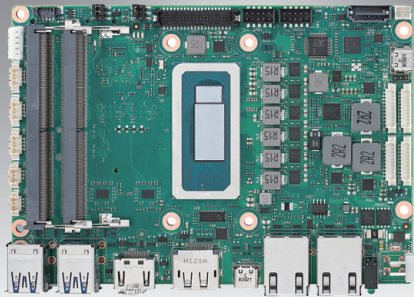


MIO-5377

12th Gen. Intel® Core™ i7/ i5/ i3 P-series 3.5" SBC

Preliminary



Features

- 12th Gen. Intel® Core™ Processor up to 12 Cores, TDP 28/15W
- Dual Channel DDR5-4800 up to 64GB
- 4 simultaneous displays: LVDS/HDMI/DP/USB-C Alt. DP
- 2 GbE, 6 USB, USB4/TBT4, 4 UART, 2 CANBus, 3 I2C
- 3 Expansions: M.2 E-Key, B-Key, M-Key (support NVMe)
- Supports iManager & Software APIs, WISE-DeviceOn

Software APIs:

- GPIO
- SMBus/I²C
- Watch Dog Timer
- Backlight On/Off
- Brightness
- CAN bus

Utilities:

- Hardware Monitor
- System Throttling
- Thermal Protection
- Smart Fan
- Data Security
- System Info

