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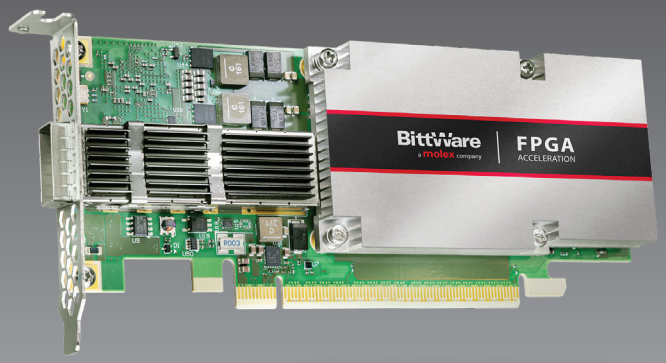
IA-420f
PCIe FPGA Card



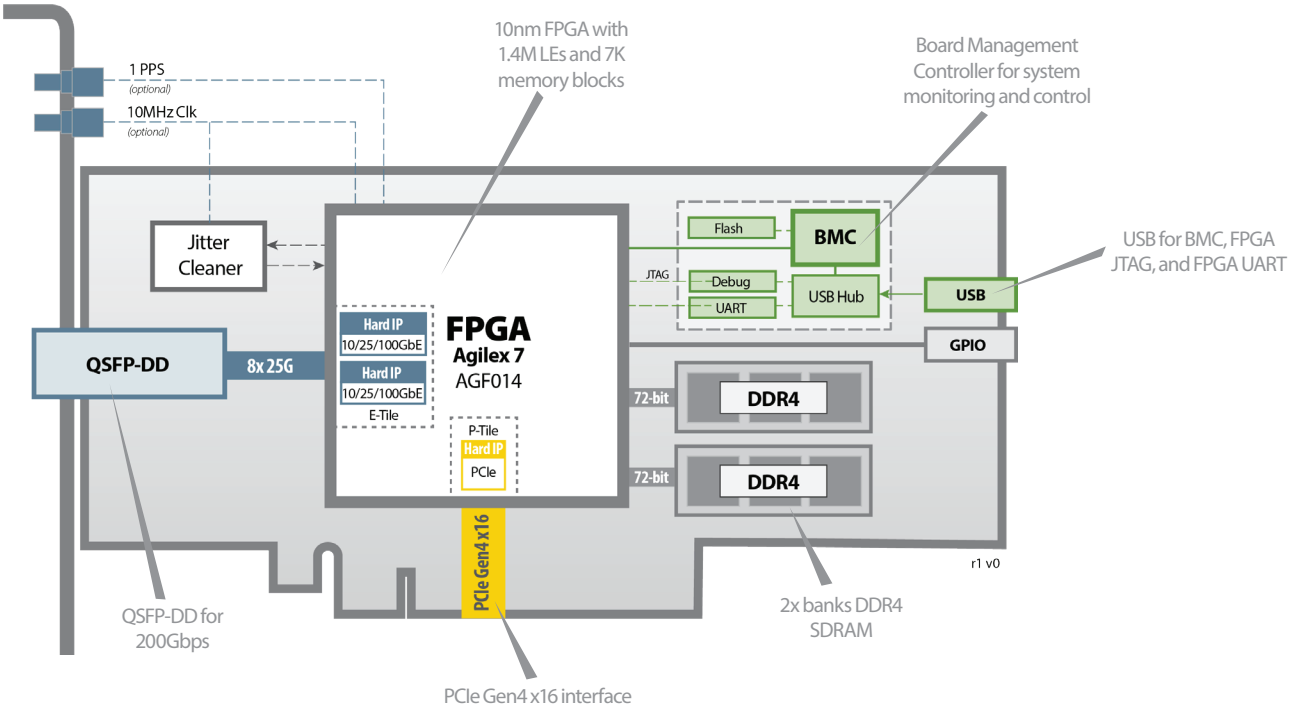
Agilex™ FPGA card with PCIe Gen4 x16
200Gbps with up to 16GBytes DDR4 SDRAM

intel. AGILEX 7

BittWare's IA-420f is an Altera Agilex™-based FPGA card designed to deliver next generation performance for data center, networking and edge compute workloads. The NIC-sized card provides a balance of I/O and memory using the Agilex chip's unique tiling architecture with a QSFP-DD (1× 200G), DDR4 SDRAM, PCIe Gen4 x16, and a GPIO port for diverse applications.

