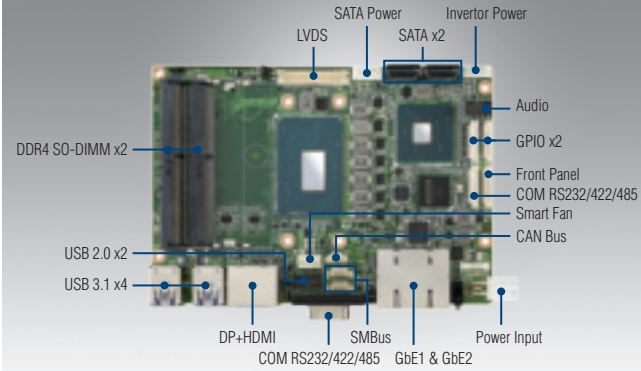


MIO-5393

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

Preliminary



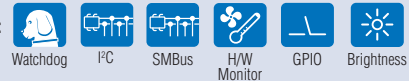
Windows Embedded

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:



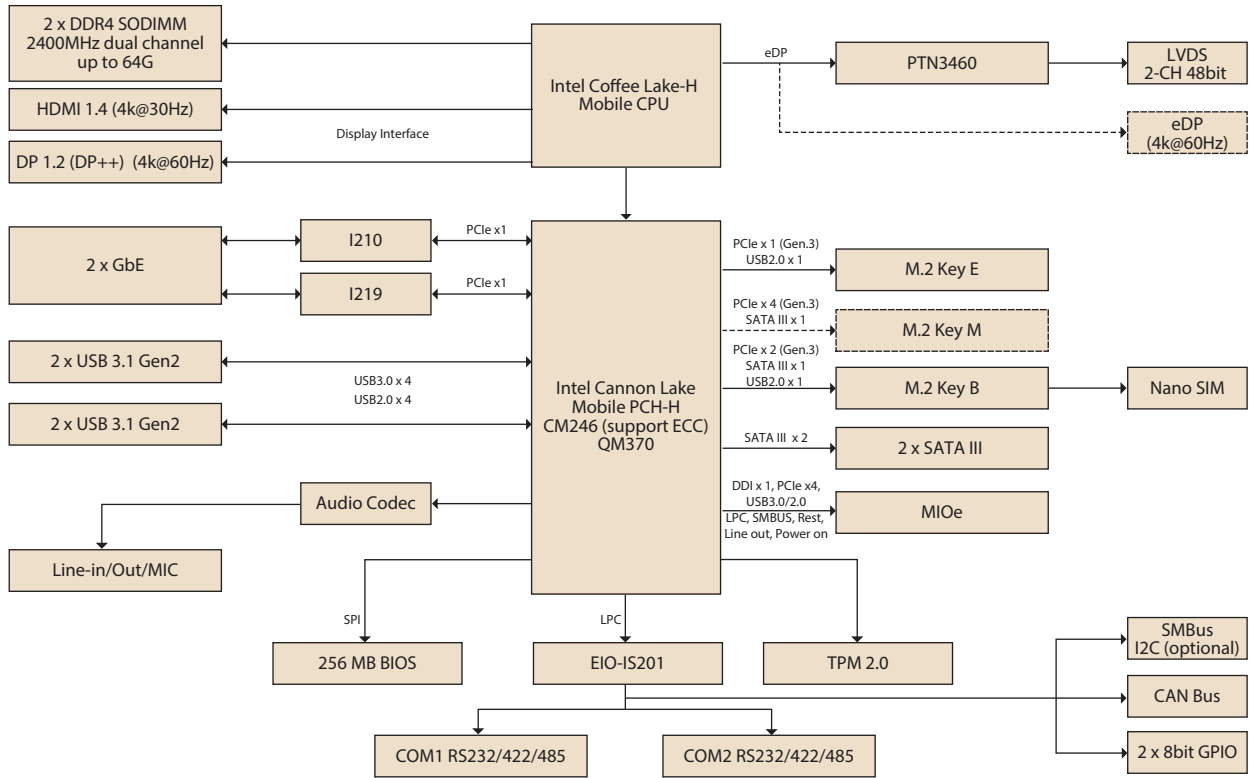
Utilities:



Specifications

Platform	Processor	E-2276ME	I7-9850HE	I7-9850HL	I5-8400H
	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		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
	Graphics Memory	Intel DMVT5.0, share memory up to 1024MB			
Display I/F	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			
	HDMI/DP	1 x HDMI 1.4a, Support up to 4096x2160 @ 30 Hz 1 x DP 1.2, Support up to 4096x2304 @ 60Hz			
Ethernet	Multiple Display	Triple simultaneous displays with 48-bit LVDS/eDP + HDMI + DP			
	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			
	LED	Power status, HDD R/W			
	Power DC-Jack	1*(Optional)			
Internal I/O	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			
	Fan	1			
	Front Panel Control	Power-on, Reset, Buzzer, ...			
Board Feature	Watchdog Timer	65536 level, 0-65535 sec			
	TPM	TPM2.0 (Infineon SLB9665)			
	iManager 3.0	Yes			
Storage	SSD	Yes, support PCIe/NVMe M.2 2280 SSD			
	eMMC	-			
Expansion	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	-			
	MIO Extension	DDI x 1, PCIe x 4, USB3.0, LPC, SMBus, Line-out, Power-on, Reset			
Power	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

