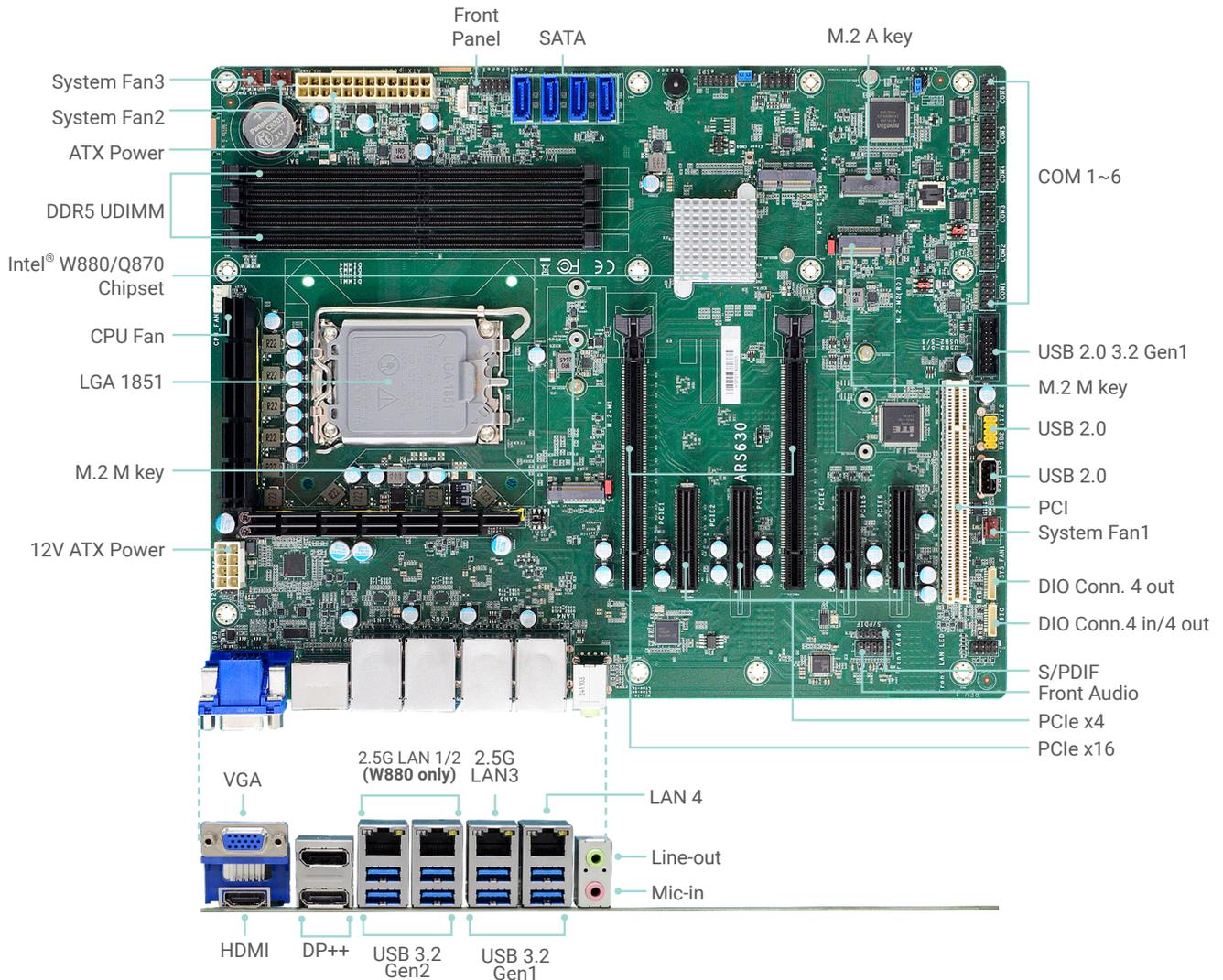


# ARS630-W880 ARS630-Q870

Desktop

Intel® Core™ Ultra Processors  
ATX



Top View  
(ARS630-W880)

