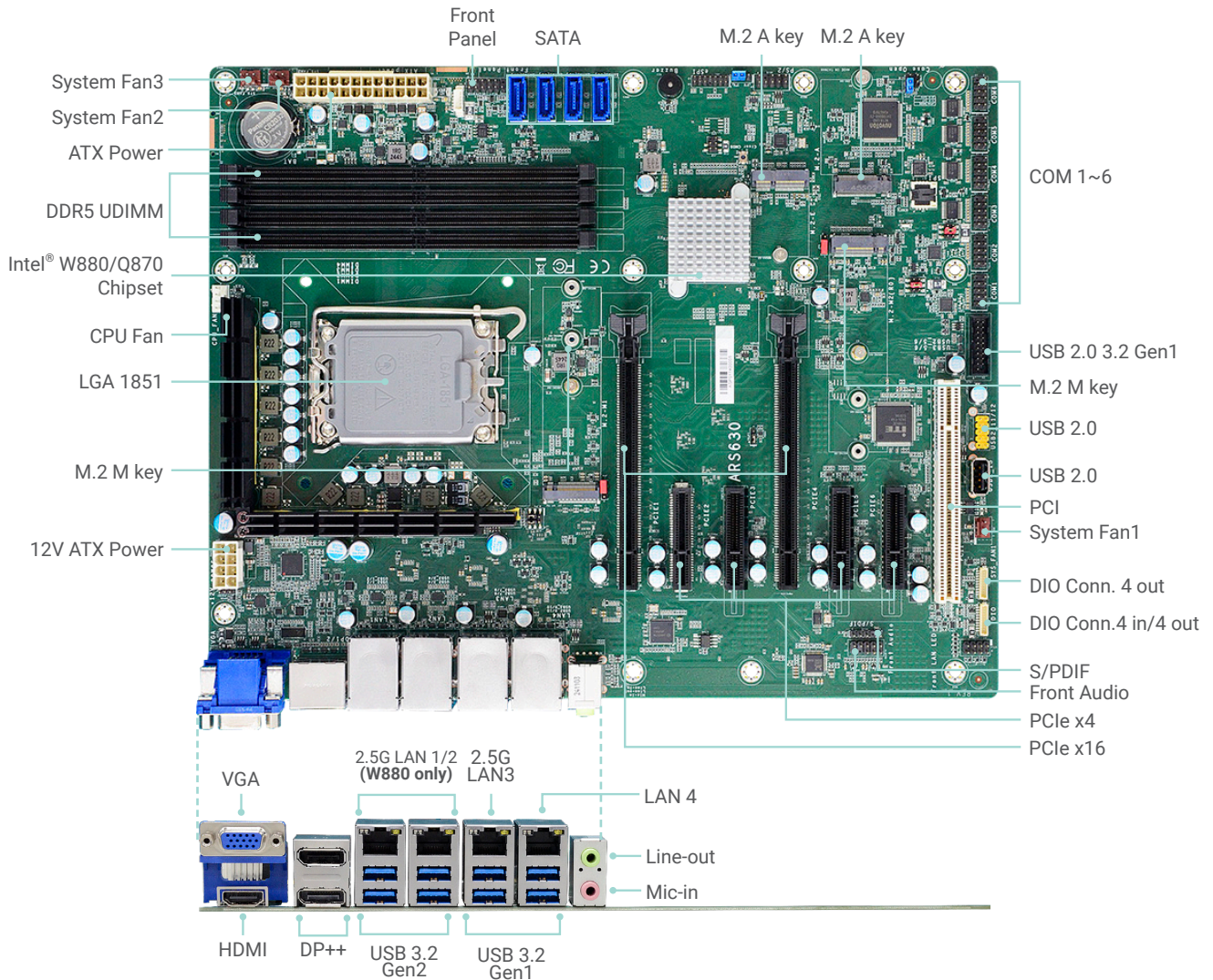


# ARS630-W880 ARS630-Q870

Desktop

Intel® Core™ Ultra Processors  
ATX



Top View  
(ARS630-W880)

