KEY FEATURES

· Intel® Core™ Ultra Series 2 processors (Arrow Lake-S) with Q870 chipset

· 4 x 288-pin CU-DIMM DDR5 6400 MHz, U-DIMM DDR5 5600 MHz, up to 256GB
  (64GB per DIMM)

· 1 x PCIe x16 (Gen5), 1 x PCIe x8 (Gen5), 2 x PCIe x4 (Gen4), 2 x USB4/Thunderbolt™4,
  8 x USB 3.2 Gen2, 2 x USB 3.2 Gen1, 1 x USB 2.0, 1 x M.2 Key E, 2 x M.2 Key M,
  6 x COM, 8 x SATA3

· 1 x Intel 1 Gigabit LAN, 1 x Intel 2.5 Gigabit LAN

· Supports Quad display, 1 x HDMI 2.1, 2 x DP 2.1 (2 from Type-C), 1 x DP 1.4a,
  1 x LVDS or eDP

· TPM 2.0 onboard IC

· Supports Intel® vPro, VMD RAID 0/1/5/10

· ATX Power (24+8+8-pin)

SPECIFICATIONS

Form Factor

Dimensions	Micro-ATX (9.6-in x 9.6-in x 1.81-in, 24.4 cm x 24.4 cm x 4.61 cm)

Processor System

CPU	Intel® Core™ Ultra Series 2 processors (Arrow Lake-S), up to 125W
Chipset	Q870
Socket	LGA1851
BIOS	AMI SPI 256 Mbit

Memory

Technology	Dual Channel DDR5 6400/5600 MHz
Capacity	256GB (64GB per DIMM)
Socket	4 x 288-pin Long-DIMM

Graphics

Controller	Intel® X^e LPG Graphics
HDMI	HDMI 2.1 Max resolution up to 7680x4320@60Hz
DisplayPort	DisplayPort 2.1/1.4a, DP++ Max resolution up to 4096x2160@60Hz
LVDS	Dual channel 24 bit up to 1920x1200@60Hz (Connector shared with eDP)
eDP	Max resolution up to 1920x1200@60Hz (Connector shared with LVDS)
MultiDisplay	Quad display (Included 2 output from Type-C)

Expansion Slot

PCIe	2 x PCIe Gen5 Slots (PCIE1/PCIE4:single at x16 (PCIE1); dual at x8 (PCIE1)/x8 (PCIE4)) (PCIE1: Support Riser card x8/x8) 2 x PCIe x4 (Gen4)
M.2	1 x M.2 (Key E, 2230) with PCIe Gen4 x1, USB 2.0 and CNVi for Wireless

Audio

Interface	Realtek ALC897 HD, High Definition Audio. Line-In, Line-Out, Mic-In

Watchdog Timer

Output	From Super I/O to drag RESETCON#
Interval	256 Segments, 0, 1, 2, ...255sec

Ethernet

Controller/ Speed	LAN3: Intel® I219LM with 10/100/1000 Mbps, supports vPro LAN4: Intel® I226V with 10/100/1000/2500 Mbps
Connector	2 x RJ-45

Rear I/O

HDMI	1 x HDMI 2.1
DisplayPort	1 x DP 1.4a++
Ethernet	1 x 1 Gigabit LAN
	1 x 2.5 Gigabit LAN
USB	7 x USB 3.2 Gen2
	1 x USB4/Thunderbolt™4 (5V/3A, supports DP 2.1 display output)
	* For Thunderbolt support, please refer to support list.
Audio	3 (Mic-in, Line-in, Line-out)
COM	COM1 (RS-232/422/485)

Internal Connector

USB	1 x USB 2.0 (1 x 2.00 pitch header)
	1 x USB 3.2 Gen2 vertical Con
	2 x USB 3.2 Gen1 (1 x USB 3.2 header)
	1 x USB4/Thunderbolt™4 vertical con. (5V/3A, supports DP 2.1 display output)
	* For Thunderbolt support, please refer to support list.
COM	COM2 (RS-232/422/485)
	COM3 (RS-232/TTL 5V/ccTalk) (Switch by Jumper setting)
	COM4, COM5, COM6 (RS-232)
Parallel	1 (shared with GPIO)
GPIO	8 x GPI, 8 x GPO (shared with LPT header)
LVDS	1 (Connector with LVDS/eDP signal, switch by BIOS)
Speaker Header	1
Thunderbolt header	1