## KEY FEATURES



### DDR5

4 DDR5 UDIMM up to 256GB



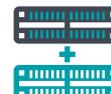
### 4K High Resolution

Supports 4K resolution



### Quad Displays

VGA, 2 DP++, HDMI



### Multiple Expansion

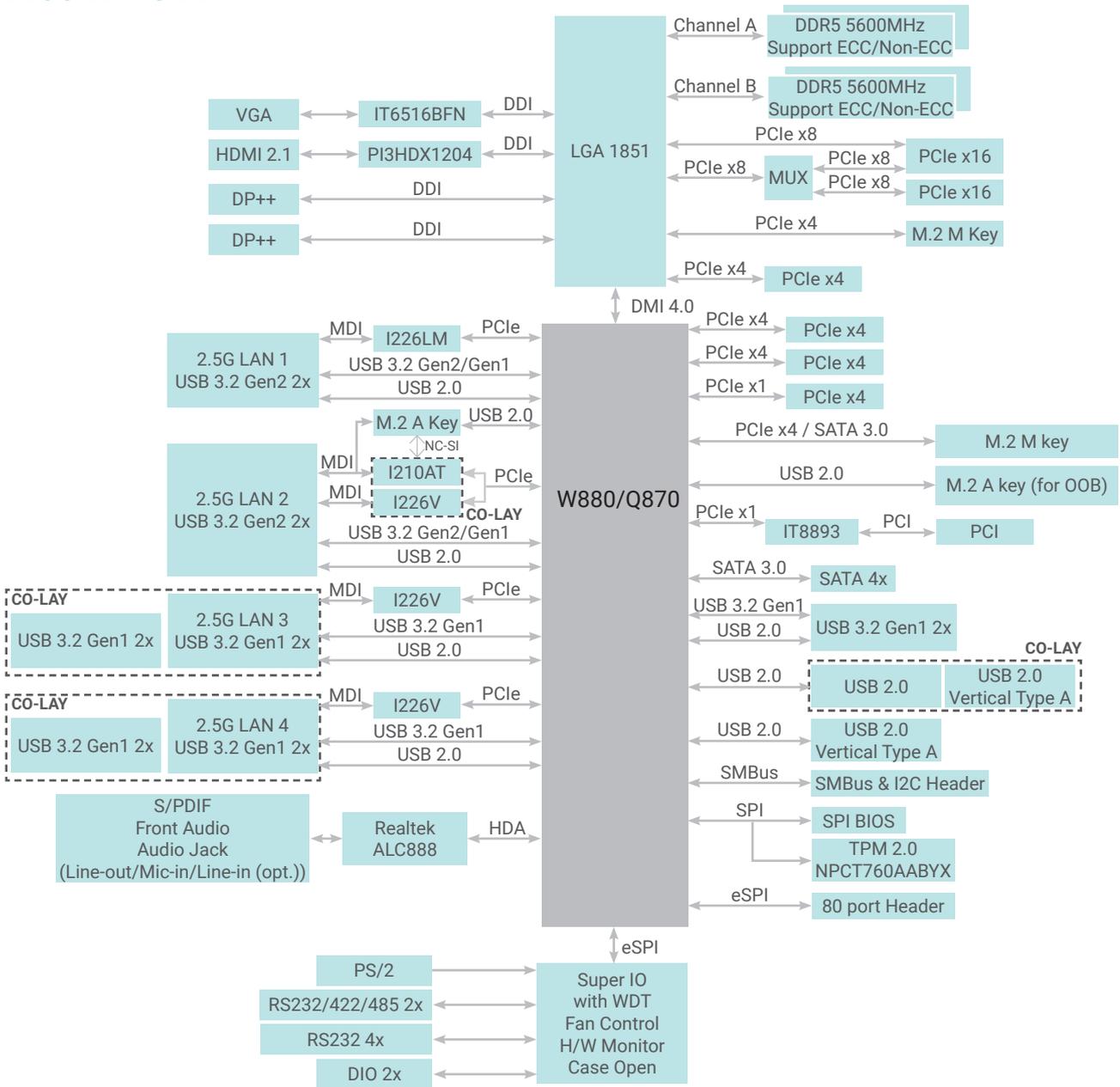
2 PCIe x16, 4 PCIe x4, 1 PCI, 2 M.2 M key, 1 M.2 A Key (for OOB)



