



# Versal<sup>™</sup> HBM Adaptive SoC Card

32GB HBM2e, High-Speed I/O, and PCIe Gen5

Brought to market in partnership with LDA Technologies, the AV-860h is a PCIe Gen5 accelerator card designed to deliver extreme performance for data center and edge compute workloads. Featuring AMD Xilinx<sup>®</sup>'s Versal Premium Adaptive SoC with 32GB of HBM2e memory, the AV-860h is a deployment-ready full height, ¾ length PCIe accelerator compatible with high-performance servers. The card features LPDDR4 memory, PCIe Gen5 x8, and a sophisticated Board Management Controller (BMC) for advanced system monitoring and control. Use the card as an accelerator, or connect it to I/O via a custom server or add-on card.



Integrated into custom server with front-port expansion breakouts





## **Additional Services**

Take advantage of BittWare's range of design, integration, and support options



Customization Additional specification options or accessory boards to meet your exact needs.



Server Integration Available pre-integrated in our <u>TeraBox servers</u> in a range of configurations.



IP and Solutions Our portfolio of IP and solutions reduce risk for development and deployment.



Service and Support BittWare Developer Site provides online documentation and issue tracking.

### **Board Specifications**

Adaptive SoC	Versal HBM     XCVH1582     Core speed grade - 2     32 GB HBM2e
On-board Flash	Flash memory for booting FPGA
External memory	64GB LPDDR4
Host interface	PCle 4.0 x16 or 2x PCle 5.0 x8 (in bifurcation mode) inter- face direct to FPGA, connected to PCle Hard IP
I/O Expansion	<ul> <li>8x ARC6-16 connectors connected to FPGA via 64x SerDes channels         <ul> <li>48x GTYP</li> <li>16x GTM</li> </ul> </li> <li>ARC6-8 connector connected to FPGA via 4x SerDes channels</li> <li>MCIO for PCIe Gen5 x8</li> </ul>
Clocking	<ul> <li>2x Jitter cleaners for network recovered clocking</li> <li>2x 1PPS (in-board)</li> </ul>
USB	<ul> <li>USB access to BMC, USB-JTAG, USB-UART</li> <li>USB C on front panel, USB in and out on back panel</li> </ul>

Board Management Controller	<ul> <li>Onboard CLI</li> <li>Python, C++ API (contact BittWare</li> <li>200 Mbps parallel port connected to the FPGA fabric and the NOC</li> <li>USB SD Card Reader for simple OS images transfer to ARM processors</li> <li>Fast FPGA Boot Flash programming</li> <li>Temperature, voltage, current monitoring</li> <li>SNMP agent for centralized management</li> <li>Dedicated preprogrammed array of 32 MAC addresses</li> <li>I/O port monitoring full QSFP, SFP, QSFP-DD access and programming through CLI and API</li> <li>CLI-based clock selection supporting custom clock configurations</li> </ul>
Cooling	Standard: dual-width passive heatsink
Electrical	<ul> <li>On-board power derived from 12V PCIe slot and 2x AUX connectors</li> <li>Power dissipation is application dependent</li> </ul>
Environmental	Operating temperature 5°C to 35°C
Form factor	<ul> <li>¾-length, standard-height PCle dual-width board</li> <li>10 x 4.37 inches (254 x 111.15 mm)</li> </ul>

#### **Development Tools**

Application development	Supported design flows -Vivado Design Suite (HDL, Verilog, VHDL, etc.)

#### Safety & Compliance

- FCC (USA) 47CFR15.107 / 47CFR15.109
- CE (Europe) EN55032:2015 + A11:2020 / EN55035:2017 + A11:2020 / EN61000-3-2:2019 +
- UKCA (United Kingdom) BS EN55032:2015 + A11:2020 / BS EN55035:2017 + A11:2020 / BS
- ICES (Canada) ICES-003 Issue 7 October 2020
- RoHS compliant to the 2011/65/EU + 2015/863 directive

Connect I/O such as QSFP-DD to the I/O expansion ports

#### To learn more, visit www.BittWare.com

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I/O Add-on Cards

The ARC6-16 ports are designed for connecting high-speed I/O to the AV-860h. Contact BittWare to learn about available add-ons or to discuss a custom design.