

Agilex™ FPGA card with 400GbE and PCIe Gen5 x16

Hard Crypto Blocks and CXL Support

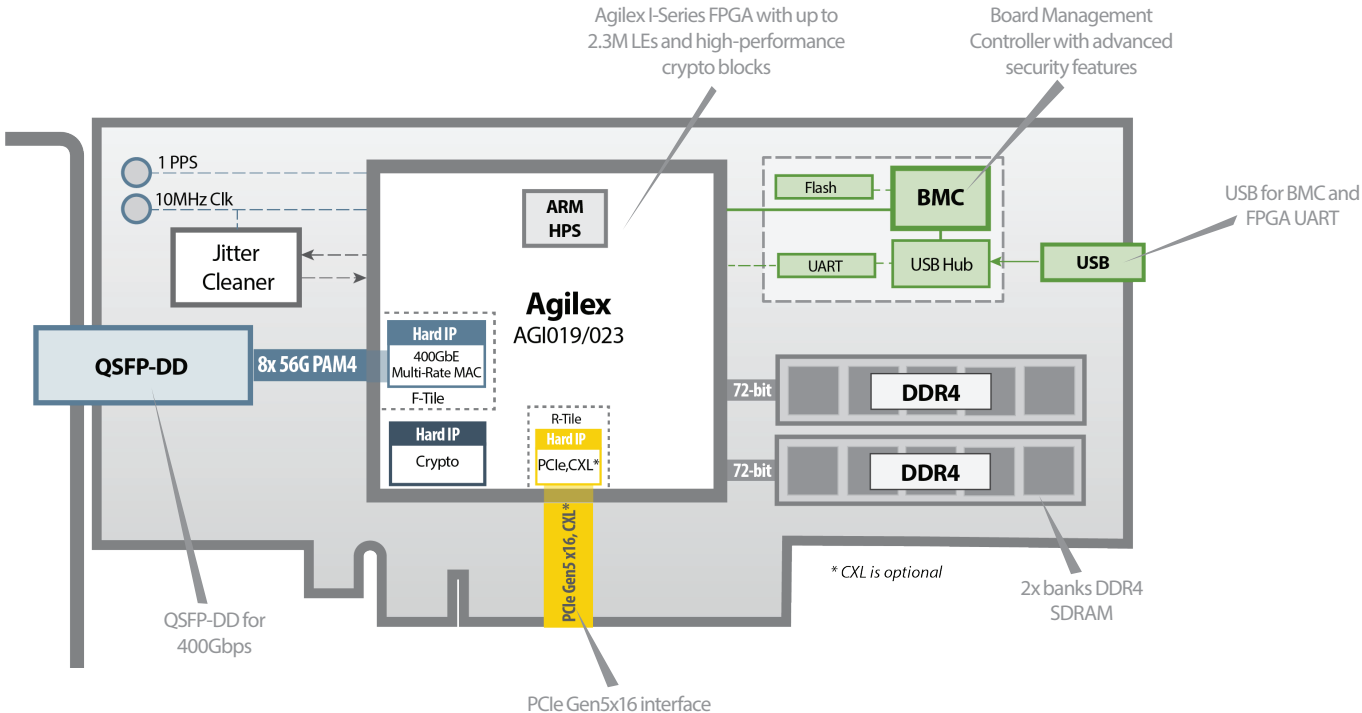


BittWare's IA-440i is an Intel® Agilex™ I-series FPGA card designed to address security challenges for data center, networking and edge compute workloads. The FPGA features optional hardened, high-speed cryptographic engines. The NIC-sized card provides a balance of I/O and memory using the Agilex chip's unique tiling architecture with a QSFP-DD (400GbE), DDR4 SDRAM, and PCIe Gen5 x16 with CXL support for a variety of applications.



key features

- 1x 400G,**
4x 100G, or
8x 10/25/50G
- PCIe Gen5**
with support for
CXL
- Intel Agilex™ I-Series**
FPGA with
Hard Crypto Blocks



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.



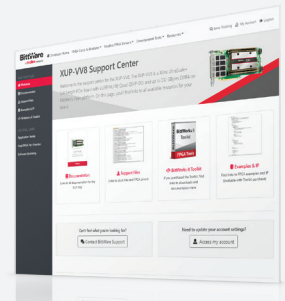
Server Integration

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"> Intel Agilex AG1019 <ul style="list-style-type: none"> Package: R18A Core speed grade -2: XCVR speed grade -2 FPGA includes ARM HPS Other Agilex FPGA options are available, including <ul style="list-style-type: none"> XCVR speed grade -1 for CXL (CXL IP is licensed and purchased separately) Hard crypto blocks
On-board Flash	<ul style="list-style-type: none"> 2Gbit Flash memory for booting FPGA
External memory	<ul style="list-style-type: none"> 2x banks on-board DDR4, up to 16GB each
Host interface	<ul style="list-style-type: none"> x16 Gen5 interface direct to FPGA, connected to PCIe hard IP CXL v1.1 (CXL IP is licensed and purchased separately)
QSFP-DD cage	<ul style="list-style-type: none"> 400 Gbps (8x 50Gbps PAM4) PAM4: 1x 400GbE, 2x 200GbE, 4x 100GbE, 8x 50GbE NRZ: 1x 200GbE, 2x 100GbE, 4x 50GbE, 8x 10/25 GbE Multi-rate hard MAC supports all combinations Jitter cleaner for network recovered clocking
External clocking	<ul style="list-style-type: none"> 1 PPS and 10MHz ref clk inputs (in-board)
USB	<ul style="list-style-type: none"> USB access to BMC, 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

Cooling

- Standard: single-width 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 and ICES approvals

Form factor

- Low profile (half-height, half-length) PCIe slot card
- Size: 68.75mm x 167.50mm

Development Tools

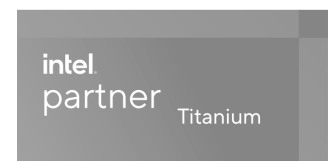
System development	BittWare SDK including PCIe driver, libraries, and board monitoring utilities
Application development	Supported design flows - Intel High-Level Synthesis (C/C++) and Quartus Prime Pro (HDL, Verilog, VHDL, etc.)

To learn more, visit www.BittWare.com

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