VERSAL™ HBM SERIES VHK158 EVALUATION KIT

OVERVIEW

The VHK158 Evaluation Kit features the Versal™ HBM series VH1582 device, which integrates multi-Tbps High Bandwidth Memory (HBM), hardened connectivity IP, and adaptive compute in a single device, eliminating the bottlenecks between memory, I/O, and compute while delivering up to 6 times more memory bandwidth at 65 percent lower power per bit[1] and a fraction of the footprint[2] versus discrete memory solutions such as LPDDR4.

The kit comes with a breadth of connectivity options, development tools, and example designs to accelerate development of demanding compute and networking systems across multiple markets.

HIGHLIGHTS

Versal HBM Device Capabilities
- 32 GB High Bandwidth Memory
- 112G PAM4 transceivers
- 100G and 600G Ethernet cores
- 600G Interlaken cores with FEC
- 400G High-Speed Crypto Engines

Breadth of Board-Level Connectivity Options
- QSFP (4) and QSFP-DD (2) connectors for high-speed data communication
- FPGA Mezzanine Card (FMC+) connector with 68 user-defined signals and 8 GTYPs
- 32 GB (2x 16 GB), 72-bit DDR4 DIMM @ 3200 Mbps
- PCIe® edge connector supporting dual Gen5x8
- MicroSD card interface

Development Tools and Enhanced Debug Methodology
- Co-optimized with Vivado™ ML design suite and the Vitis™ unified software platform
- System Controller with the Board Evaluation and Management tool (BEAM)
- Example designs and tutorials to get started quickly

TARGET APPLICATIONS

DATA CENTER
- Machine Learning Acceleration
- Compute Pre-Processing and Buffering
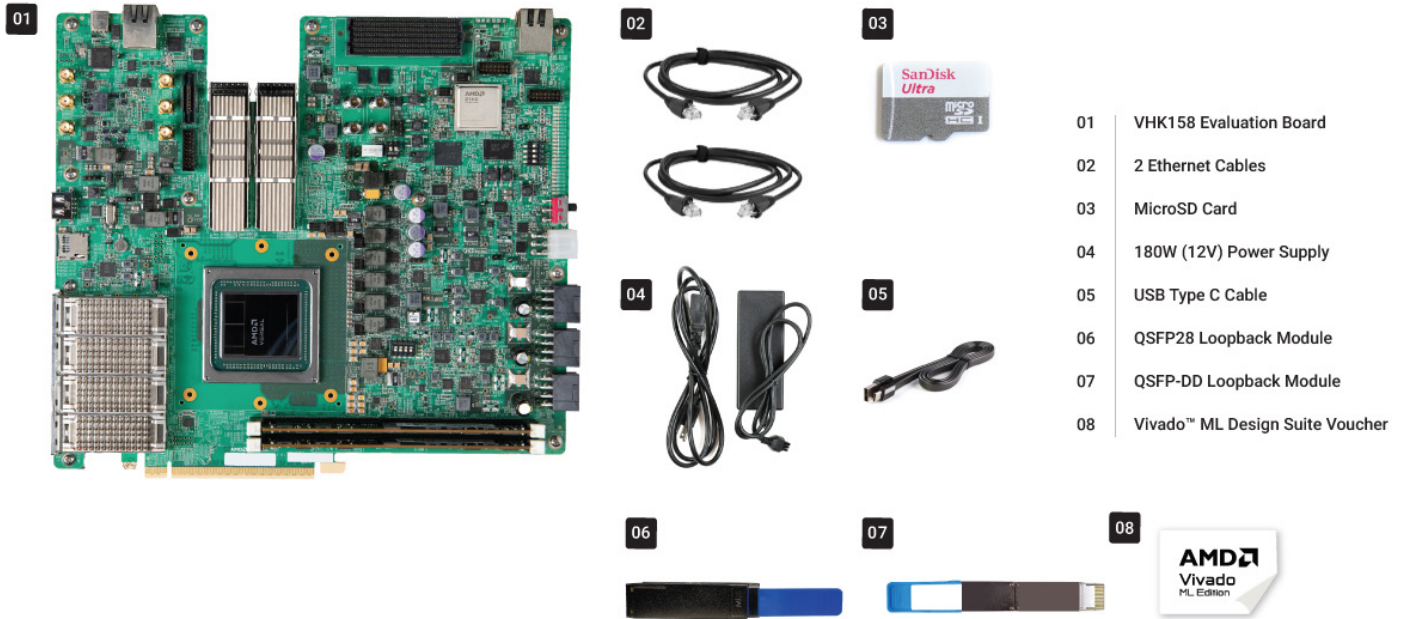- Database Acceleration and Analytics

WIRED NETWORKING
- Network Security Acceleration
- Search and Look-up System
- 800G Switch / Router

TEST AND MEASUREMENT
- Network Testers
- Packet Capturing System
- Data Capturing System

AEROSPACE AND DEFENSE
- Radar
- Data and Signal Processing System
- Secure Communication Equipment

01	VHK158 Evaluation Board
02	2 Ethernet Cables
03	MicroSD Card
04	180W (12V) Power Supply
05	USB Type C Cable
06	QSFP28 Loopback Module
07	QSFP-DD Loopback Module
08	Vivado™ ML Design Suite Voucher

NEXT STEPS

• For more information, documents, and reference designs, or to purchase, visit www.amd.com/vhk158.

[1]Based on AMD internal analysis in May 2023, comparing a system implementation of a single Versal HBM VH1542 device with in-package HBM2E to a Versal Premium VP1502 device implementation with four LPDDR4-4266 components. Assuming sequential memory accesses with 40% read/write transactions. Power calculation generated using AMD Power Design Manager and a third-party system power calculator. Configurations may vary, yielding different results. (VER-013)

[2]Based on AMD internal analysis in May 2023, comparing a hypothetical implementation of a Versal Premium VP1502 device and twenty-four LPDDR4-4266 components to a single Versal HBM VH1542/VH1582 device. Configurations may vary, yielding different results. (VER-014)

DISCLAIMERS

COPYRIGHT NOTICE