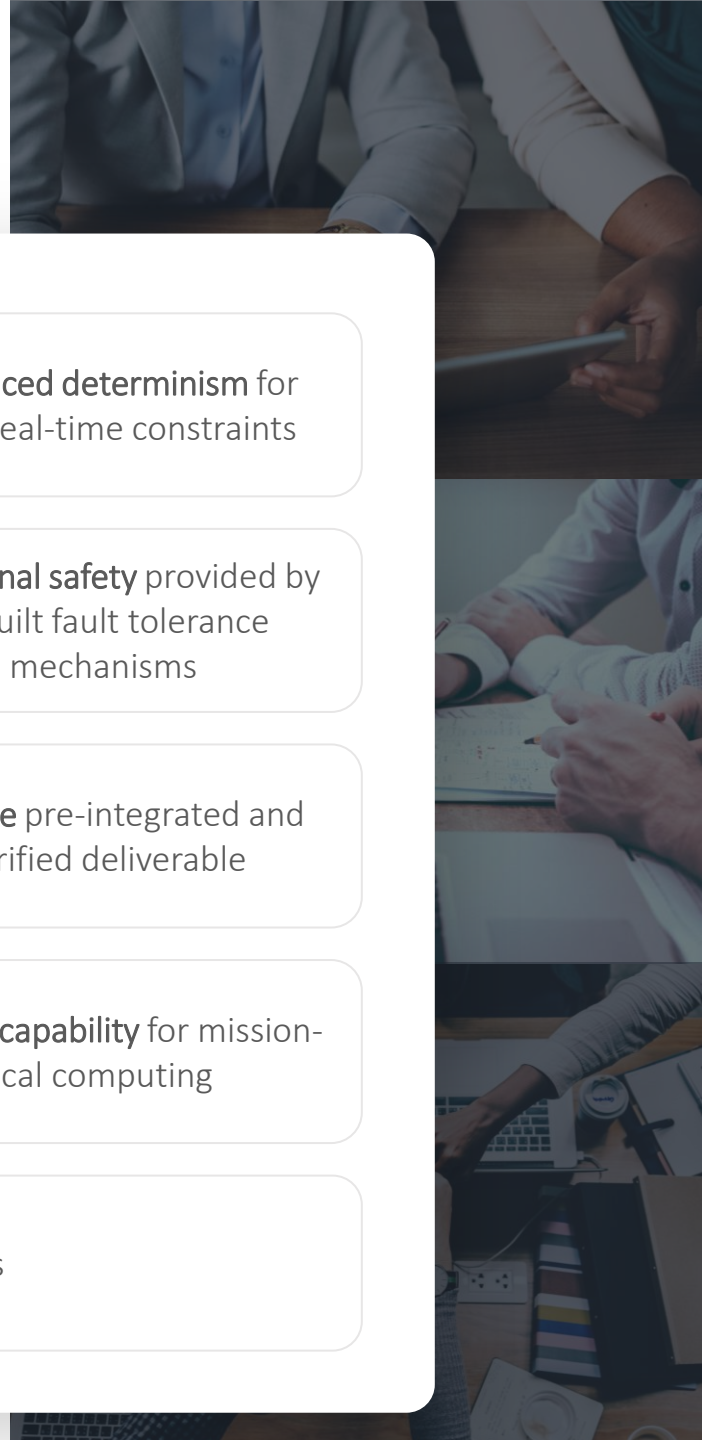
SiFive Core IP 3 and 5 series:

The **world's most deployed** RISC-V processor IP

SiFive Core IP 7 series:

