



IA-840f
PCIe FPGA Card



Agilex™ FPGA card with 3x QSFP-DDs

3x 200GbE with up to 128GB of DDR4 SDRAM

BittWare's IA-840f is an Altera Agilex™-based FPGA card designed to deliver up to 40% higher performance for data center, networking and edge compute workloads. BittWare maximized I/O features on the card using the Agilex chip's unique tiling architecture with three QSFP-DDs (3x 200G) and PCIe Gen4 x16. The card also supports Intel oneAPI™, which enables an abstracted development flow for dramatically simplified code re-use across multiple architectures.



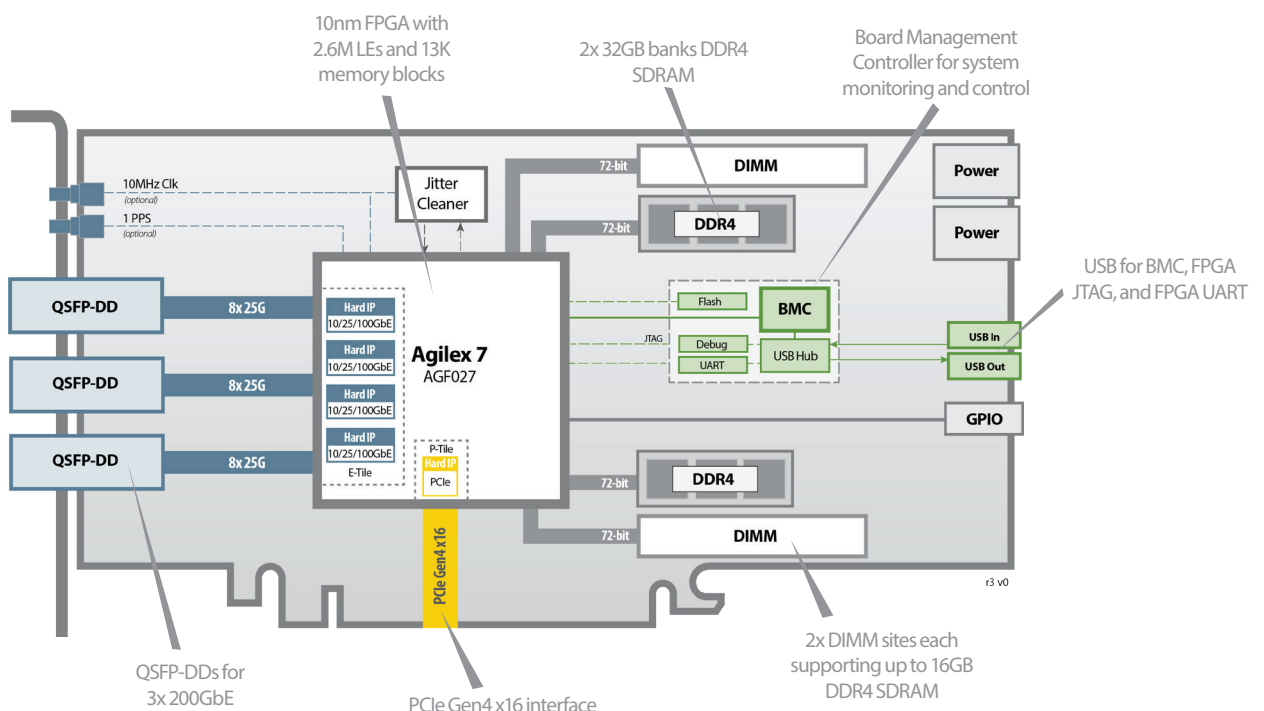
The IA-840f supports Intel's OneAPI open standards-based unified programming model

key features

QSFP-DDs
for 3x 200G

**Intel
OneAPI**
support

Altera Agilex™ FPGA
with up to **2.6M**
Logic Elements



Additional Services

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



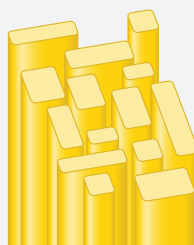
Customization

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



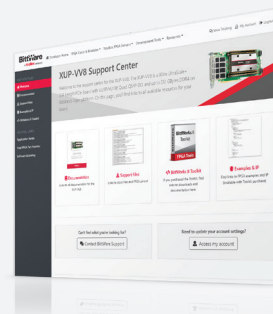
Server Integration

Available pre-integrated in our [TeraBox servers](#) in a range of configurations.



