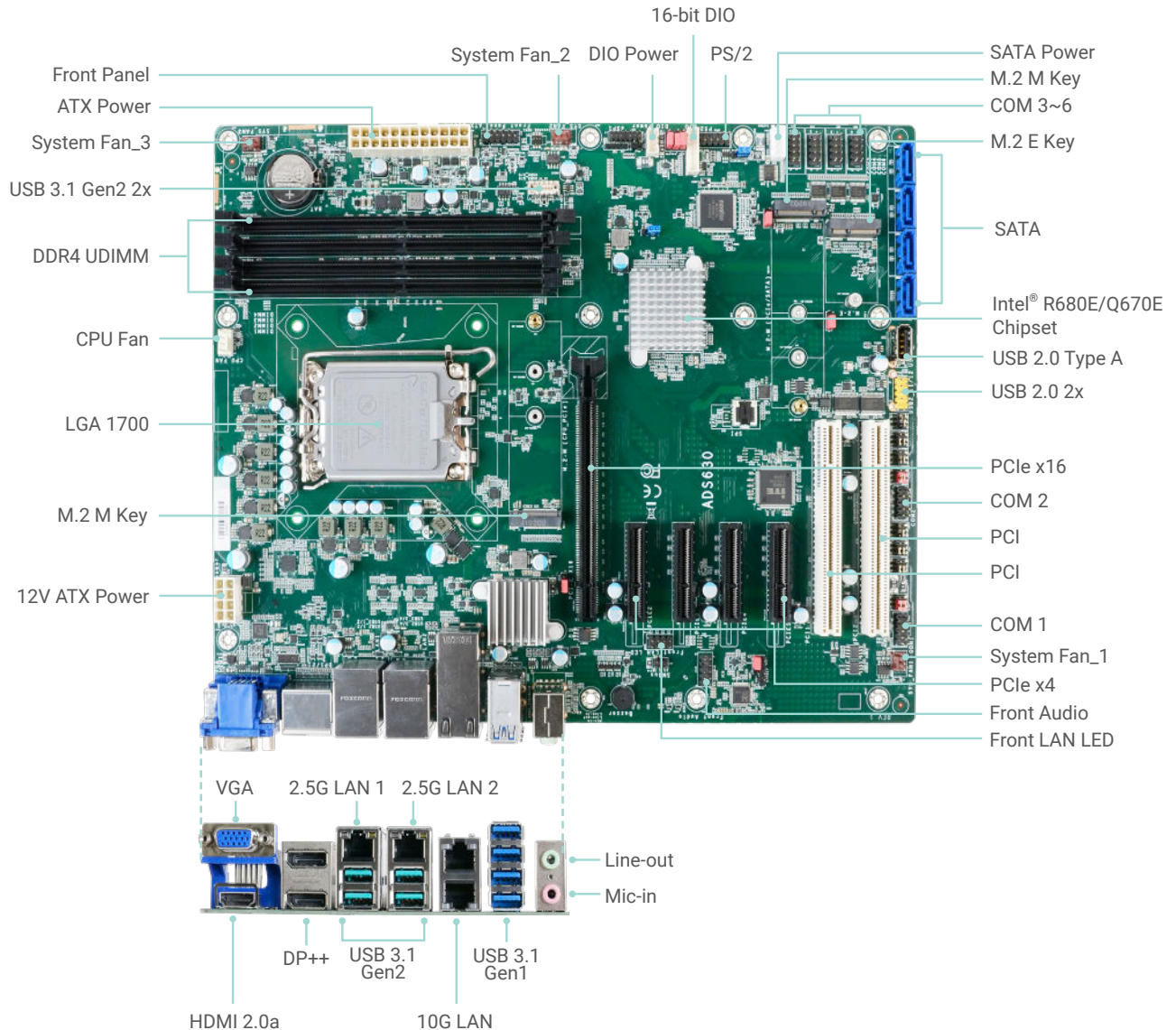


ADS630-R680E/Q670E

12th Gen Intel® Core™
Desktop
ATX



Top View

KEY FEATURES



DDR4

4 DDR4 UDIMM up to 128GB



8K High Resolution

Supports 4K/ 2K resolution