## KEY FEATURES



### DDR5

4 DDR5 UDIMM up to 192GB



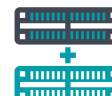
### 4K High Resolution

Supports 4K resolution



### Quad Displays

VGA, 2 DP++, HDMI



### Multiple Expansion

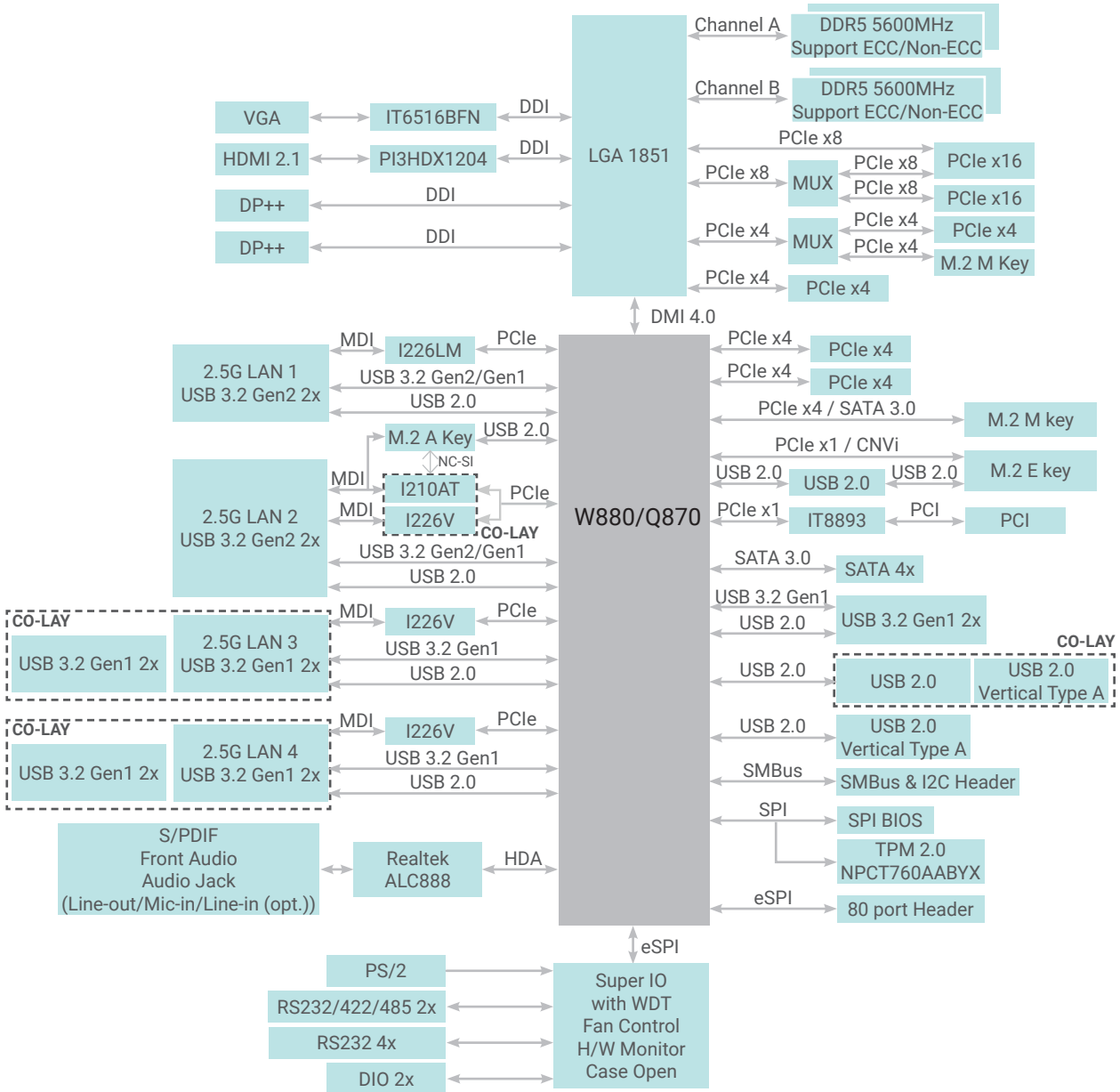
2 PCIe x16, 4 PCIe x4,  
1 PCI, 2 M.2 M key,  
1 M.2 A Key(OOB),  
1 M.2 E Key



