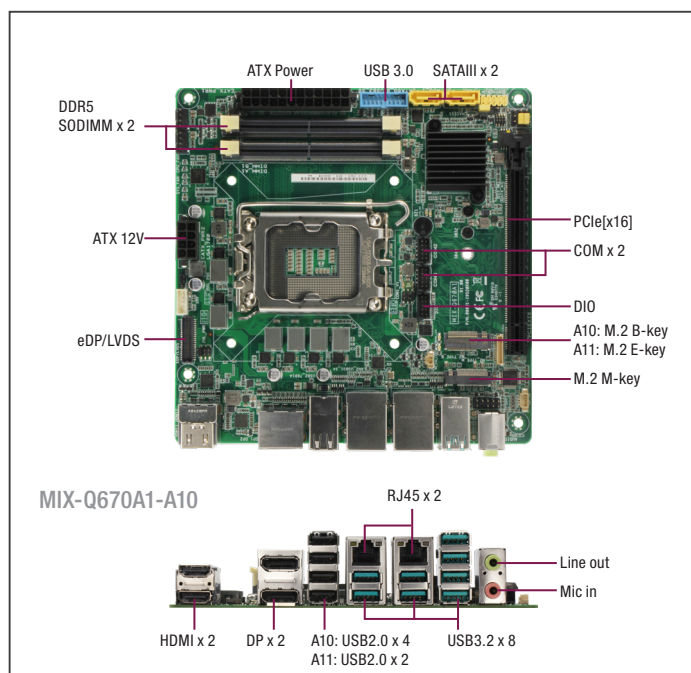


# MIX-Q670A1

Mini-ITX with 12th/13th/14th Gen Intel® Core™ and Series 2 LGA1700 Socket Processors



## Features

- 12th/13th/14th Gen Intel® Core™ and Series 2 (formerly Bartlett Lake) LGA1700 Socket Processors
- DDR5 SODIMM, 4800MHz, Max. 64GB
- HDMI 2.0 x 2 + DP 1.2 x 2
- M.2 M-Key x 1, M.2 B-Key x 1 (A10/A13-AN), M.2 E-Key x 1 (A11-EK)
- USB 3.2 Port x 10, USB 2.0 Port x 4 (A10)
- USB 3.2 Port x 10, USB 2.0 Port x 2 (A11-EK)
- USB 3.2 Port x 6, USB 2.0 Port x 8 (A13-AN)
- Intel GbE LAN x 2
- SATA 6.0 Gb/s x 2
- PCIe Gen 5 [x16] x 1



## Specifications

System	
Processor	12th/13th/14th Gen Intel® Core™ and Series 2 (formerly Bartlett Lake) LGA1700 Socket Processors, Max. TDP 65W
Chipset	Intel® Q670E Chipset
Memory	Dual-Channel DDR5 4800MHz SODIMM x 2, Max. 64GB
I/O Chipset	Intel® UHD Graphics
Ethernet	Intel® Ethernet Connection I219-LM x 1 Intel® Ethernet Controller I210-AT x 1
Audio	Realtek® ALC897 with Amp
TPM	Onboard TPM 2.0 IC
Expansion Slots	PCIe Gen 5 [x16] x 1 A10/A13-AN: M.2 3042/3052 B-Key x 1 A11-EK: M.2 2230 E-Key x 1
BIOS	256Mbit Flash ROM, AMI BIOS
H/W Monitor	Temperature Monitor on CPU/Chassis, Voltage Monitor on Vcore/5V/12V, Fan Monitor on CPU/Chassis
WatchDog Timer	1~255 steps by software program
Smart Fan Control	CPU Fan/Chassis Fan
Wake On LAN/ PXE	Yes (WOL/PXE)
Power State	S3, S4, S5
Graphics	
Graphics Chipset	Intel® UHD Graphics
Graphics Multi Display	HDMI x 2 + DP x 2, HDMI x 2 + DP x 1 + LVDS x 1, HDMI x 2 + DP x 1 + eDP x 1, HDMI x 1 + DP x 2 + LVDS x 1, HDMI x 1 + DP x 2 + eDP x 1
VGA	—
DVI	—
HDMI	Up to 3840 x 2160 @60Hz (HDMI 2.0)
Display Port	Up to 3840 x 2160 @60Hz
LVDS	Up to 1920 x 1080 @60Hz, Dual-Channel 18/24 bit
eDP	Up to 1920 x 1080 @60Hz (via CH7513), co-layout LVDS
Backlight Control	PWM
Environment & Power & ME	
Battery	Lithium Battery
Power Requirement	ATX Voltage/Current(A) requirement:+3.3V/0.06A;+5V/11.65A;+12V/17.68A;+5VS B/0.14A
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
Form Factor	Mini-ITX: 6.7" x 6.7" (170mm x 170mm)
Weight	1.1 lb (0.5Kg)
MTBF (Hours)	366,590

