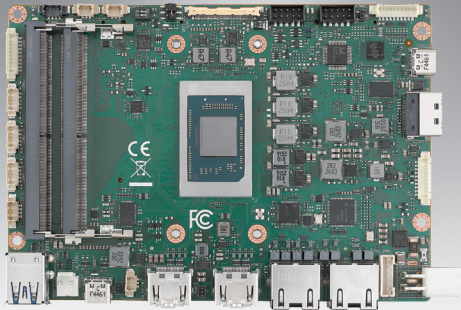


MIO-5380

AMD Ryzen™ AI Embedded P100 Series on 3.5" SBC

Preliminary



Features

- AMD Ryzen Embedded P100 Series Processors and Extend Temp. Support
- Dual Channel DDR5-5600 up to 128GB, with Sideband 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 MCIO (Support by Selected SKU)
- Supports EdgeBMC (for OOB control) & Software APIs, DeviceOn

Software APIs:



Utilities:



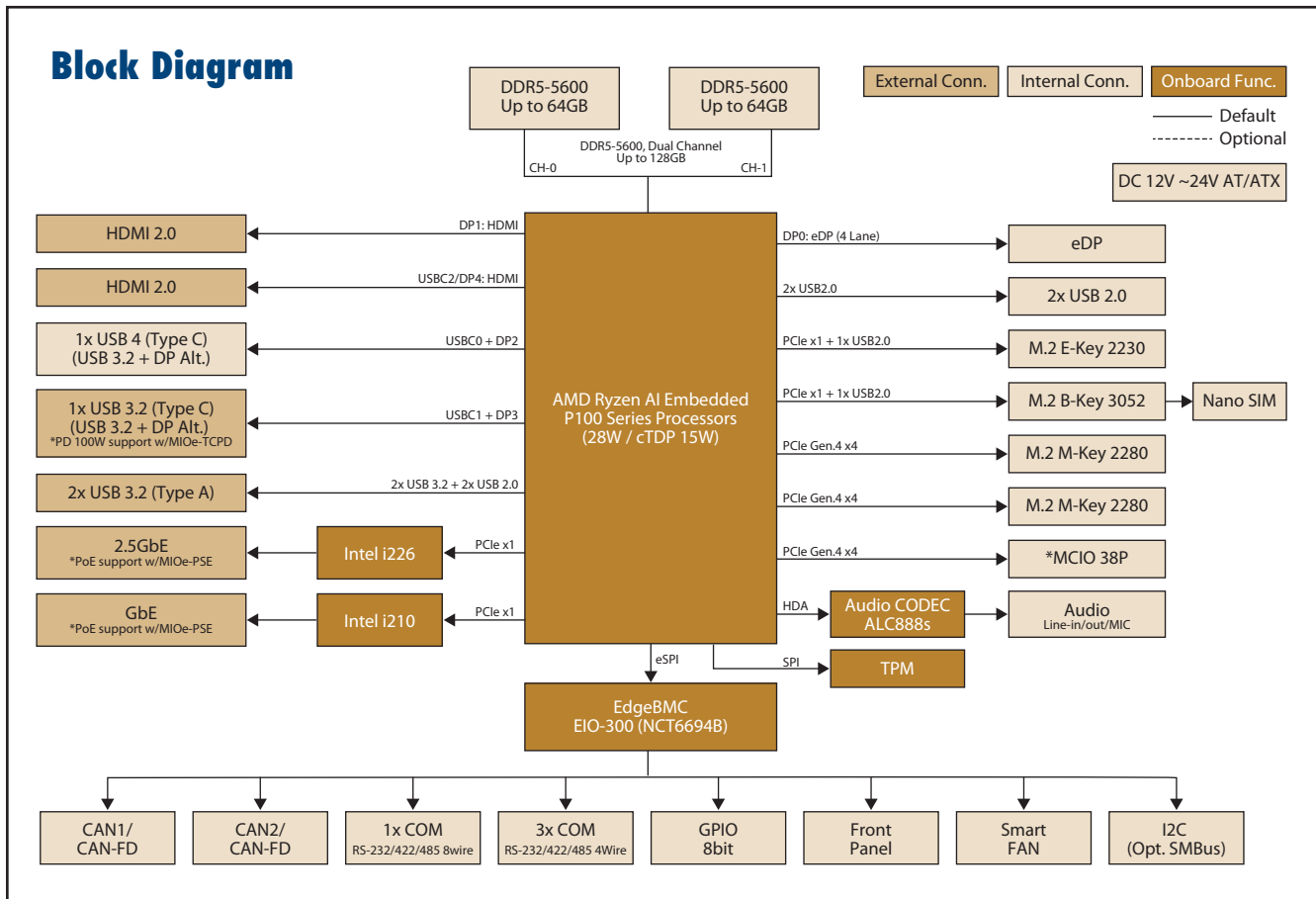
Windows Ubuntu DeviceOn EdgeBMC CE FC

Specifications

	Processor	P185	P185i	P174	P164	P132	P121	
Platform	Max. Frequency	5.1 GHz	5.1 GHz	5 GHz	5 GHz	4.5 GHz	4.4 GHz	
	Core/Thread	12 / 24	12 / 24	10 / 20	8 / 16	6 / 12	4 / 8	
	Cache	24MB	24MB	24MB	16MB	8MB	8MB	
	CPU TDP	28W	28W	28W	28W	28W	28W	
	BIOS	AMI UEFI 256Mbit						
Memory	Technology	DDR5-5600						
	Max. Capacity	Up to 128GB						
	IBECC	Yes	Yes	Yes	Yes	Yes	Yes	
Graphics	Channel/Socket	Dual Channels / 2 sockets						
	Controller	AMD Radeon™ Graphics						
	Max. Frequency	2.9 GHz	2.9 GHz	2.8 GHz	2.8 GHz	2.8 GHz	2.7 GHz	
	Compute Units	16	16	12	8	6	4	
Display I/F	3D/HW Acceleration	TBD						
	LCD	1 x eDP 1.4						
	HDMI/DP	2 x HDMI 2.0b, up to 4096 x 2160 x 24bpp@60Hz						
Ethernet	Multiple Display	4 simultaneous displays via eDP + 2x HDMI + 2x USB Type-C with Alt. Mode						
	Controller	LAN1: Intel i210; LAN2: Intel i226						
	Speed	LAN1: GbE ; LAN2: 2.5GbE						
External I/O	PoE support	*Optional support with MIOe-PSE						
	Ethernet	2 x RJ-45 (*Optional support Power Over Ethernet with MIOe-PSE)						
	HDMI/DP	2 x HDMI						
	USB Type-C	1 x USB3.2 Gen2x1 10Gbps, support DisplayPort1.4 Alt. Mode (*Optional support Power Delivery up to 100W with MIOe-TCPD)						
	USB Type-A	2 x USB3.2 Gen2x1 10Gbps						
Internal I/O	MCIO	1 x 38p MCIO (PCIe Gen4 x4) *Support by Selected SKU						
	USB4	1 USB4 with USB Type-C, Bandwidth min. 20Gbps, max. 40Gbps, with USB3.2, Display & PCIe						
	USB2.0	2						
	COM Port	1 x RS-232/422/485, 3 x RS-232 (4-wire), max. 1Mbps						
	CAN Bus	2 x CAN-FD, 2M/4M/8M bit/s or CAN 2.0, 1M bit/s						
	Serial Bus	1 x I2C (*BOM option to SMBus by request)						
