

Main Features

- 10th Generation Intel® Core™ i9 /i7/ i5/i3, Pentium® 14nm LGA 1200 socket processor (Comet Lake-S) , max. 10 core 80W, PCH Q470E
- 4 x U-DIMM DDR4 with non-ECC 2933/2666/2400MHZ up to 128GB
- Support triple display 3 x HDMI, VGA, LVDS
- 2 x Intel® GbE LAN ports, 2 x USB 3.2 (Gen2), 7 x USB 3.2 (Gen1), 2 x USB 2.0, 3 x RS232, 1 x S232/485/422, 4 x SATA 3.0, 8-bit GPIO, HD audio
- 1 x PCIe x16, 1 x PCIe x16 (8 lanes), 1 x PCIe x4, 1 x PCIe x4 (2 lanes), 3 x M.2, Micro SIM card x 1, TPM 2.0 (optional)

Product Overview

The NEX 816 is a micro ATX board. It is equipped with 10th Generation Intel® Core™ i9/i7/i5/i3 processors to support 80W max and Intel® Q470E chipset. It comes with four DDR4 DIMM sockets up to 128GB DDR4 U-DIMM 2933/2666/2400MHz with non-ECC support and integrated HD graphic controller. The NEX 816 with Intel® Q470E PCH provides high performance and rich expansion. The SATA 3.0 ports with RAID 0, 1, 5, and 10, helps to provide quick access to data files and data protection. Furthermore, it also features an integrated Intel® AMT 12 for easier maintenance.

NEX 816 operates at a temperature range from 0°C to 60°C, this design is ideal for embedded applications that run in outdoor or semi-outdoor environments, such as kiosks, outdoor systems installed in harsh environments, home automation, and thin clients.

Specifications

CPU Support

- 10th Generation Intel® Core™ i9 /i7/ i5 /i3, Pentium® 14nm LGA 1200 socket processor (Comet Lake-S), max. 10 core 80W
- Intel® Q470E express chipset

Main Memory

- 4 x DDR4 U-DIMM memory socket with non-ECC support, up to 128 GB 2933/2666/2400MHz

BIOS

- 256Mbit Flash ROM, AMI BIOS

Display

- 3 x HDMI 1.4b connector (resolution up to 4096 x 2160@60/30 Hz with digital audio)
- 1 x VGA connector (resolution up to 1920 x 1200@60Hz).
- LVDS (resolution up to 1920 x 1200@60Hz).

* Tip: Multiple display : (HDMI + HDMI + VGA, HDMI + HDMI+LVDS, HDMI + VGA + LVDS, HDMI + HDMI + HDMI)

System

- USB 3.2 Gen2 x 2, USB 3.2 Gen1 x 7, USB 2.0 x 2
- 3 x RS232, 1 x RS232/485/422
- Realtek ALC897 6 channel HDA codec
- 1 x Front panel header, 8-bit digital I/O (In/Out programmable), WDT,

chassis intrusion, 3 x Fan connector, TPM 2.0 (optional)

Storage

- 4 x SATA 3.0 (6.0Gb/s) ports, support RAID 0/1/5/10
- 1 x M.2 2280/2242 Key M (PCIe x4)

Expansion Slot

- 1 x PCIe 3.0 x16 slot (16 lanes) (8 lanes when dual use PCIe x16), 1 x PCIe 3.0 x16 (8 lanes)
- 1 x PCIe 3.0 x4 slot, 1 x PCIe 3.0 x4 slot (2 lanes) , 1 x M.2 2230 Key E (PCIe/CNV1)
- 1 x M.2 2280/2242 Key M (PCIe x4) , 1 x M.2 3042/3052/2242 Key B (PCIe/USB 3.2/SATA) , 1 x Micro SIM card slot

