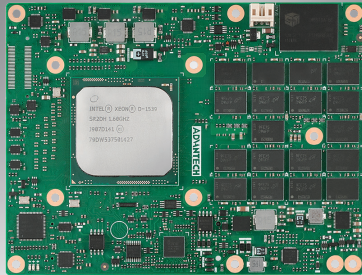


# SOM-9590

## Intel Xeon Processor D-1500 COM Express R3.0 Type 7 Module for Ruggedized Application



MIL-STD 810G



Windows Server

Windows Embedded

WISE-PaaS/DeviceOn iManager



### Features

- COM Express R3.0 Basic Module Type 7 pin out
- Intel® Xeon® Processor D-1500 Product Family
- Solder-down memory w/ ECC, max. 32GB
- High speed Ethernet (dual 10GBASE-KR interfaces, one GbE)
- Abundant expansion. (PCIe x16, PCIe x8, 8 PCIe x1)
- Supports iManager, WISE-PaaS/DeviceOn and embedded software APIs

#### Software APIs:



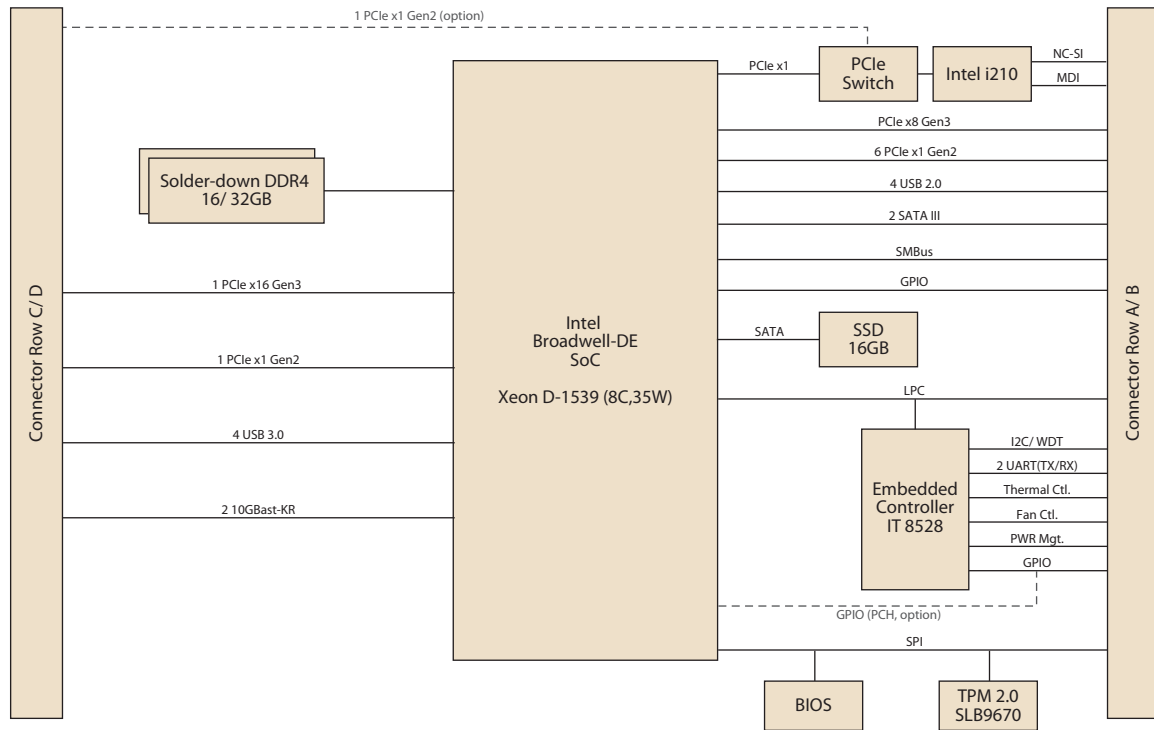
#### Utilities:



### Specifications

Form Factor	Form Factor	COM Express Basic Module	
	Pin-out Type	COM Express R3.0 Type 7 compatible	
Processor System	CPU	Xeon D-1539	
	Base Frequency	1.6 GHz	
	Max Single Core Turbo Frequency	2.2 GHz	
	Cores	8	
	LLC	12MB	
	CPU TDP	35W	
	BIOS	AMI UEFI 128Mbit	
Memory	Technology	DDR4 2133MHz	
	ECC Support	ECC	
	Max. Capacity	up to 32GB	
Storage	Memory Type	Solder-down memory	
	Capacity	16GB	
Expansion	Type	Solder-down SSD	
	PCI Express x16	1 PCIe x16 Gen.3, and bifurcatable to 2 x8, 1 x8 & 2 x4, or 4 x4	
	PCI Express x8	1 PCIe x8 Gen.3, and bifurcatable to 2 x4	
	PCI Express x1	7 Ports, PCIe x1 Gen.2, and bifurcatable to x2 or x4 (max. 8 Ports if remove GbE LAN)	
Serial Bus	LPC	Yes, 33MHz, support DMA read/write	
	SMBus	Yes	
Ethernet	PC Bus	Support 100Kb/s & 400Kb/s devices. Default master mode, optional slave mode	
	10GB Ethernet	Intel integrated 2x 10G LAN controller, Interface: 10GBase-KR	
I/O	Gigabit	Intel I210AT/I210IT controller; Speed: 10/100/1000 Mbps	
	SATA	2 ports support SATA III 6.0Gb/s	
	USB3.0	4 Ports	
	USB2.0	4 Ports	
	SPI Bus	Yes, for BIOS ROM	
	GPIO	8-bit GPIO	
	Watchdog	65536 level, 0 ~ 65535 sec	
	COM Port	2 Ports (2-Wire)	
	TPM	TPM 2.0 w/ 128 or 256bit (n/a) secured	
	Smart Fan	2 Ports; 1 Port on COM Module, Support 12V Fan, 1 Port on Carrier Board	
Power	Type	ATX: Vin, VSB, AT: Vin	
	Supply Voltage	Vin: 8.5 (9-5%) ~ 20V (19+5%), VSB: 5V±5%, RTC Battery: 2.0-3.3V	
	Power Consumption (Max.)	46.6W	
Environment	Power Consumption (Idle)	12.8W	
	Temperature	Operating Temp.:	0 ~ 60 °C (32 ~ 140 °F)
		Extend Temp.:	-40 ~ 85 °C (-40 ~ 185 °F) with 0.7m/s air flow
		Storage:	-40 ~ 85 °C (-40 ~ 185 °F)
	Humidity	High/Low Temperature Operation Test	Test Standard: Reference MIL-STD-810G testing procedures Table 501.6-II (Basic Hot (A2)) Table 502.6-I (Cold (C2))
		Humidity Test	Operating: 40 °C @ 95% relative humidity, non-condensing Storage: 60 °C @ 95%relative humidity, non-condensing
		Humidity Test	Test Standard: Reference MIL-STD-810G testing procedures Table 507.6-I (Hot Humid (B3))
Vibration Resistance	High/Low Temp. Storage Test	Test Standard: Reference MIL-STD-810G testing procedures Table 501.6-II (Basic Hot (A2)) Table 502.6-I (Cold (C2))	
	Vibration Resistance	Test Standard: MIL-STD-810G testing procedures Figure 514.7C-4 (Category 4), Table 514.7C-V	
Shock	Shock	Test Standard: Reference MIL-STD-810G testing procedures Figure 516.7-10, Table 516.7-IV	
	Altitude	Test Standard: Reference MIL-STD-810G testing procedures Method 500.6	
Mechanical	Dimensions	125 x 95 mm (4.92" x 3.74")	

## Block Diagram



## Ordering Information

Part No.	CPU	Core	Freq.	CPU TDP	LLC	Memory	SSD	Giga LAN	10GBase-KR	PEG x16	PCIe x8	PCIe x1	USB 2.0	USB 3.0	SATA III	LPC	Power	Thermal solution	Operating Temp.
SOM-9590D8AAX-U0A1	Xeon D-1539	8	1.6	35W	12MB	ECC 16GB	16GB	* 0/1	2	1	1	* 7/8	4	4	2	Yes	AT/ATX	Active	-40 ~ 85 °C
*SOM-9590D8BBX-U0A1	Xeon D-1539	8	1.6	35W	12MB	ECC 32GB	16GB	* 0/1	2	1	1	* 7/8	4	4	2	Yes	AT/ATX	Active	-40 ~ 85 °C

Note: \* Other combination is project based support. Please contact sales for details.

## Optional Accessories

Part No.	Description
1960048820N001	Semi-Cooler, 125L x 95W x 33.5H

## Packing List

Part No.	Description	Quantity
-	SOM-9590 COM module	1
1970004470T001	Heatspreader	1

## Development Board

Part No.	Description
SOM-DB5920-00A1	COM-Express Development Board, Type 7 Pin-out (with EA60 2 ports RJ45)
SOM-DB5920-F0A1	COM-Express Development Board, Type 7 Pin-out (with EA61 2 ports SFP+)

## Embedded OS

OS	Part No.	Description
Win10	2070015250	Img Win10 IoT Ent_LTSB 64 bit