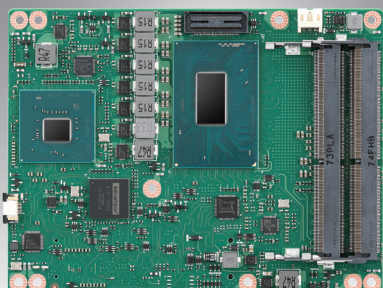


SOM-5899R/5899

9th/8thGen Intel® Xeon®/Core™ Processors COM Express Basic Module Type 6

NEW



Windows Embedded

iManager



Features

- Intel 9th/8th Gen Xeon®/Core™ Hexa/Quad Cores + PCH QM370/CM246
- Dual channel DDR4, Max 96GB (ECC optional)
- High Speed I/O: 4 USB3.1 (Gen2), 8 PCIe1(Gen3), 4 SATA (Gen3)
- Three Independent Symmetrical Displays (Up to 4K)
- Supports iManager, WISE-PaaS/RMM and Embedded Software APIs

Software APIs:



Watchdog



I²C



SMBus



H/W Monitor



GPIO

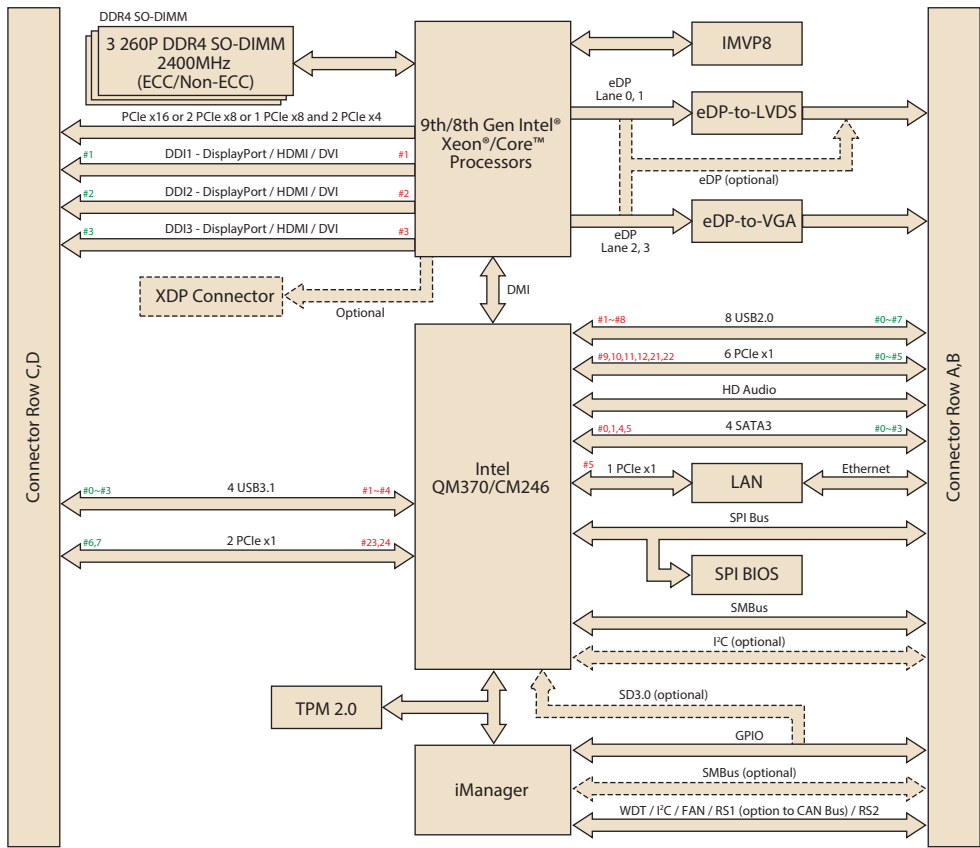


Brightness Control

Specifications

Form Factor	Form Factor Pin-out Type	COM Express Basic Module COM Express R3.0 Type 6 pin out													
Processor System	CPU	E-2276ME	E-2276ML	E-2254ME	E-2254ML	I7-9850HE	I7-9850HL	I3-9100HL	Pentium G5600E	Celeron G4930E	Celeron G4932E	E-2176M	i7-8850H	i5-8400H	i3-8100H
	Base Frequency	2.8 GHz	2.0 GHz	2.6 GHz	1.7 GHz	2.7 GHz	1.9 GHz	1.6 GHz	2.6 GHz	2.4 GHz	1.9 GHz	2.7GHz	2.6GHz	2.5GHz	3.0GHz
	Max Single Core Turbo Frequency	4.5 GHz	4.2 GHz	3.8 GHz	3.5 GHz	4.4 GHz	4.1 GHz	2.9 GHz	NA	NA	NA	4.4GHz	4.3GHz	4.2GHz	N/A
	Cores	6	6	4	4	6	6	4	2	2	2	6/12	6/12	4/8	4/4
	LLC	12MB	12MB	8MB	8MB	9MB	9MB	6MB	4MB	2MB	2MB	12MB	9MB	8MB	6MB
	CPU TDP	45W	25W	45W	25W	45W	25W	25W	35W	35W	25W	45W/35W	45W/35W	45W/35W	45W/35W
	BIOS	AMI UEFI 256Mbit											AMI 32MB, SPI		
Memory	Technology	DDR4 (2DPC: Up to DDR4 2400 x 3 SO-DIMM/1DPC: Up to DDR4 2666 x 2 SO-DIMM)													
	ECC Support	ECC is supported with specific SKU													
	Max. Capacity	96GB													
	Socket	3 260P SO-DIMM: 2 on front side (channel 0&1) / 1 on rear side (channel 0)													
Graphics	Controller	Intel® UHD Graphics 630/P630													
	Max. Frequency	1200MHz													
	Graphic Memory	Shared Memory													
Display	3D/HW Acceleration	HW Encode: MPEG2, AVC/H264, VP8, JPEG, HEVC/H265, VP9 HW Decode: MPEG2, VC1/WMV9, AVC/H264, VP8, JPEG/MJPEG, JPEG/MJPEG, HEVC/H265 (10 bits & 8 bits), VP9													
	VGA	1920 x 1200@60Hz													
	LCD	LVDS dual channel: 1920 x 1200@60Hz (option support eDP 4096 x 2304@60Hz, 24bpp)													