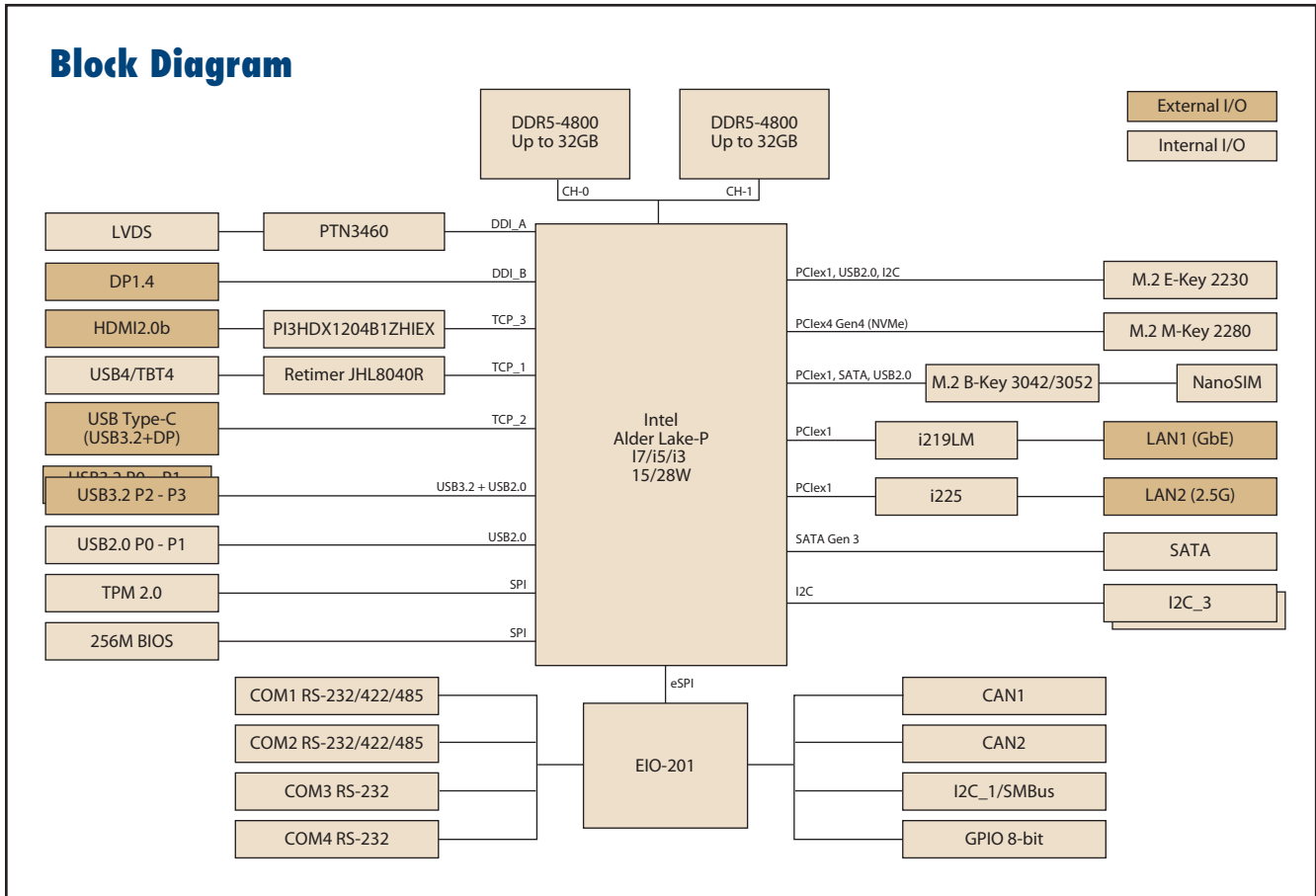


Specifications

	Processor	i7-1270PE	i5-1250PE	i7-1265UE	i5-1245UE	
Platform	Max. Frequency	4.5 GHz	4.4 GHz	4.7 GHz	4.4 GHz	
	Base Frequency	1.8 GHz	1.7 GHz	2.6 GHz	2.5 GHz	
	Core/Thread	4C+8c/16T	4C+8c/16T	2C+8c/12T	2C+8c/12T	
	LLC	18MB	12MB	12MB	12MB	
	CPU TDP	28W	28W	15W	15W	
	Chipset	On-package Intel 600 Series Chipset				
	BIOS	AMI EFI 256Mbit				
Memory	Technology	DDR5-4800				
	Max. Capacity Channel/Socket	Up to 64GB Dual Channels / 2 Sockets				
Graphics	Controller	Intel® Iris® Xe Graphics				
	Max. Frequency	1.35 GHz	1.3 GHz	1.25 GHz	1.2 GHz	
	Execution Unit	96	80	96	80	
	3D/HW Acceleration	DX12, OGL4.0, OCL1.2, HW Encode: H.265/HEVC, H.264, MPEG2, HW Decode: H.265				
Display I/F	LCD	1 x LVDS: Dual Channel 18/24-bit, up to 1920 x 1200				
	HDMI/DP	1 x HDMI 2.0b, up to 4096 x 2160 x 24bpp@60Hz 1 x DP1.4a, up to 4096 x 2304 x 36bpp@60Hz				
	Multiple Display	4 simultaneous displays via LVDS + HDMI + DP + USB Type-C Alt. Mode				
Ethernet	Controller	LAN1: Intel 219LM, LAN2: Intel 225				
	Speed	LAN1: GbE, LAN2: 2.5GbE				
External I/O	Ethernet	2 x RJ-45				
	HDMI/DP	1/1				
	USB Type-C	1 x USB3.2 Gen2, support DisplayPort1.4a Alt. Mode				
	USB3.2	4 x USB3.2 Gen2x1 10Gbps				
	LED	Power status, SATA R/W				
	Power DC-Jack	Optional				
Internal I/O	SATA	1 x SATA Gen3 6.0Gbps				
	USB4 (TBT4)	1 (Type-C)				
	USB2.0	2				
	COM Port	2 x RS-232/422/485, 2 x RS-232 (4-wire), max. 1Mbps				
	CANBus	2 x CAN2.0				
	Serial Bus	3 x I2C 1Mbps (default), 1 x SMBus* (optional to I2C)				
	Audio	Realtek ALC888s, Line-in/Line-out/MIC				
	GPIO	8-bit general purpose input output I/O				
	Inverter	12V/5V/3.3V selectable				
	Fan	12V, 1A (4-wire)				
	Front Panel Control	Power-on, Reset, Buzzer, SATA LED, CaseOpen				
	Board Feature	Watchdog Timer	65536 level, 0~65535 sec			
		TPM	TPM2.0			
iManager 3.0		SW API for Hardware Monitor, Smart Fan Control, Brightness Control, I2C, GPIO, WDT				
Expansion	M.2 E-Key	1 x E-Key 2230 (PCIex1, USB2.0)				
	M.2 B-Key	1 x B-Key 3042 LTE/3052 5G (PCIex1/SATA, USB2.0) w/ Nano SIM				
	M.2 M-Key	1 x M-Key 2280 (PCIex4 Gen.4 NVMe)				
Power	Supply Voltage	Vin: DC 12V~24V +/- 10%; RTC Battery: Lithium 3V/210mAH				
	Connector	ATX 2x2 pin 90D, optional DC-Jack or ATX 2x2 pin 180D				
	Power Management	AT, ATX				
	Max. Consumption	TBU	TBU	TBU	TBU	
	Idle Consumption	TBU	TBU	TBU	TBU	
Environment	Temperature	Operating: Standard: 0 ~ 60° C (32 ~ 140° F) Storage: -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				
Certification	EMC					
Mechanical	Dimensions	146 x 102 mm (5.7" x 4")				
	Net Weight	TBU				

*Note: Support by request

Block Diagram



Ordering Information

Part No.	CPU	cTDP	Max Frequency	Memory	Storage	OS	Cable Kit	Thermal Solution	Operating Temperature
MIO-5377C7P-Q5A1	i7-1270PE	28W	4.5GHz	-	-	-	Y	Active	0 ~ 60 °C
MIO-5377C5P-Q4A1	i5-1250PE	28W	4.4GHz	-	-	-	Y	Active	0 ~ 60 °C
MIO-5377C7-Q7A1	i7-1265UE	15W	4.7GHz	-	-	-	Y	Passive	0 ~ 60 °C
MIO-5377C5-Q4A1	i5-1245UE	15W	4.4GHz	-	-	-	Y	Passive	0 ~ 60 °C

Packing List

Part No.	Description	Quantity
	MIO-5377 SBC	
	Startup Manual	
1700006291	SATA cable 30cm	1
1700031583-01	SATA Power cable, 15P/1*2P-2.0 35cm	1
1700030406-01	M Cable 2*5P-2.0/USB-A 4P(F)*2 20cm	1
1700030404-01	RS-232 9P(M)/1*10P-1.25 20cm	2
1700031582-01	COM3/4 Cable, D-SUB 9P(M)/1*5P-1.25 20cm	2
1700019584-01	A Cable 2*5P-2.0/Audio JACK*3 20cm	1
TBU	MIO-5377 Heatsink (Passive)	1
TBU	MIO-5377 QFCS (Active)	1

Optional Accessories

Part No.	Description
TBU	MIO-5377 Heatspreader

Embedded OS/API

OS	Part No.	Description
WIN10	TBD	64-bit (UEFI mode only)
Ubuntu 20.04 LTS	TBD	
Software API	Download by website	
Yocto BSP		

Rear I/O View