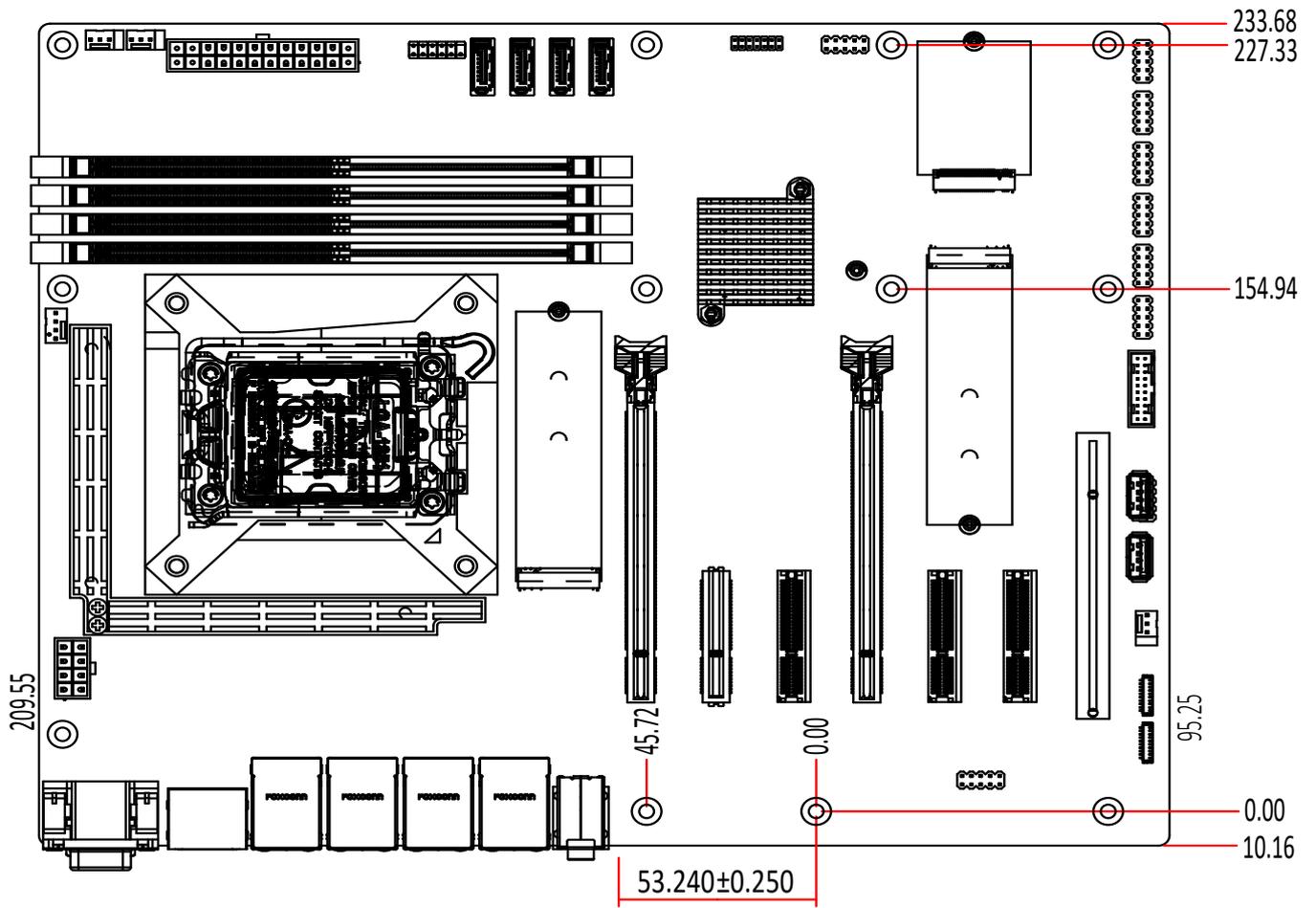
### Rich I/O

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, TDP support up to 125W Intel® Core™ Ultra 9 285 (24 Cores, 36M Cache, up to 5.6 GHz); 65W Intel® Core™ Ultra 9 285T (24 Cores, 36M Cache, up to 5.4 GHz); 35W Intel® Core™ Ultra 7 265 (20 Cores, 30M Cache, up to 5.3 GHz); 65W Intel® Core™ Ultra 7 265T (20 Cores, 30M Cache, up to 5.3 GHz); 35W Intel® Core™ Ultra 5 245 (14 Cores, 24M Cache, up to 5.1 GHz); 65W Intel® Core™ Ultra 5 245T (14 Cores, 24M Cache, up to 5.1 GHz); 35W Intel® Core™ Ultra 5 225 (10 Cores, 20M Cache, up to 4.9 GHz); 65W Intel® Core™ Ultra 5 225T (10 Cores, 20M Cache, up to 4.9 GHz); 35W		
	Chipset	Intel® W880 Chipset	Intel® Q870 Chipset	
	Memory	Four 288-pin UDIMM up to 256GB (ECC/Non-ECC) Dual Channel DDR5 up to 5600 MHz *Speed support list follow User's Manual	Four 288-pin UDIMM up to 256GB (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) Support PCIe1/PCIe4 : single at x16(PCIe1) Support PCIe1/PCIe4 : dual at x8 (PCIe1)/x8 (PCIe4) Support PCIe1 : Riser card x16 or x8/x8 selected by Jumper	2 x PCIe x16 (Gen 5, 16 or 8+8) Support PCIe1/PCIe4 : single at x16(PCIe1) Support PCIe1/PCIe4 : dual at x8 (PCIe1)/x8 (PCIe4) Support PCIe1 : Riser card x16 or x8/x8 selected by Jumper	
