

## 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.

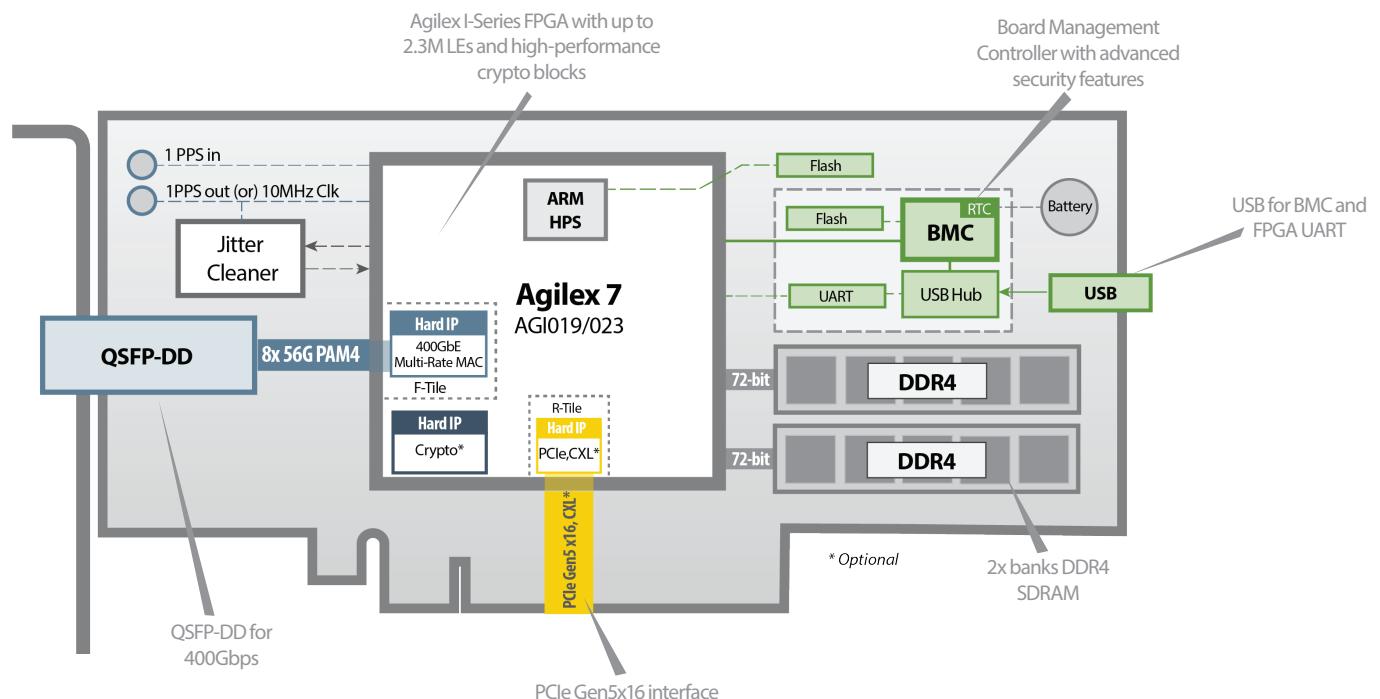


### key features

**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



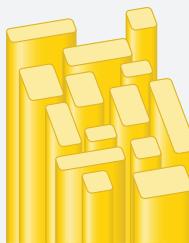
## Customization

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



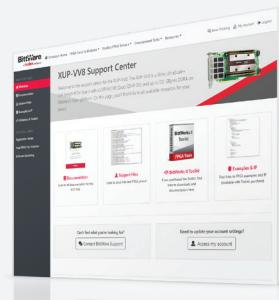
## Server Integration

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

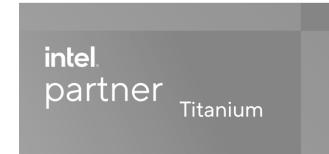
BittWare Developer Site provides online documentation and issue tracking.