The **highest performance** commercial **RISC-V** processor IP

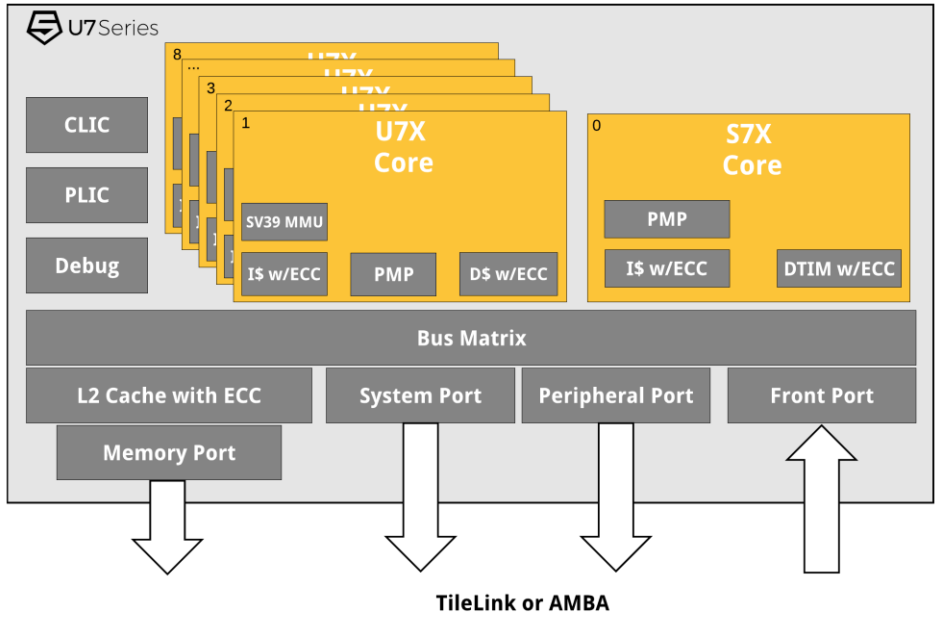
SiFive 7 Series
Embedded Intelligence Everywhere



Scalable throughput provided by **8+1** cores per cluster

Extensible design via custom instructions

Configurable memory architecture for application specific tuning



Enhanced determinism for hard real-time constraints

Functional safety provided by in-built fault tolerance mechanisms

A **single** pre-integrated and verified deliverable

Tightly integrated memory for low latency access

64-bit addressability for real time latency sensitive applications

Mixed-precision arithmetic for efficient compute of ML workloads

Cache lock capability for mission-critical computing

In-cluster coherent heterogenous combination of real-time and application processors

Storage

Coherent in-cluster combination of application processors and real-time processors

Deterministic mode for **FAST DATA** applications with hard real-time constraints

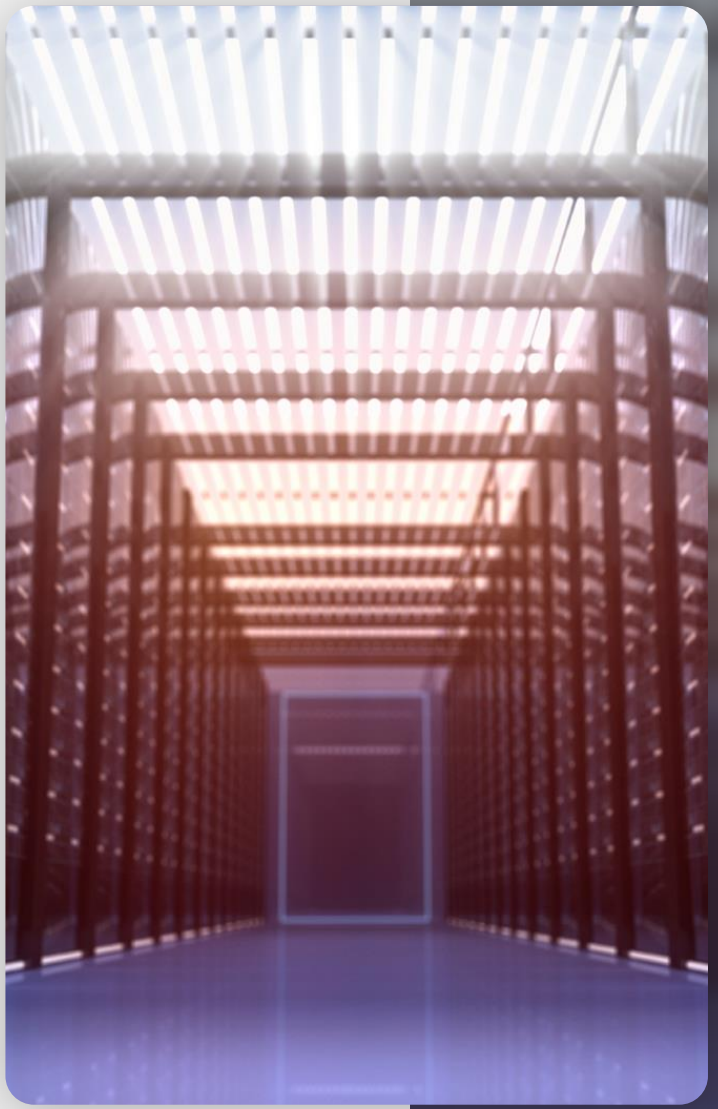
Configurable memory maps and coherent accelerator ports for tightly coupling storage specific accelerators

