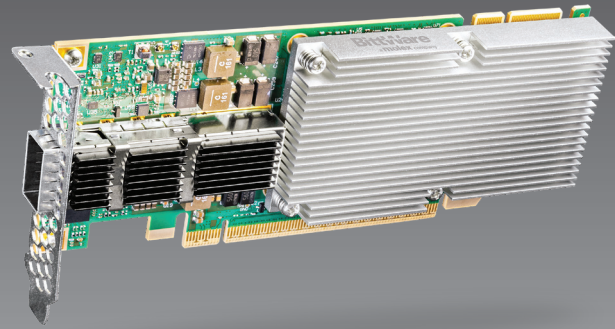




IA-440i PCIe FPGA Card



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. The IA-440i has support for Intel oneAPI™, which enables an abstracted development flow for dramatically simplified code re-use across multiple architectures.



1
oneAPI

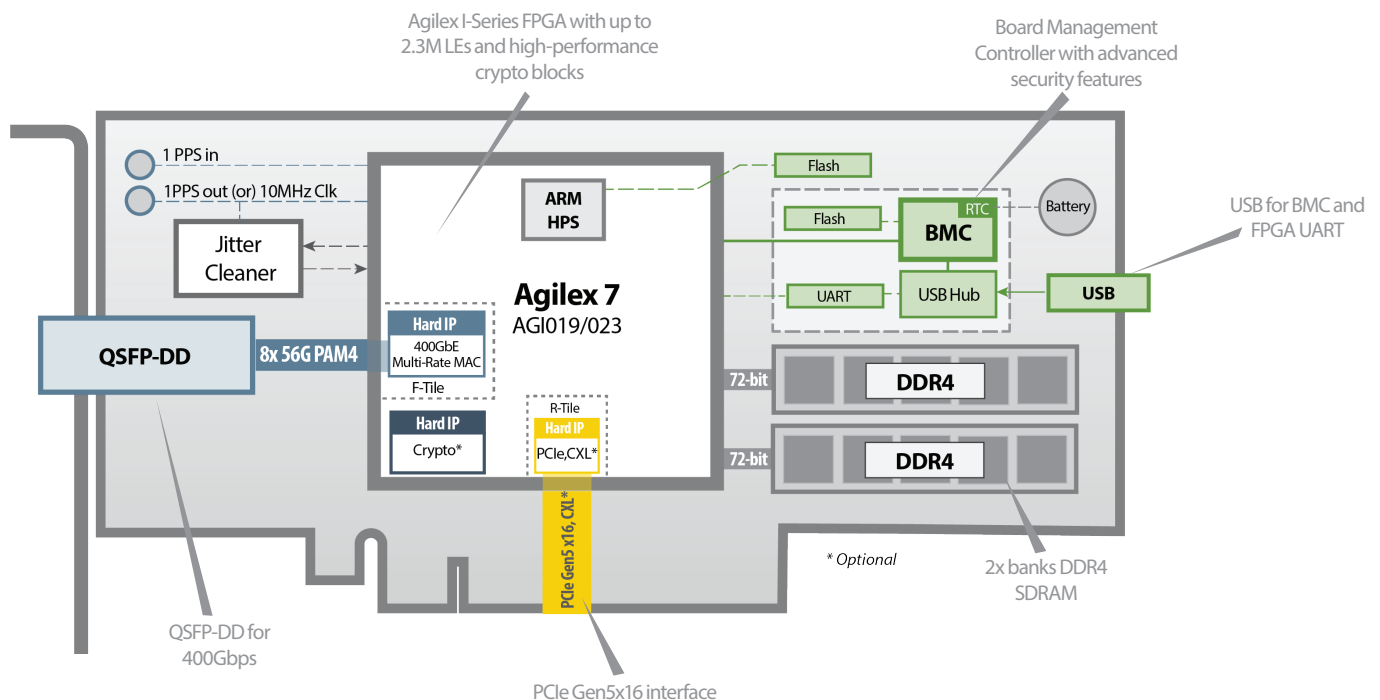


key features

1x 400G,
4x 100G, or
8x 10/25/50G

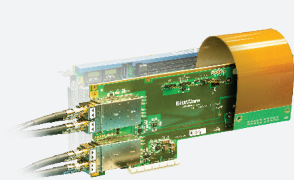
PCIe Gen5
with support for
CXL

Intel Agilex™ I-Series
FPGA with
Hard Crypto Blocks



Additional Services

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



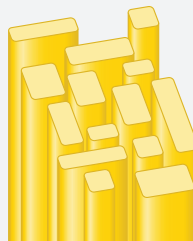
Customization

[Additional specification options](#) or [accessory boards](#) to meet your exact needs.



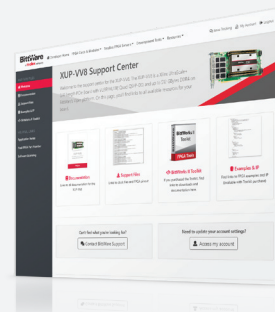
Server Integration

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 7 I-Series AGI019 or AGI023AGI019: Core speed grade -2: XCVR speed grade -1AGI023: Core speed grade -1: XCVR speed grade -1XCVR speed grade -1 supports CXL (CXL IP is licensed and purchased separately)FPGA includes ARM HPSOther Agilex FPGA options are available, includingHard crypto blocks	Board Management Controller	<ul style="list-style-type: none">Power sequencing and resetVoltage, current, temperature monitoring<ul style="list-style-type: none">Protection shut-downClock configurationLow bandwidth BMC-FPGA comms with SPI linkUSB 2.0PLDM supportCard-level security<ul style="list-style-type: none">BMC Root of TrustBMC and FPGA secure bootBMC and FPGA secure upgradeKey managementRTC with battery backup
On-board Flash	<ul style="list-style-type: none">2Gbit Flash memory for booting FPGA	Cooling	<ul style="list-style-type: none">Standard: single-width passive heatsink