Storage

M.2	1 x M.2 (Key M, 2242/2280) with PCIe Gen5 x4 for SSD
	1 x M.2 (Key M, 2242/2280) with PCIe Gen4 x4 for SSD
SATA	8 x SATA3 (6Gb/s)
RAID	Intel® VMD RAID 0/1/5/10
	**supported by identical interface (PCIE or SATA)
	PCIE interface: 2 x M.2 Key M
	SATA interface: SATA port

Security

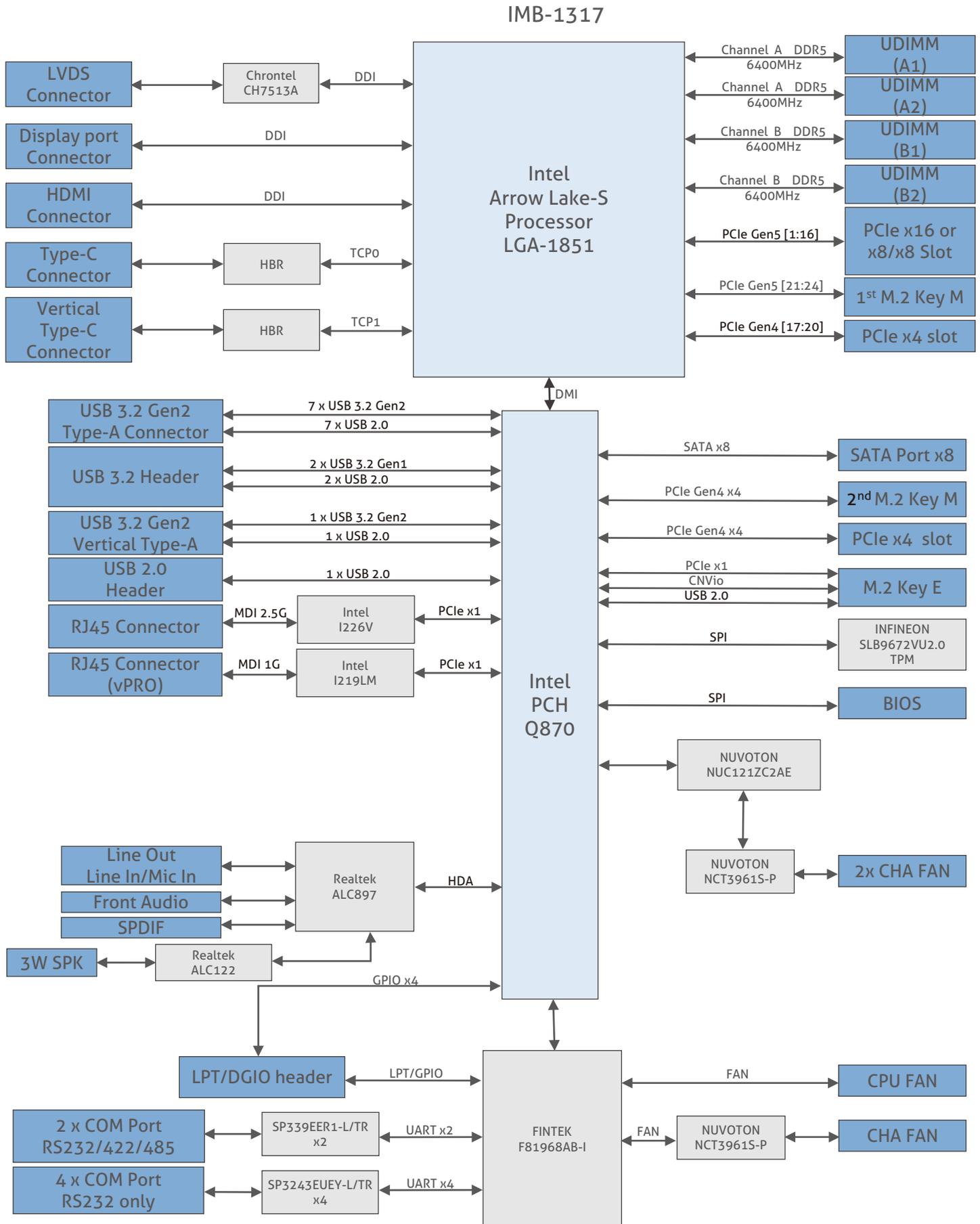|	
TPM	TPM 2.0 onboard IC

Power Requirements

Input PWR	ATX PWR (24+8+8-pin)
Power On	AT/ATX Supported
	- AT : Directly PWR on as power input ready
	- ATX : Press button to PWR on after power input ready

