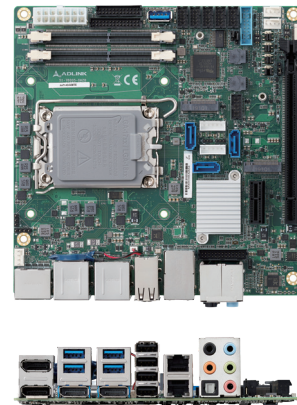


AmITX-AD-G

Mini-ITX Embedded Board with
12th Gen Intel® Core™ Desktop
Processor



Features

- 12th Gen Intel® Core™ i7/i5/i3, Intel® Pentium® and Celeron® Desktop Processor with Intel® Q670E/H610E Chipset
- Up to 32GB dual channel DDR4 at 3200MHz
- PCIe x16, PCIe x1, M.2
- 4 DisplayPort outputs on rear IO (Q670E)
- Supports Smart Embedded Management Agent (SEMA®) functions
- 2x USB 3.2 Gen 1 onboard header (H610E: 1x USB 2.0)
- 4x USB 3.2 Gen 1

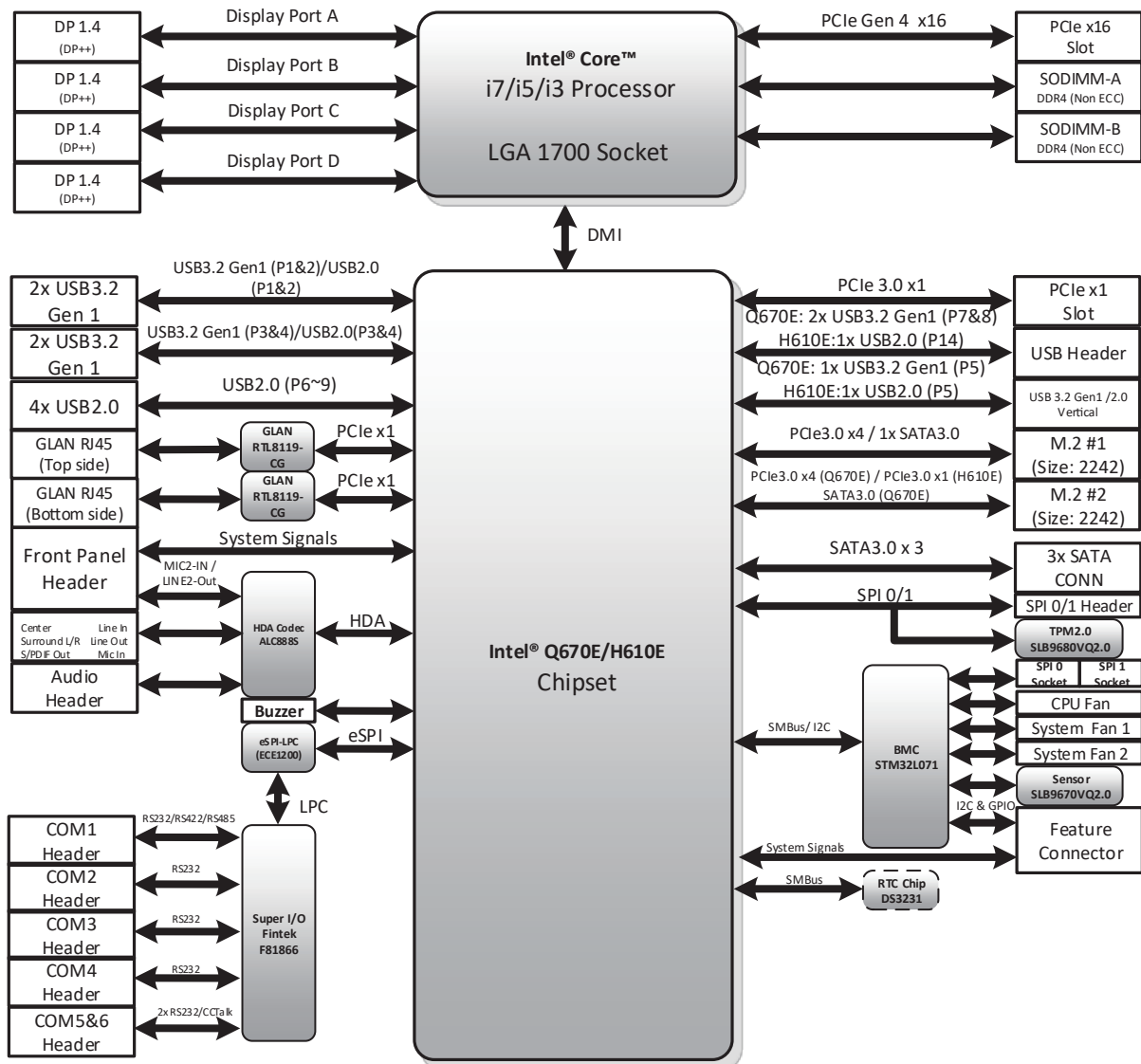
Specifications

Processor & System	CPU	Embedded 12th Generation Intel® Core™ i7/i5/i3 and Pentium®/Celeron® Processor, LGA1700 socket Intel® Core™ i7-12700 Processor, 12C, 2.1/4.9GHz, 25M, 65W/180W (Maximum Turbo Power) Intel® Core™ i7-12700E Processor, 12C, 2.1/4.8GHz, 25M, 65W Intel® Core™ i7-12700TE Processor, 12C, 1.4/4.6GHz, 25M, 35W Intel® Core™ i5-12500 Processor, 6C, 3.0/4.6GHz, 18M, 65W/117W (Maximum Turbo Power) Intel® Core™ i5-12500E Processor, 6C, 2.9/4.5GHz, 18M, 65W Intel® Core™ i5-12500TE Processor, 6C, 1.9/4.3GHz, 18M, 35W Intel® Core™ i5-12400 Processor, 6C, 2.5/4.5GHz, 18M, 65W/117W (Maximum Turbo Power) Intel® Core™ i3-12100E Processor, 4C, 3.2/4.2GHz, 12M, 60W Intel® Core™ i3-12100 Processor, 4C, 3.3/4.3GHz, 12M, 60W/89W (Maximum Turbo Power) Intel® Core™ i3-12100TE Processor, 4C, 2.1/4.0GHz, 12M, 35W Intel® Pentium® Gold G7400TE Processor, 2C, 3.0/3.0GHz, 6M, 35W Intel® Pentium® Gold G7400E Processor, 2C, 3.6/3.6GHz, 6M, 46W Intel® Celeron® Processor G6900E, 2C, 3.0/3.0GHz, 4M, 46W Intel® Celeron® Processor G6900TE, 2C, 2.4/2.4GHz, 4M, 35W
	Chipset	Intel® Q670E/H610E Chipset
	BIOS	AMI EFI in 16MB SPI BIOS Optional SPI BIOS socket onboard and SPI header for external BIOS, dual BIOS support TPM module soldered onboard Precision RTC (optional)

Specifications

	Debug Header	40-pin multipurpose flat cable connector. Use in combination with DB-40 debug module providing BIOS POST code LEDs, BMC access, SPI BIOS, flashing, power testpoints, debug LEDs
	Memory	Dual channel non-ECC 3200 MHz DDR4 memory up to 32GB in dual vertical SODIMM sockets
	Board Management Controller	Supports: voltage monitoring, system and CPU temperature monitoring, smart fan control, logistics and forensic information, general purpose I ² C, watchdog timer
