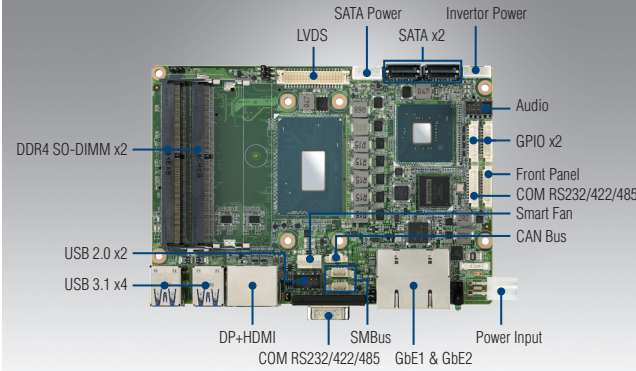


MIO-5393

9th/8th Gen Intel® Core® H-Series Platform (Xeon, i7, i5), 3.5" SBC w/ MIOe

Preliminary



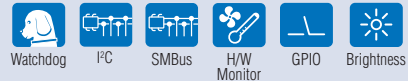
Windows Embedded

iManager susiAccess CE FCC

Features

- 9th/8th Intel® Core® H-Series Mobile Platform, up to 6 cores, and TDP options with 45W & 25W
- Dual channel DDR4 2400, up to 64GB*
- Triple simultaneous displays with LVDS/eDP*+HDMI+DP
- Support USB 3.1 Gen2 (10 Gbps), TPM & ECC* function
- Support PCIe/NVMe high-speed SSD
- Expansion: M.2 B-key (M.2 M-key*), M.2 E-Key, MIOe
- Supports iManager, WISE-PaaS/RMM, emb. SW API

Software APIs:



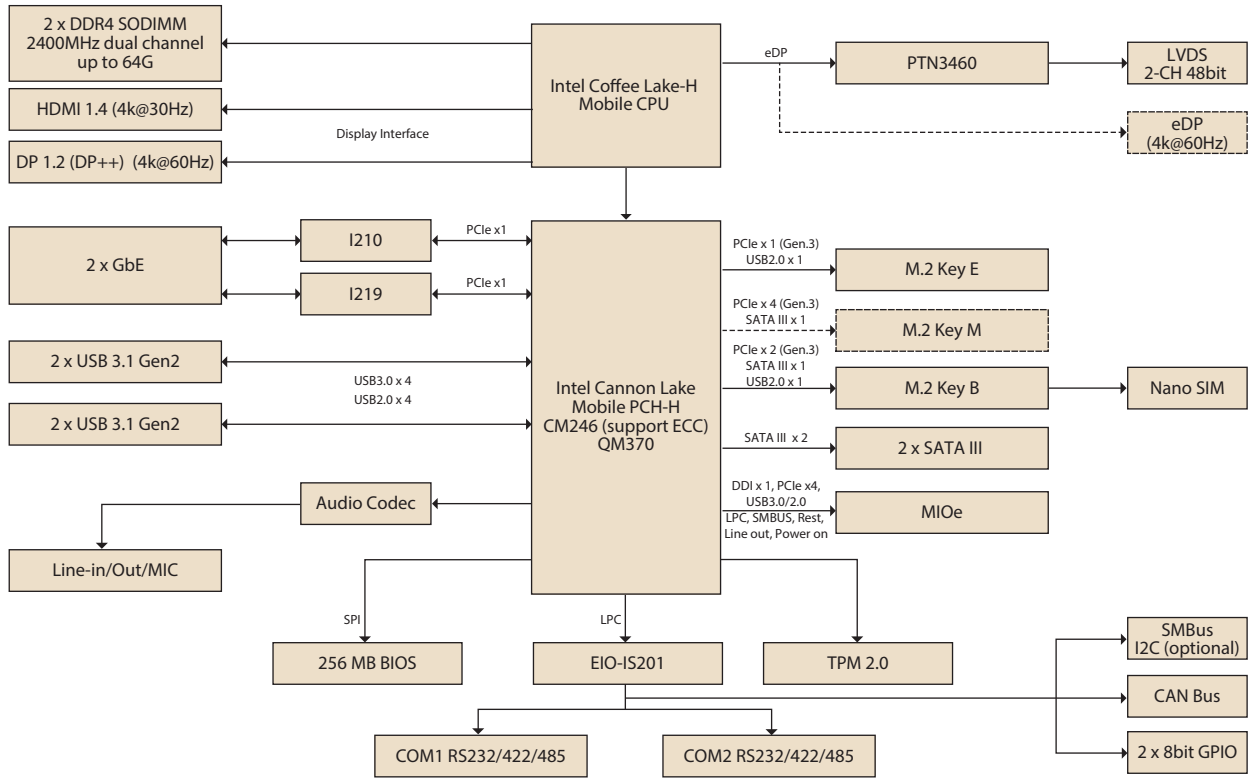
Utilities:



Specifications

	Processor	E-2276ME	I7-9850HE	I7-9850HL	I5-8400H
Platform	Max. Frequency	4.5 GHz	4.4 GHz	4.1 GHz	4.2 GHz
	Base Frequency	2.8 GHz	2.7 GHz	1.9 GHz	2.5 GHz
	Core/Tread	6C/12T	6C/12T	6C/12T	4C/8T
	LLC	12MB	9MB	9MB	8MB
	CPU TDP	45W	45W	25W	45W
	Chipset	CM246	QM370	QM370	QM370
	BIOS	AMI EFI 256Mbit			
Memory	Technology	DDR4-2400			
	Max. Capacity	Up to 64GB			
	Channel/Socket	Dual Channels / 2 sockets			
Graphics	ECC Support	Support	n/a	n/a	n/a
	Controller	Intel Gen 9 low power graphics			
	Max. Frequency	1150 MHz	1150 MHz	1150 MHz	1100 MHz
	Base Frequency	350 MHz	350 MHz	350 MHz	350 MHz
Display I/F	Graphics Memory	Intel DMVT5.0, share memory up to 1024MB			
	3D/HW Acceleration	HW Codec: H.265/HEVC 8bit/10bit encode/decode; VP8 8bit encode/decode; VP9 10bit decode; MPEG2; JPEG; VC1/WMV9. Direct3D 2015/11.2/11.1/10/9; OpenGL5.0; OpenCL 2.0/1.2/1.0			
	LCD	1 x LVDS Dual Channel 24-bit, up to WUXGA 1920 x 1200 @ 60Hz *Optional, eDP 1.4, support up to 4096x2304 @ 60Hz			
Ethernet	HDMI/DP	1 x HDMI 1.4a, Support up to 4096x2160 @ 30 Hz 1 x DP 1.2, Support up to 4096x2304 @ 60Hz			
	Controller	LAN1: Intel 219LM, LAN2: Intel 210IT			
External I/O	Speed	10/100/1000 Mbps			
	Ethernet	2 x RJ-45			
	VGA/HDMI/DP	-/1/1			
	USB3.1/USB2.0	4/0			
	COM Port	1 x RS-232/422/485			
Internal I/O	LED	Power status, HDD R/W			
	Power DC-Jack	1*(Optional)			
	SATA	2 x SATA GenIII 6.0Gbps			
	USB2.0	2			
	Serial Bus	SMBus default, I2C optional			
	COM Port	1 x RS-232/422/485			
	GPIO	2 x 8-bit general purpose input output I/O			
	Audio	Realtek ALC888S, High Definition Audio (HD), Line-in, Line out, Mic-in			
	Inverter	3.3/5/12V for VDD power, 5/12V for inverter			
	LPC/SPI Bus	-			
	CAN Bus	1			
Board Feature	Fan	1			
	Front Panel Control	Power-on, Reset, Buzzer, ...			
	Watchdog Timer	65536 level, 0-65535 sec			
	TPM	TPM2.0 (Infineon SLB9665)			
Storage	iManager 3.0	Yes			
	SSD	Yes, support PCIe/NVMe M.2 2280 SSD			
Expansion	eMMC	-			
	M.2	E-Key (PCIe x1, USB 2.0) - M.2 2230 WiFi/BT module B-Key (PCIe Gen3 x2, SATA Gen3, USB2.0) - M.2 2280 SSD module or M.2 3042 4G/LTE module (with nano SIM slot and bracket) *Optional, M-Key (PCIe Gen3 x4, SATA Gen3) - M.2 2280 NVMe/PCIe Gen3x4 SSD module			
	mPCIe/msATA	-			
Power	MIO Extension	DDI x 1, PCIe x 4, USB3.0, LPC, SMBus, Line-out, Power-on, Reset			
	Supply Voltage	Vin: DC 12V ± 10%; RTC Battery: Lithium 3V/210mAh			
	Connector	ATX 2x2 pin 90D, optional DC-jack or ATX 2x2 pin 180D			
	Power Management	AT, ATX			
Environment	Max. Consumption	TBC	TBC	TBC	TBC
	Idle Consumption	TBC	TBC	TBC	TBC
	Temperature	Operating: Standard: 0 ~ 60 °C (32 ~ 140 °F), Extend: -40 ~ 85 °C (-40 ~ 185 °F) Storage: -40 ~ 85 °C (-40 ~ 185 °F)			
Certification	Humidity	Operating: 40 °C @ 95% relative humidity, non-condensing Storage: 60 °C @ 95% relative humidity, non-condensing			
	Vibration Resistance	3.5 Grms			
Mechanical	EMC	CE, FCC			
	Safety	-			
Mechanical	Dimensions	146 x 102 mm (5.7" x 4")			

Block Diagram



*Function support by request with dotted line

Ordering Information

Part No.	CPU	Max. Frequency	Core	TDP	vPro	ECC	LVDS/eDP ¹	M.2 Slot Extension ²	Power Connector ³	Thermal Solution	Operating Temperature
TBD	E-2276ME	4.5 GHz	6	45W	Yes	Yes	LVDS	B-key + E-key	2x2 pin	Active	0 ~ 60 °C
TBD	i7-9850HE	4.4 GHz	6	45W	Yes	No	LVDS	B-key + E-key	2x2 pin	Active	0 ~ 60 °C
TBD	i7-9850HL	4.1 GHz	6	25W	Yes	No	LVDS	B-key + E-key	2x2 pin	Passive	0 ~ 60 °C
TBD	i5-8400H	4.2 GHz	4	45W	Yes	No	LVDS	B-key + E-key	2x2 pin	Active	0 ~ 60 °C

- eDP is supported by request
- M.2 M-key +E-key is supported by request
- DC-Jack with lock is supported by request

Packing List

Part No.	Description	Quantity
	MIO-5393 SBC	1
TBD	Startup Manual	1
TBD	Mini Jumper Pack	1
TBD	Cooler	1
TBD	Heat Sink	1

Optional Accessories

Part No.	Description
TBD	Heat Spreader
TBD	Adapter

Embedded OS/API

OS	Part No.	Description
WIN10	TBD	
Software API		iManager
Software API		WISE-PaaS/RMM

Rear I/O View