### Rear Panel I/O Ports

USB	A10: USB 3.2 Gen 2 x 8 + USB 2.0 x 4 A11-EK: USB 3.2 Gen 2 x 8 + USB 2.0 x 2 A13-AN: USB 3.2 Gen 2 x 4 (available by request)
Display I/O	HDMI x 2, DP x 2
Audio I/O	Mic-in x 1, Line-out x 1
LAN I/O	LAN Port x 2 (RJ-45)
Serial Port	—
PS/2 Port	—
Others	SIM Socket x 1 (A10 only)

### Internal I/O Connectors

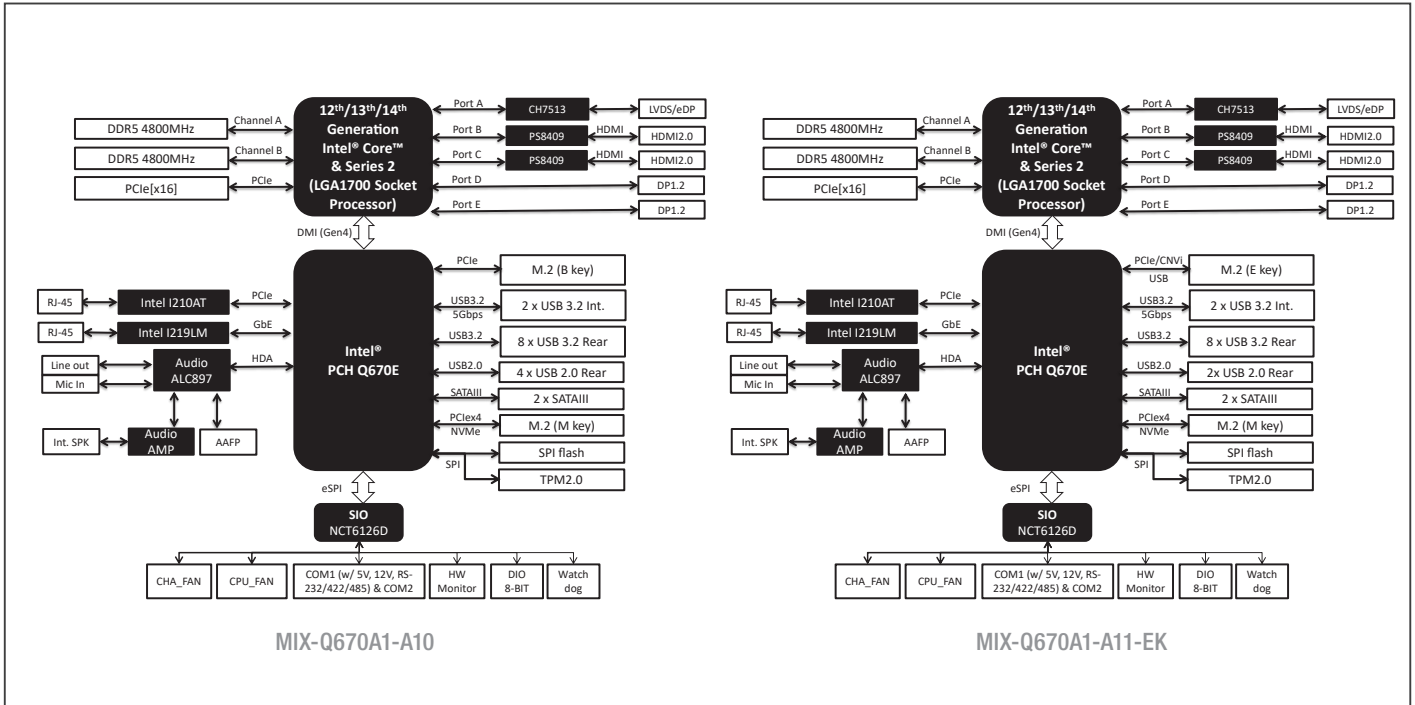
Storage	SATA III x 2 (6.0Gb/s), M.2 2280 M-Key
USB	A10/A11-EK: USB 3.2 Gen 1 x 2 ports A13-AN: USB 3.2 Gen 1 x 2 ports + USB 2.0 x 8 ports (available by request)
Display I/O	—
Audio I/O	AAFP x 1, Speaker x 1
Serial Port	Box Header for COM x 1 (RS-232/422/485) Box Header for COM x 1 (RS-232)
PS/2 Port	—
Parallel Port	—
DIO	Digital I/O Box Header x 1
FAN	4-pin CPU Fan Connector x 1, 4-pin Chassis Fan Connector x 1
Power	—
Others	Front Panel Connector x 1, Chassis Intrusion x 1, Onboard Buzzer x 1, CMOS Jumper x 1
OS	
OS Support	Windows® 10 64-bit, Windows® 11 64-bit