Tightly integrated memories and Cache lock capability for critical real time workloads

Optional FPU for applications which don’t need floating point capability

Storage, ML, Cryptography specific **custom instructions**

64-bit real-time addressability for **BIG DATA** applications



5G/Networking

Complex arithmetic capability for accelerating baseband functions

In-cluster coherence of application and real-time processor enables 5G latency (<1ms) requirements

High bandwidth accelerator ports for enabling intelligent offload processing

Hard real-time capabilities for scheduling baseband protocol layers

Configurable memory maps for optimizing QoS

High throughput processing for next gen 5G stacks

Tightly Integrated Memories and Cache lock capability for critical real time workloads

AR/VR/Sensor Fusion

Low Latency peripheral access and coherent accelerator port

Combine with SiFive 2, 3 or 5 series for designs with tight power constraints

Coherent in-cluster combination of application processors with real time processors

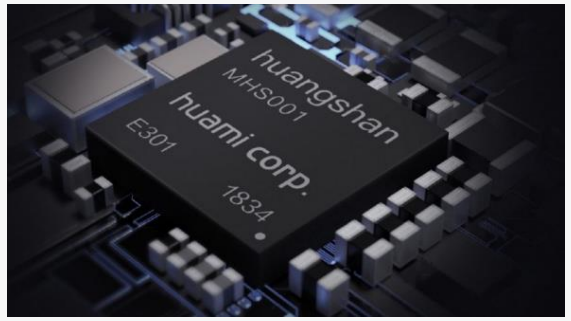
Workload specific customizations (AR/VR/MR/CV)

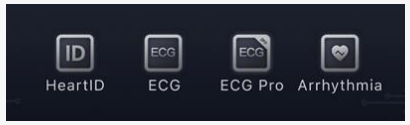
Simple caching hierarchy for ease of application optimization

