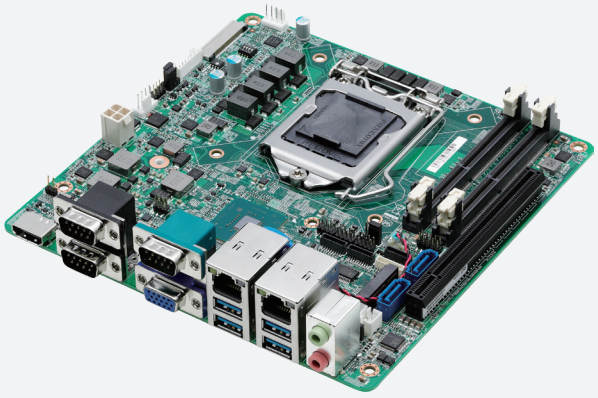
X302

Mini-ITX Embedded Computing Board

Powered by 8th/9th Intel® Core ™ Processor



Main Features

- Support 8th/9th Intel® Core™ socket type processor
- Dual channel DDR4 SO-DIMM, 32GB max
- 1 x VGA, 1 x HDMI 1.4 (support 4K display output) and 1 x LVDS
- Dual Intel® LAN ports
- 6 x COM port, 10 x USB, Mic-in/Line-out/Speaker-out
- Optional TPM 2.0 for security advantage
- Support Intel® AMT technology
- Onboard M.2 Key B/E for storage & wireless connection

Product Overview

The X302 is an industrial Mini-ITX embedded computing board 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 X302 features with outstanding GPU performance based on Intel® UHD Graphics 630 engine. The X302 comes with rich I/O connectivity including 6 x COM ports, 10 x USB 3.0, 2 x LANs, 1 x VGA and 1 x HDMI 1.4 for 4K display output. The internal LVDS connector can be connected with panel for kiosk use. It also comes in great expansion possibilities, including two M.2 slot for support SSD storage, Wi-Fi or LTE connectivity. The X302 is perfect to be embedded in industrial testing equipment or measurement machine applications which need rich I/O connectivity in high demand for higher computing 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)

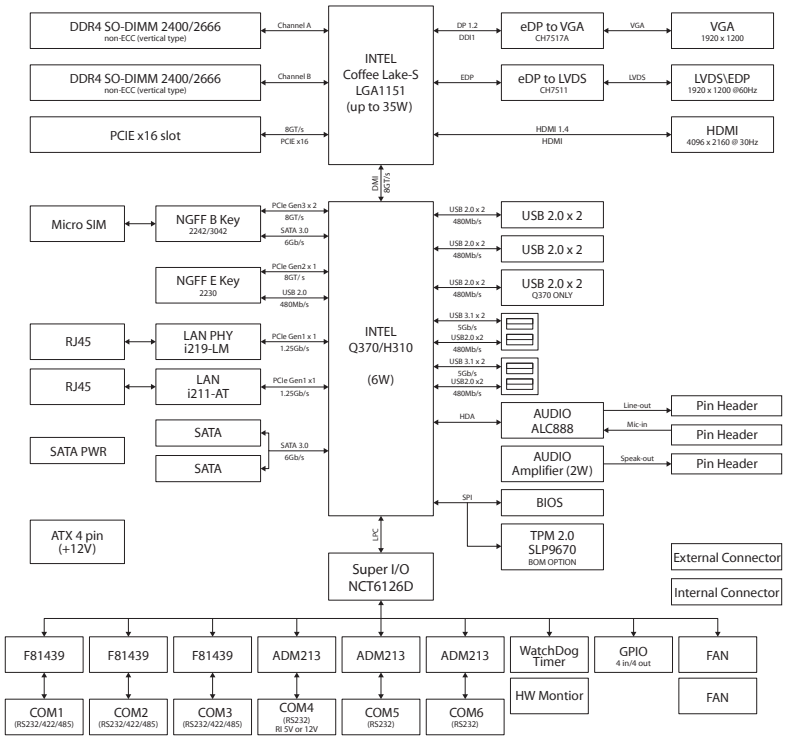
I/O Interface on the Edge

- 1 x HDMI 1.4 output, resolution up to 4096 x 2160 @30Hz
- 3 x RS232/422/485 DB9 COM port
- 1 x VGA output
- 2 x Intel GbE LAN port (Intel® I219-LM and I211-AT)
- 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 Q370 chipset)
- 4 x USB 2.0, internal pin header (with H310 chipset)
- 3 x RS232, internal pin header (COM4 support RI, 5V or 12V)
- 8 channel GPIO, 5V TTL level

Block Diagram



- 1 x Internal speaker pin header with 2.5W 4Ω Amplifier
- 1 x Power button internal pin header
- 1 x Set of HDD LED, internal pin header
- 2 x 12V PWM fan connector, internal pin header

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/3G/4G or LTE module
- 1 x SIM card holder for M.2 Key B use
- 1 x PCIe x16 slot

Storage

- 2 x 7-pin SATA and 2 x 5V, 1A SATA power connectors
- TPM 2.0: optional feature by request

Power Requirements

- ATX 4-pin, +12V DC input
- AT/ATX power setting by jumper (ATX as the default)

Environment

- Operating temperature: 0°C to 60°C ambient with 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

Weight Information

- 10 x board in bulk package
- Net weight: TBC
- Gross weight: TBC

Ordering Information

- **X302-Q370 (P/N: 10W10X30202X0)**
  Mini-ITX Embedded Computing Board powered by 8th/9th Intel® Core™ processor
- **X302-H310 (P/N: 10W10X30203X0)**
  Mini-ITX Embedded Computing Board powered by 8th/9th Intel® Core™ processor