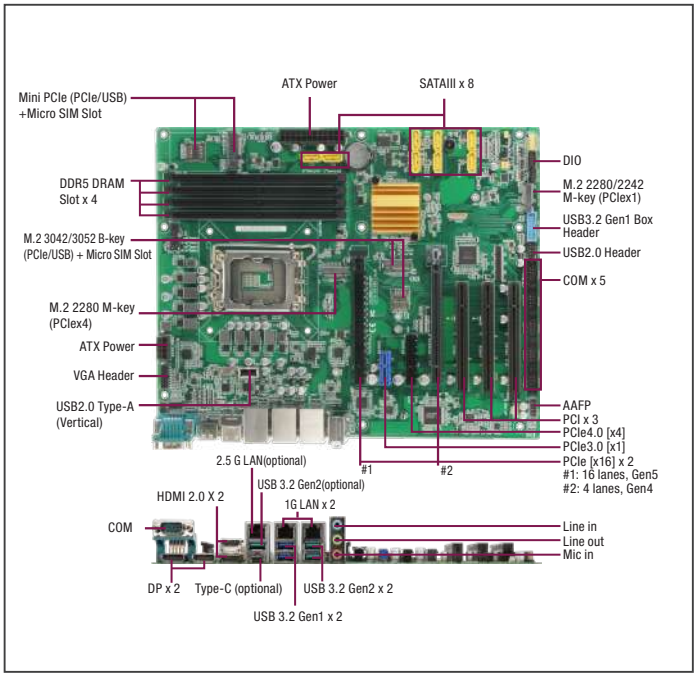
ATX-Q670A

ATX with 12th/13th/14th Generation Intel® Core™ LGA1700 Socket Processors, TDP Max. 125W, DDR5 DRAM, Multiple Display Ports



Features

- 12th/13th/14th Generation Intel® Core™ LGA1700 Socket Processors
- DDR5 DRAM Support, 4000MHz, Max. 128GB
- Four Independent Display: HDMI 2.0 x 2, DP x 2, VGA x 1
- Dual Intel® GbE (Optional: additional LAN 3 I225-LM x 1)
- M.2 2280/2242 M-Key x 2, M.2 3042/3052 B-Key x 1 + Micro SIM Slot x 1, Mini PCIe x 1 + Micro SIM Slot x 1
- USB 3.2 Gen 2 x 2, USB 3.2 Gen 1 x 4, USB 2.0 x 3 (Optional: USB Type-C x 1, USB 3.2 Gen 2 x 3)
- SATA x 8
- Switchable USB Power feature for USB device reset
- Bootable feature in rear USB Port for enhanced security
- Onboard TPM 2.0

PCI Express · Giga LAN · DDR 5 · HDMI · USB 3.2 Gen 2 · USB 2.0

Specifications

System	
Processor	12th/13th/14th Generation Intel® Core™ LGA1700 Socket Processors (formerly Alder Lake/Raptor Lake), TDP Max 125W
Chipset	Intel® Q670E Chipset
Memory	DDR5 4000MHz DIMM x 4, up to 128GB Non-ECC, Unbuffered Memory, Dual-Channel Memory Architecture
I/O Chipset	NCT6126D
Ethernet	Intel® PHY I219-LM Giga LAN x 1 (supports Intel® AMT 12.0) Intel® I210-AT Giga LAN x 1 Intel® I225-LM Giga LAN x 1 (Optional) RJ-45 x 2 (Optional: RJ-45 x 3, LAN 3 with USB 3.2 Gen 2 x 1)
Audio	Realtek ALC897 6-Channel High Definition Audio CODEC
TPM	TPM 2.0 onboard
Expansion Slots	PCIe Gen 5 [x16] x 1 (16 Lanes) PCIe Gen 3 [x1] x 1 (1 Lane, Open Slot) PCIe Gen 4 [x4] x 1 (4 Lanes, Open Slot) PCIe Gen 4 [x16] x 1 (4 lanes) PCI Slot x 3 M.2 3042/3052 B-Key x 1 (PCIe 3.0 [x1]/USB 3.2 Gen 1) Mini PCIe Slot x 1 (PCIe 3.0/USB 2.0) Micro SIM Card Slot x 1 (M.2 B-Key or Mini PCIe Slot)
BIOS	256Mbit Flash ROM, AMI BIOS
H/W Monitor	Temperature Monitor on CPU/Chassis, Voltage Monitor on Vcore/5V/3.3V/12V, Fan Monitor on CPU/Chassis
WatchDog Timer	1~255 step by software program
Smart Fan Control	CPU Fan x 1/Chassis Fan x 3
Wake On LAN/ PXE	Yes (WOL/PXE)
Power State	S3, S4, S5
Graphics	
Graphics Chipset	Intel® Graphics Media Accelerator
Graphics Multi Display	HDMI+HDMI+DP+DP, HDMI+HDMI+DP+VGA, HDMI+VGA+DP+DP
VGA	Up to 1920 x 1200 @60Hz (via IT6516B)
DVI	—
HDMI	HDMI 2.0, up to 4096 x 2160 @60/30Hz, with Digital Audio
Display Port	DP 1.4, up to 4096 x 2160 @24Hz or 3840 x 2160 @60 Hz, with Digital Audio
LVDS	—
eDP	—
Backlight Control	—
Environment & Power & ME	
Battery	Lithium battery
Power Requirement	24-pin ATX Connector x 1, 8-pin ATX 12V Power Connector x 1
Operating Temperature	32°F ~ 140°F(0 ~ 60°C) (Operational humidity: 60°C @ 90% RH Non-Condensing)
Storage Temperature	-40°F ~ 185°F (-40°C ~ 85°C)