key features

- **QSFP-DD** for 200G
- **PCIe Gen4** x16
- Altera Agilex™ FPGA with up to **1.4M Logic Elements**

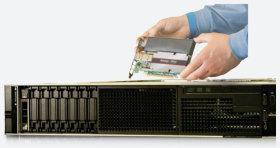


Additional Services

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

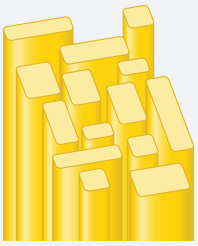
Customization

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



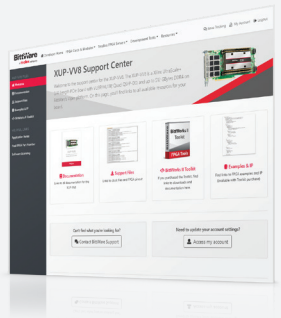
Server Integration

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	• Altera Agilex 7 F-Series: AGF014 • Core speed grade -2: I/O speed grade -2 • Contact BittWare for other Agilex FPGA options
On-board Flash	• 2Gbit Flash memory for booting FPGA
External memory	• 2x banks on-board DDR4, 8GB per bank, 16GB total
Host interface	• x16 Gen4 interface direct to FPGA, connected to PCIe hard IP
QSFP-DD cages	• QSFP-DD cage on front panel connected directly to FPGA via 8 transceivers • User programmable low jitter clocking supporting 10/25/40/100GbE • Jitter cleaner for network recovered clocking
GPIO	• 4x GPIO expansion connector
External clocking	• 1 PPS and 10MHz ref clk front panel inputs (optional)
USB	• USB access to BMC, USB-JTAG, USB-UART
Board Management Controller	• Voltage, current, temperature monitoring • Power sequencing and reset • Field upgrades • FPGA configuration and control • Clock configuration • Low bandwidth BMC-FPGA comms with SPI link • USB 2.0 • PLDM support • Voltage overrides
Cooling	• Standard: single-slot passive heatsink
Electrical	• On-board power derived from PCIe slot • Power dissipation is application dependent • Max power consumption 75W
Environmental	• Operating temperature: 5°C to 35°C
Quality	• Manufactured to IPC-A-610 Class 2 • RoHS compliant • CE, FCC, UKCA & ICES approvals
Form factor	• Low profile (half-height, half-length) PCIe slot card • Size: 68.90mm x 167.65mm (2.713in x 6.600in)

Sales Part Numbers

IA-420F-0001	Low-profile FPGA card: Agilex F-Series, 200G, PCIe Gen4 x16
IA-420F-0002	FHHL FPGA card: Agilex F-Series, 200G, PCIe Gen4 x16
IA-420F-0005	FHHL FPGA card: Agilex F-Series, 200G, PCIe Gen4 x16, front panel timing connectors

Looking for a different configuration? Ask us about other configuration options.

Development Tools

System development	BittWare SDK including PCIe driver, libraries, and board monitoring utilities
Application development	Supported design flows - Quartus Prime Pro (HDL, Verilog, VHDL, etc.). Contact BittWare for OneAPI support.

Safety & Compliance

- FCC (USA) 47CFR15.107 / 47CFR15.109
- CE (Europe) EN55032:2015 + A11:2020 / EN55035:2017 + A1:2021 / EN61000-3-2:2019 +A1:2021 / EN610003-3:2013 + A1:2019
- UKCA (United Kingdom) BS EN55032:2015 + A11:2020 / BS EN55035:2017 + A1:2021 / BS EN61000-3-2:2019 + A1:2021 / BS EN610003-3:2013 + A1:2019
- ICES (Canada) ICES-003 Issue 7
- CE (Europe) EN IEC 62368-1:2020 + A11:2020
- UKCA (United Kingdom) BS EN IEC 62368-1:2020 + A11:2020
- CB Scheme Certificate No. DK-139414-UL
- RoHS compliant to the 2011/65/EU + 2015/863 directive

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

r1 v1 | last revised 2025.05.28

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