## Packing List

- I/O Shield
- SATA Cable
- MIX-Q670A1

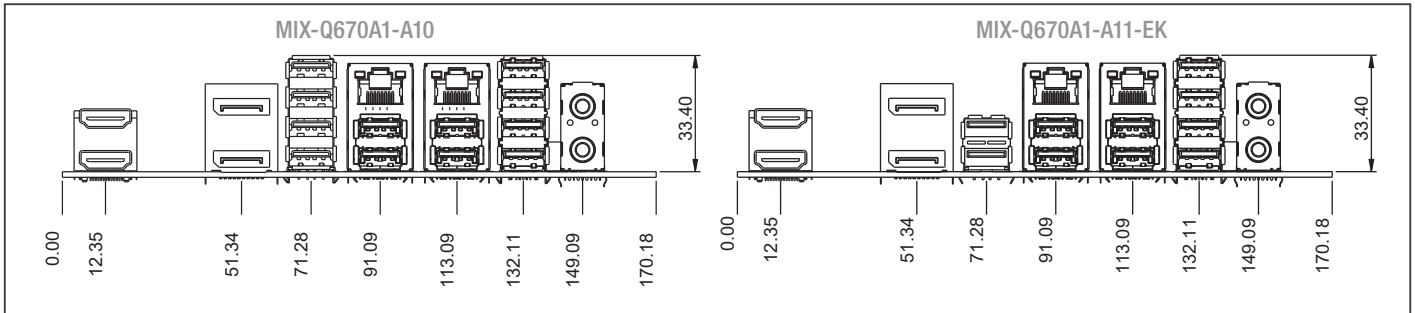


## Block Diagram



## Dimension

Unit: mm



## Ordering Information

Part Number	CPU	RAM	Fan/Fanless	Display	LVDS/eDP	Storage	LAN	USB	RS-232	RS-232/422/485	Expansion Slot	Power	TPM	Temp.
MIX-Q670A1-A10	Socket	SODIMM x 2	Fan	HDMIx2, DPx2, LVDS/eDPx1	1	SATA3 x2, M.2(M-key)	GbE x 2	USB2.0 x 4, USB3.2 x 10	1	1	PCIe slot [x16] x 1, M.2(B-Key) x 1	ATX	2.0	0~60°C
MIX-Q670A1-A11-EK	Socket	SODIMM x 2	Fan	HDMIx2, DPx2, LVDS/eDPx1	1	SATA3 x2, M.2(M-key)	GbE x 2	USB2.0 x 2, USB3.2 x 10	1	1	PCIe slot [x16] x 1, M.2(E-Key) x 1	ATX	2.0	0~60°C
MIX-Q670A1-A13-AN (available by request)	Socket	SODIMM x 2	Fan	HDMIx2, DPx2, LVDS/eDPx1	1	SATA3 x2, M.2(M-key)	GbE x 2	USB2.0 x 8, USB3.2 x 6	1	1	PCIe slot [x16] x 1, M.2(B-Key) x 1	ATX	2.0	0~60°C

## Optional Accessories

Part Number	Description
1701100206	COM Cable (200MM, p=2.00mm)
AP-FNTH11700020	(TF).1U CPU cooler for LGA1700,TDP up to 125W.12V.5400RPM.Smart FAN.90°90*25mm.Ablecom.ACL-D11122
AP-FNTH11700030	(TF).2U CPU cooler for LGA1700,TDP up to 125W.12V.8400RPM.Smart FAN.95°95*63.5mm.Ablecom.ACL-D21120
AP-FNTH11700010	(TF).2U CPU cooler for LGA1700,TDP up to 95W.12V.2500RPM.Smart FAN.91°91.Ablecom.ACL-S41120
1709100201	USB 2.0 Cable (10P, 200mm, p=2.00mm, w/bracket)
1700100491	USB 2.0 Cable (10P, 490mm, p=2.00mm)
1709050201	USB 2.0 Cable (5P, 220mm, p=2.00mm)