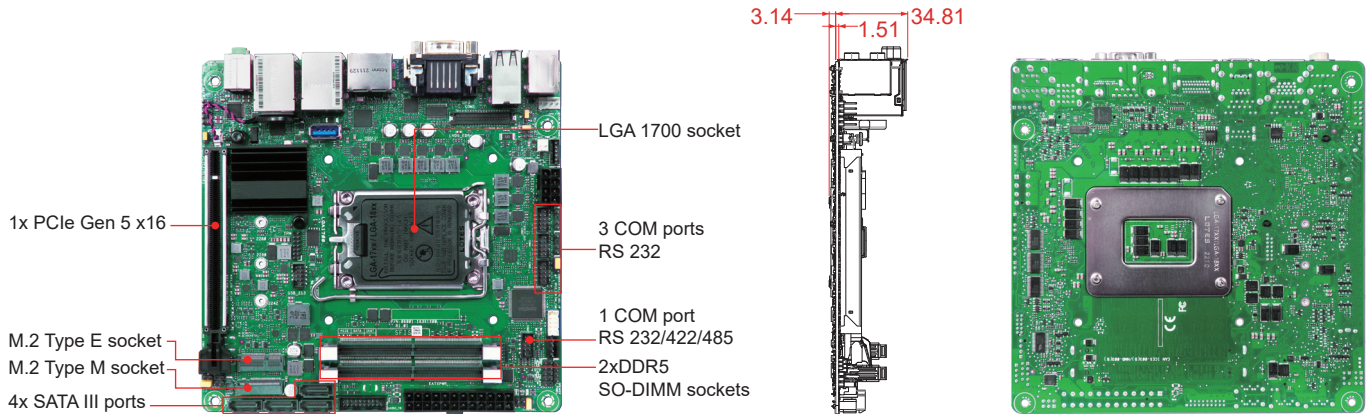# WADE-8213-Q670E

12th Gen Intel® Core™ Processors based Mini-ITX Board with DDR5 SO-DIMM up to 64GB, eDP/LVDS, 3x DP Ports, HDMI, Dual GbE LAN, 5x COM Ports in

- 3.14
- 1.51
- 34.81

Labels on board image:
- 1x PCIe Gen 5 x16
- M.2 Type E socket
- M.2 Type M socket
- 4x SATA III ports
- LGA 1700 socket
- 3 COM ports RS 232
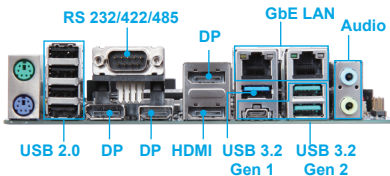- 1 COM port RS 232/422/485
- 2xDDR5 SO-DIMM sockets

WADE-8213-Q670E is based on Intel® Q670E chipset and 12th Gen Intel® Core™ i9/i7/i5/i3 desktop processors. It supports multiple display outputs, options of legacy features for industrial applications, GPIO ports, dual LAN as well as rich expandability with PCIe Gen5, M.2 M and M.2 E keys. Featuring rich I/O capabilities and advanced connectivity on a smaller and thinner space-saving platform, the Portwell WADE-8213-Q670E is ideal for a wide range of embedded applications.

FEATURES

- Support 12th Intel® Gen Core™ Processors
- Two SO-DIMM support DDR5 DRAM up to 64GB
- Support dual Ethernet, 5x COM ports, 3x USB 3.2 Gen2 ports, 4x SATA III ports and Audio
- One PCIe Gen5 x16, one M.2 Key M for SSD, one M.2 Key E for Wireless

REAR I/O

Rear I/O labels:
- RS 232/422/485
- GbE LAN
- Audio
- DP
- USB 2.0
- DP
- DP
- HDMI
- USB 3.2 Gen 1
- USB 3.2 Gen 2

ORDERING GUIDE

AB1-3P58	(R).WADE-8213-Q670E ATX ESB.Q670E w/o ECC LGA1700.w/DDR5 / eDP/LVDS/Thripal DP/HDMI/ Dual GbE/COM/Audio/USB

PACKING LIST

One WADE-8213-Q670E Main board
One I/O shield
One SATA cable
One CPU coolor backplate

GENERAL

Processor	12th Gen Intel® Core™ Processors CPU in LGA1700 package
Chipset	Intel® Q670E
BIOS	AMI uEFI BIOS
Memory	Support up to 64GB DDR5 4800 on two SO-DIMM socket
Storage Devices	4x SATAIII ports
Watchdog Timer	Programmable watchdog timer
Hardware Monitoring	System monitor(Voltage, Fan Speed and Temperature)
Expansion Interface	- 1x PCIe x16 Gen 5 - 1x M.2 Key E 2230 with PCIe x1 and CNVI for Wireless - 1x M.2 Key M 2242/2260/2280 with PCIe x4 and SATA3 for SSD

I/O INTERFACE

Audio	Audio Jack on rear I/O with Line-out / Line-in with Realtek ALC897 audio controller
Ethernet	- Intel® I210AT (1GbE) and Intel® I225LM (2.5GbE) Ethernet controller - 2x RJ45 connectors on rear I/O
Serial port	- 2x RS232/422/485 ports (one port on rear I/O and one port on board header) - 3x RS232 port on pin header
USB	- 3x USB3.2 (Gen2) on rear I/O(2x Type A + 1x Type C) - 1x USB3.2 (Gen1) on rear I/O - 1x USB3.2 (Gen1) on board(Vertical Type-A) - 2x USB3.2 (Gen1) on pin header - 4x USB2.0 on rear I/O - 2x USB2.0 on pin header
GPIO	8-bit configurable controlled by embedded controller

DISPLAY

Graphic Controller	Intel® UHD Graphics 770 supports DirectX 12, OpenGL 4.6
Display Interface	- DP: Three DP ports on rear I/O, resolution up to 8K - eDP/LVDS: One eDP/LVDS port on board header, switch by BIOS - HDMI: One HDMI connector on rear I/O

Mechanical & Environment

Dimension	170mm(L) x 170mm(W)
Power Supply	ATX power input
Environment	- Operation Temperature: 0°C to 60°C - Storage Temperature: -20°C to 80°C - Relative Humidity: 5% to 95%, non-condensing
MTBF	Over 100,000 hours at 40°C

Logos: AMI BIOS | USB 3.0 | USB 2.0 | 2 GbE | SATA 6Gb | DP | FC | CE | Linux | Windows 10 IoT | RoHS

*All information provided is subject to change without notice. Last updated: October 25, 2022