prodesign

Product Brief

CXL Compute Express Link

intel. AGILEX 7

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: → Same board – 40 different FPGA assembly options to match your requirements exactly: → 32/ 16 GB HBM2e → Transceiver speed grades -1 or -2/ Core speed grades -1, -2, or -3 and HPS enabled/ disabled → FPGA configuration via → 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	3x Samtec NovaRay® connectors (112 Gbps PAM4 Extreme Density Arrays) → 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 → 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	3x QSFP-DD connectors → 6x QSFP56 (200 Gbit/s each) supporting 10/25/40/100/200/400 GbE Optional clock daughter board for network synchronization: → Stratum 3E OCXO for IEEE 1588 PTP applications → Differential/ Single-ended clock inputs → External clock inputs via SMA connectors and jitter cleaner

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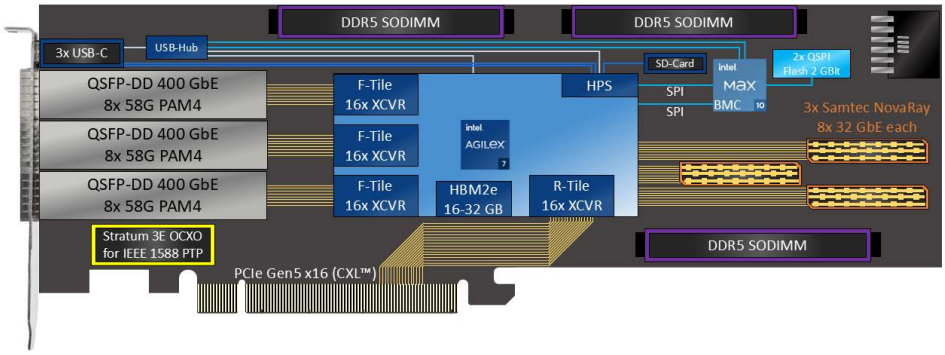

ARCHITECTURE AND FEATURES

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:
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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 HPS 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