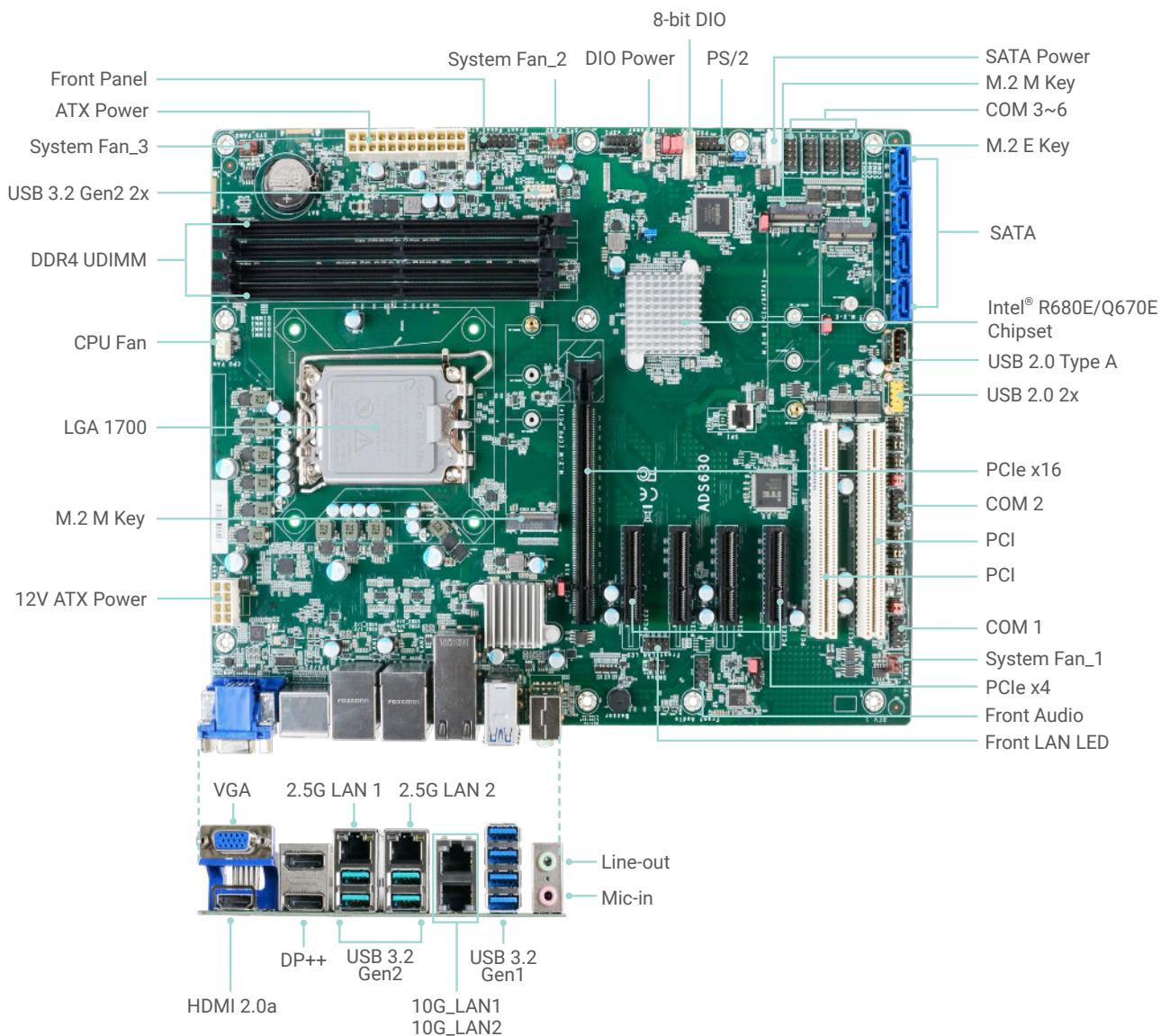


ADS630-R680E/Q670E

12th Gen Intel® Core™
Desktop
ATX



Top View

KEY FEATURES



DDR4

4 DDR4 UDIMM up to 128GB



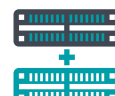
