



Product Brief

prodesign FALCON Agilex® 7 M Acceleration Card

PRODUCT SUMMARY

The FALCON Agilex 7 M acceleration card offers Intel® 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 four programmable SODIMM sockets and three high-speed NovaRay® connectors for connecting multiple memory modules or peripherals.

Supporting HDL, oneAPI, CXL flows.

KEY MARKETS

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

KEY FEATURES

- Intel® Agilex® 7 M-Series FPGA incl. HBM2e
- PCIe Gen5 x16 with CXL™
- 4x 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
- 3x 400 GbE QSFP-DD network connectors

SPECIFICATION

FPGA

Intel® Agilex® M-Series:

- Same board – 40 different FPGA assembly options to match your requirements exactly:
 - 32/ 16 GB HBM2e and 3.2 M/ 3.9 M LEs
 - 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
 - AVSTx8 via BMC and JTAG (built-in USB-Blaster II IP)

FPGA Logic Elements

AGMx032: 3,245,000 or AGMx039: 3,851,520

FPGA DSP

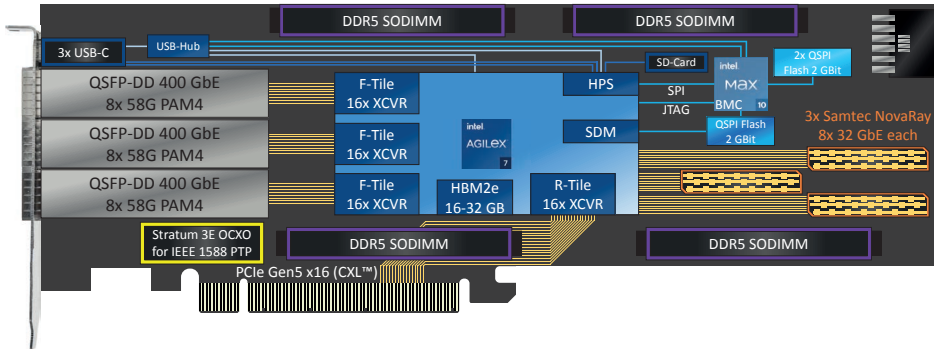
AGMx032: 9,375 or AGMx039: 12,300

Extension Interfaces

- 3x Samtec NovaRay® connectors (112 Gbps PAM4 Extreme Density Arrays)
 - Up to 8x 32 Gbit/s and 8 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 OXC0 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

sales-fpga-acceleration@prodesign-europe.com



Hotline

Monday-Friday from 9:00 to 18:00 (MET)
 Phone: +49 (0) 8062 808 - 0
 Fax: +49 (0) 8062 100
 E-Mail: hotline@prodesign-europe.com

FURTHER SPECIFICATIONS

Hard Processing System (HPS)	<ul style="list-style-type: none"> → 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	<ul style="list-style-type: none"> → PCIe Gen5 x16 interface direct to FPGA → Compute Express Link™ (CXL™)
USB Interface	<ul style="list-style-type: none"> 2x USB Type-C connectors at front I/O bracket rotatable to the outside or inside of the server: → Dedicated HPS USB 2.0 Interface
Board Management Controller	<ul style="list-style-type: none"> → Power sequencing → Voltage, current, temperature monitoring → Clock programming
Power	<ul style="list-style-type: none"> → 1x 12VHPWR 12-pin and PCIe slot 12V (up to 675 W) → 250 W typical max power consumption
Software / IP	<ul style="list-style-type: none"> → prodesign SDK including BIST, BMC firmware → HDL → CXL, oneAPI
Operating Temperature	Environmental temperature
Board Cooling	Passive, Active air and Liquid
Board Form Factor	<ul style="list-style-type: none"> → 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