

Nematron nPC20 Fanless Industrial PC

High-Performance Fanless, Embedded Computer

UL/cUL Class I Div 2 Approved

Compact Form Factor

Intel® Processing

Solid State Drive Storage

55°C Operating Temp

64-bit Application Support

Mounting Options



Nematron
by COMARK

DS nPC20, Rev B

Optional
64-Bit
Application
Support



Made in USA

Overview



The nPC20 Fanless Node PC is a high-performance Non-display computer built for industrial use. Intel® ATOM Dual and Quad Core processing options give this industrial-grade node the power to run your control applications.

With quality and durability in mind, the nPC20 is built to be reliable in the most extreme conditions and is fully tested with UL Class I, Div 2 certifications. The nPC20 will also offer several mounting options including DIN-Rail and mounting brackets, making mounting in a NEMA enclosure much simpler.

Standard Configuration

- Two High Performance / Low Power CPU options:
 - Intel Dual Core ATOM E3826 Fanless Processor (1.46 GHz, 1MB Cache, 2 Threads)
 - Intel Quad Core ATOM E3845 Fanless Processor (1.91 GHz, 2MB Cache, 4 Threads)
- 4GB DRAM (8GB optional)
- I/O Connectivity:
 - Two Gigabit (10/100/1000) Ethernet ports
 - One RS-232/422/485 serial port
 - Two USB 3.0 ports
 - Audio Out port
 - Analog Video and HDMI ports (Supports dual video)
- 240GB Solid State Drive (480 and 960GB options)
- 24 VDC (10-30 VDC) input
 - Optional AC power supply sold separately
- Simple, easy-to-use DIN Rail and Shelf Mounting Brackets included for mounting in multiple orientations
- UL and cUL Ordinary Locations Listed
- UL and cUL Hazardous Locations Listed
 - Class I Division 2, Groups A, B, C, & D when mounted in a NEMA enclosure
- 0°-55°C operational temperature rating
- Windows 7 Professional (32-bit) pre-installed
 - Windows 7 Ultimate (64-bit) with Multilanguage support, Windows 10 Enterprise IoT (32-bit or 64-bit), or No OS Installed optional
- ThinClient Configurations available:
 - ACP® ThinManager Enabled
 - PXE-Boot Configuration (for non-ACP ThinManager applications)
- FCC & CE Compliant
- 2-Year warranty

Technical Specifications



Physical

Overall Dimensions	4.49" x 6.40" x 1.50" (114.05mm x 162.56mm x 38.1mm)
Overall Dimensions w/ Mounting Brackets	4.49" x 7.40" x 1.98" (114.05mm x 187.96mm x 50.29mm)
Weight	2.0 lbs (0.9 kg)
Shipping Weight	3.0 lbs (1.4 kg)

Processor

Type & Processor	ATOM E3826 (fanless) Intel Dual Core ATOM E3826	ATOM E3845 (fanless) Intel Quad Core ATOM E3845
Core Speed	1.46 GHz	1.91 GHz
Threads	2	4
L2 Cache	1 MB	2 MB
Chipset	Intel Baytrail-E3800 Series	Intel Baytrail-E3800 Series
Video RAM	Integrated Intel Gen7 Intel Graphics DX 11, OGL3.2 Max. Resolution: 1920 x 1200	Integrated Intel Gen7 Intel Graphics DX 11, OGL3.2 Max. Resolution: 1920 x 1200
Ethernet Controller	Realtek RTL8111G-CG 10/100/1000 (2 ports)	Realtek RTL8111G-CG 10/100/1000 (2 ports)

Storage & Peripherals

Operating System	Windows 7 Professional (32-bit); Optional Windows 7 Ultimate (64-bit), Windows 10 Enterprise IoT (32-bit or 64-bit), or No OS installed
DRAM	4GB Single Module (204-pin DDR3 SO-DIMM, non-ECC, unbuffered, 1066 MHz); Optional 8GB ¹
Standard Storage	240GB SATA Solid State Drive; Optional 480GB or 960GB Solid State Drive
Available I/O	(1) Analog Video Port, (1) HDMI Video, (1) Serial RS-232/422/485 Port, (2) USB 3.0 Ports, (2) Gigabit 10/100/1000 Ethernet Ports, (1) Audio Line Out port ¹ 8GB DRAM only available with Windows 7 Ultimate (-W7U) 64-bit or Windows 10 (-W1064) 64-bit operating systems.

Power

Input Power	15W
DC Input Voltage/Max Current	10-30 VDC, 1.5 A Maximum
Optional External AC Supply	100-240 VAC, 47-63 Hz, 1.1 A Maximum

Technical Specifications

Environmental

	Operating	Non-operating
Temperature ²	0°C to 55°C	-20°C to 70°C
Humidity	20% to 80% RH, noncondensing	20% to 80% RH, noncondensing
Shock ³	15g peak acceleration, 11msec	30g peak acceleration, 11msec
Vibration (5-2000 Hz) ³	.006" peak to peak displacement, 1.0g maximum acceleration	.015" peak to peak displacement, 2.5g maximum acceleration
Altitude ⁴	Sea level to 10,000 feet	Sea level to 40,000 feet

² Temperature specifications are for air temp surrounding the unit (i.e. inside any enclosure being utilized). Meets US Federal Requirements specified in 46 CFR 111.01-15 (d) for offshore electrical systems.

