



Product Brief

prodesign FALCON Agilex® 7 M Acceleration Card

PRODUCT SUMMARY

The FALCON Agilex 7 M acceleration card offers Altera® Agilex® 7 FPGA technology with high throughput HBM2e memory integration. The board is based on PCIe Gen5 x16 and offers three 400GE QSFP-DD front ports supporting 6x 200Gbit/s or 3x 400Gbit/s. Further, it offers three programmable SODIMM sockets and three high-speed NovaRay® connectors for connecting multiple memory modules or peripherals.

Supporting HDL, CXL flows.

KEY MARKETS

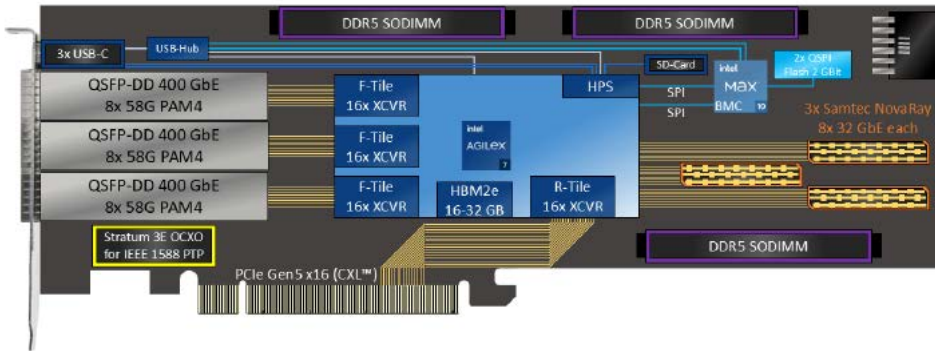
- High Performance Computing
- AI and Machine Learning
- Network / Security
- Video Broadcasting
- High Frequency Trading

KEY FEATURES

- Altera® Agilex® 7 M-Series FPGA incl. HBM2e
- PCIe Gen5 x16 with CXL™
- 3x 400 GbE QSFP-DD network connectors
- 3x SODIMM sockets with programmable I/Os for
 - Standard DDR5 modules
 - Custom memory modules or daughter cards
- 3x High-speed Samtec NovaRay® connectors for
 - Board-to-board connection
 - High throughput peripheral interfaces

SPECIFICATION

FPGA	Altera® Agilex® 7 M-Series: <ul style="list-style-type: none"> → Same board – 40 different FPGA assembly options to match your requirements exactly: <ul style="list-style-type: none"> → 32/ 16 GB HBM2e → Transceiver speed grades -1 or -2/ Core speed grades -1, -2, or -3 and HPS enabled/ disabled → FPGA configuration via <ul style="list-style-type: none"> → PCIe CvP and AS x4 active configuration via 2 Gbit QSPI flash → USB-JTAG (USB-III-Blaster)
FPGA Logic Elements	AGMx032: 3,245,000 or AGMx039: 3,851,520
FPGA DSP	AGMx032: 9,375 or AGMx039: 12,300
Extension Interfaces	<ul style="list-style-type: none"> 3x Samtec NovaRay® connectors (112 Gbps PAM4 Extreme Density Arrays) <ul style="list-style-type: none"> → Up to 8x 32 Gbit/s and 7 GPIOs each → For extension boards or board-to-board connection 3x SODIMM slots with programmable I/Os for memory and/or other interfaces <ul style="list-style-type: none"> → Up to 5600 MT/s (64b/ 80b) and 32 GB DDR5 per SODIMM → Custom memory modules and Custom daughter cards with programmable I/Os and voltage levels
Network Interfaces	<ul style="list-style-type: none"> 3x QSFP-DD connectors <ul style="list-style-type: none"> → 6x QSFP56 (200 Gbit/s each) supporting 10/25/40/100/200/400 GbE Optional clock daughter board for network synchronization: <ul style="list-style-type: none"> → Stratum 3E OCXO for IEEE 1588 PTP applications → Differential/ Single-ended clock inputs → External clock inputs via SMA connectors and jitter cleaner



ARCHITECTURE AND FEATURES

PRO DESIGN IN-HOUSE ADVANTAGES

R&D team (HW, SW):

- Board modifications
- Customization
- Custom module development

Production Lines:

- Full cycle with 40 years of experience
- fast and determined lead times
- several SMD lines

Test Facilities

- Quality
- Reliability
- Service support

Further Information

Please visit:
www.prodesign-fpga-acceleration.com

Contact

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FURTHER SPECIFICATIONS

Hard Processing System (HPS)

- Quad-core 64 bit Arm® Cortex-A53 with up to 1.41 GHz
- Fully operational independently from FPGA's programmable logic
- SPI interface to BMC
- Two dedicated USB 2.0 Type-C connectors
- Dedicated SD-card interface for easy OS maintenance

PCIe Interface

- PCIe Gen5 x16 interface direct to FPGA
- Compute Express Link™ (CXL™)

USB Interface

- 2x USB Type-C connectors accessible on the front and back of the card
- Dedicated BMC USB 2.0 Interface

Board Management Controller

- Power sequencing
- Voltage, current, temperature monitoring
- Clock programming

Power

- 1x 12VHPWR 12-pin and PCIe slot 12V (100 W - 675 W)
- 250 W typical max power consumption

Software / IP

- prodesign SDK including BIST, BMC firmware, drivers
- HDL
- CXL

Operating Temperature

Environmental temperature

Board Cooling

Passive, Active air and Liquid

Board Form Factor

- 275 mm x 111.28 mm (Full height)
- Available in dual slot and single slot

SERVICES

Deliverables

Acceleration card with cooling and cables

Warranty

1-year on hardware

Order Code

PD-FALCON-AGM