NRP301

Main Features

- ◆ Support 8th/9th Intel® Core™ socket type processor
- ◆ Dual channel DDR4 SO-DIMM, 32GB max.
- ◆ 1 x VGA and 1 x HDMI 1.4 4K display output.
- ◆ Dual Intel® LAN ports

- ◆ 6 x COM port, 10 x USB, Mic-in/Line-out
- ◆ TPM 2.0 module onboard design for security advantage
- ◆ Support Intel® AMT Technology
- ◆ Onboard M.2 Key B/E for storage & wireless connection

Product Overview

The NRP301 is an industrial grade fanless edge computing system powered by Intel® 8th /9th Core™ i7/i5/i3 and Celeron processors (formerly Coffee Lake) with Intel® Q370/H310 express chipset. In addition to the great computing performance, the NRP301 features with outstanding GPU performance based on Intel® UHD Graphics 630 engine. The NRP301 system comes with rich I/O connectivity including 6 x COM ports, 4 x USB 3.0, 2 x LANs, 1 x VGA and 1 x HDMI 1.4 for 4K display output. There are 6 more expandable USB 2.0 which can be added to the edge by request. It also comes in great expansion possibilities, including two M.2 slot for support SSD storage, Wi-Fi, or LTE connectivity. The NRP301 is perfect for industrial testing equipment or measurement machine applications which need rich I/O connectivity in high demand for supercomputing and graphic performance.

Specifications

CPU Support

- ◆ Support following listed processor.

Generation	Socket type	CPU	Smart Cache	Cores	Threads	Base Frequency	TDP
8th Coffee Lake	FCLGA1151	i3-8100T	6M	4	4	3.1GHz	35W
8th Coffee Lake	FCLGA1151	i5-8500T	9M	6	6	2.1GHz	35W
8th Coffee Lake	FCLGA1151	i7-8700T	12M	6	12	2.4GHz	35W
9th Coffee Lake Refresh	FCLGA1151	i3-9100TE	6M	4	4	2.2GHz	35W
9th Coffee Lake Refresh	FCLGA1151	i5-9500TE	9M	6	6	2.2GHz	35W
9th Coffee Lake Refresh	FCLGA1151	i7-9700TE	12M	8	8	1.8GHz	35W

Chipset & Memory

- ◆ Intel® PCH Q370
- ◆ Intel® PCH H310
- ◆ 2x DDR4 SO-DIMM socket, supports up to 32G DDR4 2666 SDRAM, with un-buffered and non-ECC

Graphic & Display

- ◆ Intel® UHD Graphics 630
- ◆ 1 x VGA output on the edge, resolution up to 1920 x 1200 @ 60Hz
- ◆ 1 x HDMI 1.4 output on the edge, resolution up to 4096 x 2160 @ 30Hz
- ◆ 1 x LVDS internal connector, dual channel, resolution up to 1920 x 1200 @ 60Hz (eDP: by request)
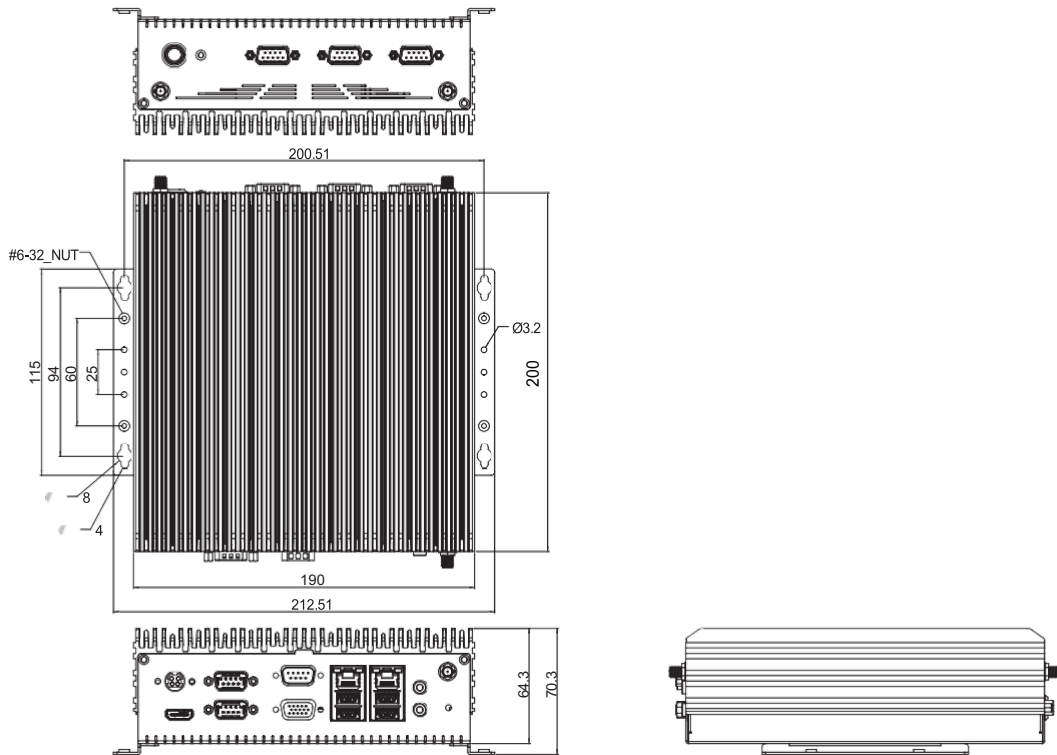
I/O Interface on the Front