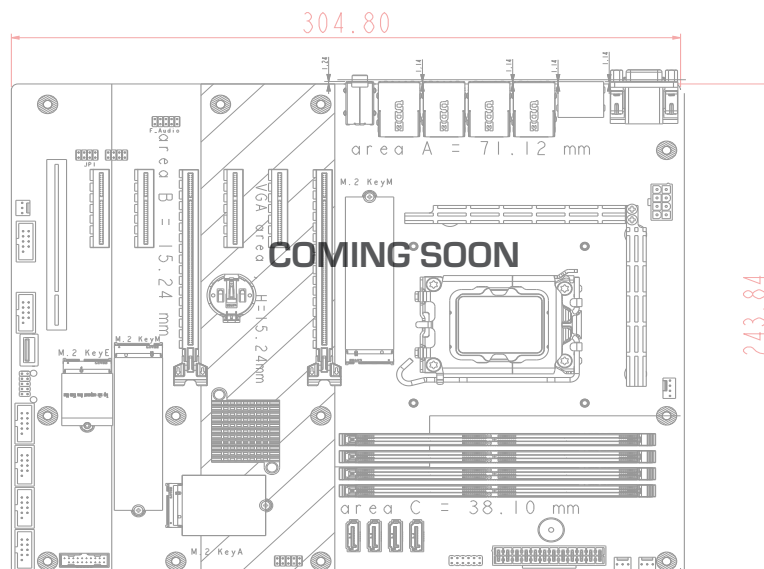
### Rich I/O

4 Intel 2.5GbE, 6 COM,  
4 USB 3.2 Gen2,  
6 USB 3.2 Gen1,  
3 USB 2.0

# BLOCK DIAGRAM



# MECHANICAL DRAWING



## SPECIFICATION

Model Name		ARS630-W880	ARS630-Q870
SYSTEM	Processor	Intel® Core™ Ultra LGA 1851 Socket Processors, support up to TDP. Intel® Core™ U9-285T (24 Cores, 36M Cache, up to 1.4 GHz); 35W Intel® Core™ U9-285 (24 Cores, 36M Cache, up to 2.5 GHz); 65W Intel® Core™ U7-265T (20 Cores, 30M Cache, up to 1.5 GHz); 35W Intel® Core™ U7-265F (20 Cores, 30M Cache, up to 2.4 GHz); 65W Intel® Core™ U7-265 (20 Cores, 30M Cache, up to 2.4 GHz); 65W Intel® Core™ U5-225F (10 Cores, 20M Cache, up to 3.3 GHz); 65W Intel® Core™ U5-225 (10 Cores, 20M Cache, up to 3.3 GHz); 65W	
	Chipset	Intel® W880 Chipset	Intel® Q870 Chipset
	Memory	Four 288-pin UDIMM up to 192GB (ECC/Non-ECC) Dual Channel DDR5 up to 5600 MHz *Speed support list follow User's Manual	Four 288-pin UDIMM up to 192GB (Non-ECC) Dual Channel DDR5 up to 5600 MHz *Speed support list follow User's Manual
	BIOS	AMI SPI 256Mbit	AMI SPI 256Mbit
GRAPHICS	Controller	Intel® UHD Graphics 700 series	Intel® UHD Graphics 700 series
	Feature	OpenGL 4.5, DirectX 12, OpenCL 2.1 <b>HW Decode:</b> AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 <b>HW Encode:</b> MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9	OpenGL 4.5, DirectX 12, OpenCL 2.1 <b>HW Decode:</b> AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 <b>HW Encode:</b> MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9
	Display	1 x VGA 2 x DP++ 1 x HDMI 2.0a <b>VGA:</b> resolution up to 1920x1200 @ 60Hz <b>DP++:</b> resolution up to 4096x2304 @ 60Hz <b>HDMI:</b> resolution up to 4096x2160 @ 24Hz	1 x VGA 2 x DP++ 1 x HDMI 2.0a <b>VGA:</b> resolution up to 1920x1200 @ 60Hz <b>DP++:</b> resolution up to 4096x2304 @ 60Hz <b>HDMI:</b> resolution up to 4096x2160 @ 24Hz
	Quad Displays	VGA + 2 DP++ + HDMI	VGA + 2 DP++ + HDMI
EXPANSION	Interface	2 x PCIe x16 (Gen 5, 16 or 8+8) 1 x PCIe x4 (Gen 5, share M.2 M-key, function selected by BIOS.) 3 x PCIe x4 (Gen 4) 1 x PCI	2 x PCIe x16 (Gen 5, 16 or 8+8) 1 x PCIe x4 (Gen 5, share M.2 M-key, function selected by BIOS.) 3 x PCIe x4 (Gen 4) 1 x PCI
	M.2	1 x M.2 M key (opt. share PCIe x4 Gen5 slot #2, function selected by BIOS.) 1 x M.2 M key (PCIe x4 Gen4 NVMe, SATA) 1 x M.2 A key for M2-OOB 1 x M.2 E key	1 x M.2 M key (opt. share PCIe x4 Gen5 slot #2, function selected by BIOS.) 1 x M.2 M key (PCIe x4 Gen4 NVMe, SATA) 1 x M.2 A key for M2-OOB 1 x M.2 E key
AUDIO	Audio Codec	Realtek ALC888S	Realtek ALC888S
ETHERNET	Controller	1 x Intel® I226-LM 1 x Intel® I210-AT (co-lay I226-V) 2 x Intel® I226-V	1 x Intel® I226-LM 1 x Intel® I210-AT (co-lay I226-V)
REAR I/O	Ethernet	3 x 2.5GbE (RJ-45) 1 x 1GbE (RJ-45, opt. 2.5GbE)	1 x 2.5GbE (RJ-45) 1 x 1GbE (RJ-45, opt. 2.5GbE)
	USB	4 x USB 3.2 Gen 2 4 x USB 3.2 Gen 1	4 x USB 3.2 Gen 2 4 x USB 3.2 Gen 1
	Display	1 x VGA 2 x DP++ 1 x HDMI	1 x VGA 2 x DP++ 1 x HDMI
	Audio	1 x Line-out 1 x Mic-in 1 x Line-in (opt.)	1 x Line-out 1 x Mic-in 1 x Line-in (opt.)
INTERNAL I/O	Serial	2 x RS-232/422/485 4 x RS-232	2 x RS-232/422/485 4 x RS-232
	USB	2 x USB 3.2 Gen1 1 x USB 2.0 Vertical Type A 2 x USB 2.0 Pin Header (2.54mm pitch)	2 x USB 3.2 Gen1 1 x USB 2.0 Vertical Type A 2 x USB 2.0 Pin Header (2.54mm pitch)
	Audio	1 x Front Audio 1 x S/PDIF	1 x Front Audio 1 x S/PDIF
	SATA	4 x SATA 3.0 (up to 6Gb/s) RAID 0/1/5/10	4 x SATA 3.0 (up to 6Gb/s) RAID 0/1/5/10
	PS/2	1 x PS/2 (2.54mm pitch)	1 x PS/2 (2.54mm pitch)
	DIO	4-IN / 8-OUT DIO	4-IN / 8-OUT DIO
	eSPI	1 x eSPI	1 x eSPI
	SMBus	1 x SMBus	1 x SMBus
WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	System Reset, Programmable via Software from 1 to 255 Seconds
SECURITY	TPM	TPM 2.0	TPM 2.0
	POWER	Type	ATX
POWER	Connector	8-pin ATX 12V power 24-pin ATX power	8-pin ATX 12V power 24-pin ATX power
	Consumption	TBD	TBD
	RTC Battery	CR2032 Coin Cell	CR2032 Coin Cell