		1 x PCIe x4 (Gen 4, x1, open edge slot)	1 x PCIe x4 (Gen 4, x1, open edge slot)	
		3 x PCIe x4 (Gen 4, open edge slot)	3 x PCIe x4 (Gen 4, open edge slot)	
		1 x PCI	1 x PCI	
M.2	1 x M.2 2242/2260/2280 M key (PCIe x4 Gen5 NVMe)	1 x M.2 2242/2260/2280 M key (PCIe x4 Gen5 NVMe)		
	1 x M.2 2242/2260/2280 M key (PCIe x4 Gen4 NVMe, SATA)	1 x M.2 2242/2260/2280 M key (PCIe x4 Gen4 NVMe, SATA)		
	1 x M.2 A key for M2-OOB	1 x M.2 A key for M2-OOB		
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	

## SPECIFICATION

Model Name		ARS630-W880	ARS630-Q870
POWER	Type	ATX	ATX
	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
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

## ORDERING INFORMATION

Model Name	P/N	PCH	USB 3.2 Gen2	USB 3.2 Gen1	USB 2.0	SATA 3.0	TPM 2.0	1GbE LAN	2.5GbE LAN
ARS630-W880	770-ARS6301-000G	W880	4	6	3	4	TPM 2.0	0	4
ARS630-W880	770-ARS6301-100G	W880						1	3
ARS630-Q870	770-ARS6301-200G	Q870						0	2
ARS630-Q870	770-ARS6301-300G	Q870						1	1

## 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

## OPTIONAL ITEMS

· USB 2.0 port cable (Length: 350/398mm)	A81-001066-016G
· USB 3.2 Gen1 port cable (Length: 320mm)	A81-001052-023G
· 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