Bittiviare a molex company





Agilex[™] FPGA card featuring 400G and Gen5 PCle M-series FPGA with HBM2e supporting 1TBps total memory bandwidth

BittWare's IA-860m is an Altera Agilex[™] M-series FPGA card optimized for throughputand memory-intensive applications. The M-series FPGA features an extensive memory hierarchy including integrated high-bandwidth memory (HBM2e) and a hard memory Network-on-Chip (NoC) to maximize memory bandwidth. The IA-860m card provides a balance of I/O and memory leveraging the Agilex chip's unique tiling architecture with QSFP-DDs, PCIe Gen5 x16 with CXL support, and MCIO expansion port for a variety of applications. An M.2 SSD slot accommodates additional storage.



The IA-860m has support for Intel oneAPI[™], which enables an abstracted development flow for dramatically simplified code re-use across multiple architectures.



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.

Board Specifications

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FPGA

C Areas same	
on	Server Integration
n options	Available pre-integrated
to meet	in our <u>TeraBox servers</u> in a
Is.	range of configurations.
tions	
Altera Agilex 7 M	1-Series: AGM039 (default)
Package: R4	7A
32GB HBM2	e
Core speed	grade -2; XCVR speed grade -1
CXL with XC	VR speed grade -1 (CXL IP is license



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 Management Controller	 Power sequencing and reset Voltage, current, temperature monitoring Protection shut-down Clock configuration Low bandwidth BMC-FPGA comms with SPI link USB 2.0 PLDM support Card-level security BMC Root of Trust BMC and FPGA secure boot BMC and FPGA secure upgrade Key management RTC with battery backup
Cooling	Standard: dual-width passive heatsinkOptional: dual-width liquid cooling
Electrical	 On-board power derived from PCle slot 12V and 12-pin AUX power connector Power dissipation is application dependent Typical max power consumption TBD
Environmental	• Operating temperature: 5°C to 35°C (passive heatsink)
Quality	 Manufactured to IPC-A-610 Class 2 RoHS compliant CE, FCC, UKCA & ICES approvals
Form factor	 Standard-height, full-length, dual-slot PCle card 111.15mm x 312.00mm (4.376in x 12.283in)

Development Tools

System development	BittWare SDK including PCIe driver, libraries, and board monitoring utilities
Application development	Supported design flows - Altera FPGA oneAPI Base Toolkit, Altera High-Level Synthesis (C/C++) and Quartus Prime Pro (HDL, Verilog, VHDL, etc.)





		 Core speed grade -2; XCVR speed grade -1 CXL with XCVR speed grade -1 (CXL IP is licensed and purchased separately) FPGA includes ARM HPS
	ARM HPS	 Dedicated 40-bit DDR4 Dedicated Flash memory for booting ARM Optional 1GbE interface (contact BittWare)
	On-board Flash	2Gbit Flash memory for booting FPGA
	Host interface	 x16 PCle Gen5 interface direct to FPGA CXL support (CXL IP is licensed and purchased separately)
	M.2 SSD Slot	Slot for NVMe PCIe M.2 2230 SSD
	QSFP-DD cages	 3x QSFP-DD cages on front panel connected directly to FPGA via 24 transceivers User programmable low jitter clocking supporting 10/25/40/100/200/400GbE Each QSFP-DD can be independently clocked Jitter cleaner for network recovered clocking Multi-rate hard MAC+FEC Fully backward compatible with QSFP28s
	MCIO	• x8 connector supporting 2x Gen4 x4 root complexes
	GPIO	• 4x GPIO
	External clocking	 1 PPS and 10MHz ref clk front panel inputs (optional)
	USB	USB access to BMC, USB-JTAG, USB-UART

Accessory Cables

Access to USB and JTAG requires accessory cables. Cables are sold separately.

USB In cable	Pico-lock to USB A cable BittWare part number: RS-PL05-UAP-83 Designed for deployment in servers
USB Out cable	Pico-lock to Pico-lock BittWare part number: RS-PL05-PL05-24
JTAG-only cable	Pico-lock to JTAG cable BittWare part number: RS-PL06-JTB-13 Recommended for development

To learn more, visit www.BittWare.com

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