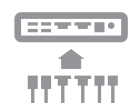
Quad Displays

VGA + 2 x DP++ + HDMI



Multiple Expansion

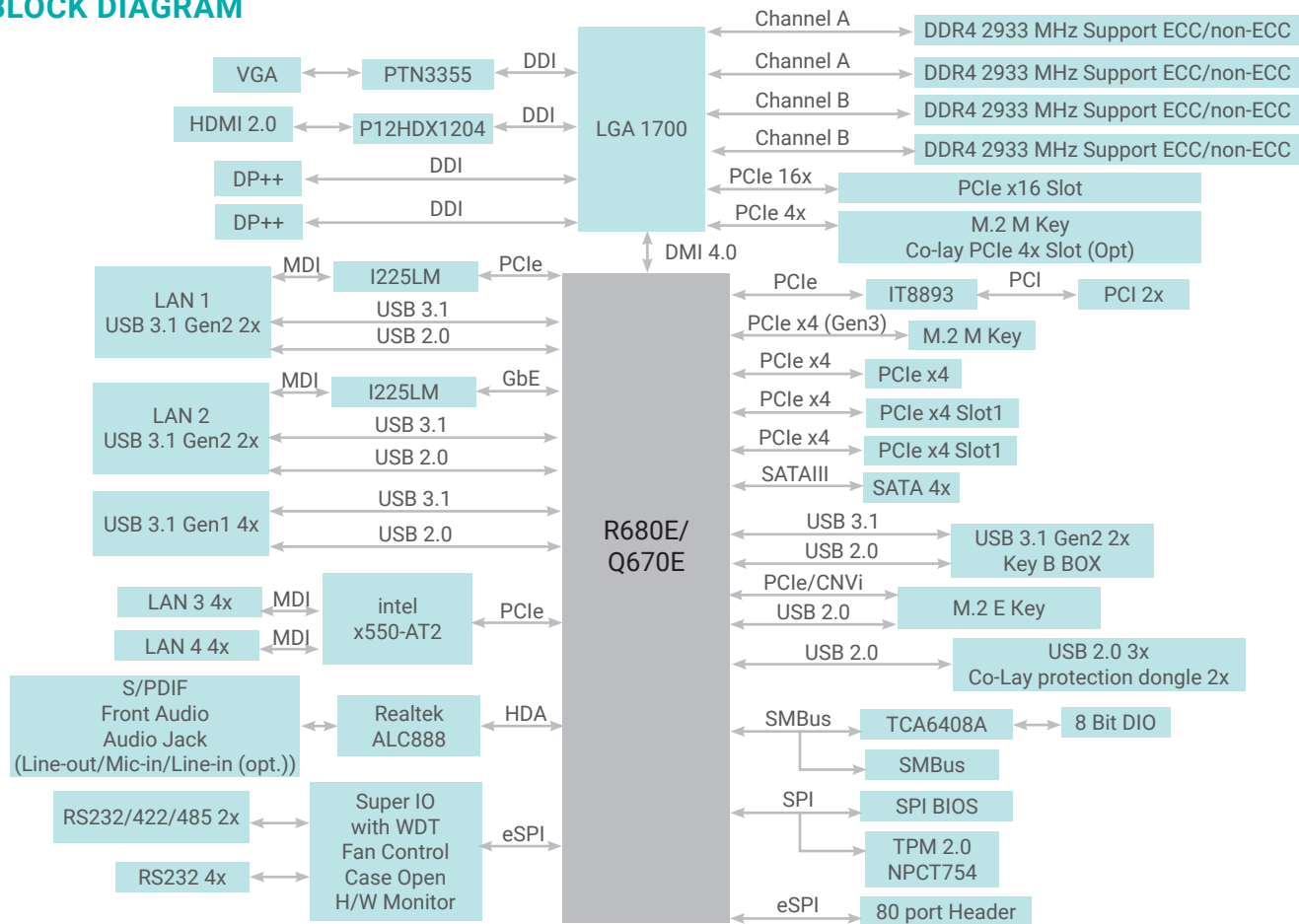
1 PCIe x16(Gen 5)
4 PCIe x4(Gen 4)
2 PCI, 2 M.2 M key
1 M.2 E Key