Mixed precision arithmetic for accelerating machine learning compute

Recently announced products

Wearable AI



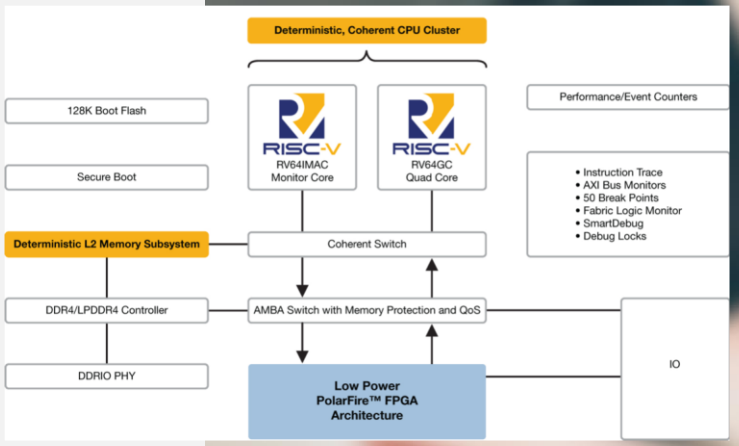


huami

Enterprise

FADU

Edge



Microsemi
a MICROCHIP company

Rapid adoption of SiFive Core IP from the Edge to the Core

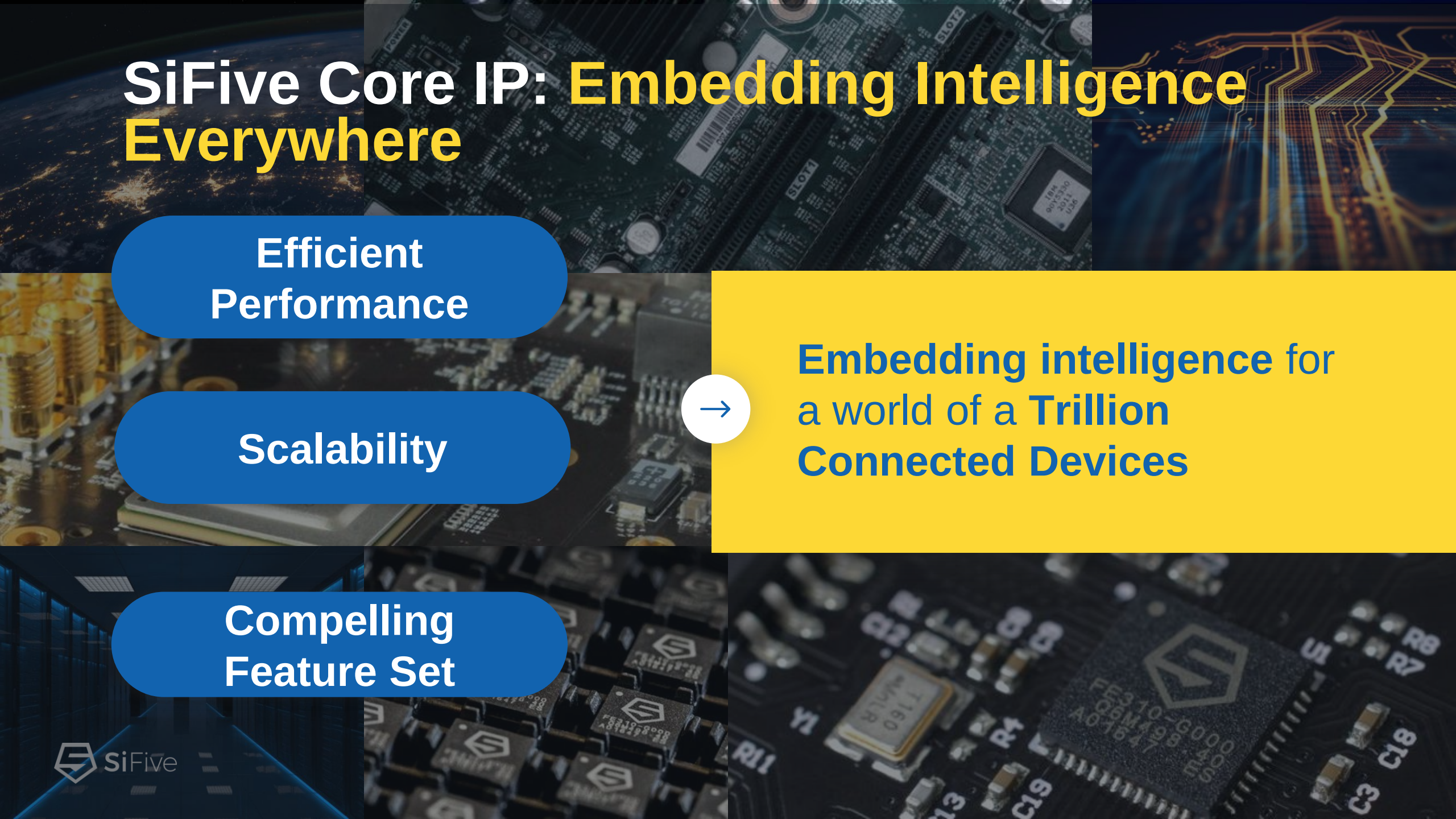
SiFive Core IP: Embedding Intelligence Everywhere

