ADLINK
LEADING EDGE AI COMPUTING

ISB-W890

CEB Form Factor Server Board with Intel® Xeon® 600 Processors for Workstations, DDR5-6400, and Flexible PCIe 5.0 Expansion

Features

- Standard CEB form factor 12" x 10.5" (305 x 267mm): Easy integration, space-efficient design
- Support Intel® Xeon® 600 Processors for Workstations
- 4x Channel DDR5, 8 slots DDR5 RDIMM, DDR5 6400 MT/s per channel
- High flexibility of PCIe configurations: 7x PCIe slots, including 3x PCIe x16 slots
- 2x Slim SAS slots, 2x M.2 NVMe & 8x SATAIII slots

Specifications

Form Factor	CEB	
Dimensions	12" x 10.5" (305 x 267mm)	
Processor System	CPU	1x Intel® Xeon® 600 Processors for Workstations, with over clocking and VROC support*1
System Memory	Supported Type	4 Channel DDR5, 8 slots DDR5 RDIMM ECC Memory speed: Up to 6400MT/S (1DPC), 5200 MT/S (2DPC)
	Max. Capacity	1TB, 128GBx 8 slot
PCIe Expansion Slot	Configuration	Expert stream (128L): 3x PCIe 5.0 x16 2x PCIe 5.0 x8 2x PCIe 5.0 x4 Mainstream (80L): 2x PCIe 5.0 x16 2x PCIe 5.0 x8 2x PCIe 5.0 x4
	MCIO	4x MCIO x8 connectors*2
Storage	M.2	2x M.2 (M-Key) NVMe (2280/22110/25110)
	SlimSAS	2x SlimSAS slots from Intel W890
	SATA	8x SATA III slots, SATA RAID 0/1/5/10 supported by PCH

*1 Over clocking supported depend on Intel's CPU SKU/ Carriers for Intel® Xeon® W Processors are not included
*2 When CPU is go for mainstream CPU, MCIO-1/2 (2x MCIO x8 connectors) is enabled only.

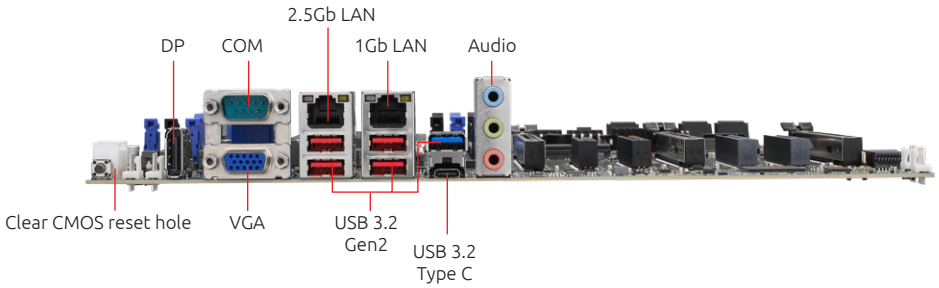
Specifications

I/O	GbE	1x 1G (I210), 1x 2.5G (I226). Support Wake on Lan(WOL) and PXE boot IPMI Management LAN shared with I210
	USB	10 USB 3.0 ports 5x Type A USB 3.2 Gen2 10Gbps in rear IO 1x Type C USB 3.2 Gen2 10Gps in rear IO 4x USB 3.2 Gen1 5Gps through internal pin header 2x USB 2.0 ports pin header
	Serial Port	5x COM, including 1x DB-9 COM connector with RS-232/422/485 x1 in rear I/O+4x RS-232 internal pin header
	Display Port	1x D-Sub 15-pin VGA port in rear IO from AST2600 1x DP port in rear IO from AST2600
	Internal IO pin header	1x TPM pin header with SPI interface 1x VROC connector 7x 4-pin Fan pin header(1 for CPU, 6 for system) 2x Chassis intrusion pin header 1x IPMC pin header(1x PMBus, 1xSMBus, 1x IPMB) 1x 24 pin ATX main PWR connector +2x8 pin ATX 12V PWR connector+ 2x8 pin in 12V PWR connector for PCIe 1x DIO pin header (4x DI, 4x DO) 1x backplane PCIe hotplug connector (Reserved) 2x SGPIO pin header (Reserved) 4x COM port pin header,1x RS-232/422/485, 3x RS232 4x USB 3.2 Gen1 5Gps through internal pin header 2x USB 2.0 ports pin header
	Front I/O & LED	3x button: Power button, Reset button, UID button, 7x LED: Power on/OFF LED, SATA HDD LED, Thermal alarm LED, System fault LED, 2x LAN (active), UID LED 2x USB 2.0
	Rear I/O connector	1x VGA, 1x DP, USB 3.2 Gen2x1 (Type A) x5, USB 3.2 Gen2 (Type c) x1, 2x RJ45, 1x COM (RS-232/422/485x1), 3x Audio(Line in, out, mic) Clear CMOS reset hole
	DIO	in x4, out x4 -> Pin header
	Power Requirement	12V/12V_8P/5V_SB/5V/3.3V
Server Management	BMC Controller	Aspeed AST2600, with IPMI v2.0 & Redfish support
	TPM	TPM with header (TPM 2.0 module: 59-37610-000E)
	Watch dog	Programmable 1 to 255 sec. (time put reset from Super I/O chip)
	Others	Wake up from USB ATX PWR: 24 Pin + 2x 8 Pin 12V + 2x8 Pin 12V for PCIe On board buzzer support On board RTC and co-design with 2-pin header 2x Chassis intrusion design
	OS	Windows® 11 LTSC (64 bit) Ubuntu 24.04 (64 bit)
	Environmental	Operating: 0°C to +60°C (32°F to 140°F) Storage: -40°C to +70°C (-40°F to 158°F) Relative Humidity: 10% to 85% (long term), 5% to 90% (short term)

