



# Agilex™ FPGA card with PCIe Gen4 x16

200Gbps with up to 16GBytes DDR4 SDRAM

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 (1x 200G), DDR4 SDRAM, PCIe Gen4 x16, and a GPIO port for diverse applications.

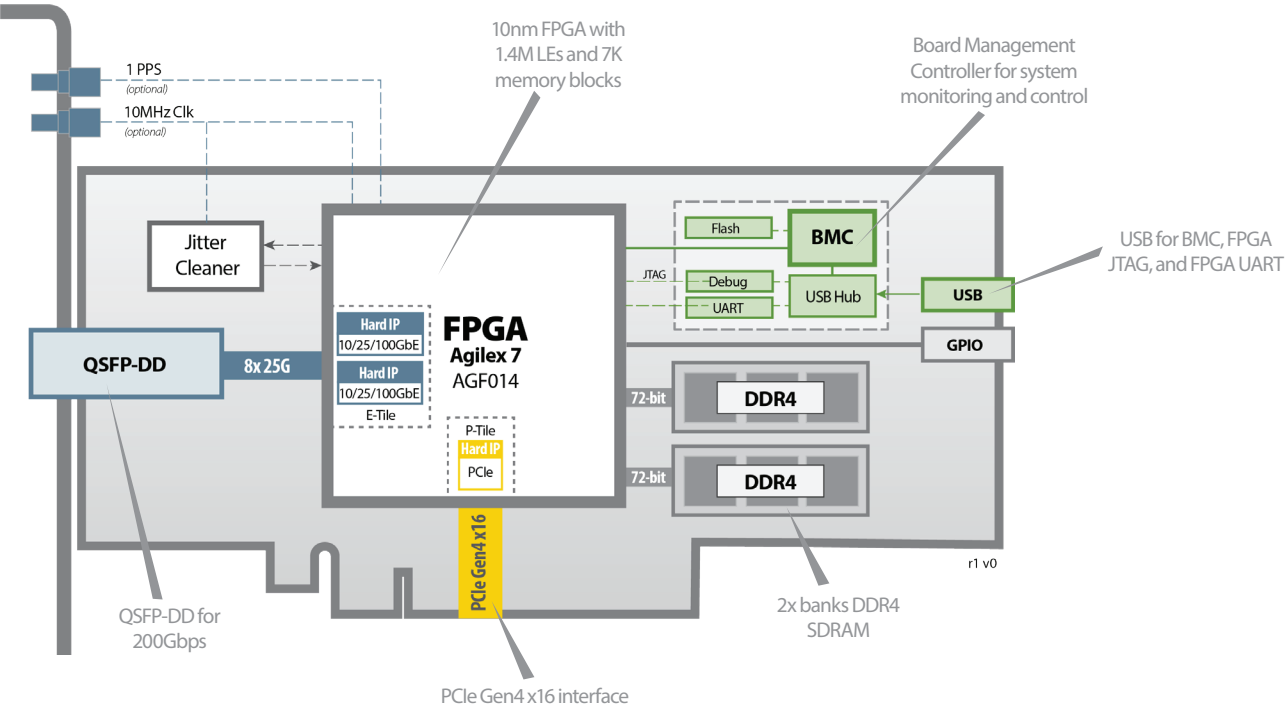


## key features

**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.



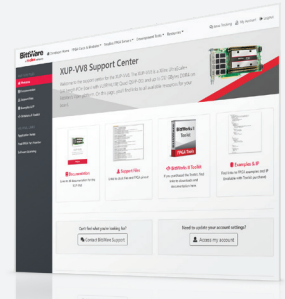
## Server Integration

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	<ul style="list-style-type: none"> <li>Altera Agilex 7 F-Series: AGF014</li> <li>Core speed grade -2: I/O speed grade -2</li> <li>Contact BittWare for other Agilex FPGA options</li> </ul>
On-board Flash	<ul style="list-style-type: none"> <li>2Gbit Flash memory for booting FPGA</li> </ul>
External memory	<ul style="list-style-type: none"> <li>2x banks on-board DDR4, 8GB per bank, 16GB total</li> </ul>
Host interface	<ul style="list-style-type: none"> <li>x16 Gen4 interface direct to FPGA, connected to PCIe hard IP</li> </ul>
QSFP-DD cages	<ul style="list-style-type: none"> <li>QSFP-DD cage on front panel connected directly to FPGA via 8 transceivers</li> <li>User programmable low jitter clocking supporting 10/25/40/100GbE</li> <li>Jitter cleaner for network recovered clocking</li> </ul>
GPIO	<ul style="list-style-type: none"> <li>4x GPIO expansion connector</li> </ul>
External clocking	<ul style="list-style-type: none"> <li>1 PPS and 10MHz ref clk front panel inputs (optional)</li> </ul>
USB	<ul style="list-style-type: none"> <li>USB access to BMC, USB-JTAG, USB-UART</li> </ul>

### 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

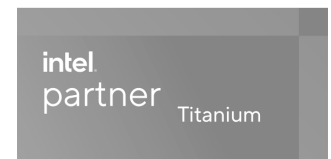
System development	BittWare SDK including PCIe driver, libraries, and board monitoring utilities
Application development	<b>Supported design flows</b> - Quartus Prime Pro (HDL, Verilog, VHDL, etc.). Contact BittWare for OneAPI support.

To learn more, visit [www.BittWare.com](http://www.BittWare.com)

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