



## Main Features

- Intel Atom® x6000E series processors
- 1 x DDR4 SO-DIMM socket, up to 32GB
- Support 1 x HDMI 1.4, 4K30Hz and a dual channel 18/24-bits LVDS connector, up to 1920 x 1080@60Hz
- TPM2.0 on board
- Rich I/O connectivity: 3 x 2.5GbE LAN, 4 x USB port, 6 x COM
- Variety expansion: 1 x M.2 Key B, 1 x M.2 Key E, 1 x mini-PCIe slot
- Support dual power input, 12V/24V

## Product Overview

X103 is 3.5" single board computer, which is designed with multi-core Intel Atom® x6000E Series SoC processors. X103 series target for embedded applications with its advanced computing performance, low power consumption, and integrated with rich I/O features. It supports 1 x HDMI 1.4, 1 x LVDS (2K), triple 2.5GbE LAN ports, 2 x USB 3.2 Gen2 ports, 2 x USB 2.0 ports, 2 x RS232/RS422/RS485 and 4 x RS232 ports. Meanwhile, it supports variety of M.2 and mini-PCIe slot expansion, compatible with variety of modules for multiple industry applications, for example: smart parking, EV charging station, vending machine, and kiosks, etc.

X103 series support wide-range operating temperature from -40°C to 85°C. It is the best choice and ideal design for semi-outdoor and outdoor embedded applications.

## Specifications

### CPU Support

- Intel Atom® x6000E Series SoC processors
  - x6211E, dual-core, 1.3GHz, 6W
  - x6413E, qual-core, 1.5GHz, 9W (default)

### Graphic & Display

- Intel® Gen11 UHD graphics engines
- 1 x HDMI 1.4, resolution up to 3840 x 2160@30Hz
- 1 x Dual channel 18/24-bit LVDS connector, up to 1920x 1080@60Hz (optional: eDP selects by jumper setting)

### Main Memory

- 1 x 260-pin DDR4 SO-DIMM socket, support 3200MHz, up to 32GB, with non ECC, Un-buffered memory
- Un-buffered memory

### Onboard LAN

- 3 x RJ45 connector with Intel® i226-IT, 2.5GbE LAN controller

### Edge I/O Interface

- 3 x RJ45 connector with LEDs
- 1 x HDMI 1.4 output

- 2 x USB 3.2 Gen2
- 2 x USB 2.0
- 1 x Speaker out (6W)

### Onboard Internal I/O

- COM1~2: RS232/422/485, 9-pin header
- COM3~6: RS232 only, 9-pin header
- 1x 10-pin header for GPIO, 4x GPI, 4x GPO
- 1x 4-pin Smart Fan connector
- 2, 2x 5-pin header for 2x USB 2.0 ports
- 1x 9-pin header for MIC-in/Line-out