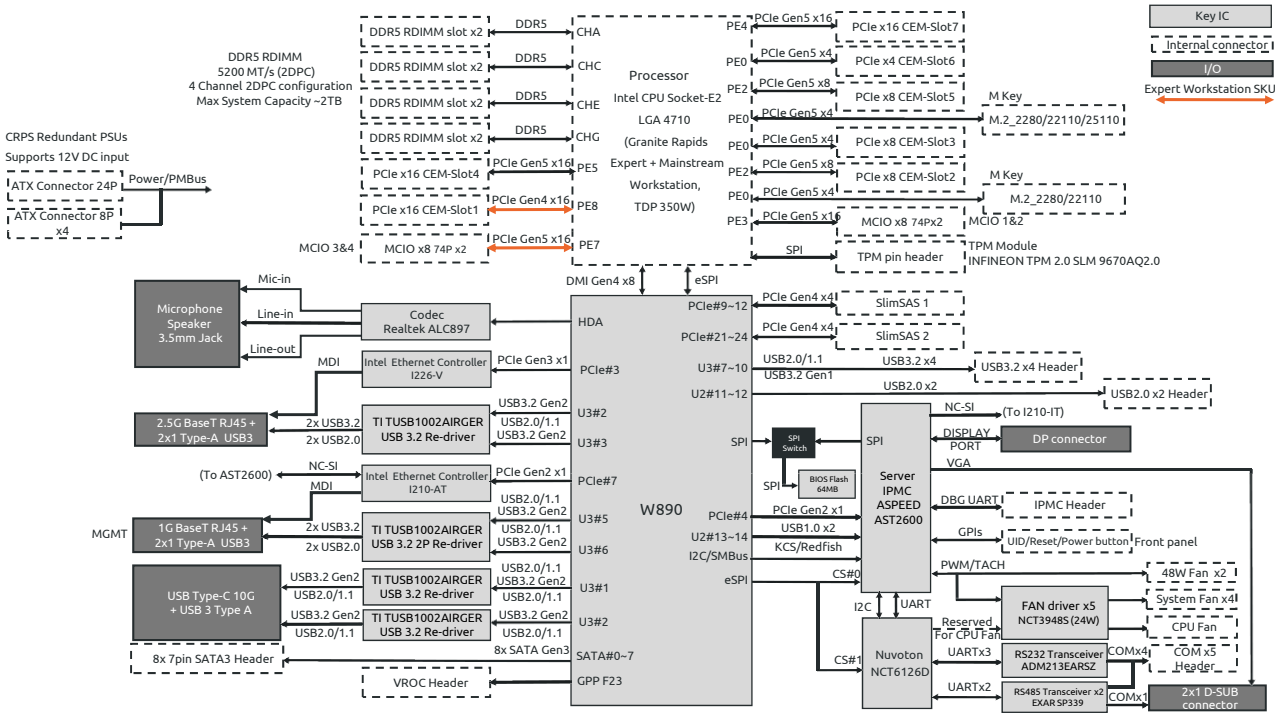
Ordering Information

Part Number	Description
91-31903-000E	ISB-W890 Board

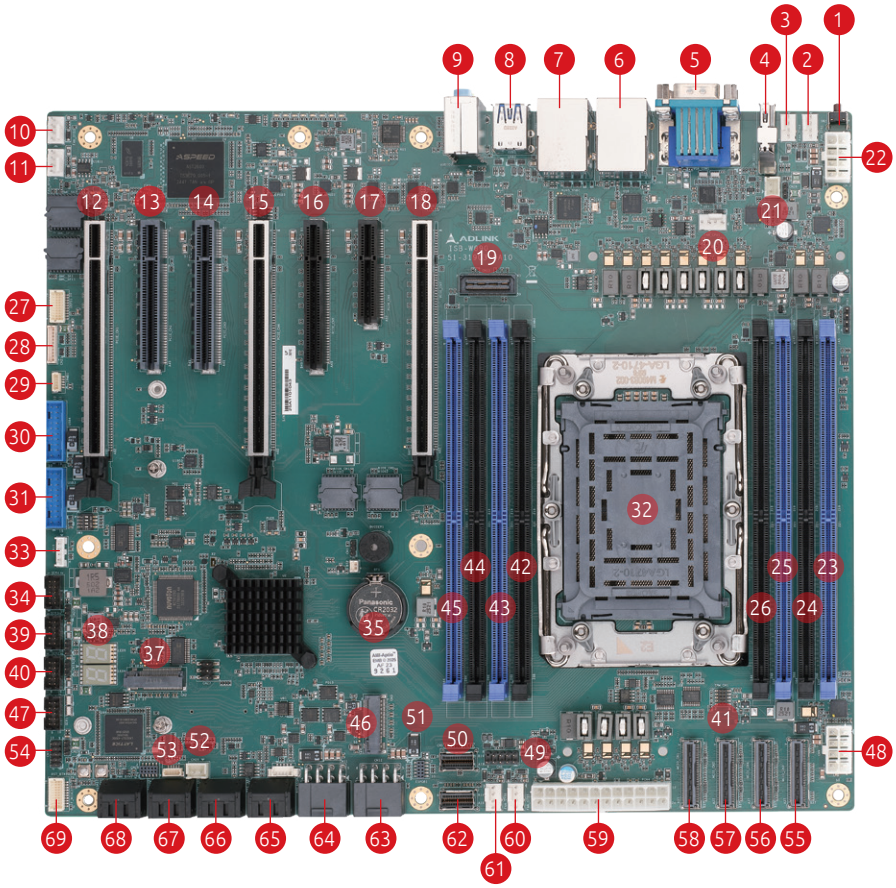
Front View



Block Diagram



Layout



No.	Description
1	Clear CMOS reset hole
2	System Fan
3	System Fan
4	DP connector
5	COM+VGA
6	2.5Gb LAN+USB 3.2 Gen 2
7	1Gb LAN + USB 3.2 Gen 2
8	USB3.2 Gen2 + Type C
9	Audio
10	System Fan
11	System Fan
12	PCIe x16
13	PCIe x8
14	PCIe x4 with x8 connector
15	PCIex16
16	PCIex8
17	PCIex4
18	PCIex16
19	XDP (for debug)
20	CPU fan
21	Case opn detection
22	CPU Power connector
23	DDR5 slot

No.	Description
24	DDR5 slot
25	DDR5 slot
26	DDR5 slot
27	CRPS power board header
28	DIDO header
29	IPMB header
30	USB3.2 Gen1 header
31	USB3.2 Gen1 header
32	CPU
33	VROC
34	COM port
35	CMOS battery
36	PCH-W890
37	M.2 connector
38	80 port display
39	COM port
40	COM port
41	COM port
42	DDR5 slot
43	DDR5 slot
44	DDR5 slot
45	DDR5 slot
46	M.2 connector

No.	Description
47	COM port
48	CPU Power connector
49	USB 2.0 header
50	SlimSAS
51	ESPI header
52	SMBus header
