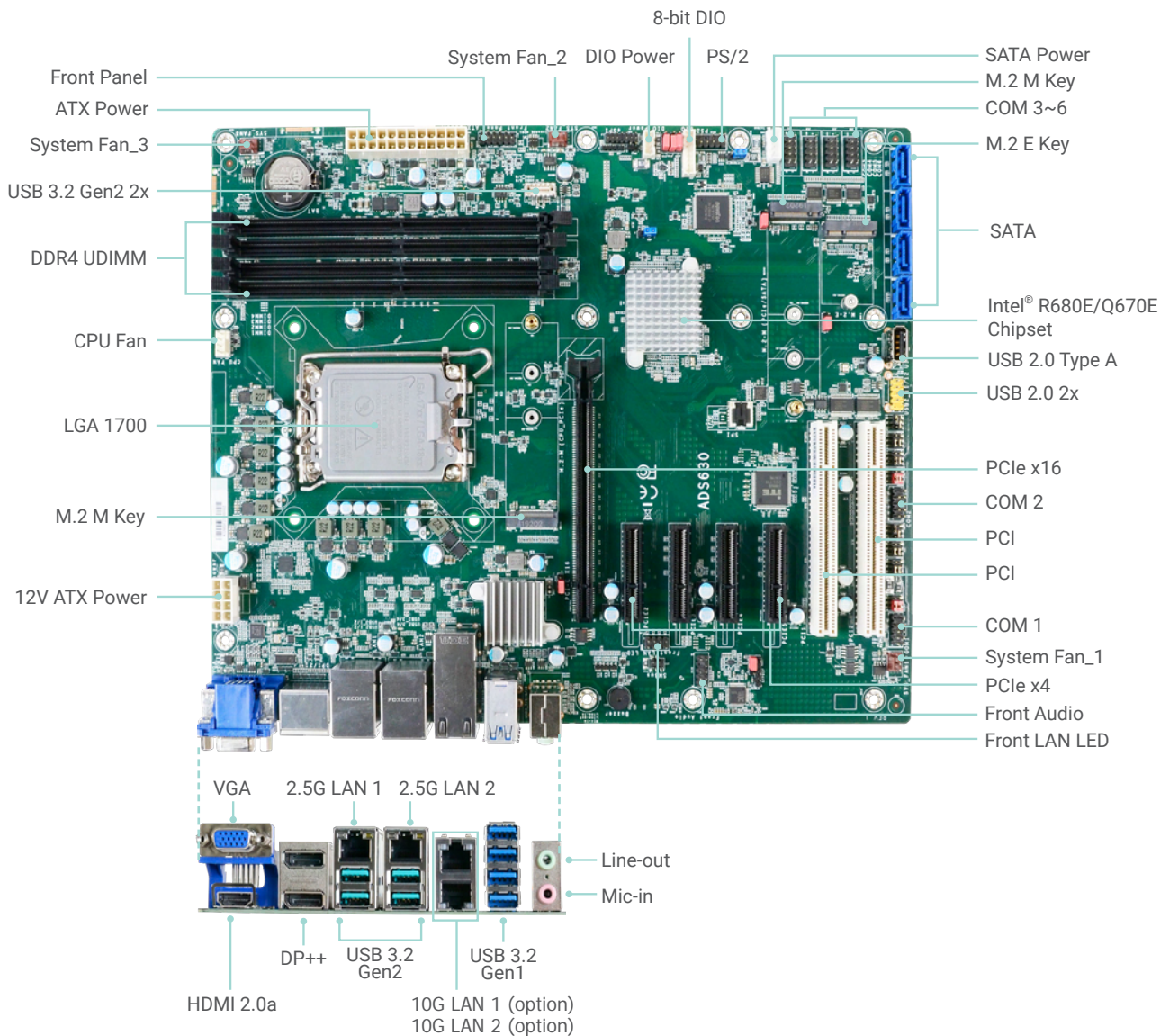


MB-ADS630-R680E/Q670E

12th Gen Intel® Core™
Desktop
ATX



Top View

KEY FEATURES



DDR4

4 DDR4 UDIMM up to 128GB



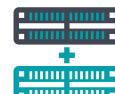
