

MIO-5381

Intel Core Ultra Processors Panther Lake on 3.5" SBC

Preliminary

Features

- Intel® Core™ Ultra 9/7/5 Processors, up to 16 Cores, TDP 28W/15W
- Dual Channel DDR5-7200 up to 128GB, with IB ECC
- 4x Independent displays: eDP + 2x HDMI + 2x USB Type-C (DP Alt. Mode)
- 2x LAN, 6x USB, 4x COM, 2x CAN-FD, I2C/SMBus, DC-in 12-24V
- Expansion: 4x standalone M.2 slot: E-Key 2230, B-Key 3052 & 2x M-Key 2280, and 1x M.2 slot (Support by Selected SKU)
- Supports EdgeBMC (for OOB control) & Software APIs, DeviceOn

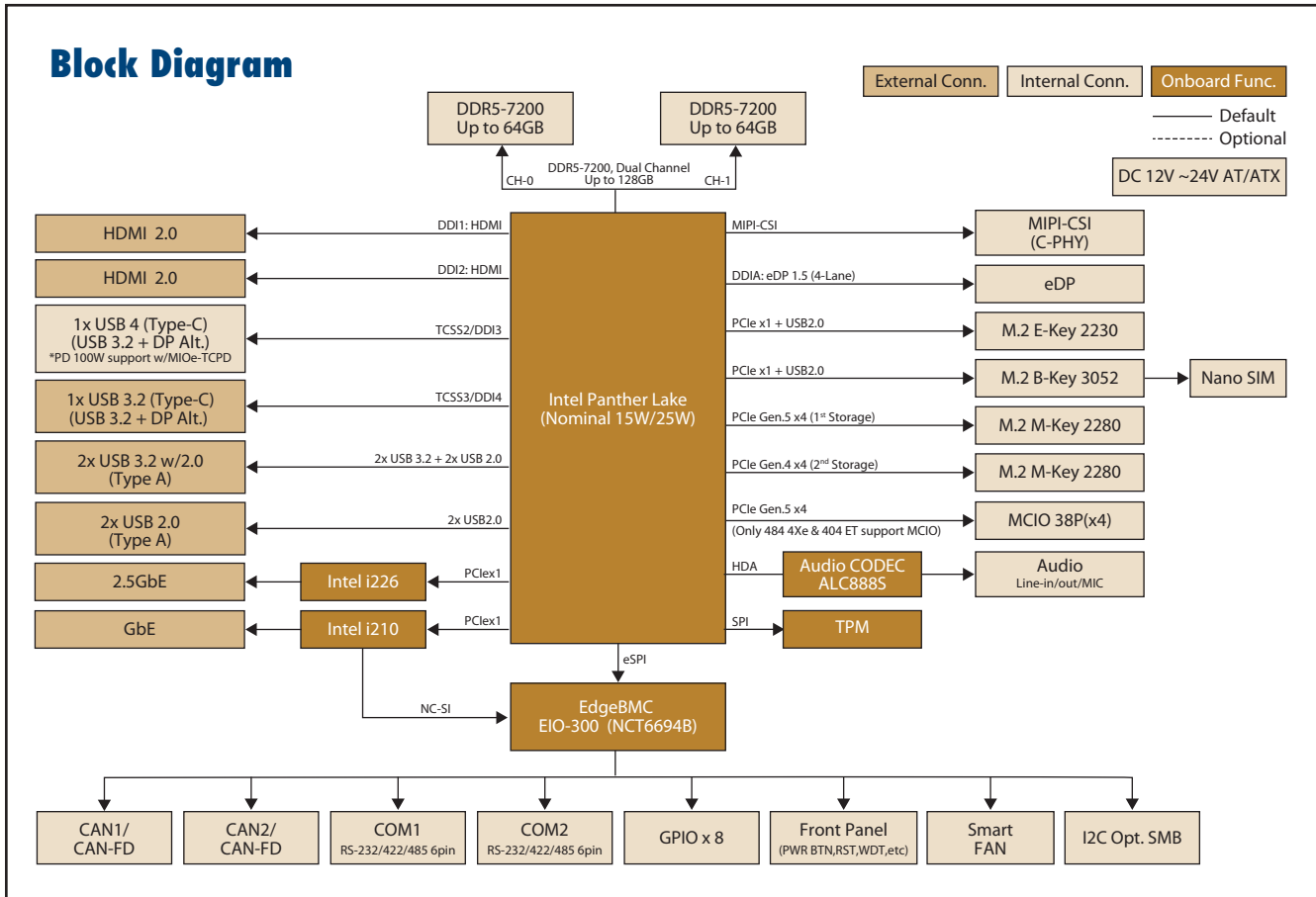
Ubuntu Windows 11 DeviceOn EdgeBMC CE FCC