53	CPLD JTAG header
54	SGPIO header
55	MCIO connector
56	MCIO connector
57	MCIO connector
58	MCIO connector
59	ATX Power connector
60	System Fan
61	System Fan
62	SlimSAS
63	PCIe power connetcor
64	PCIe power connetcor
65	SATA III x2
66	SATA III x2
67	SATA III x2
68	SATA III x2
69	Front Panel header

CPU Selection Guide

Processor Number	Cores/ Threads	Intel® Smart Cache LLC	Base / Max Turbo Frequency	PCIe Lanes	Notes
Intel® Xeon® 698X	86 / 172	336	2.0 / 4.6	128	Extreme high-end for massive virtualization or complex, multi-model workloads
Intel® Xeon® 696X	64 / 128	336	2.4 / 4.6	128	High core density for data center-grade edge nodes
Intel® Xeon® 678X	48 / 96	192	2.4 / 4.7	128	High-performance AI inference & heavy multitasking
Intel® Xeon® 656	20 / 40	72	2.9 / 4.6	128	Enough cores for automation
Intel® Xeon® 654	18 / 36	72	3.1 / 4.6	128	
Intel® Xeon® 636	12 / 24	48	3.5 / 4.5	80	Suitable for budget Edge Servers needing minimal high-end GPUs
Intel® Xeon® 634	12 / 24	48	2.7 / 4.4	80	

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