	DDI	3 DDI ports support configurable HDMI/DVI/DisplayPort HDMI: 4096 x 2160@24Hz, DVI: 1920 x 1200@60Hz, DP: 4096 x 2304@60Hz													
	Multiple Display	Triple displays with each display combinations													
Expansion	PCI Express x16 (Gen3)	1 PCIe x16 configurable to 1 x16, 2 x8, 1 x8 + 2 x4													
	PCI Express x1 (Gen3)	8 PCIe x1, configurable to x4 or x2													
	Audio Interface	Intel HD Audio Interface													
	LPC	Yes													
Serial Bus	SMBus	Yes													
	I²C Bus	Yes													
	CAN Bus	Yes (Optional, co-layout with COM2)													
Ethernet	Controller	Intel I219													
	Speed	10/100/1000 Mbps													
I/O	SATA3.0	4 Ports (6Gbps)													
	USB3.1 (Gen2)	4 Ports (10Gbps)													
	USB2.0	8 Ports (480Mbps)													
	SPI Bus	Yes													
	GPIO	8 bits (Option support SD Card)													
	Watchdog	65536 level, 0~65535 sec													
	COM Port	2 Ports (2-wire)													
	TPM	TPM2.0 (Infineon SLB9665)													
	Smart Fan	2 Ports: 1 port on COM module (Notice: the input voltage of fan is aligned to Vin); 1 port on carrier board													
Power	Type	ATX: Vin, VSB; AT: Vin													
	Supply Voltage	Vin: 8.5V ~ 20V; VSB: 4.75V ~ 5.25 V, RTC Battery: 2.0V ~ 3.3V													
	Power Consumption	Max: 44.63W @ 12V (i7-8850H with 48GB DDR4 2400) Idle: 6.89W @ 12V (i7-8850H with 48GB DDR4 2400) *Only for reference and will depends on custom software loading, detail refer to user manual													
Environment	Operating Temperature	Standard: 0 ~ 60 °C (32 ~ 140 °F), Extend: -40 ~ 85 °C (-40 ~ 185 °F)													
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185 °F)													
	Humidity	Operating: 40 °C @ 95% relative humidity, non-condensing Storage: 60 °C @ 95%relative humidity, non-condensing													
	Vibration Resistance	3.5 Grms													
Mechanical	Dimensions	125 mm x 95 mm (4.92" x 3.74")													

Block Diagram



*Display Configuration Table

	DDI 1	DDI 2	DDI 3	LVDS/eDP	VGA
Default	DP++	DP++	HDMI/DVI	LVDS	VGA
Option 1	DP++	DP++	HDMI/DVI	eDP (2-lane)	VGA
Option 2	DP++	DP++	DP++	eDP (4-lane)	None

Support maximum 3 independent displays simultaneously.