³ Shock & Vibration specifications established with Solid State drives and no rotating media.

⁴ Altitude specification is established by using all internal component specifications.

Compliance

FCC	47 CFR, Part 15, Class A
EU CE Marking	CE, EN 55022: Class A, EN 61000-3-3, EN 61000-6-2, IEC 60950-1
Agency Approvals *	UL508 Listed, ANSI/ISA 12.12.01-2012 5, cUL Listed CSA C22.2, #142, cUL Listed CSA 22.2, #213

* nPC20: Class I Division 2, Groups A, B, C, D; Temp. Code: T4A, when installed on a flat surface of a Type 1 enclosure.

Features

- 10-30 VDC Power Supply (AC optional, sold separately)
- UL/cUL 508, Class I Div 2, CE Approvals
- COM1 Serial Port RS-232/422/485
- Vented Chassis Design for Optimal Cooling
- Finned Heat Sync for Cooling
- Mounting Brackets
- Audio Line Out Port
- Two USB 3.0 Ports
- Dual Gigabit 10/100/1000 Ethernet Ports
- Dual Video Output - Analog VGA and HDMI ports allow video to be displayed on two monitors
- Rugged, exterior chassis
- Made with Pride in the USA



DIN Rail Mounting - Side or Back



Back or Side DIN Rail Mount Configurations (adjustable Din Rail clip included)

DIN Mounting on M-Series Monitors



MTG-DIN-nPC20

Din Rail section that allows the nPC20 to be mounted to all M-Series Monitors, including the M1500SRT monitor, using the 75mm or 100mm VESA mounting pattern on the rear of the units

Wall or Shelf Mount Brackets



Wall or Shelf Mounting Brackets included with unit



Standard 2-year warranty
- Covers parts and service

Order Number Generation

Base Unit Configuration: nPC20-E3826-4GB-240SS-W7-24, nPC20 Node PC with Intel Dual Core Fanless ATOM E3826 processor, 4GB DRAM, 240GB Solid State Drive, Windows 7 Professional (32-bit) operating system, and 24VDC power supply.



nPC20- -24

Processors:

E3826	Intel Dual Core ATOM E3826 (fanless)
E3845	Intel Quad Core ATOM E3845 (fanless)

DRAM:

-4GB	4GB DRAM
-8GB	8GB DRAM ¹

Solid State Drive Storage:

-240SS	240GB Solid State Drive ²
-480SS	480GB Solid State Drive ²
-960SS	960GB Solid State Drive ²

Operating System:

-W7	Windows 7 Professional (32-bit)
-W7U	Windows 7 Ultimate (64-bit)
-W1032	Windows 10 Enterprise IoT (32-bit)
-W1064	Windows 10 Enterprise IoT (64-bit)
-NOS	No Operating System

Power Supply:

-24	10-30 VDC non-isolated input
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¹ 8GB DRAM only available with Windows 7 Ultimate (-W7U) 64-bit or Windows 10 (-W1064) 64-bit operating systems.

² Solid State Drive options carry a 5-year (part-only) warranty.

nPC20 ThinClient Configurations

ACP® ThinManager Enabled



nPC20-E3826-2GB-24-ACP

nPC20 Node PC with Intel Dual Core Fanless ATOM E3826 processor, 2GB DRAM, No storage drive, No operating system, 24VDC power supply, and ACP ThinManager Enabled

Note: This ACP ThinManager Enabled configuration does NOT contain any storage or operating system. It is configured for booting to a network via ACP protocol only. It is NOT a standalone PC. This has been verified by ACP (Automation Control Products) to be ThinManager LXi and ACP ThinManager compatible. Nematron does not supply ACP ThinManager. For application support contact ACP. For more info on ACP: <http://www.thinmanager.com>

nPC20 PXE-Boot Configuration

nPC20-E3826-2GB-24-PXE

nPC20 Node PC with Intel Dual Core Fanless ATOM E3826 processor, 2GB DRAM, No storage drive, No operating system, 24VDC power supply

Note: This PXE-boot configuration does NOT contain any storage or operating system. It is configured for booting to a network via the Preboot eXecution Environment (PXE) protocol only. It is NOT a standalone PC. This configuration can be used for booting to a multitude of other ThinClient applications (other than ACP ThinManager) using the PXE protocol. This has also been verified by ACP to be ThinManager LXi compatible. Nematron does not supply ThinClient software applications. Consult the ThinClient application software developer for support.

Accessories



PWR-AC-nPC20

100-240 VAC Power Supply for connection directly to the nPC20. nPC20 only rated for 50°C operation when using this power supply.

NOTE: NOT allowed for use in installations where Hazardous Locations Approvals are required.



MTG-DIN-nPC20

DIN Rail section for mounting to the 75 or 100 mm VESA pattern on the rear of all M-Series monitors.