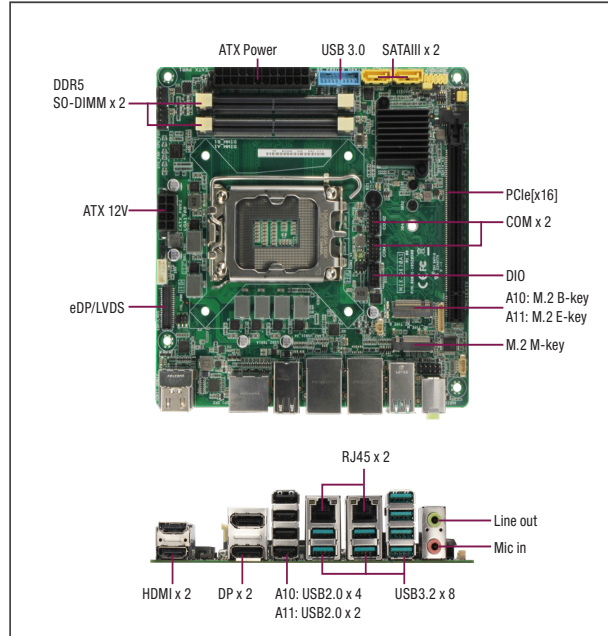


MIX-Q670A1

MIX with 13th & 12th Gen Intel® Core™ Processors (formerly Raptor Lake-S/Alder Lake-S)

Industrial Motherboards



Specifications

System	
Processor	13th & 12th Gen Intel® Core™ Processors (Raptor Lake-S/Alder Lake-S)
Chipset	Q670E
Memory	Dual-Channel DDR5 4800MHz SODIMM x 2, Max. 64GB
I/O Chipset	Intel® UHD Graphics
Ethernet	Intel® GbE LAN 219LM x 1 Intel® GbE LAN 210AT x 1
Audio	Realtek® ALC897 with Amp
TPM	Onboard TPM 2.0 IC
Expansion Slots	PCIe Gen 5 [x16] x 1 A10: 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 step 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 4096 x 2160 @60Hz (HDMI 2.0)
Display Port	Up to 4096 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
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	0%~90%RH, non-condensing
Certificate	CE & FCC
Form Factor	Mini-ITX: 6.7" x 6.7" (170mm x 170mm)

Features

- 13th & 12th Gen Intel® Core™ Processors (Raptor Lake-S/Alder Lake-S)
- DDR5 SODIMM Support, 4800MHz, Max. 64GB
- HDMI 2.0 x 2 + DP 1.2 x 2
- M.2 2280 M-Key x 1, M.2 3042/3052 B-Key x 1
- USB 3.2 Port x 8, USB 2.0 Port x 4
- Intel GbE LAN x 2
- SATA 6.0 Gb/s x 2
- PCIe Gen 5 [x16] x 1