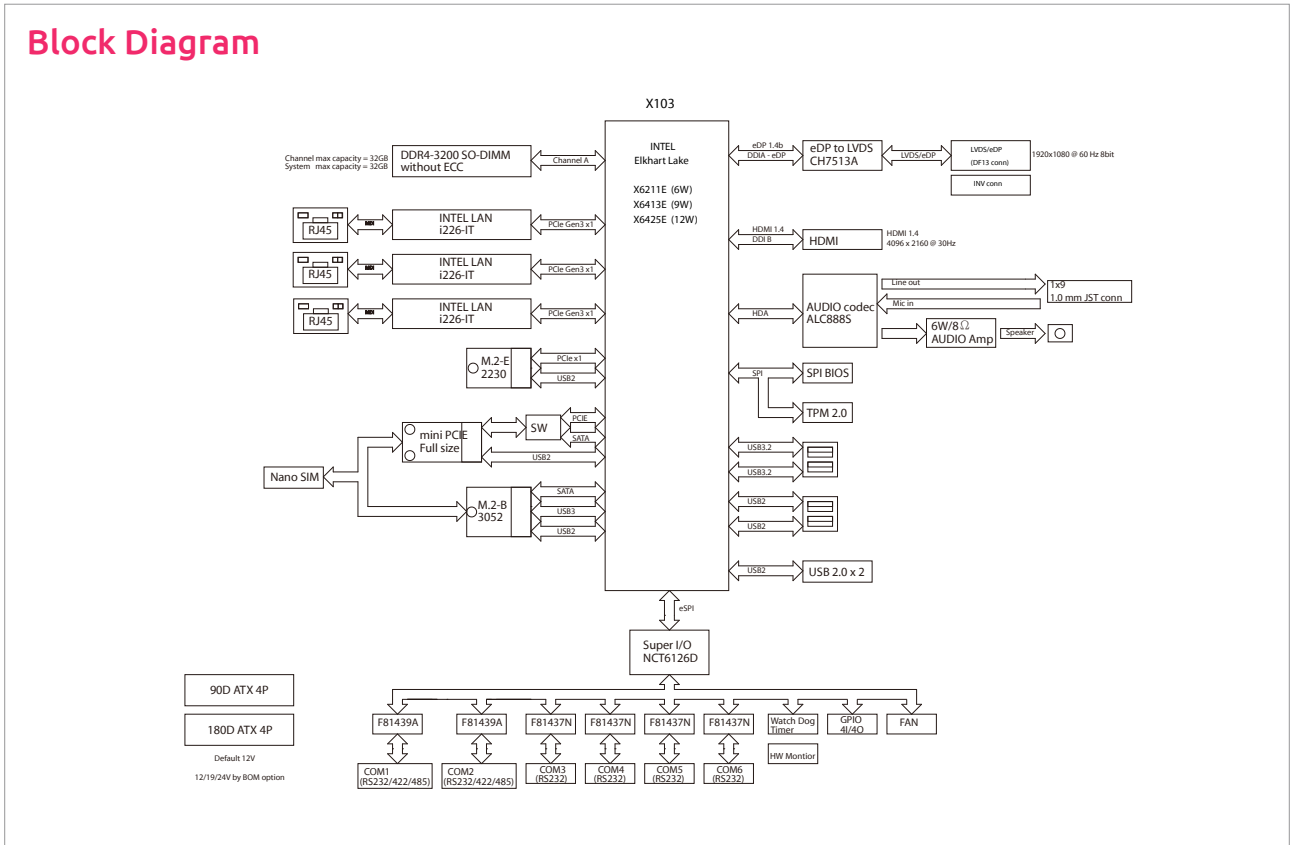
### Expansion

- 1 x M.2 Key B, support 3052 (Signal SATA, USB2.0, USB3.0)
- 1 x M.2 2230 Key E for Wi-Fi+BT module
- 1 x mini-PCIe slot (PCIe, USB 2.0, SATA signal)
- 1 x SIM socket onboard, support Key B+M, 5G/LTE module

### Power Requirements

- Support 12V/24V DC power Input via 1 x 4-pin ATX connector

## Block Diagram



### Environment

- Operating temperature: -40°C ~ 85°C in chamber with airflow 0.7m/s
- Storage temperature: -40°C to 85°C
- Relative humidity : 95% (non-condensing)

### Dimension

- 146mm (L) x 102mm (W) (5.7" x 4.0")

### Shipping Information

- Product weight (N.W): 1.6Kg
- Package weight (G.W): 2.8kg
- Carton dimension: 460mm x 373mm x 211mm

### Certification

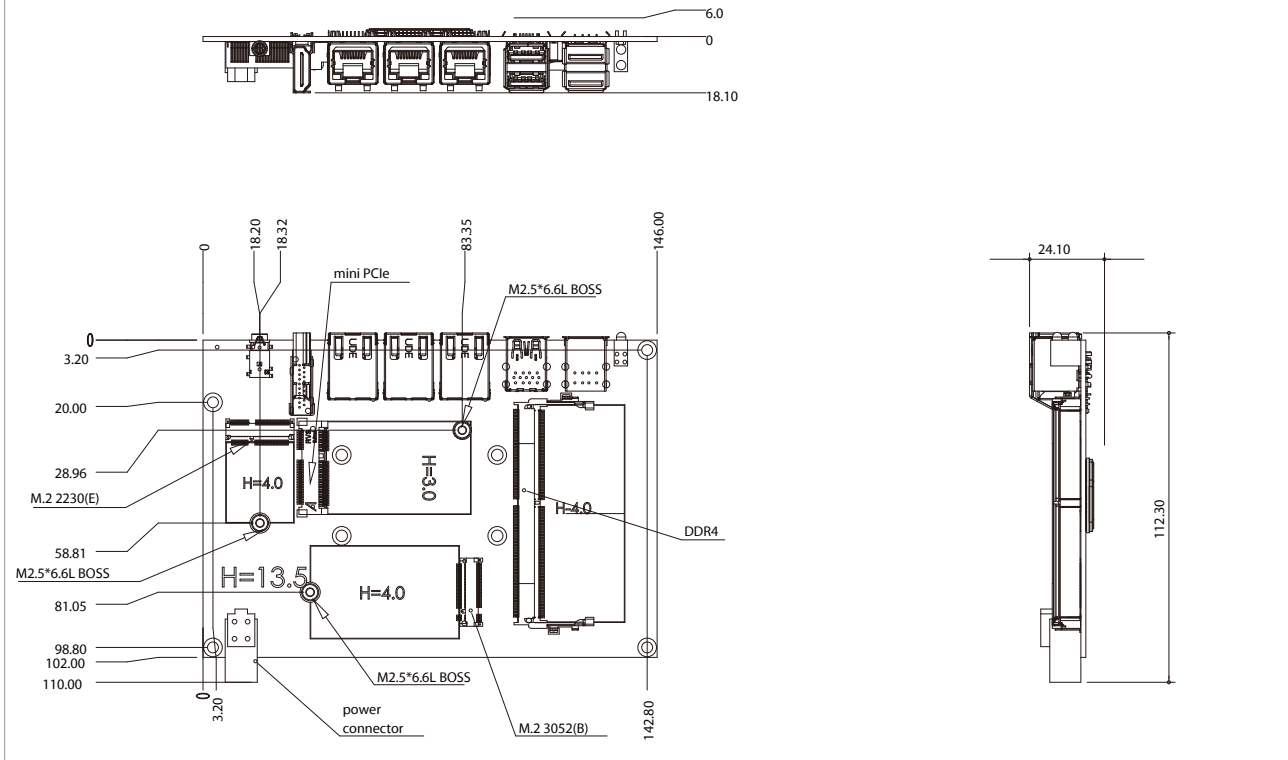
- CE (EN55035 + EN55032)
- FCC Class A (EMI part 15B)

### Operating System

- Win10 64-bit
- Linux 4.1 above



## Dimension Drawing (mm)



## Ordering Information

- X103-x6211E (P/N: TBD)**  
 Embedded computing board with Intel Atom® x 6211E processor,  
 with 1 x HDMI, 1 x LVDS, 3 x LAN, 6 x COM ports
- X103-x6413E (P/N: 10W10X10301X0)**  
 Embedded computing board with Intel Atom® x 6413E processor,  
 with 1 x HDMI, 1 x LVDS, 3 x LAN, 6 x COM ports