4K High Resolution

Supports 4K resolution



Quad Displays

VGA + 2 x DP++ + HDMI



Multiple Expansion

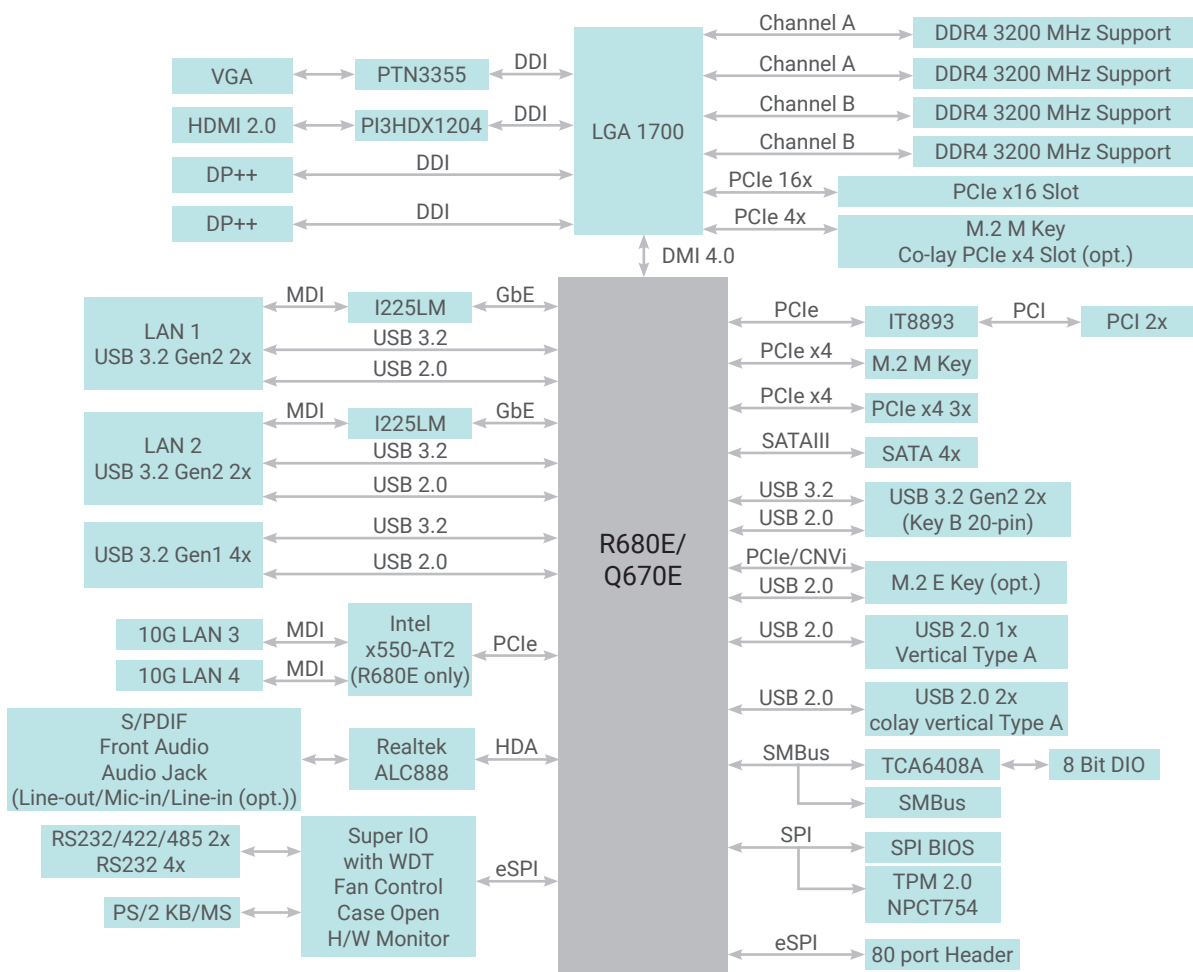
1 PCIe x16(Gen 5)
4 PCIe x4(Gen 4)
2 PCI, 2 M.2 M key
1 M.2 E Key