Efficient Performance

Scalability

Compelling Feature Set

Embedding intelligence for a world of a **Trillion Connected Devices**



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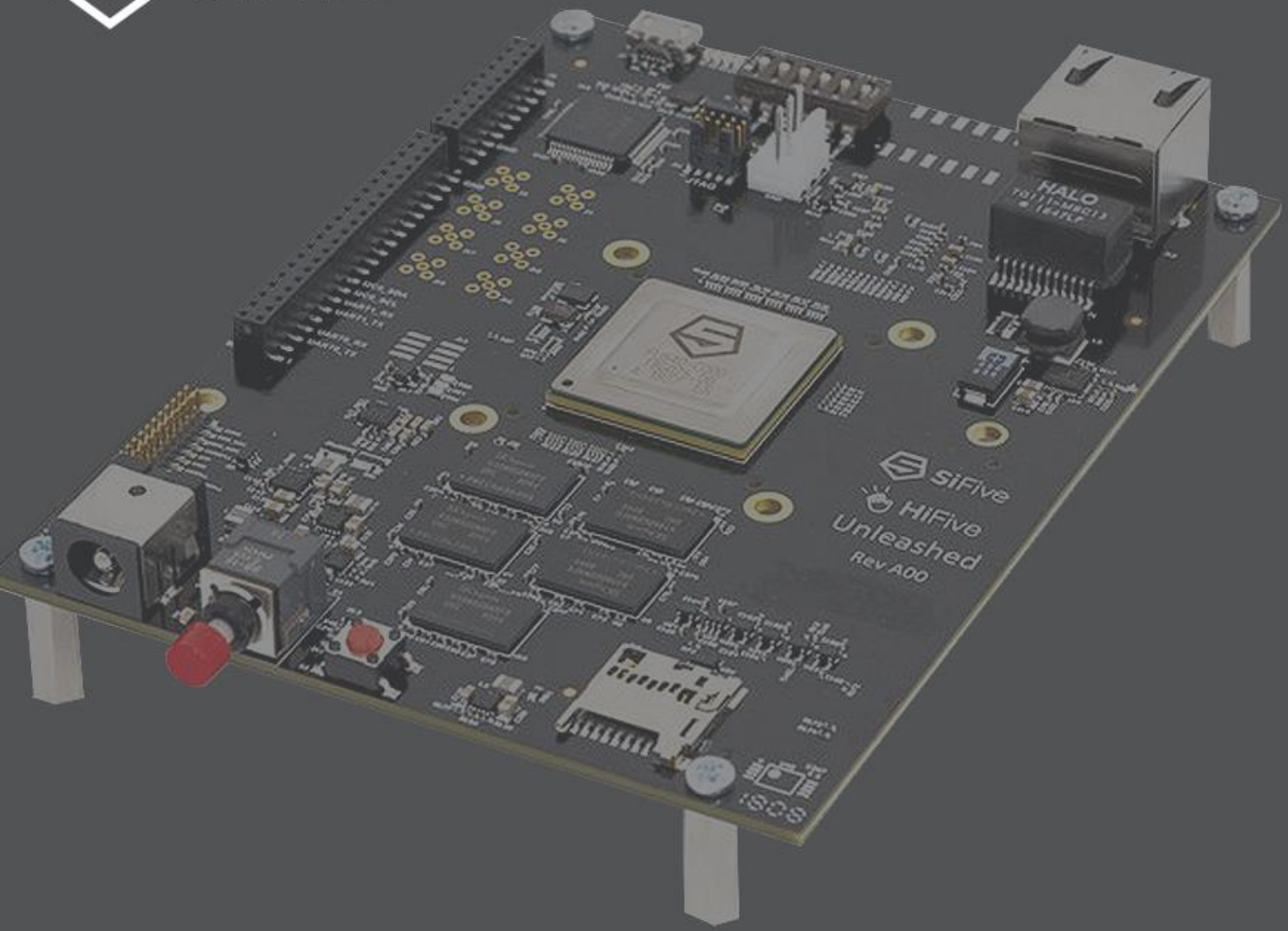

Silicon verified. Market proven.

The most advanced configurable core IP and silicon solutions from the inventors of RISC-V.

Microcontrollers ▪ Embedded ▪ Linux ▪ Multicore

▪ Networking ▪ Storage ▪ Computing ▪ AI
▪ Industrial ▪ IoT ▪ Consumer ▪ Automotive

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