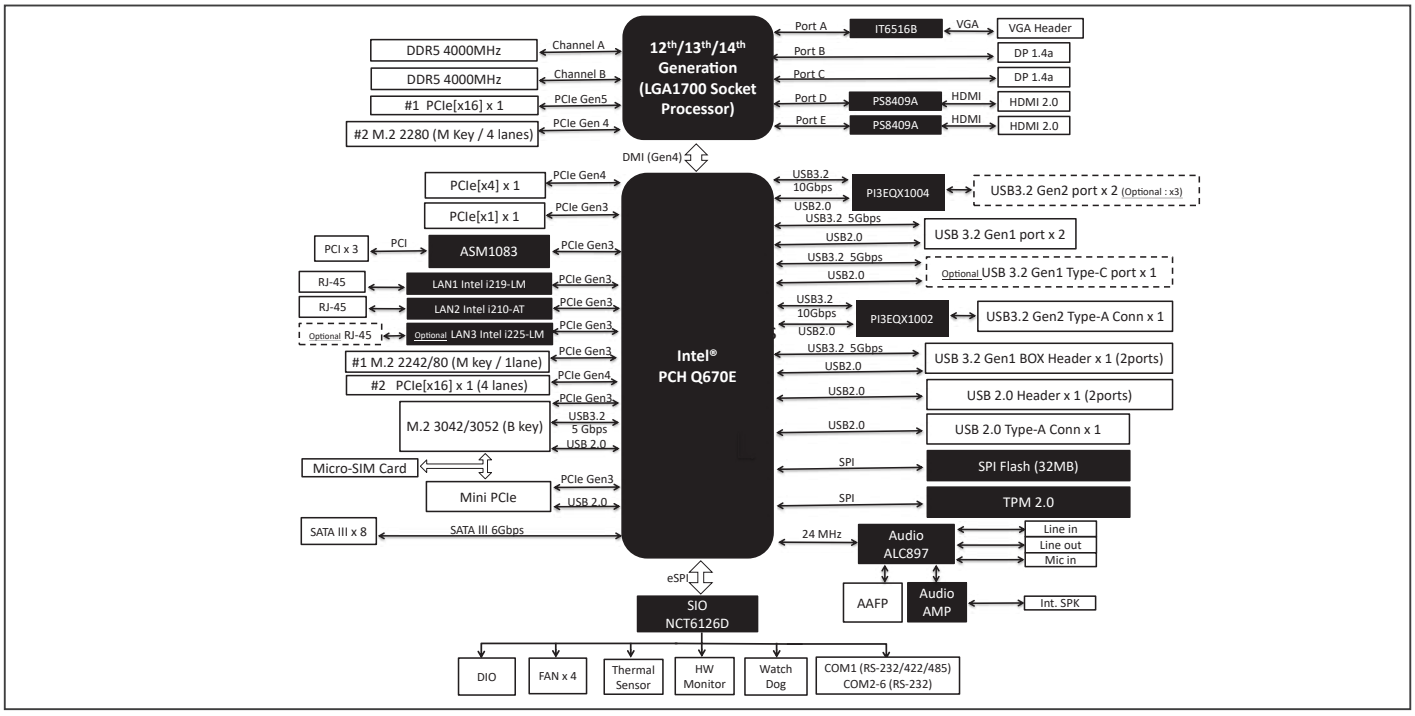
Certificate	CE & FCC Class A
Form Factor	ATX Form Factor, 12" x 9.6" (305mm x 244mm)
Weight	1.76 lb (0.8 Kg)
MTBF (Hours)	281,760
Rear Panel I/O Ports	
USB	USB 3.2 Gen 2 x 2 (10Gbps, Optional: x 3 units if with LAN 3 I225-LM) USB 3.2 Gen 1 x 2 (5Gbps) USB Type C x 1 (5Gbps, 5V, 1.5A, Optional) (All ports are bootable, can be deactivated per BIOS function; USB Power switchable feature)
Display I/O	HDMI 2.0 x 2, DP 1.4 x 2
Audio I/O	Audio Jack x 3, Line-in, Mic-in, Line-out
LAN I/O	RJ-45 LAN x 2 (Optional: RJ-45 x 3)
Serial Port	DB-9 COM x 1 (supports RS-232/422/485, 5V/12V/RI)
PS/2 Port	—
Others	—
Internal I/O Connectors	
Storage	SATA III x 8, supports RAID 0/1/5/10 M.2 2280 M-Key x 1 (PCIe Gen 4.0, 4 Lanes) M.2 2242/80 M-Key x 1 (PCIe Gen 3.0 1 Lane)
USB	USB 3.0 Box Header x 1 (2x5P, p=2.54mm), supports USB 3.2 Gen 1 x 2 (USB Power switchable feature) USB 2.0 Header x 1 (2x5P, p=2.54mm) supports USB 2.0 x 2 (USB Power switchable feature) USB 2.0 x 1 (Vertical Type-A)
Display I/O	VGA Header x 1
Audio I/O	Speaker Header (Line-out), AAFP x 1
Serial Port	RS-232 Header x 5
PS/2 Port	—
Parallel Port	—
DIO	8-bit Digital I/O Interface x 1 (In/Out Programmable)
FAN	4-pin CPU Fan Connector x 1 (PWM Mode) 4-pin Chassis Fan Connector x 3 (PWM Mode)
Power	—
Others	Chassis Intrusion x 1, AT/ATX Mode Select Jumper x 1, Front Panel Header x 1 Clear CMOS Jumper x 1, Buzzer Onboard x 1, 3-pin ME Lock Header x 1
OS	
OS Support	Windows® 10 64-bit, Windows® 11 64-bit

