

PRODUCT BRIEF

AMD VERSAL™ AI EDGE SERIES GEN 2 VEK385 EVALUATION KIT



OVERVIEW

The AMD Versal™ AI Edge Series Gen 2 VEK385 Evaluation Kit is a powerful, flexible platform for rapid bring-up and evaluation of Versal AI Edge Series Gen 2 adaptive SoCs. Built around the 2VE3858 device, the kit exposes the full heterogeneous architecture, enhanced processing system offering up to 10X more scalar compute than first-generation Versal devices,¹ next-generation AI Engines, DSP Engines, and high-performance programmable logic, alongside a comprehensive set of integrated peripherals. With high-bandwidth LPDDR5X memory and rich vision, networking, and industrial interfaces, the kit enables fast prototyping of end-to-end embedded pipelines from sensor preprocessing to AI inference and real-time control.

This kit comes with a breadth of connectivity options, software tools, and example designs to accelerate development of applications from sensor to AI to real-time control across multiple markets.

HIGHLIGHTS

VERSAL AI EDGE SERIES GEN 2 2VE3858 DEVICE CAPABILITIES

- AI Engines optimized for ML inference (AIE-MLs v2)
- Arm® Cortex®-A78AE (x8)
- Arm Cortex-R52 (x10)
- 100G multirate Ethernet MACs
- Video codec unit (VCU)
- Image signal processors
- DSP Engines
- GTYP transceivers

BREADTH OF BOARD-LEVEL CONNECTIVITY OPTIONS

- FPGA mezzanine card (FMC+) connector with 68 user-defined signals and 8 GTYPs
- QSFP28 and SFP28 connectors for high-speed data communication
- 20 GB (5x 4 GB, 32-bit) 160-bit LPDDR5X component memory
- PCIe® edge connector supporting Gen5 x4, Gen 3/4 x8
- DisplayPort™ 1.4 support
- HDMI™ 2.1 input and output
- MicroSD card interface

DEVELOPMENT TOOLS AND ENHANCED DEBUG METHODOLOGY

- AMD Vivado™ Design Suite and Vitis™ unified software platform
- Out-of-the-box support for key open-source vision models with Vitis AI tools
- System controller with the Board Evaluation and Management tool (BEAM)
- Example designs and tutorials to get started quickly

KEY APPLICATIONS

AUTOMOTIVE

- ADAS
- Autonomous Driving

INDUSTRIAL AND SMART CITY

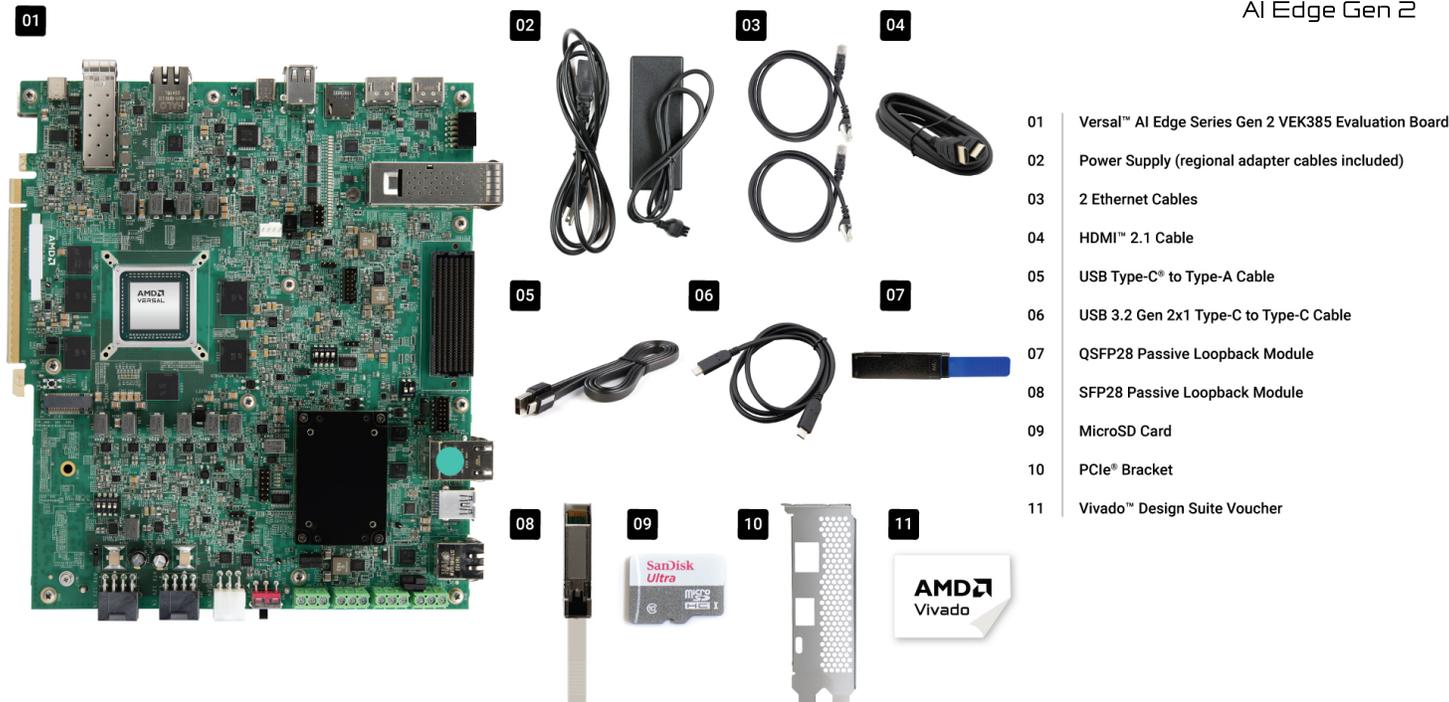
- Autonomous Mobile Robots
- Industrial PCs
- Edge AI Box

AEROSPACE AND DEFENSE

- Avionics, UAS, UAM
- Mission Computing
- Detection and Tracking

HEALTHCARE

- Ultrasound
- Endoscopy
- 3D Imaging



- 01 Versal™ AI Edge Series Gen 2 VEK385 Evaluation Board
- 02 Power Supply (regional adapter cables included)
- 03 2 Ethernet Cables
- 04 HDMI™ 2.1 Cable
- 05 USB Type-C® to Type-A Cable
- 06 USB 3.2 Gen 2x1 Type-C to Type-C Cable
- 07 QSFP28 Passive Loopback Module
- 08 SFP28 Passive Loopback Module
- 09 MicroSD Card
- 10 PCIe® Bracket
- 11 Vivado™ Design Suite Voucher

NEXT STEPS

- For more information on the AMD Versal AI Edge Series Gen 2 VEK385 Evaluation Kit, visit www.amd.com/vek385.
- For more information on AMD Versal AI Edge Series Gen 2 adaptive SoCs, visit www.amd.com/versal-ai-edge-gen2.

ENDNOTES

1. Based on AMD testing in August 2025, using the Drystone Benchmarking code benchmark test on the AMD Versal AI Edge Series Gen 2, 8 Arm Cortex-A78AE processor with application cores @2.2 GHz and 10 Arm Cortex-R52 processor with real-time cores @1.05 GHz compared to the published combined total DMIPs / scalar compute specification of first generation AMD Versal AI Edge Series and Versal Prime Series devices. Testing for second generation devices performed at the highest available speed grade(s), 0.88V PS operating voltage, split-mode operation, and the maximum supported operating frequency. Processor manufacturers may vary configurations, yielding different results. Results may vary based a variety of factors, including by device, device configuration, and operating conditions. (VER-104)

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