4K High Resolution

Supports 4K resolution



Quad Displays

VGA + 2 x DP++ + HDMI



Multiple Expansion

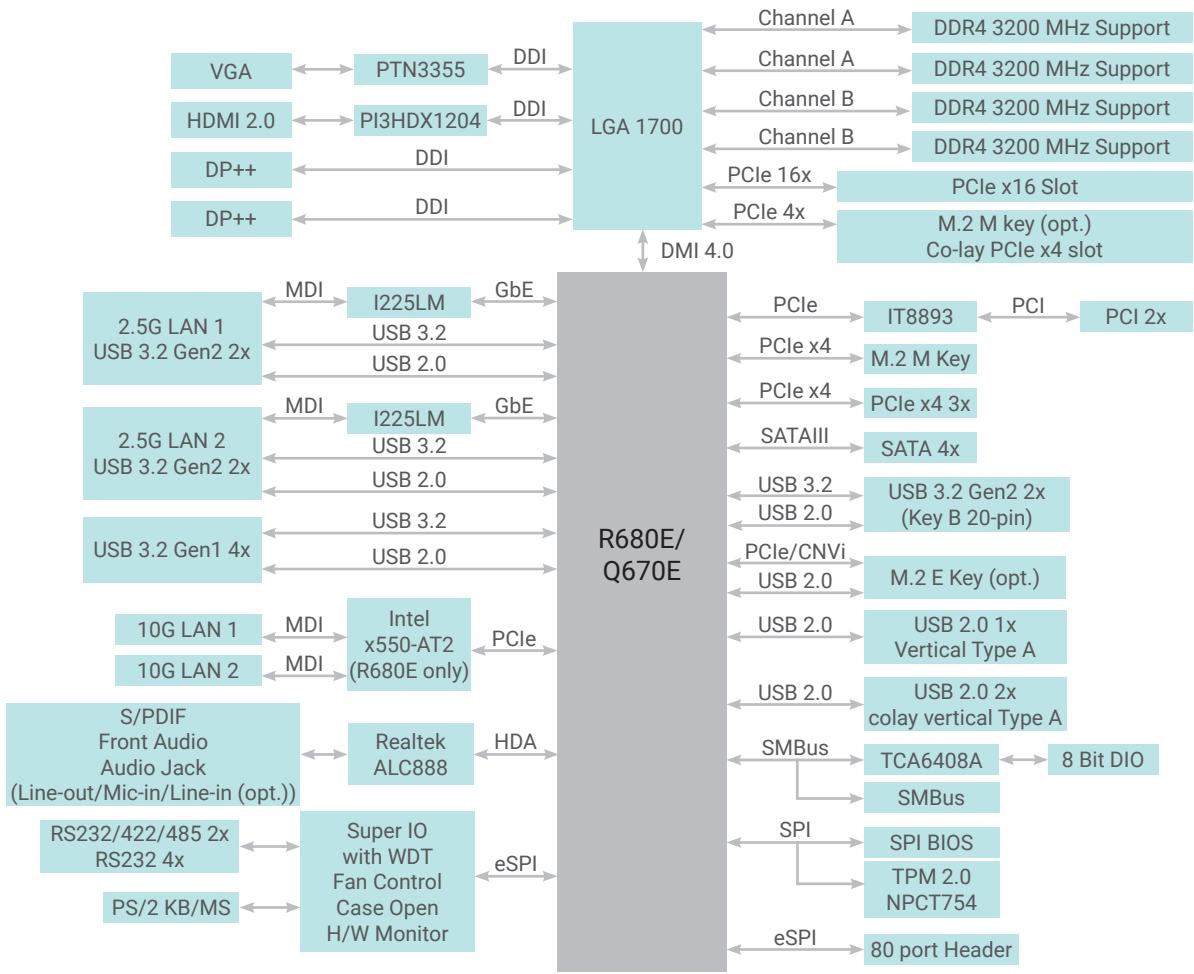
1 PCIe x16 (Gen 5)
4 PCIe x4 (Gen 4)
2 PCI, 2 M.2 M key
1 M.2 E Key