Application Optimization

Ask about our services to help you port, optimize, and benchmark your application.



Service and Support

BittWare Developer Site provides online documentation and issue tracking.

Board Specifications

| | |
|-----------------------------|--|
| FPGA | <ul style="list-style-type: none">Altera Agilex 7 F-Series<ul style="list-style-type: none">AGF027 in an R2581A packageCore speed grade -2: I/O speed grade -2Contact BittWare for other Agilex FPGA options |
| On-board Flash | <ul style="list-style-type: none">2Gbit Flash memory for booting FPGA |
| External memory | <ul style="list-style-type: none">2x 288-pin DIMM slots, each supporting up to 16GB DDR4 SDRAM modules (up to 32GB total)2x banks on-board DDR4, up to 32GB each |
| Host interface | <ul style="list-style-type: none">x16 Gen4 interface direct to FPGA, connected to PCIe hard IP |
| QSFP-DD cages | <ul style="list-style-type: none">3 QSFP-DD cages on front panel connected directly to FPGA via 24 transceiversUser programmable low jitter clocking supporting 10/25/40/100GbEEach QSFP-DD can be independently clockedJitter cleaner for network recovered clockingMulti-rate hard MAC+FEC for 10/25/100GbE (4x HardIP)Fully backward compatible with QSFP28s |
| External clocking | <ul style="list-style-type: none">1 PPS and 10MHz ref clk front panel inputs (optional) |
| USB | <ul style="list-style-type: none">USB access to BMC, USB-JTAG, USB-UART |
| Board Management Controller | <ul style="list-style-type: none">Voltage, current, temperature monitoringPower sequencing and resetField upgradesFPGA configuration and controlClock configurationLow bandwidth BMC-FPGA comms with SPI linkUSB 2.0PLDM supportVoltage overrides |

| | |
|---------------|--|
| Cooling | <ul style="list-style-type: none">Standard: dual-slot passive heatsinkOptional: dual-slot liquid cooling |
| Electrical | <ul style="list-style-type: none">On-board power derived from PCIe slot 12V and two AUX connectorsPower dissipation is application dependentTypical max power consumption 225W |
| Environmental | <ul style="list-style-type: none">Operating temperature: 5°C to 35°C |
| Quality | <ul style="list-style-type: none">Manufactured to IPC-A-610 Class 2RoHS compliantCE, FCC, UKCA & ICES approvals |
| Form factor | <ul style="list-style-type: none">Standard-height, dual-slot PCIe card111.15mm x 266.70mm (4.376in x 10.500in) |

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.) |

Safety & Compliance

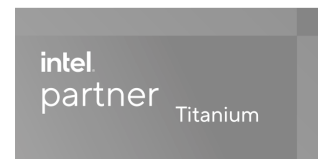
- FCC (USA) 47CFR15.107 / 47CFR15.109
- CE (Europe) EN55032:2015 / EN55035:2017 / EN61000-3-2:2019 + A1:2021 / EN610003-3:2013+ A1:2019
- UKCA (United Kingdom) BS EN55032:2015 / BS EN55035:2017 / BS EN61000-3-2:2019 + A1:2021 / BS EN610003-3:2013 + A1:2019
- ICES (Canada) ICES-003 Issue 7
- CE (Europe) EN IEC 62368-1:2018 / EN IEC 62368-1:2020 + A11:2020
- UKCA (United Kingdom) BS EN IEC 62368-1:2018 / BS EN IEC 62368-1:2020 + A11:2020
- CB Scheme Certificate No. DK-141340-UL
- RoHS compliant to the 2011/65/EU + 2015/863 directive

To learn more, visit www.BittWare.com

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