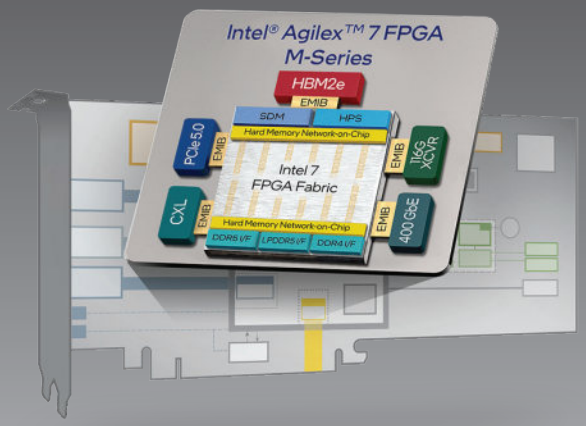
BittWare a molex company

IA-860m
PCIe FPGA Board



Agilex™ FPGA card featuring 400G and Gen5 PCIe

M-series FPGA with HBM2e supporting 1TBps total memory bandwidth

BittWare's IA-860m is an Intel® Agilex™ M-series FPGA card optimized for throughput- and 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.

CXL Compute Express Link™

oneAPI

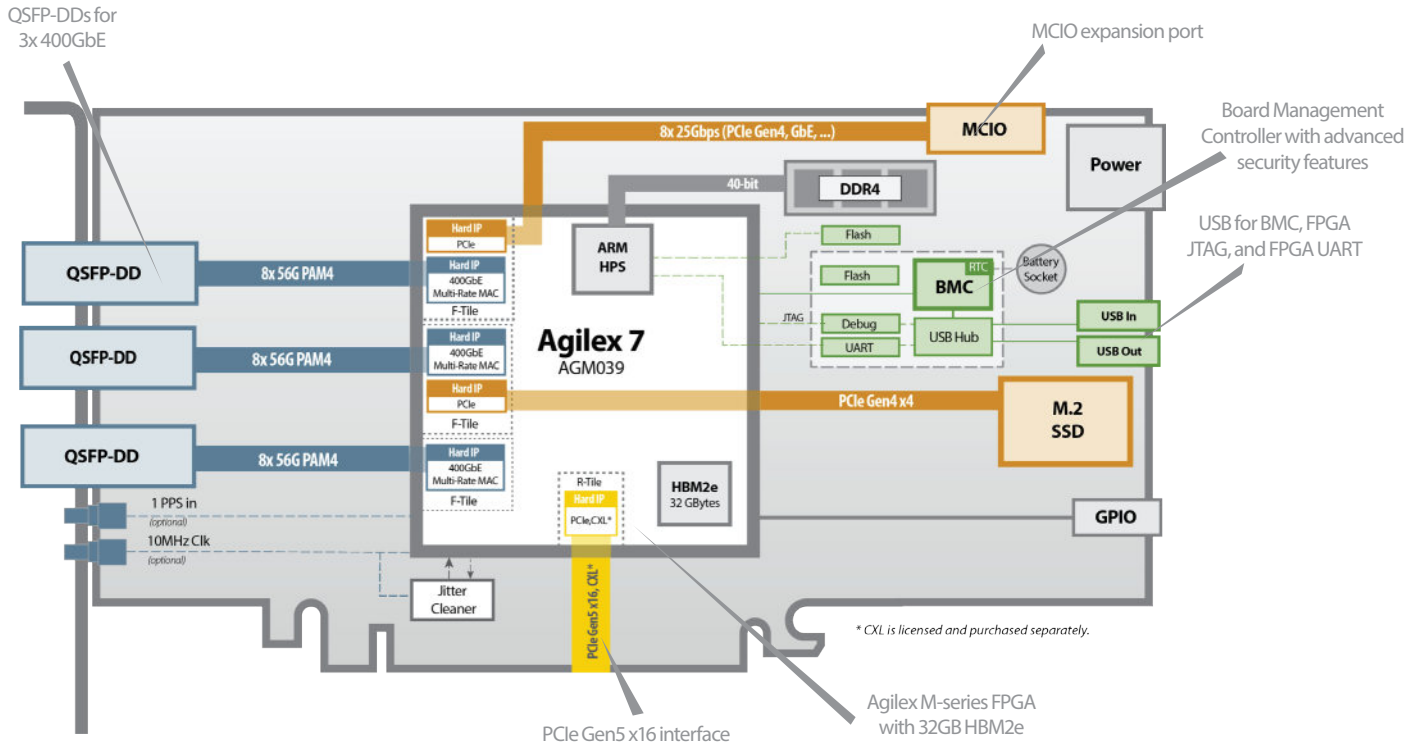
intel. AGILEX 7

key features

3x 400G, 12x 100G, or 24x 10/25/50G

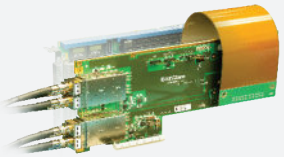
PCIe Gen5 with support for **CXL**

32 GB HBM2e Memory



Additional Services

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

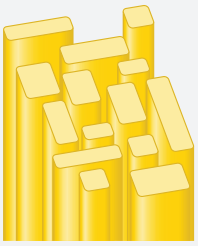


Customization

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

Server Integration

Available pre-integrated in our TeraBox servers 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

FPGA	• Intel Agilex 7 M-Series: AGM039 (default)
	  • Package: R47A
	  • 32GB HBM2e
	  • 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 PCIe 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 10/25/40/100/400GbE • 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

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 heatsink • Optional: dual-width liquid cooling
Electrical	• On-board power derived from PCIe 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 PCIe 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 - Intel FPGA oneAPI Base Toolkit, Intel High-Level Synthesis (C/C++) and Quartus Prime Pro (HDL, Verilog, VHDL, etc.)

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BittWare a molex company

intel AGILEX 7

intel partner Titanium

International Distributors

sky blue microsystems

Sky Blue Microsystems GmbH
Geisenhausenerstr. 18
81379 Munich, Germany
+49 89 780 2970, info@skyblue.de
www.skyblue.de

ZERIF TECHNOLOGIES LTD.
A SKY BLUE COMPANY, FOUNDED 1999

In Great Britain:
Zerif Technologies Ltd.
Winnington House, 2 Woodberry Grove
Finchley, London N12 0DR
+44 115 855 7883, info@zerif.co.uk
www.zerif.co.uk