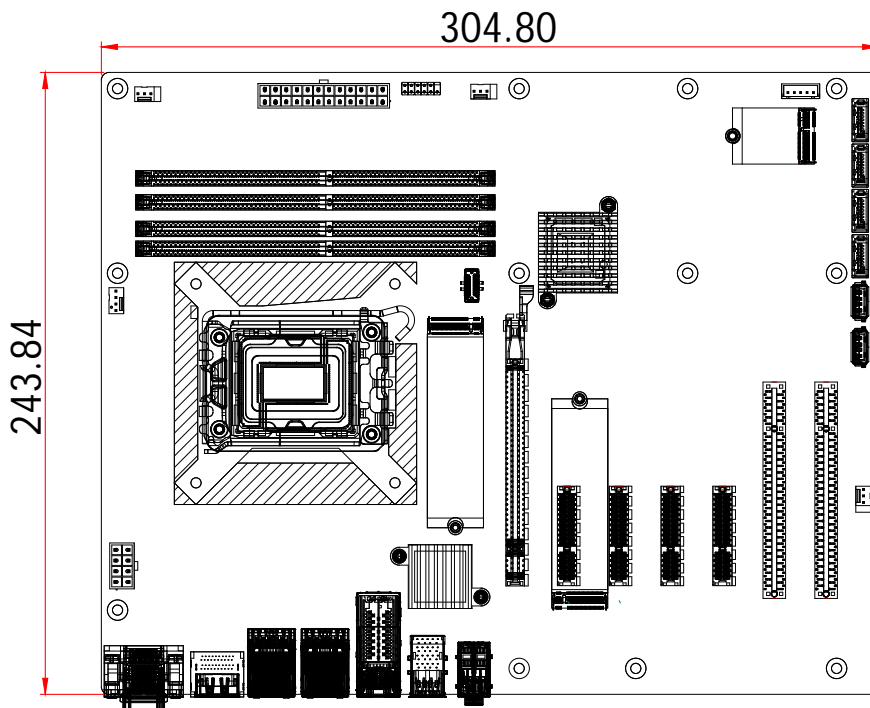
Rich I/O

2 Intel 10GbE, 2 Intel 2.5GbE, 6 USB 3.2 Gen2, 4 USB 3.2 Gen1, 8 USB 2.0

BLOCK DIAGRAM



MECHANICAL DRAWING



SPECIFICATION

SYSTEM	Processor	12th Generation Intel® LGA 1700 Socket Processors, TDP support up to 125W Intel® Core™ i9-12900E (16 Cores, 30M Cache, up to 5.0 GHz); 65W Intel® Core™ i9-12900TE (16 Cores, 30M Cache, up to 4.8 GHz); 35W Intel® Core™ i7-12700E (12 Cores, 25M Cache, up to 4.8 GHz); 65W Intel® Core™ i7-12700TE (12 Cores, 25M Cache, up to 4.6 GHz); 35W Intel® Core™ i5-12500E (6 Cores, 18M Cache, up to 4.5 GHz); 65W Intel® Core™ i5-12500TE (6 Cores, 18M Cache, up to 4.3 GHz); 35W Intel® Core™ i3-12100E (4 Cores, 12M Cache, up to 4.2 GHz); 60W Intel® Core™ i3-12100TE (4 Cores, 12M Cache, up to 4.0 GHz); 35W Intel® Pentium® G7400E (2 Cores, 6M Cache, 3.6 GHz); 46W Intel® Pentium® G7400TE (2 Cores, 6M Cache, 3.0 GHz); 35W Intel® Celeron® G6900E (2 Cores, 4M Cache, 3.0 GHz); 46W Intel® Celeron® G6900TE (2 Cores, 4M Cache, 2.4 GHz); 35W		
	Chipset	Intel® R680E/Q670E Chipset		
	Memory	Four 288-pin UDIMM up to 128GB Dual Channel DDR4 3200 MHz (ECC support: R680E only)		
	BIOS	AMI SPI 256Mbit		
	GRAPHICS	Controller	Intel® HD Gen 9 Graphics	
Feature		OpenGL 4.5, DirectX 12, OpenCL 2.1 HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 HW Encode: MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9		
Display		1 x VGA	VGA: resolution up to 1920x1200 @ 60Hz	
		2 x DP++	DP++: resolution up to 4096x2304 @60Hz	
		1 x HDMI 2.0a	HDMI: resolution up to 4096x2160 @ 24Hz	
EXPANSION	Quad Displays	VGA + 2 x DP++ + HDMI		
	Interface	1 x PCIe x16 (Gen 5) 3 x PCIe x4 (Gen 4) 1 x PCIe x4 (Gen 4) (Default, co-lay M.2 M key) 2 x PCI 1 x M.2 2230 E key (PCIe/USB 2.0/Intel CNVi/Wifi 6E as option, MOQ required) 1 x M.2 2242/2260/2280 M key (Opt. co-lay PCIe x4 Gen 4.0 NVMe with intel RST support) 1 x M.2 2242/2260/2280 M key (PCIe x4 Gen3 NVMe/Intel Optane Memory support)		
	Audio Codec	Realtek ALC888		
	ETHERNET	Controller	2 x Intel® I225LM PCIe (10M/100M/1000Mbps/2.5G) (only LAN1 and Xeon, Core i9/i7/i5 support iAMT) 2 x Intel® x550-AT2 (10 GBASE-T/1 GbE/100 Mbps)(R680E only, no support WOL)	
		Ethernet	2 x 2.5GbE 2 x 10GbE	
	REAR I/O	USB	4 x USB 3.2 Gen2 4 x USB 3.2 Gen1	
		Display	1 x VGA 2 x DP++ 1 x HDMI 2.0a	
Audio		1 x Line-out 1 x Mic-in 1 x Line-in (opt. by request, MOQ required)		
Serial		2 x RS-232/422/485 (RS-232 w/ power) (2.54mm pitch) 4 x RS-232 (2.54mm pitch)		
INTERNAL I/O	USB	2 x USB 3.2 Gen 2 (Key B 20-pin) 2 x USB 2.0 (2.54mm pitch, Colay vertical Type A, opt.: MOQ required) 1 x USB 2.0 Vertical Type A		
	Audio	1 x Front Audio Header 1 x S/PDIF		
	SATA	4 x SATA 3.0 (up to 6Gb/s)	RAID 0/1/5/10	
	PS/2	1 x PS/2 (2.54mm pitch)		
	DIO	1 x 8-bit DIO		
	SMBus	1 x SMBus		
	WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
	SECURITY	TPM	Nuvoton TPM2.0 (opt., MOQ required)	
POWER	Type	ATX		
	Connector	8-pin ATX 12V power 24-pin ATX power		
	Consumption	TBD		
	RTC Battery	CR2032 Coin Cell		
OS SUPPORT	Microsoft	Windows 10 IoT Enterprise 64-bit Windows Server 2022		
	Linux	Linux		

