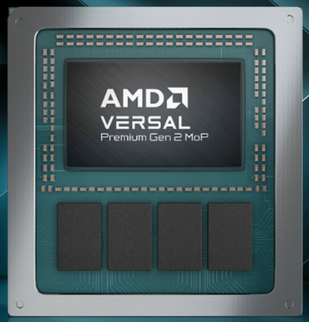
PRODUCT BRIEF

AMD VERSAL™ PREMIUM GEN 2 MEMORY ON PACKAGE

AMD
together we advance_



OVERVIEW

AMD Versal™ Premium Gen 2 Memory on Package (MoP) integrates high-speed LPDDR5X DRAM and a Versal Premium Series Gen 2 adaptive SoC die directly into a single package. The result is higher memory bandwidth, less board complexity, and a compact footprint for data-intensive systems from cloud to edge.

Versal Premium Gen 2 MoP is designed for applications that demand high data throughput within strict power, space, and lifecycle constraints. Versal Premium Gen 2 MoP simplifies system integration, accelerates development timelines, and enables deployment in compact form factors, compared to using an FPGA or adaptive SoC in conjunction with external memory.

HIGHLIGHTS

SHRINK THE FOOTPRINT. SCALE THE BANDWIDTH

- Integrates up to 32 GB of LPDDR5X on-package to increase memory bandwidth without adding external DRAM
- Delivers up to 288 GB/s of bandwidth* to keep AI inference, video processing, and network security workloads moving
- Reduces board area by over 60% versus discrete LPDDR5X designs,[1] helping compact systems fit tighter space and thermal envelopes
- Enables smaller PCIe®, PXI, and VPX deployments by moving memory onto the package

ACCELERATE TIME TO MARKET

- Removes the external memory subsystem, reducing routing, validation, and integration effort
- Cuts signal integrity and power integrity risk, helping reduce board respins
- Preserves existing AMD Vivado™ and Vitis™ workflows, so teams can adopt MoP devices without relearning the design flow
- Shortens development cycles by moving a high-risk part of the board design into a pre-validated package

BUILD LONG-LIFE, SECURE SYSTEMS

- Supports 15+ year lifecycle[2] planning with JEDEC standard for LPDDR5X memory
- Extends deployment options with industrial temperature support from -40°C to 110°C
- Protects data in flight and data at rest with PCIe IDE and DDR encryption
- Delivers secure processing with 400G High-Speed Crypto Engines for demanding cloud, network, and edge systems

* Data is preliminary and subject to change.

KEY BENEFITS

NETWORKING & SECURITY

- Network security appliances
- Packet processing and data movement
- Inline acceleration

VIDEO & BROADCAST

- Professional cameras
- High-resolution video processing
- Professional imaging and broadcast workflows

CLOUD/DATA CENTER

- Memory-intensive acceleration
- Custom data center interconnect
- Low-latency compute

TEST & MEASUREMENT

- Modular test equipment
- Protocol testers
- Memory & wireless testers

AEROSAPCE & DEFENSE

- Secure communications
- LEO satellites
- Radar & E/W

FEATURES

FEATURE	HIGHLIGHTS
MEMORY ON PACKAGE	• 32 GB of LPDDR5X DRAM operating at up to 9000 Mb/s* • Eight 32b hard memory controllers • Hard inline ECC and encryption for data integrity and security
GTM2 TRANSCEIVERS	• Low-latency monolithic transceiver architecture • Supports PAM4 and NRZ encoding • 1.25-128 Gb/s data rate per channel*
PROGRAMMABLE LOGIC	• High-bandwidth, low-latency compute and data movement • Programmable memory hierarchy for optimal compute efficiency
PCIe GEN 6	• Up to 2 Tb/s aggregate bandwidth across 16 lanes (two x8 links) operating at 64 Gb/s per lane • Enhanced security features, with Integrity and Data Encryption (IDE) support in hard IP
CXL® 3.1	• Up to total 2 Tb/s bandwidth on CXL link (2 ports x 8 lanes) • Supports memory pooling, memory tiering, and Type-1, Type-2, and Type-3 endpoint device mode • Supports CXL host mode, enabling more memory capacity via CXL attached memory
INTEGRATED 600G ETHERNET AND 100G MULTIRATE ETHERNET CORES	• Up to 3.1 Tb/s of scalable Ethernet throughput • Multirate: 400/200/100/50/40/25/10G • Multi-standard: FlexE, Flex-O, eCPRI, FCoE, and OTN
400G HIGH-SPEED CRYPTO ENGINES	• AES-GCM-256/128 engines • Up to 800 Gb/s of line rate encryption throughput • 400G of MACsec, IPsec, and bulk encryption per engine
DSP ENGINES	• DSP-rich architecture with up to 7,616 DSP58 Engines • Wide range of modes supporting fixed- and floating-point data types suitable for DSP and ML applications
PROCESSING SYSTEM	• Complex algorithm processing and decision-making tasks • Dual-core Arm® Cortex®-A72 application processing unit • Dual-core Arm Cortex-R5F real-time processing unit
PLATFORM MANAGEMENT CONTROLLER	• Boot, configuration, and advanced power & thermal management • Security, safety, and reliability enclave • Integrated platform interfaces and high-speed debug

* Data is preliminary and subject to change.

NEXT STEPS

For more information on Versal Premium Gen 2 Memory on Package adaptive SoCs, visit **www.amd.com/memory-on-package**

For more information on Versal Premium Series Gen 2 devices, visit **www.amd.com/versal-premium-gen2**

ENDNOTES

1. Based on AMD internal measurements taken in April 2026, of the board area of Versal Premium Series Gen 2 MoP 2VP3622 adaptive SoC, compared to the board area of a Versal Premium Series Gen 2 monolithic adaptive SoC with external memory. (VER-111)
2. Product lifecycle targets are based on AMD product program objectives and lifecycle management practices and may extend beyond the availability of individual third-party components. Component availability, including memory, is subject to supplier roadmaps and may vary. AMD may offer supply assurance options or other lifecycle management solutions to support long-term availability; contact AMD sales for details. (GD-254)

DISCLAIMERS

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