

Product Brief

prodesign FALCON Stratix® 10 Acceleration Card

PRODUCT SUMMARY

The FALCON Stratix acceleration card offers Intel® Stratix® 10 FPGA technology with high throughput HBM2 memory integration. The board is based on PCIe Gen3 x16 and offers four 100GE QSFP-DD front ports supporting 8x 100Gbit/s or 4x 200Gbit/s. Further, it offers three programmable SODIMM sockets and three high-speed NovaRay® connectors for connecting multiple memory modules or peripherals.

Supporting HDL, oneAPI, OpenCL flows.

KEY MARKETS

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

KEY FEATURES

- Intel® Stratix® 10 MX or NX FPGA incl. HBM2
- PCIe Gen3 x16
- 3x SODIMM sockets with programmable I/Os for
 - Standard DDR4 modules
 - Custom memory modules or daughter cards
- 3x High-speed Samtec NovaRay® connectors for
 - Board-to-board connection
 - High throughput peripheral interfaces
- 4x QSFP28-DD network connectors

SPECIFICATION

FPGA

Intel® Stratix® 10 MX/NX series:

- 1S10MX160-F55, 1S10MX210-F55
- 1S10NX210-F55

Same board – 21 different FPGA assembly options to match your requirements exactly:

- 16/ 8 GB HBM2
- 2.1M/ 1.7 M LEs
- Transceiver speed grades -1, -2 or -3/ Core speed grades -1, -2, or -3

FPGA configuration via

- PCIe CvP
- AVSTx8 passive configuration via BMC
- JTAG via BMC (built-in USB-Blaster II IP)

FPGA Logic Elements (LEs)

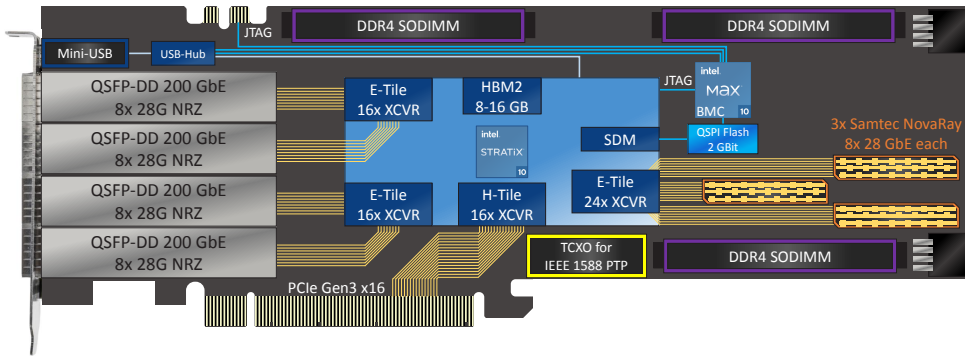
- NX 2100: 2.073.000
- MX 2100: 2.073.000
- MX 1650: 1.679.000

FPGA DSP (AI Tensor blocks)

- NX / MX 2100: 3.960
- MX 1650: 3.326

Extension Interfaces

- 3x Samtec NovaRay® connectors (112 Gbps PAM4 Extreme Density Arrays)
 - Up to 8x 28.9 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 2666 MT/s (64b/ 72b) and 32 GB DDR4 per SODIMM
 - Custom memory modules and Custom daughter cards with programmable I/Os and voltage levels



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

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FURTHER SPECIFICATIONS

Network Interfaces	4x QSFP28-DD connectors → 4x 100Gbps / 8x 100Gbps / 2x200Gbps / 4x 200Gbps → User programmable low jitter clocking supporting 10/25/40/100GbE → Each QSFP28-DD can be independently clocked Stratum 3 TCXO for IEEE 1588 PTP network synchronization applications
PCIe Interface	PCIe Gen3 x16 interface direct to FPGA
USB Interface	Mini-USB connector at front I/O bracket → USB 2.0 access to BMC, S10 via USB-UART → Built-in USB Blaster II in BMC
Board Management Controller	→ Power sequencing → Voltage, current, temperature monitoring → Clock programming
Power	→ Standard ATX 12V → Supporting up to 375W
Software / IP	→ prodesign SDK including example designs, BMC firmware → HDL → OpenCL, one API
Operating Temperature	Environmental temperature
Board Cooling	Passive, Active air and Liquid
Board Form Factor	254 mm x 111.28 mm (Full height, 3/4 length) Available in dual and single slot
SERVICES	
Deliverables	Acceleration card with cooling and cables
Warranty	1-year on hardware
Order Code	PD-FALCON-1SM16 /-1SM21 /-1SN21