SPECIFICATION

ENVIRONMENT	Temperature	Operating: -5 to 65°C Storage: -30 to 60°C with RTC Battery; -40 to 85°C without RTC Battery
	Humidity	Operating: 5 to 95% RH Storage: 5 to 95% RH
	MTBF	TBD
MECHANISM	Dimensions	ATX Form Factor 305mm (12") x 244mm (9.6")
	Height	PCB: 1.6mm Top Side: 33.3mm, Bottom Side: 4mm
	Certifications	CE, FCC Class B, UKCA, RoHS

ORDERING INFORMATION

Model Name	P/N	Memory	2.5 GbE	10 GbE	RS-232/422/485	USB 3.2 Gen2	USB 3.2 Gen1	USB 2.0	TPM 2.0	Power	Thermal	Temp.
ADS630-R680EIRM	770-ADS6301-000G	4 UDIMM	2	-	2	6	10	13	-	24-pin ATX/ 8-pin ATX 12V	Active	-5 to 65°C
ADS630-Q670EIRM	770-ADS6301-100G	4 UDIMM	2	-	2	6	10	13	-	24-pin ATX/ 8-pin ATX 12V	Active	-5 to 65°C
ADS630-R680EIRM	770-ADS6301-200G	4 UDIMM	2	2	2	6	10	13	-	24-pin ATX/ 8-pin ATX 12V	Active	-5 to 65°C
ADS630-R680EIRM	770-ADS6301-300G	4 UDIMM	2	2	2	6	10	13	1	24-pin ATX/ 8-pin ATX 12V	Active	-5 to 65°C
ADS630-R680EIRM	770-ADS6301-400G	4 UDIMM	2	-	2	6	10	13	1	24-pin ATX/ 8-pin ATX 12V	Active	-5 to 65°C
ADS630-Q670EIRM	770-ADS6301-500G	4 UDIMM	2	-	2	6	10	13	1	24-pin ATX/ 8-pin ATX 12V	Active	-5 to 65°C

PACKING LIST

1 ADS630 motherboard	
1 COM port cables (Length: 300mm, 2 x COM ports)	A81-015026-023G
1 Serial ATA data cable (Length: 500mm)	332-553001-005G
1 I/O shield (4LAN)	A49-ADS630-000G
1 I/O shield (2LAN)	A49-ADS630-010G
1 M.2 screw/standoff	A32-112016-041G

OPTIONAL ITEMS

USB 2.0 port cable (Length: 350/398mm)	A81-001066-016G
USB 3.2 Gen1 port cable (Length: 320mm)	A81-001052-023G
USB 3.2 Gen2 port cable (Length: 300mm)	A81-001075-017G
COM port cable (Length: 300mm, 2 x COM ports)	A81-015026-023G
Serial ATA data cable (Length: 500mm, W/LOCK)	332-553001-005G
Serial ATA data cable (Length: 500mm, W/LOCK, 90D)	A81-002128-017G
Thermal solution (For 35W, Height: 29.39mm)	A71-101136-000G
Thermal solution (For 65W, Height: 46mm)	A71-101137-000G
Thermal solution (For 95W/125W, Height: 110mm)	A71-101145-000G
DP to HDMI Dongle	612-D2H13M-000G
M.2-COM4 (M.2 serial port module)	770-M2COM1-000G
M.2-2LAN (M.2 LAN port module)	770-M22LN2-000G
M.2-2PSE (M.2 PSE module)	770-M22PS2-000G