External memory	<ul style="list-style-type: none">2x banks on-board DDR4, up to 16GB each (32GB total)	Electrical	<ul style="list-style-type: none">On-board power derived from PCIe slotPower dissipation is application dependentMax power consumption 75W
Host interface	<ul style="list-style-type: none">x16 Gen5 interface direct to FPGA, connected to PCIe hard IPCXL v1.1 (CXL IP is licensed and purchased separately)	Environmental	<ul style="list-style-type: none">Operating temperature: 5°C to 35°C
QSFP-DD cage	<ul style="list-style-type: none">400 Gbps (8x 50Gbps PAM4)PAM4: 1x 400GbE, 2x 200GbE, 4x 100GbE, 8x 50GbENRZ: 1x 200GbE, 2x 100GbE, 4x 50GbE, 8x 10/25 GbEMulti-rate hard MAC supports all combinationsJitter cleaner for network recovered clocking	Quality	<ul style="list-style-type: none">Manufactured to IPC-A-610 Class 2RoHS compliantCE, FCC and ICES approvals
External clocking	<ul style="list-style-type: none">1 PPS and 10MHz ref clk inputs (in-board)	Form factor	<ul style="list-style-type: none">Low profile (half-height, half-length) PCIe slot cardSize: 68.90mm x 167.65mm (2.713in x 6.600in)
USB	<ul style="list-style-type: none">USB access to BMC, USB-UART		

Development Tools

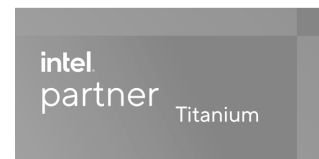
System development	BittWare SDK including PCIe driver, libraries, and board monitoring utilities
Application development	Supported design flows - Intel FPGA oneAPI Base Toolkit, Intel High-Level Synthesis (C/C++) and Quartus Prime Pro (HDL, Verilog, VHDL, etc.)

To learn more, visit www.BittWare.com

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