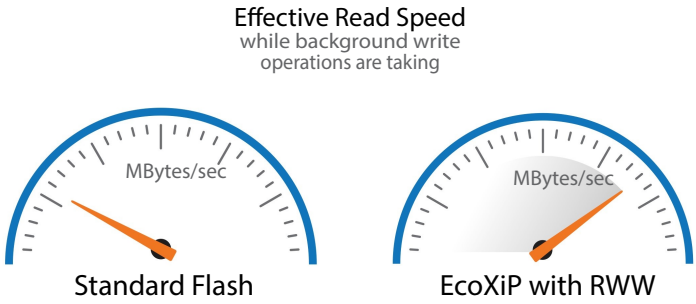
Octal xSPI Memory

High-performance Low-power Octal Flash with Read While Write

EcoXiP ATXP Family

Blazingly fast
Low power

Optimized for Speed
EcoXiP provides a high-speed octal interface and Read While Write (RWW) to enable blazingly fast system performance. Whether performing high-speed data transfer or executing code directly out of memory, EcoXiP is the optimal solution.



Execute in Place
With the need for greater processing performance at lower power, execute in place is quickly becoming the architecture of choice for IoT devices. EcoXiP's high-speed read performance, low latency, and low power consumption allow even time critical software to be executed directly out of non-volatile memory, reducing boot time and system cost.

Power Efficient
Power consumption is a critical consideration in any system, especially in battery powered desgns. Typically this means sacrificing performance. EcoXiP achieves high-speed octal performance at half of the power of other memory solutions; it even consumes 25% less power than a comparable quad memory solution at the same data transfer rate

R W W
Read While Write

The drawback of Flash memory technology is program and erase speeds are much slower than read speeds. RWW prevents slow erase and program times from choking system performance and allows read operations to continue uninterrupted. Without integrated RWW multiple devices are required to achieve the same functionality, increasing system complexity, cost and power.

System Advantages

- Simplified software architecture
- Reduced system cost
- Unobtrusive system updates
- Rapid, on-demand data retrieval
- Execution of time-critical events
- Responsive UIs
- Rapid interrupt processing
- Immediately executable updates

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Technical Specifications

High-speed Octal xSPI interface with DDR	• Up to 300MBytes/sec data rate
Critical word first instruction fetch	• Reduces average latency • Enables 40% higher CPU performance
Optimized for Execute in Place (XiP)	• Supports boot code applications • Instant-on performance
Automatic ultra-deep power-down mode	• 60nA (typical) ATXP064B and ATXP032 • 200nA (typical) ATXP128
Low read current	• Up to 50% power savings versus standard octal
Active Interrupt	• Reduces MCU overhead and saves system power by notifying MCU when a program or erase operation is complete
Read While Write (RWW)	• Removes system bottlenecks • Eliminates the need for multiple Flash devices and reduces system cost • Allows uninterupted read, even during erase and program operations
Security register	• 256Byte OTP

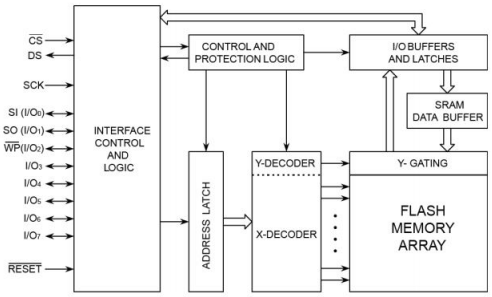
Applications

- AI on the edge
- Access control / Security
- Smart assistants
- Ambient computing
- Network modules
- Wearables
- Medical devices
- Smart thermostats
- Smart appliances
- Industrial IoT
- Audio subsystems
- E-bikes
- Personal mobile radio
- Building / home automation
- Advanced communications
- Augmented reality

EcoXiP Products

Density	Part Number	Speed	Ultra-Deep Power-Down	RWW	Datasheet
128Mbit	ATXP128	150MHz	•		Download
64Mbit	ATXP064B	133MHz	•	•	Download
32Mbit	ATXP032	150MHz	•		Download

EcoXiP Block Diagram



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