

**::NEW PRODUCT**

# Nallatech FPGA MicroNode

Arria-10 SoC Enabled



The Nallatech FPGA MicroNode is a low power miniature Linux Edge-computer featuring an Intel Arria-10 SoC FPGA. This innovative integrated product features dual network I/O directly coupled to the FPGA fabric enabling ultra-low latency applications. Best-in-class out-of-box experience makes it faster than ever to start deploying your solution.

- Intel Arria® 10 SX660 FPGA
- Dual-core ARM® Cortex®
- 2 QSFP+ ports capable of supporting Ethernet, Fibre Channel and CPRI
- 4 GByte DDR4 for FPGA fabric
- 2 GByte DDR4 for ARM processor system
- NVMe SSD mass storage
- System Manager Monitoring via 1GbE

**ARM**



Designed to address a range of compute-intensive and latency-critical applications, including:

- Machine Learning Inference
- Internet of Things
- Intelligent Storage Gateway
- Real-time Network Analytics



## Standalone FPGA-Accelerated Edge Computer

### Programming Models



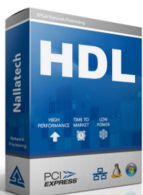
OpenCL

#### » Intel FPGA OpenCL Software Development Kit (SDK)

- Abstraction enables faster and higher level software development flow
- Emulate OpenCL application code in seconds
- Push button flow generates FPGA executable, driver and API
- Add optimized HDL IP cores to OpenCL designs as libraries

#### » Hardware Description Language (HDL)

- Traditional VHDL/Verilog tool flow support
- Aimed at hardware-orientated customers
- Hand-code HDL for ultimate performance
- FPGA card designed to support standard Intel IP cores for Arria 10



# FPGA MicroNode

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## Arria-10 SoC Enabled

### Form Factor

- » Enclosure Size: 160mm x 240mm x 40mm (W x L x H)  
6.3in x 9.45in x 1.6in (W x L x H)
- » Weight: 900g / 2 lbs.

### Processing

- » Intel Arria 10 SX F34 package
- » Default configuration: SX 660, speed grade 2

### DDR4 SDRAM memory (FPGA)

- » One bank of DDR4 SDRAM x 72 for FPGA fabric
- » 4GB @ 2133 MT/s

### DDR4 SDRAM memory (ARM processors)

- » One bank of DDR4 SDRAM x 40 for ARM processors
- » 2GB @ 2133 MT/s

### Storage

- » M.2 embedded NVMe Solid State Drive
- » Default configuration: 128GB
- » 256MB QSPI Flash for preinstalled Linux
- » 256MB QSPI Flash for FPGA configurations

### Application Development

- » Supports multiple design flows including HDL

### Electrical

- » External power 12V connector & power supply provided
- » Power cable options for EU, US, etc.
- » Pre-installed Angstrom Linux Distribution

### Quality

- » Manufactured to ISO9001:2000 IPC-A-610-Class III
- » RoHS compliant

### Power Supply Monitoring & Reporting

- » On-board Intel USB Blaster II
- » Voltage monitoring
- » Temperature monitoring
- » Fault condition reporting to FPGA

### Two QSFP+ Network Ports (up to 40Gbps each)

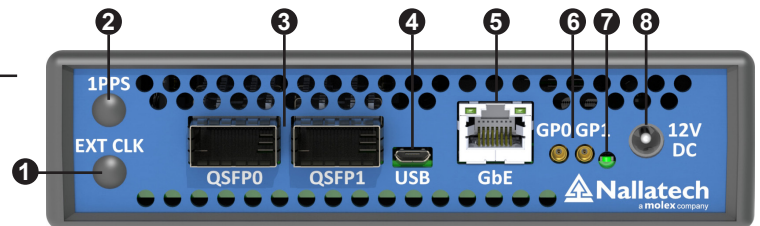
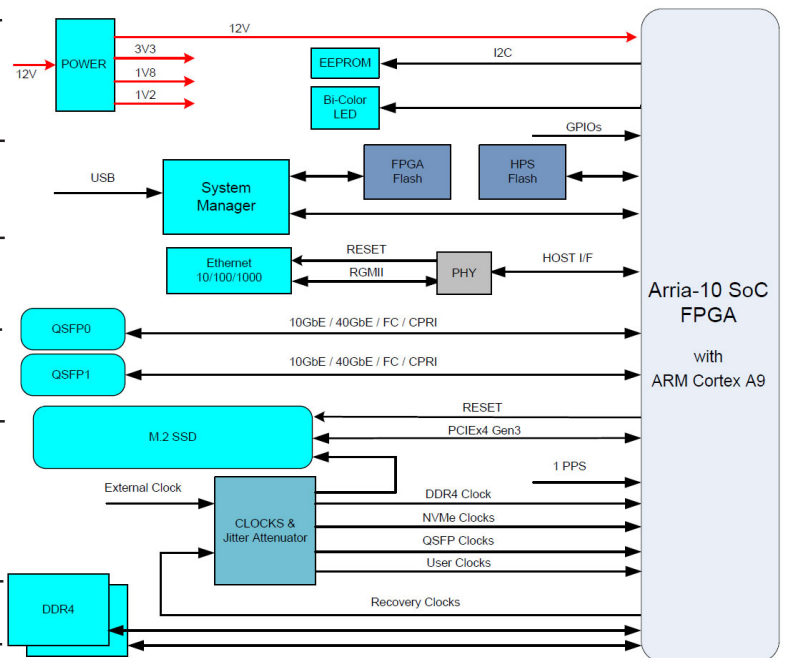
- » Flexible low jitter clocking supporting multiple telecoms standards – 40/10/1 GbE, CPRI, Fiber Channel
- » Each QSFP+ can be independently clocked
- » Network recovered with jitter attenuation
- » QSFP+ Clocking: user programmable
- » Others: external clock input, 1PPS input (optional)

### Environmental

- » Cooling: Air convection
- » Operating temperature: 0°C to 35°C
- » Storage temperature: -20°C to 80°C
- » Relative humidity: 45 to 95% (non-condensing)

### Deliverables

- » Built-In-Self-Test (BIST)
- » 1 year access to online support lounge
- » 1 year hardware warranty



### FPGA MicroNode: Front Panel Connectivity

- (1) External clock (optional)
- (2) User GPIO connectors
- (2) QSFP+ ports
- (1) Micro USB port
- (1) Ethernet 10M/100M/1G Ethernet port (RJ45)
- (2) User bi-color LED
- (1) User bi-color LED
- (1) 12V power supply

**Customization:** Technical specifications (e.g. FPGA type, size, external memory capacity etc.) can be modified to meet the exact needs of commercial customer applications as off-the-shelf product available to the general market.

**Application optimization:** Sky Blue and Zerif provides consultancy services assisting customers in the porting, optimization and benchmarking of applications executed on Nallatech FPGA accelerators.

\* Please check with Sky Blue or Zerif for availability

International Distributors

**sky blue**  
microsystems

Sky Blue Microsystems GmbH  
Geisenhausenerstr. 18  
81379 Munich, Germany  
+49 89 780 2970, info@skyblue.de  
www.skyblue.de

**ZERIF**  
TECHNOLOGIES LTD.  
A SKY BLUE COMPANY, FOUNDED 1999

In Great Britain:  
Zerif Technologies Ltd.  
Winnington House, 2 Woodberry Grove  
Finchley, London N12 0DR  
+44 115 855 7883, info@zerif.co.uk  
www.zerif.co.uk