Packing List

- **14001-0063010**
  SATA 6G Cable (7P, 180; 90, 500mm 2 in1)
- **14019-00060700**
  VGA Cable (320mm, 2X8P, w/bracket)
- **I/O Shield**
- **ATX-Q670A**

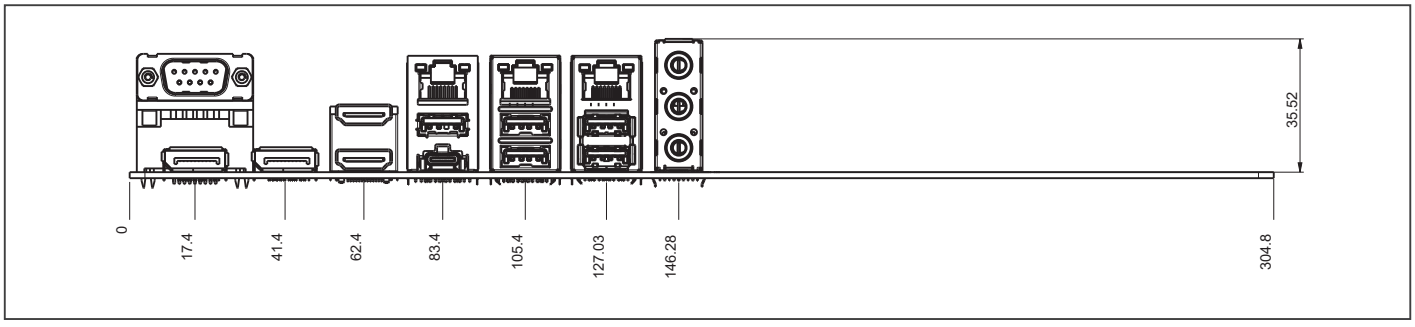
Note: All specifications are subject to change without notice.

Block Diagram



Dimension

Unit: mm



Ordering Information

Part Number	CPU	RAM	Fan/ Fanless	Display	Storage	LVDS	LAN	USB	RS-232	RS-232/422/485	Expansion Slot	Power	TPM	Temp.
ATX-Q670A-A10-2L	LGA1700 Socket	DDR5 4000MHz	Fan	HDMI x 2 DP x 2 VGA Header x 1	SATA III x 8 M.2 2280 M-Key x 1 M.2 2242/80 M-Key x 1	—	Intel®GbE x 2	USB 3.2 Gen 2 x 2 USB 3.2 Gen 1 x 2 USB 3.0 Header x 1 USB 2.0 Header x 1 USB 2.0 x 1 (Vertical Type A)	5	1	PCIe [x16] x 1 PCIe [x1] x 1 PCIe [x4] x 1 PCIe [x16] x 1 (4 Lanes) PCI Slot x 3 M.2 3042/3052 B-Key x 1 (PCIe/USB) Mini PCIe Slot x 1 (PCIe/USB) Micro SIM Card Slot x 1	ATX	TPM2.0 onboard	32°F ~ 140°F (0°C ~ 60°C)

Optional Accessories

Part Number	Description
1709100330	USB 2.0 cable (9P, 330MM, p=2.54mm, w/bracket)
170910020K	USB 2.0 cable (9P, 200MM, p=2.54mm, w/o bracket)
1700190450	USB3.2 Gen 1 Cable (19P, 450mm, w/bracket)
AP-FNTH11700010	2U CPU cooler for LGA1700,TDP Max. 95W, 2500RPM
AP-FNTH11700020	1U CPU cooler for LGA1700,TDP Max. 125W, 5400RPM
AP-FNTH11700030	2U CPU cooler for LGA1700,TDP Max 125W, 8400RPM