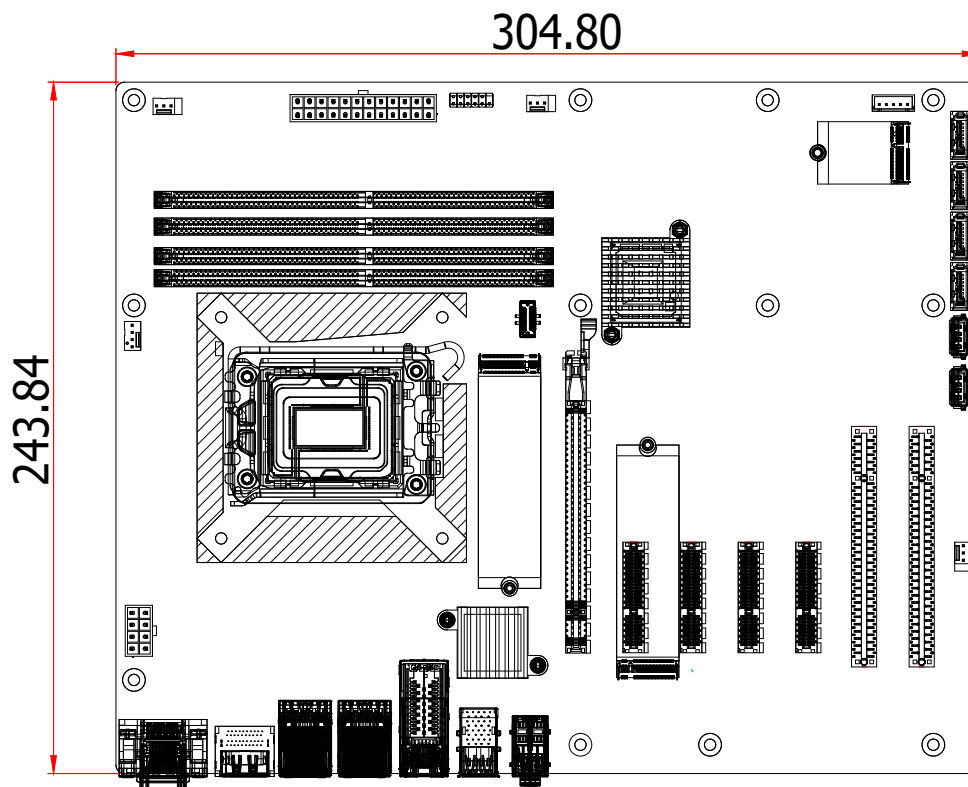
Rich I/O

2 Intel 10GbE, 2 Intel 2.5GbE, 6 USB 3.1 Gen2, 4 USB 3.1 Gen1, 3 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	
	Controller	Intel® HD Gen 9 Graphics	
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 2 x DP++ 1 x HDMI 2.0a	VGA: resolution up to 1920x1200 @ 60Hz DP++: resolution up to 4096x2160 @ 60Hz HDMI: resolution up to 4096x2160 @ 24Hz
	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 support) (Discrete Wifi 6E support) 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 Gen4 NVMe/Intel Optane Memory support)	
	Audio Codec	Realtek ALC888	
AUDIO	Audio Codec	Realtek ALC888	
ETHERNET	Controller	2 x Intel® I225LM PCIe (10M/100M/1000Mbps/2.5G) (only Xeon, Core i9/i7/i5 support iAMT) 2 x Intel® x550-AT2 (10 GBASE-T/1 GbE/100 Mbps)	
REAR I/O	Ethernet	2 x 2.5GbE (RJ-45) 2 x 10GbE (RJ-45)	
	USB	4 x USB 3.1 Gen2 4 x USB 3.1 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 3.1 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)	
	LPC	1 x LPC (supports LPC EXT-RS232/RS485 module)	
	DIO	1 x 16-bit DIO	
	SMBus	1 x SMBus	
	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
SECURITY	TPM	Infineon 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 2019	
	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
MECHANISM	MTBF	TBD
	Dimensions	ATX Form Factor
		305mm (12") x 244mm (9.6")
	Height	PCB: 1.6mm
		Top Side: 33.3mm, Bottom Side: 4mm
CERTIFICATIONS	Certifications	CE, FCC Class B

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	A49-CMS630-000G
1 M.2 screw/standoff	A32-112016-041G