## SPECIFICATION

Model Name		ARS630-W880	ARS630-Q870
OS SUPPORT	Microsoft	Windows 10 IoT Enterprise 64-bit Windows 11 IoT Enterprise 64-bit	Windows 10 IoT Enterprise 64-bit Windows 11 IoT Enterprise 64-bit
	Linux	Linux	Linux
ENVIRONMENT	Temperature	<b>Operating:</b> -5 to 65°C <b>Storage:</b> -30 to 60°C with RTC Battery; -40 to 85°C without RTC Battery	<b>Operating:</b> -5 to 65°C <b>Storage:</b> -30 to 60°C with RTC Battery; -40 to 85°C without RTC Battery
	Humidity	<b>Operating:</b> 5 to 95% RH <b>Storage:</b> 5 to 95% RH	<b>Operating:</b> 5 to 95% RH <b>Storage:</b> 5 to 95% RH
	MTBF	TBD	TBD
MECHANISM	Dimensions	ATX Form Factor 305mm (12") x 244mm (9.6")	ATX Form Factor 305mm (12") x 244mm (9.6")
	Height	<b>PCB:</b> 1.6mm <b>Top Side:</b> 33.3mm <b>Bottom Side:</b> 4mm	<b>PCB:</b> 1.6mm <b>Top Side:</b> 33.3mm <b>Bottom Side:</b> 4mm
CERTIFICATIONS	Certifications	CE, FCC Class B, RoHS, UKCA	CE, FCC Class B, RoHS, UKCA

## PACKING LIST

· 1 ARS630 motherboard
· 1 COM port cables (Length: 300mm, 2 x COM ports)
· 1 Serial ATA data cable (Length: 500mm)
· 1 I/O shield
· 1 M.2 screw/standoff