- ◆ Power button
- ◆ HDD LED status
- ◆ 3 x RS232 DB9 COM port (COM4 support 5V or 12V by jumper selection)
- ◆ 2 x Antenna holes

I/O Interface on the Rear

- ◆ +12V DC input
- ◆ 1 x HDMI 1.4 output, resolution up to 4096 x 2160 @30Hz
- ◆ 3 x RS232/422/485 DB9 COM ports
- ◆ 1 x VGA output
- ◆ 2 x Intel® GbE LAN ports (Intel® I219-LM and I211-AT)

Dimension Drawing

- ◆ 4 x USB 3.0
- ◆ 1 x Mic-in, 1 x Line-out powered by Realtek ALC888

Internal I/O Function

- ◆ 6 x USB 2.0, internal pin header (with Intel® Q370 chipset)
- ◆ 3 x USB 2.0, internal pin header (with Intel® H310 chipset)
- ◆ 8 channel GPIO, 5V TTL level
- ◆ 1 x Internal pin header for speaker with 2W amplifier

Expansion

- ◆ 1 x M.2 Key E, 2230, support optional Wi-Fi/Bluetooth module.
- ◆ 1 x M.2 Key B, 2242/3042, support optional SSD or 3G/4G/LTE module.
- ◆ 1 x SIM card holder for M.2 Key B use

Storage

- ◆ 1 x 2.5" SATA SSD space

Power Requirements

- ◆ +12V DC input
- ◆ Equip with 96W AC/DC power adapter in carton.
- ◆ AT/ATX power setting by jumper (ATX as the default)

Environment

- ◆ Operating temperature: -5°C to 45°C ambient with 0.7m/s air flow (according to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14)
- ◆ Relative humidity (non-condensing): 95% (non-condensing)
- ◆ Storage temperature: -20°C to 80°C

- ◆ Shock protection: 50G peak acceleration, 11ms according to IEC60068-2-27
- ◆ Vibration protection
  - Random: 2Grms @ 5~500 Hz, IEC60068-2-64
  - Sinusoidal: 2G @ 5~500 Hz, IEC60068-2-6

Certification

- ◆ CE approval (EN55032/EN55035)
- ◆ FCC Class A

Mechanical & Dimension

- ◆ Aluminum and metal chassis with fanless design
- ◆ 200mm (L) x 190mm (W) x 64.3mm (H) without mounting bracket.
- ◆ 200mm (L) x 212.5mm (W) x 70.3mm (H) with mounting bracket

Operating System

- ◆ Win10 64bit, Linux

Ordering Information

- ◆ NRP301-Q (P/N: 10W10X30200X0)
  8th/9th Intel® Core™ edge computing fanless system with Intel® PCH Q370

- ◆ NRP301 -H (P/N: 10W10X30201X0)
  8th/9th Intel® Core™ edge computing fanless system with Intel® PCH H310