I/O Interfaces	Expansion Slots	1x PCIe x16 Gen4 slot 1x PCIe x1 Gen3 slot 2x M.2 (M key, Support 2242 and NVMe boot) M.2 #1 (Q670E: PCIe 3.0 x4; H610E: PCIe 3.0 x4 and w/ SATA interface) M.2 #2 (Q670E: PCIe 3.0 x4; H610E: PCIe 3.0 x1 and w/o SATA interface) 1x SPI header for external BIOS
	Serial ATA	3x SATA 6 Gbps ports (Jumper select NA/3.3V/5V for SATA1 and SATA2 to deliver power by SATA pin7; Default is NA) 2x SATA power connector
	USB	4x USB 3.2 Gen 1 and 4x USB 2.0 on rear I/O 2x USB 3.2 Gen 1 onboard header (H610E : 1x USB 2.0) 1x USB 3.2 Gen 1 on vertical connector with keep out area for dongle (H610E: USB 2.0)
	Serial Ports (9 bit protocol support)	1x RS-232/422/485 on internal header 3x RS-232 on internal headers 1x RS232/CCTALK x2 on internal header
	Digital IO	8x GPIO via onboard feature connector
Audio	Audio Codec	Realtek® ALC888S
	Interfaces	7.1 channel audio via 5 jacks and S/PDIF output on rear I/O 7.1 channel audio signals and S/PDIF output on internal header
Display	Graphics Core	Intel® 12th generation graphics core architecture (Intel® Xe Architecture) with up to 32 execution units supporting DirectX 12, OGL4.6, and up to four independent, simultaneous displays
	DisplayPort	Up to 4x DisplayPort v1.2 with max resolution of 4096x2304@60Hz 4x DisplayPort(Q670E), 3x DisplayPort (H610E)
Ethernet	Controller	2x Realtek RTL8119-CG Ethernet controller
	Interface	PCI Express x1 Bus 10/100/1000 connection
Power	Standard Input	ATX: 12V ±5% / 5Vsb ±5%
	AT	12V ±5%
	Peripheral Output	Onboard headers for fan and SATA power ATX Power Connector (14-pin)
Mechanical and Environmental	Dimension (mm)	170 mm x 170 mm (L x W)
Operating Temperature	Standard	0°C to +60°C
	Storage Temperature	-20°C to +80°C
	Certification	CE, FCC Class A
	Relative Humidity	40° C @ 95% RH Non-condensing

Functional Diagram



Ordering Information

AmITX-AD-G-Q670E	Mini-ITX Embedded Board with 12th generation Intel® Core™ i7/i5/i3 Desktop Processor with Q670E Chipset
AmITX-AD-G-H610E	Mini-ITX Embedded Board with 12th generation Intel® Core™ i7/i5/i3 Desktop Processor with H610E Chipset

Optional Accessories

30-20876-1000	COM Port Cable, 1 Port, 25cm
30-20873-0000	USB 3.2 Gen 1 Cable, 2 ports, 20cm (for AmITX-AD-G-Q670E)
30-20874-1000	USB 2.0 Cable, 2 ports, 20cm (for AmITX-AD-G-H610E)

Packing List

30-20872-0000	ATX/AT Power Cable
30-20875-0000	SATA Dual Power Cable
30-10057-0600	SATA Cable
34-25329-0000-A0	Rear I/O Shield