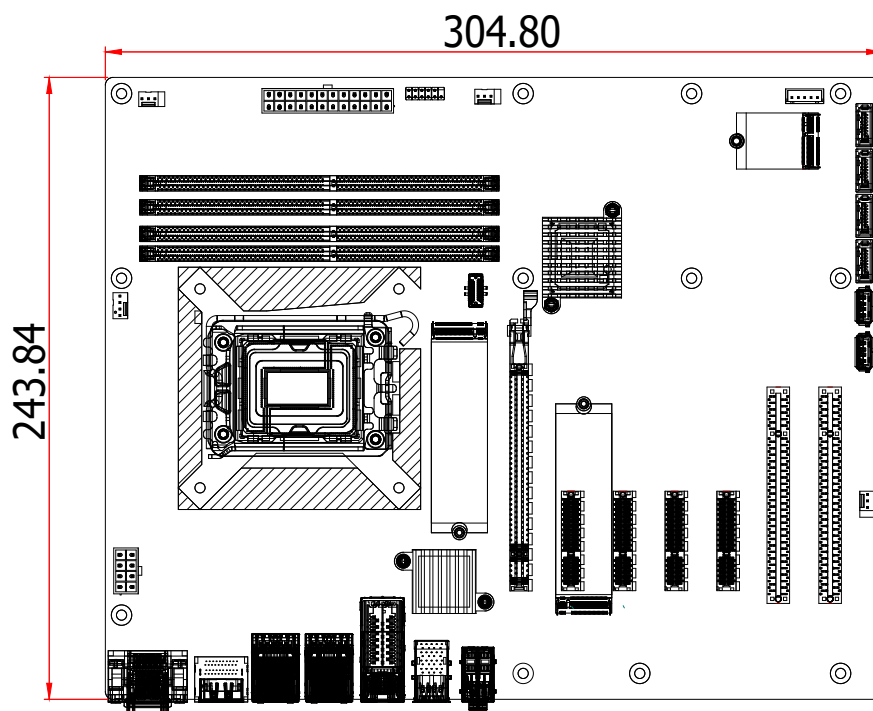
Rich I/O

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
Quad Displays	VGA + 2 x DP++ + HDMI		
EXPANSION	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	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)	
REAR I/O	Ethernet	2 x 2.5GbE (RJ-45)	
		2 x 10GbE (RJ-45)	
	USB	4 x USB 3.2 Gen2	
		4 x USB 3.2 Gen1	
	Display	1 x VGA	
		2 x DP++	
	Audio	1 x HDMI 2.0a	
Audio		1 x Line-out	
	1 x Mic-in		
INTERNAL I/O	Serial	1 x Line-in (opt. by request, MOQ required)	
		2 x RS-232/422/485 (RS-232 w/ power) (2.54mm pitch)	
	USB	4 x RS-232 (2.54mm pitch)	
		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)	
	Audio	1 x USB 2.0 Vertical Type A	
		1 x Front Audio Header	
	SATA	1 x S/PDIF	
		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
	Dimensions	ATX Form Factor 305mm (12") x 244mm (9.6")
MECHANISM	Height	PCB: 1.6mm Top Side: 33.3mm, Bottom Side: 4mm
CERTIFICATIONS	Certifications	CE, FCC Class B

ORDERING INFORMATION

Model Name	P/N	Memory	GbE	RS-232/422/485	USB 3.2 Gen2	USB 3.2 Gen1	USB 2.0	TPM 2.0	Power	Thermal	Temp.
ADS630-R680ECRM	770-ADS6301-000G	4 DDR4 UDIMM	2	2	6	10	13	0	24-pin ATX/8-pin ATX 12V	Active	-5~65°C
ADS630-Q670ECRM	770-ADS6301-100G	4 DDR4 UDIMM	2	2	6	10	13	0	24-pin ATX/8-pin ATX 12V	Active	-5~65°C
ADS630-R680ECRM	770-ADS6301-200G	4 DDR4 UDIMM	4	2	6	10	13	0	24-pin ATX/8-pin ATX 12V	Active	-5~65°C
ADS630-R680ECRM	770-ADS6301-300G	4 DDR4 UDIMM	4	2	6	10	13	1	24-pin ATX/8-pin ATX 12V	Active	-5~65°C
ADS630-R680ECRM	770-ADS6301-400G	4 DDR4 UDIMM	2	2	6	10	13	1	24-pin ATX/8-pin ATX 12V	Active	-5~65°C
ADS630-Q670ECRM	770-ADS6301-500G	4 DDR4 UDIMM	2	2	6	10	13	1	24-pin ATX/8-pin ATX 12V	Active	-5~65°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: 37.3mm)	A71-101107-000G
Thermal solution (For 65W, Height: 72.8mm)	552-200049-000G
Thermal solution (For 95W/125W, Height: 69.3mm)	761-103001-000G
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