	Audio	Realtek ALC888s, Line-in/Line-out/MIC						
	GPIO	8-bit general purpose input output I/O						
	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	Discrete TPM2.0 IC						
	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) for WiFi/BT module						
	M.2 B-Key	1 x B-Key 3052 (PCIex1, USB2.0) for 4G/LTE module w/ Nano SIM (*Support 3042 module with bracket)						
	M.2 M-Key	2 x M-Key 2280 (PCIe Gen.4 x4) for NVMe SSD						
Power	Supply Voltage	Vin: DC 12V-24V ± 10%; RTC Battery: Lithium 3V/220mAH (*200mAH for Extend Temp. SKU)						
	Connector	ATX 2x2 pin 90D (*BOM option to DC-Jack or ATX 2x2 pin 180D by request)						
	Power Management	AT(Default), ATX						
	Max. Consumption (*Ref. data with Burn-In Test. Please contact FAE for adapter selection.)	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Environment	Idle Consumption	TBD	TBD	TBD	TBD	TBD	TBD	
	Temperature	Operating: Standard: 0 - 60 °C (32 - 140 °F); *Extend: -40 - 85 °C (-40 - 185 °F), support with selected SKU						
	Humidity	Storage: -40 - 85 °C (-40 - 185 °F)						
Certification	Humidity	Operating: 40 °C @ 95% relative humidity, non-condensing						
	Vibration Resistance	Storage: 60 °C @ 95%relative humidity, non-condensing						
Mechanical	EMC	3.5 Grms						
	Dimensions	CE, FCC Class B						
		146 x 102 mm (5.7" x 4")						

*Note: Support by request

Block Diagram



Packing List

Part No.	Description	Quantity
	MIO-5380 SBC	1
1700030406-01	USB 2.0 Cable, 20cm	1
1700030404-01	COM1 Cable, 20cm	1
1700031582-01	COM2/COM3/COM4 Cable, 20cm	3
1700019584-01	Audio Cable, 20cm	1
1970005512T001	MIO-5380 Passive Heatsink (Only for cTDP 15W)	1
TBD	MIO-5380 Active QFCS Cooler (Only for TDP 28W)	1

Rear I/O View



Optional Accessories

Part No.	Description
TBD	MIO-5380 Heatspreader

Embedded OS/API

OS	Part No.	Description
Windows 11 LTSC	TBD	Win11 IoT Ent. 2021 LTSC 64bit, High End
	TBD	Win11 IoT Ent. 2021 LTSC 64bit, Value
	TBD	Win11 IoT Ent. 2021 LTSC 64bit, Entry
Ubuntu 24.04 LTS	TBD	Ubuntu Desktop 24.04 LTS 64-bit
Software API	Website Download	SUSI v4.0
Yocto BSP	Support by Request	Yocto BSP and Test Image