Specifications

	Processor	Core Ultra 9, 388H	Core Ultra 7, 358H	Core Ultra 7, 356H	Core Ultra 5, 325
Platform	Max. Frequency	5.0GHz	4.8 GHz	4.7 GHz	4.5 GHz
	Base Frequency	2.1GHz	1.5 GHz	1.5 GHz	2.1GHz
	Core/Tread	16	16	16	8
	LLC	18MB	18MB	18MB	12MB
	CPU TDP	25W	25W	25W	25W
	BIOS	AMI UEFI 256Mbit			
	Memory	Technology	DDR5-7200		
Max. Capacity		Up to 128GB			
Channel/Socket		Dual Channels / 2 sockets			
IB ECC		Supported			
Integrated GPU	Controller	Intel® Arc™	Intel® Arc™	Intel® Graphics	Intel® Graphics
	Max. Frequency	2.5 GHz	2.5 GHz	2.45 GHz	2.45 GHz
	3D/HW Acceleration	HW Encode: Supports AVC/H264, JPEG, HEVC/H265 and AV1. HW Decode: Supports MPEG2, AVC/H264, JPEG/MJPEG, HEVC/H265, VP9, AV1 and VVC/H266			
Integrated NPU	PTOPS	50TOPS	50TOPS	50TOPS	47TOPS
Display I/F	LCD	eDP up to 4K@ 60Hz, 36bpp			
	HDMI/DP	2x HDMI up to 4K@ 48-60Hz, 24 bpp			
	Multiple Display	4 simultaneous displays: eDP/HDMI/USB			
Ethernet	Controller	LAN1: Intel i210AT/IT; LAN2: Intel i226LM/IT			
	Speed	LAN1: 10M / 100M / 1GbE; LAN2: 10M / 100M / 1000M / 2.5GbE			
External I/O	Ethernet	2			
	VGA/HDMI/DP	-/2/-			
	USB3.2/USB2.0	2/2			
	USB Type-c	1			
	Power DC-Jack	Optional			
Internal I/O	Serial Bus	SMBus default, I2C optional			
	COM Port	2 x RS-232/422/485			
	GPIO	8-bit general purpose input output I/O			
	Audio	Realtek ALC888, Line-in/Line-out/MIC			
	CAN Bus	2x CAN FD			
	Fan	1x Smart FAN			
	Front Panel Control	Power-on, Reset, Buzzer			
	MIPI-CSI	2x C-PHY			
	M.2	1x 38P PCIe gen5 x4 (by SKU)			
	Watchdog Timer	65536 level, 0-65535 sec			
Board Feature	TPM	TPM2.0			
	EdgeBMC OOB	Support EdgeBMC Out-of-Band (OOB) remote control			
	Expansion	M.2	1x E-Key 2230 (PCIe, USB 2.0)		
1x B-Key 3052 (PCIe, USB 2.0) w/ Nano-SIM					
1x M-Key 2280 (PCIe x4/x2/x1 compatible, Gen5)					
1x M-Key 2280 (PCIe x4/x2/x1 compatible, Gen4)					
M.2		PCIe x4 Gen5 (only 484 4Xe, 404 ET support M.2)			
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	TBD	TBD	TBD	TBD
Environment	Idle Consumption	TBD	TBD	TBD	TBD
	Temperature	Operating: Standard: 0 ~ 60° C (32 ~ 140° F), Extended: -40-85° C (-40 ~ 185° F) for Industrial SKU; Storage: -40 ~ 85° C (-40 ~ 185° F)			
	Humidity	Operating: 40° C @ 95% relative humidity, non-condensing Storage: 60° C @ 95% relative humidity, non-condensing			
Certification	Vibration Resistance	3.5 Grms			
	EMC	CE, FCC			
Mechanical	Dimensions	146 x 102 mm (5.7" x 4")			

*Note: xxxx

Block Diagram



Packing List

Part No.	Description	Quantity
	MIO-5381 SBC	1
1700019584-01	Audio cable	1
1700031582-01	COM cable RS-232	1

Optional Accessories

Part No.	Description	Suggest Quantity
TBD	adapter	1
1702002600	Power cable 3-pin 183cm, USA type	1
1702002605	Power cable 3-pin 183cm, EU type	1
1702031801-11	Power cable 3-pin 183cm, UK type	1
1700000596-11	Power cable, 3-Pin 183cm, China/Australia type	1