Environment

Operating Temp	-20°C ~ 70°C
Storage Temp	-40°C ~ 85°C
Operating Humidity	5% ~ 90%
Storage Humidity	5% ~ 90%

IMB-1317

From	Via	Signal	To
LVDS Connector	Chrontel CH7513A	DDI	Intel Arrow Lake-S Processor LGA-1851
Display port Connector		DDI	
HDMI Connector		DDI	
Type-C Connector	HBR	TCP0	
Vertical Type-C Connector	HBR	TCP1	

- Channel A DDR5 6400MHz → UDIMM (A1)
- Channel A DDR5 6400MHz → UDIMM (A2)
- Channel B DDR5 6400MHz → UDIMM (B1)
- Channel B DDR5 6400MHz → UDIMM (B2)
- PCIe Gen5 [1:16] → PCIe x16 or x8/x8 Slot
- PCIe Gen5 [21:24] → 1st M.2 Key M
- PCIe Gen4 [17:20] → PCIe x4 slot

DMI

Intel PCH Q870

- USB 3.2 Gen2 Type-A Connector — 7 x USB 3.2 Gen2 / 7 x USB 2.0
- USB 3.2 Header — 2 x USB 3.2 Gen1 / 2 x USB 2.0
- USB 3.2 Gen2 Vertical Type-A — 1 x USB 3.2 Gen2 / 1 x USB 2.0
- USB 2.0 Header — 1 x USB 2.0
- RJ45 Connector — MDI 2.5G — Intel I226V — PCIe x1
- RJ45 Connector (vPRO) — MDI 1G — Intel I219LM — PCIe x1

- SATA x8 → SATA Port x8
- PCIe Gen4 x4 → 2nd M.2 Key M
- PCIe Gen4 x4 → PCIe x4 slot
- PCIe x1 / CNVio / USB 2.0 → M.2 Key E
- SPI → INFINEON SLB9672VU2.0 TPM
- SPI → BIOS

NUVOTON NUC121ZC2AE → NUVOTON NCT3961S-P → 2x CHA FAN

Audio:
- Line Out / Line In/Mic In — Realtek ALC897 — HDA
- Front Audio — Realtek ALC897
- SPDIF — Realtek ALC897
- 3W SPK — Realtek ALC122 — Realtek ALC897

GPIO x4

LPT/DGIO header — LPT/GPIO — FINTEK F81968AB-I
- FAN → CPU FAN
- FAN — NUVOTON NCT3961S-P → CHA FAN

- 2 x COM Port RS232/422/485 — SP339EER1-L/TR x2 — UART x2 — FINTEK F81968AB-I
- 4 x COM Port RS232 only — SP3243EUEY-L/TR x4 — UART x4 — FINTEK F81968AB-I

Ordering Information

Model	IMB-1317	IMB-X1317	IMB-X1317-10G
CPU/Chipset	Q870	W880	W880
HDMI	1	1	1
DP	1	1	1
LVDS/eDP	1/ (1)	1/ (1)	1/ (1)
1 Gbe LAN	1	3	3
2.5 Gbe LAN	1	1	1
10 Gbe LAN	0	0	1
COM	6	6	6
USB4/Thunderbolt™ 4 or USB Type-C	2	2	2
USB 3.2	10	10	10
USB 2.0	1	1	1
SATA III	8	8	8
M.2 E-Key	1	1	1
M.2 M-Key	2	2	2
TPM	1	1	1

Packing List (Gift)

Description	Quantity
SATA Data Cable	2
I/O Shield	1
SCREW M3*2.5	3

Packing List (Bulk)

Description	Quantity
I/O Shield	1
SCREW M3*2.5	3

Optional Accessories

P/N	Description
13G03P003000AI	DIMM BRACKET

I/O View

IMB-1317

IMB-X1317

IMB-X1317-10G