

NEON-1040/1020

Intel® Atom™ Quad-Core Processor E3845 1.91 GHz-based smart camera



Introduction

ADLINK's new generation x86 NEON-1040/1020 features 4MP 60fps/2MP 120fps global shutter sensor and the Intel® Atom™ quad core 1.91 GHz processor, featuring minimal footprint and rugged IP67-rated construction. The quad core CPU increases computing power and FPGA coprocessors and GPU deliver advanced image processing, both beyond the capabilities of conventional smart cameras. Rich software support and API compatibility enable easy migration from original x86 platforms, eliminating software and development language burdens across the platform, reducing time to market.

The NEON-1040/1020 is a powerful new generation x86 smart camera that features Intel® Atom™ quad core Processor E3845 1.91 GHz, global shutter image sensor (4 MP at 60 fps for the 1040, 2 MP at 120 fps for the 1020), and PWM lighting control support. The NEON-1040/1020 stands out with its minimal footprint, and superior computing power. Rugged construction with IP67-rated housing and M12 connectors enables the NEON-1040 to withstand the harshest industrial environments.

High-end quad-core processor with FPGA coprocessors, GPU and up to 32GB storage for image processing, programs, and archiving, all provide advanced image processing ability that's ideally suited to high-speed, high-resolution industrial imaging applications.

Optimal I/O including one additional slave GigE Vision camera connection, 4x isolated inputs, 4x isolated outputs, and VGA output maximize integration with external devices. Additionally, flexible software development support, including GenTL support for image acquisition and Open CV and Open CL programming, significantly benefits developers by easing migration from x86 platforms.

Features

- Quad core Intel® Atom™ processor E3845 1.91GHz
- 4M 60fps/2M 120fps monochrome global shutter CMOS sensor
- IP67-rated housing and M12 connectors thoroughly protect against dust & moisture
- Advanced image processing support
- Additional GigE Vision 1 slave camera support reduces TCO
- Built-in PWM lighting control
- 4x digital inputs, 4x digital outputs, USB 2.0 and RS-232 ports
- Flexible software support with STEMMER Common Vision Blox, MVTec HALCON, COGNEX VisionPro, Teledyne Dalsa Sherlock, Adaptive Vision Studio, Euresys Open eVision, and many others
- GenICam, GenTL, Open CV and Open CL compatible with image acquisition
- VGA output, max. 2560x1600 @60 Hz

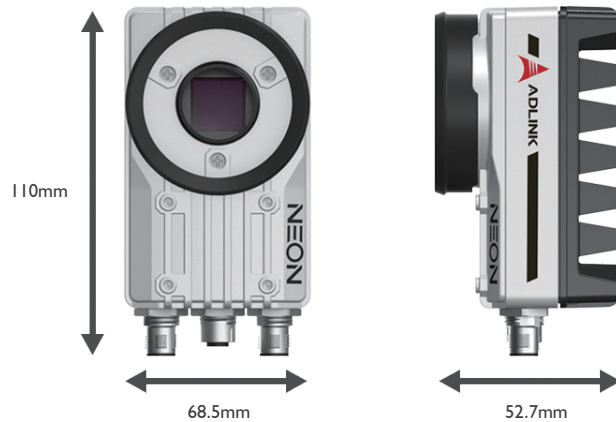
Applications

- Industrial automation
- Robot guidance
- 3D vision
- Medical imaging
- Machine Tooling