## Board Specifications

FPGA	<ul style="list-style-type: none"><li>Intel Agilex 7 I-Series AGI019 or AGI023</li><li>AGI019: Core speed grade -2: XCVR speed grade -1</li><li>AGI023: Core speed grade -1: XCVR speed grade -1</li><li>XCVR speed grade -1 supports CXL (CXL IP is licensed and purchased separately)</li><li>FPGA includes ARM HPS</li><li>Other Agilex FPGA options are available, including</li><li>Hard crypto blocks</li></ul>	Board Management Controller	<ul style="list-style-type: none"><li>Power sequencing and reset</li><li>Voltage, current, temperature monitoring<ul style="list-style-type: none"><li>Protection shut-down</li></ul></li><li>Clock configuration</li><li>Low bandwidth BMC-FPGA comms with SPI link</li><li>USB 2.0</li><li>PLDM support</li><li>Card-level security<ul style="list-style-type: none"><li>BMC Root of Trust</li><li>BMC and FPGA secure boot</li><li>BMC and FPGA secure upgrade</li><li>Key management</li></ul></li><li>RTC with battery backup</li></ul>
On-board Flash	<ul style="list-style-type: none"><li>2Gbit Flash memory for booting FPGA</li></ul>	Cooling	<ul style="list-style-type: none"><li>Standard: single-width passive heatsink</li></ul>
External memory	<ul style="list-style-type: none"><li>2x banks on-board DDR4, up to 16GB each (32GB total)</li></ul>	Electrical	<ul style="list-style-type: none"><li>On-board power derived from PCIe slot</li><li>Power dissipation is application dependent</li><li>Max power consumption 75W</li></ul>
Host interface	<ul style="list-style-type: none"><li>x16 Gen5 interface direct to FPGA, connected to PCIe hard IP</li><li>CXL v1.1 (CXL IP is licensed and purchased separately)</li></ul>	Environmental	<ul style="list-style-type: none"><li>Operating temperature: 5°C to 35°C</li></ul>
QSFP-DD cage	<ul style="list-style-type: none"><li>400 Gbps (8x 50Gbps PAM4)</li><li>PAM4: 1x 400GbE, 2x 200GbE, 4x 100GbE, 8x 50GbE</li><li>NRZ: 1x 200GbE, 2x 100GbE, 4x 50GbE, 8x 10/25GbE</li><li>Multi-rate hard MAC supports all combinations</li><li>Jitter cleaner for network recovered clocking</li></ul>	Quality	<ul style="list-style-type: none"><li>Manufactured to IPC-A-610 Class 2</li><li>RoHS compliant</li><li>CE, FCC and ICES approvals</li></ul>
External clocking	<ul style="list-style-type: none"><li>1 PPS and 10MHz ref clk inputs (in-board)</li></ul>	Form factor	<ul style="list-style-type: none"><li>Low profile (half-height, half-length) PCIe slot card</li><li>Size: 68.90mm x 167.65mm (2.713in x 6.600in)</li></ul>
USB	<ul style="list-style-type: none"><li>USB access to BMC, USB-UART</li></ul>		

## Development Tools

System development	BittWare SDK including PCIe driver, libraries, and board monitoring utilities
Application development	<b>Supported design flows</b> - 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](http://www.BittWare.com)

Rev 2023.04.20 | April 2023

© BittWare 2023

Agilex is a trademark of Intel Corp. All other products are the trademarks or registered trademarks of their respective holders.

**BittWare**  
a **molex** company

# X-ON Electronics

Largest Supplier of Electrical and Electronic Components

***Click to view similar products for Programmable Logic IC Development Tools category:***

***Click to view products by Molex manufacturer:***

Other Similar products are found below :

[CR00109-02-QHCN-A](#) [LCMxo2-4000HE-DSIB-EVN](#) [LCMxo3L-SMA-EVN](#) [A2F500-DEV-KIT-2](#) [LCMxo3LF-9400C-ASC-B-EVN](#) [410-352](#) [LF-EVDK1-EVN](#) [LFE5UM5G-45F-VERSA-EVN](#) [471-014](#) [SL001](#) [EK-10CL025U256](#) [P0496](#) [P0493](#) [cs-beaglewire-01](#) [SLG4DVKADV](#) [88980182](#) [Hinj](#) [SNOMAKRKIT](#) [SnoMakr10](#) [DK-DEV-10AX115S-A](#) [DK-DEV-1SDX-P-A](#) [DK-DEV-5SGSMD5N](#) [DK-SI-1SGX-H-A](#) [DK-SI-5SGXEA7N](#) [EK-10M08E144](#) [ABX00022](#) [ATF15XX-DK3-U](#) [cs-fomu-01](#) [CS-ULX3S-01](#) [AB17-M2FMC](#) [DFR0600](#) [SLG46824V-DIP](#) [SLG46826V-DIP](#) [SLG4DVKINTRO](#) [240-114-1](#) [410-183](#) [410-248](#) [410-292](#) [410-300](#) [410-316](#) [410-319-1](#) [410-328-35](#) [410-338](#) [410-346-10](#) [410-352-25](#) [410-370](#) [410-376](#) [410-383-5EV](#) [410-393](#) [410-398](#)