Ordering Information

Part No.	CPU	Core	Base Freq.	Max. Boost Freq.	CPU TDP	LLC	PCH	DDR4 SODIMM	Power	Thermal solution	Operating Temp.
SOM-5899RE6C-U8A1	E-2276ME	6	2.8	4.5	45W	12MB	CM246	ECC	AT/ATX	Active	0 ~ 60 °C
SOM-5899RE6C-U0A1	E-2276ML	6	2	4.2	25W	12MB	CM246	ECC	AT/ATX	Active	0 ~ 60 °C
SOM-5899RE4C-U6A1	E-2254ME	4	2.6	3.8	45W	8MB	CM246	ECC	AT/ATX	Active	0 ~ 60 °C
SOM-5899RE4C-S7A1	E-2254ML	4	1.7	3.5	25W	8MB	CM246	ECC	AT/ATX	Active	0 ~ 60 °C
SOM-5899RC7Q-U7A1	i7-9850HE	6	2.7	4.4	45W	9MB	QM370	non-ECC	AT/ATX	Active	0 ~ 60 °C
SOM-5899RC7Q-S9A1	i7-9850HL	6	1.9	4.1	25W	9MB	QM370	non-ECC	AT/ATX	Active	0 ~ 60 °C
SOM-5899RC3Q-S6A1	i3-9100HL	4	1.6	2.9	25W	6MB	QM370	non-ECC	AT/ATX	Active	0 ~ 60 °C
SOM-5899RC3C-S6A1	i3-9100HL	4	1.6	2.9	25W	6MB	CM246	ECC	AT/ATX	Active	0 ~ 60 °C
SOM-5899RPQ-U6A1	Pentium G5600E	2	2.6	NA	35W	4MB	QM370	non-ECC	AT/ATX	Active	0 ~ 60 °C
SOM-5899RCRC-U4A1	Celeron G4930E	2	2.4	NA	35W	2MB	CM246	ECC	AT/ATX	Active	0 ~ 60 °C
SOM-5899RCRH-S9A1	Celeron G4932E	2	1.9	NA	25W	2MB	HM370	non-ECC	AT/ATX	Active	0 ~ 60 °C
SOM-5899RE6CX-U8A1	E-2276ME	6	2.8	4.5	45W	12MB	CM246	ECC	AT/ATX	Active	-40 ~ 85 °C
SOM-5899RC7QX-U7A1	i7-9850HE	6	2.7	4.4	45W	9MB	QM370	non-ECC	AT/ATX	Active	-40 ~ 85 °C
SOM-5899RC3QX-S6A1	i3-9100HL	4	1.6	2.9	25W	6MB	QM370	non-ECC	AT/ATX	Active	-40 ~ 85 °C
SOM-5899RCRH-S9A1	Celeron G4932E	2	1.9	NA	25W	2MB	HM370	non-ECC	AT/ATX	Active	-40 ~ 85 °C

Part No.	CPU	Freq.	Cores	CPU TDP	PCH	DDR4 Memory	Thermal Solution	Operating Temperature
SOM-5899E6C-U7A1	E-2176M	2.7	6	45W/35W	CM246	ECC/ non-ECC	Active	0 ~ 60 °C
SOM-5899C7Q-U6A1	i7-8850H	2.6	6	45W/35W	QM370	non-ECC	Active	0 ~ 60 °C
SOM-5899C5Q-U5A1	i5-8400H	2.5	4	45W/35W	QM370	non-ECC	Active	0 ~ 60 °C
SOM-5899C3Q-H0A1	i3-8100H	3.0	4	45W/35W	QM370	non-ECC	Active	0 ~ 60 °C
SOM-5899E6CX-U7A1	E-2176M	2.7	6	45W/35W	CM246	ECC/ non-ECC	Active	-40 ~ 85 °C
SOM-5899C7QX-U6A1	i7-8850H	2.6	6	45W/35W	QM370	non-ECC	Active	-40 ~ 85 °C
SOM-5899C5QX-U5A1	i5-8400H	2.5	4	45W/35W	QM370	non-ECC	Active	-40 ~ 85 °C
SOM-5899C3QX-H0A1	i3-8100H	3.0	4	45W/35W	QM370	non-ECC	Active	-40 ~ 85 °C

Any other SKUs or combination is project based support. Please contact sales for details.

Packing List

Part No.	Description	Quantity
-	SOM-5899 CPU Module	1
1960081253T001	Heatspreader of SOM-5899	1

Optional Accessories

Part No.	Description
1960048820N001	Semi-Cooler 125 x 95 x 33 mm with 12V fan
1960094209T001	QFCS 125 x 97 x 26.14 mm

Development Board

Part No.	Description
SOM-DB5830-00A1	COMe Devel. Board COMe R3.0 Type6 pin-out (SOM-DB5830)

Embedded OS

OS	Part No.	Description
Win10 (HL)	2070015300	Img Win10 IoT Ent_LTSB 64 bit (Xeon & Core i7)
Win10 (VL)	2070015301	Img Win10 IoT Ent_LTSB 64 bit (Core i5)