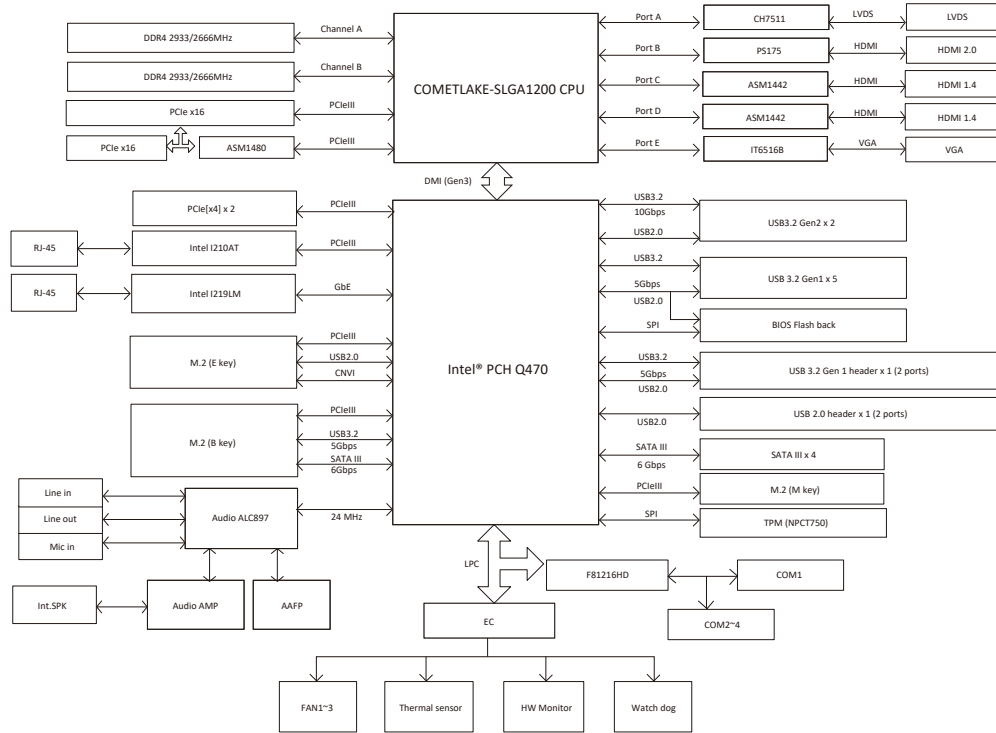
Edge I/O

- 2 x USB 3.2 (Gen2) ports (10 Gbps), 4 x USB 3.2 (Gen1) ports (5 Gbps)
- 1 x VGA, 3 x HDMI (2.0 x 1, 1.4 x 2)
- 2 x RJ45
 - Intel® PHY I219-LM GbE LAN x 1 (supports Intel® AMT 12.0)
 - Intel® I210-AT GbE LAN x 1
- 1 x DB-9 COM (by COM1 supports RS-232/422/485, 5V/12V/RI)
- 1 x 3 ports HD audio Jack (Line, Mic-in, Line-out)

Internal I/O

- 2 x USB 2.0 (2 x 5 2.54mm pin header)
- 4 x serial ports

Block Diagram



- 3 x RS232, 1 x RS232/485/422
- ♦ 1 x 8-bit digital I/O
- ♦ HA audio:
 - 1 x speaker header (Line-out)

Power Requirement

- ♦ 1 x 24-pin ATX connector x 1, 8-pin (2 x 4) ATX 12V power connector
- ♦ Support both AT and ATX power supply mode

Dimensions

- ♦ Micro-ATX form factor, 9.6" x 9.6" (244 mm x 244 mm)

Environment

- ♦ Board level operation temperature: 0°C to 60°C
- ♦ Storage temperature: -40°C to 85°C
- ♦ Relative humidity:
 - 10% to 95% (operating, non-condensing)
 - 5% to 95% (non-operating, non-condensing)

Certifications

- ♦ Meet CE/FCC Class A

Ordering Information

Barebone

♦ NEX 816 (P/N: 6879G0008160F)

Micro-ATX form factor, 10th Generation Intel® Core™ LGA1200 processor, VGA, 3 x HDMI, 4 x DDR4 U-DIMM, 2 x USB 3.2 (Gen2), 7 x USB 3.2 (Gen1), 2 x USB 2.0, 2 x GbE LAN, 4 COM, 2 x PCIe x16, 2 x PCIe x4, 3 x M.2

Packing list

- ♦ 2 x SATA cable
- ♦ 1 x COM port cable
- ♦ I/O shield
- ♦ NEX 816

Optional Accessories

- ♦ LGA115X CPU cooler (P/N: TBD)
- ♦ SATA cable (P/N: 60233ATA48X00)
- ♦ COM cable (P/N: TBD)