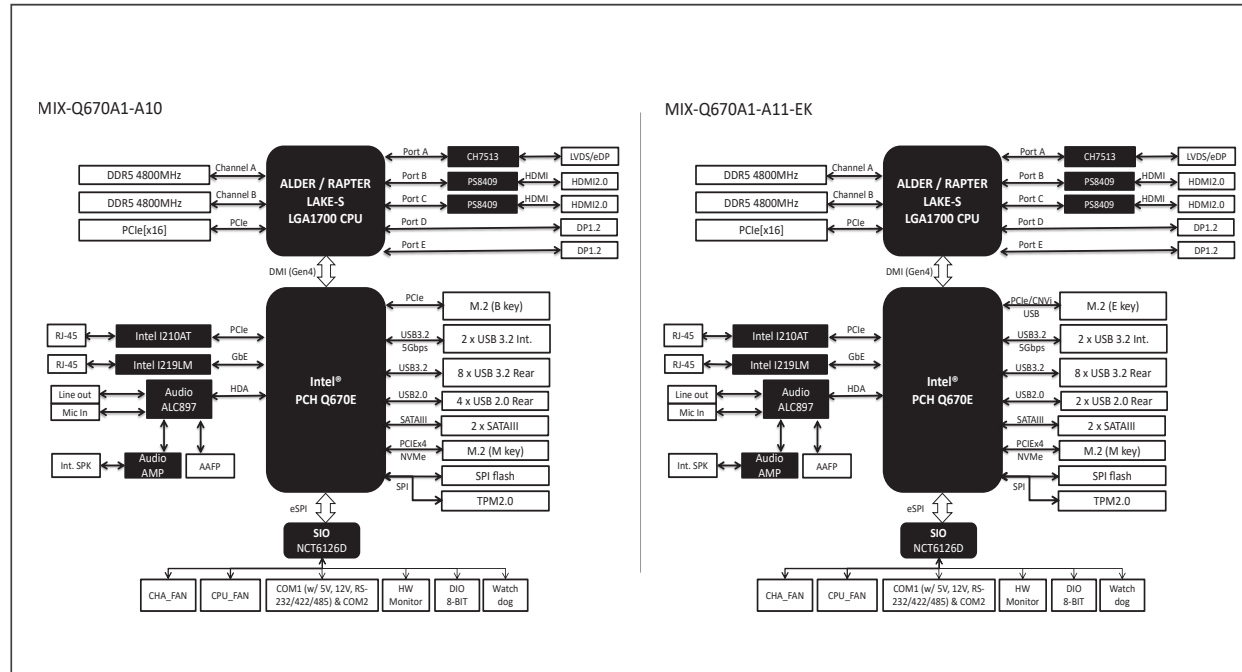


Weight	1.1 lb. (0.5Kg)
MTBF (Hours)	—
Rear Panel I/O Ports	
USB	A10: USB 3.2 Gen 2 x 8 + USB 2.0 x 4 A11-EK: USB 3.2 Gen 2 x 8 + USB 2.0 x 2
Display I/O	HDMI x 2, DP x 2
Audio I/O	Mic-in x 1, Line-out x 1
LAN I/O	LAN Port x 2 (RJ-45)
Serial Port	—
PS/2 Port	—
Others	SIM Socket x 1 (A10 only)
Internal I/O Connectors	
Storage	SATA III x 2 (6.0Gb/s), M.2 2280 M-Key
USB	USB 3.0 Pin Header x 1 (Supports additional USB 3.2 Gen 1 x 2)
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

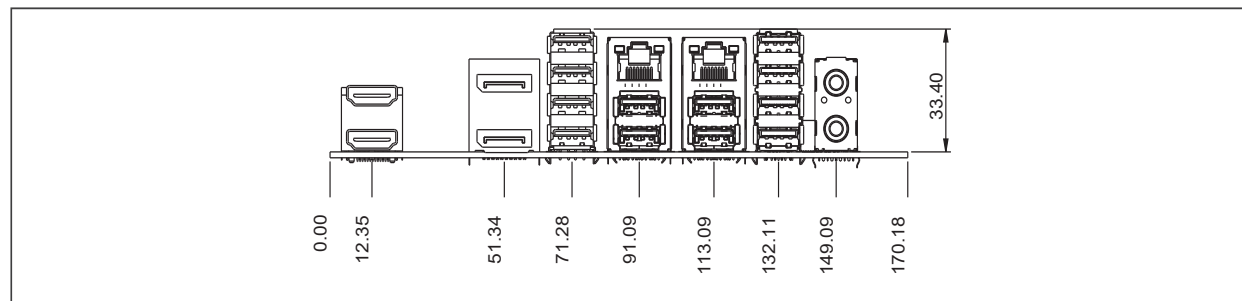
Packing List

- 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-0670A1-A10	Socket	SODIMM x 2	Fan	HDMI x 2, DP x 2, LVDS/eDP x 1	1	SATA III x 2, M.2 2280 M-Key	GbE x 2	USB 2.0 x 4 USB 3.x x 8	1	1	PCIe [x16] x 1, M.2 3042/3052 B-Key x 1	ATX	2.0	0~60°C

Optional Accessories

Part Number	Description
1701100206	COM Cable (200MM, $\phi=2.00\text{mm}$)

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Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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