Software Support

OS Information

- Windows® 7, Embedded Standard 7



Standard M4 mounting holes enable easy installation



Programmable LED indicator provides status information



M12 connectors allow secure, rugged connection

Specifications

| Model Name | NEON-1020 | NEON-1040 |
|---------------------------------------|---|-------------------------------|
| Processing & Memory | | |
| ■ Processor | Intel® Atom™ E3845 Processor, Quad Core @ 1.91 GHz | |
| ■ Display | VGA output, max. 2048 x 1152 at 60 Hz | |
| ■ RAM | 4 GB DDR3L | |
| ■ Storage | 16 to 32 GB solid state drive | |
| ■ Advanced Processing | ROI, LUT, Shading Correction | |
| Sensor | | |
| ■ Image Sensor | CMOSIS CMV2000 | CMOSIS CMV4000 |
| ■ Resolution | 2048 x 1088 | 2048 x 2048 |
| ■ Sensor Size | 2/3" | 1" |
| ■ Format | Monochrome | |
| ■ Pixel Size (µm) | 5.5 | |
| ■ Frame Rate (fps) | 120 | 60 |
| ■ Shutter | Global | |
| ■ Trigger Mode | External trigger, software trigger, free run | |
| I/O Interface | | |
| ■ Trigger Input | 1x Opto-isolated trigger input | |
| ■ Digital Output | 4x sink type output, max sink 100mA sink voltage max 30VDC | |
| ■ Digital Input | 4x TTL level input | |
| ■ PWM Lighting Control | ■ Drive Method | Constant current 500mA |
| | ■ Applicable Light Units | 24 VDC illuminators |
| | ■ Dimming Resolution | 1000:1 |
| ■ Ethernet | 1 x GbE | |
| ■ Serial Communication | 1 x RS-232 (TX and RX only) | |
| ■ USB | 1 x USB 2.0 | |
| Mechanical | | |
| ■ Dimensions | 68.5mm W x 110mm D x 52.7 mm H / 2.70" W x 4.33" D x 2.08" H (68.5mm x 110mm x 42.7mm reduced size option) | |
| ■ Lens mount | C mount | |
| ■ Connectors | 1 x M12 8-pin (Female), 1xM12 17-pin (Male), 1x M12 12-pin (Male) | |
| Software Support | | |
| ■ Operation System | Windows 7, Windows Embedded Standard 7 | |
| Environmental & Electrical | | |
| ■ Power Consumption | 24 VDC +/-10%, 13W (Typical) | |
| ■ Operating Temperature | Standard: 0°C to 50°C (32°F to 122°F) | 0° to 50 °C (32° F to 122° F) |
| | Extended temperature option: 0° to 60 °C (32° F to 140° F) (w/ industrial SSD) | |
| ■ Vibration | Operating, 5 Grms, 5-500 Hz, 3 axes | |
| ■ Certification | IP67, CE, FCC Class A | |

Ordering Information

| Model Name | Description |
|----------------------|---|
| NEON-1040/M4G/SSD32G | Intel® Atom™ Quad-Core Processor E3845 1.91 GHz-based smart camera with 4MP, 60fps, global shutter sensor with 32G SSD |
| NEON-1040/M4G/SSD16G | Intel® Atom™ Quad-Core Processor E3845 1.91 GHz-based smart camera with 4MP, 60fps, global shutter sensor with 16G SSD |
| NEON-1020/M4G/SSD32G | Intel® Atom™ Quad-Core Processor E3845 1.91 GHz-based smart camera with 2MP, 120fps, global shutter sensor with 32G SSD |
| NEON-1020/M4G/SSD16G | Intel® Atom™ Quad-Core Processor E3845 1.91 GHz-based smart camera with 2MP, 120fps, global shutter sensor with 16G SSD |

Optional Accessories

| | |
|--------------------------|--|
| GigE cable 5m | 5m Ethernet cable with shielded and AWG 26 stranded. M12 to RJ45 plug |
| Power & DI/O cable 3m | 3m cable for NEON to connect power, DI/O and UART cable. M12 to free cable end. |
| VGA & USB cable 3m | 3m cable for NEON to connect VGA and USB. M12 plug to VGA female and USB-type A female plug. |
| IP67 kits lens protector | Lens protector for NEON to achieved IP67 rated |
| DIN-1040 terminal board | Terminal board for DI/O, RS-232, GigE, USB and power input for NEON series. |
| 16mm C-mount lens | 16mm 4Mega pixels resolution C-mount lens for 1" sensor |
| LED lighting | 15" high-density white LED arrays in ring shape. |
| NEON Starter Kit | ADLINK Smart Camera Starter Kit with NEON-1040/1020 and accessories package |

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