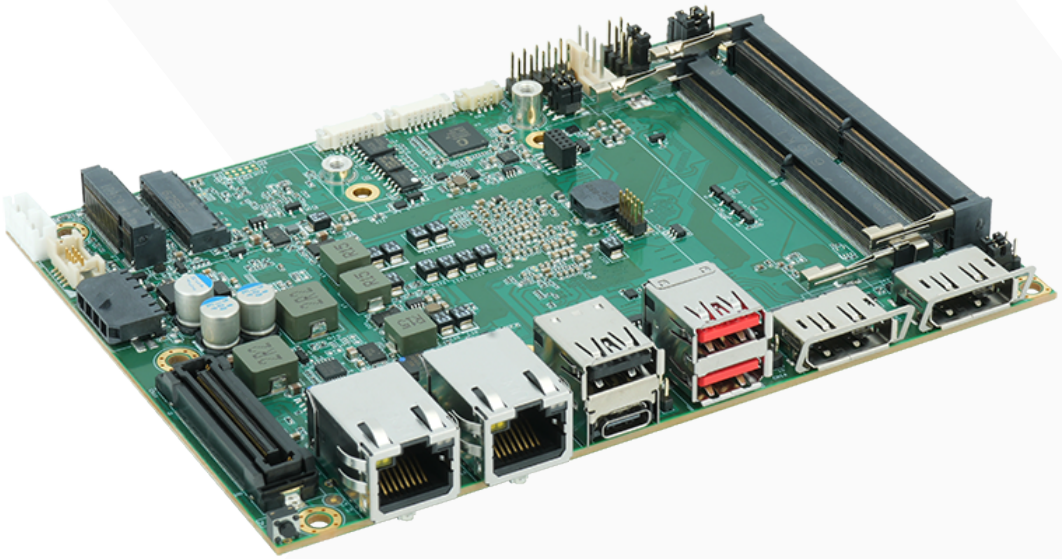
3.5”-SBC-P100



3.5" Single Board Computer with AMD Ryzen™ AI Embedded P100 Series Processors

- Advanced graphics capabilities through RDNA™ 3.5 GPU
- AI acceleration XDNA™ 2 Architecture NPU
- 2x 2.5 GbE Ethernet Controller and 2x CAN FD buses integrated
- Various expansion capabilities by board-to-board/-wire connectors, M.2 sockets
- Industrial-grade operating temperature range, wide voltage input

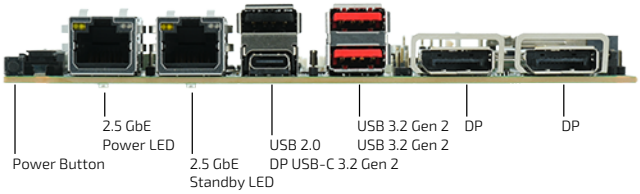
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Product Highlights

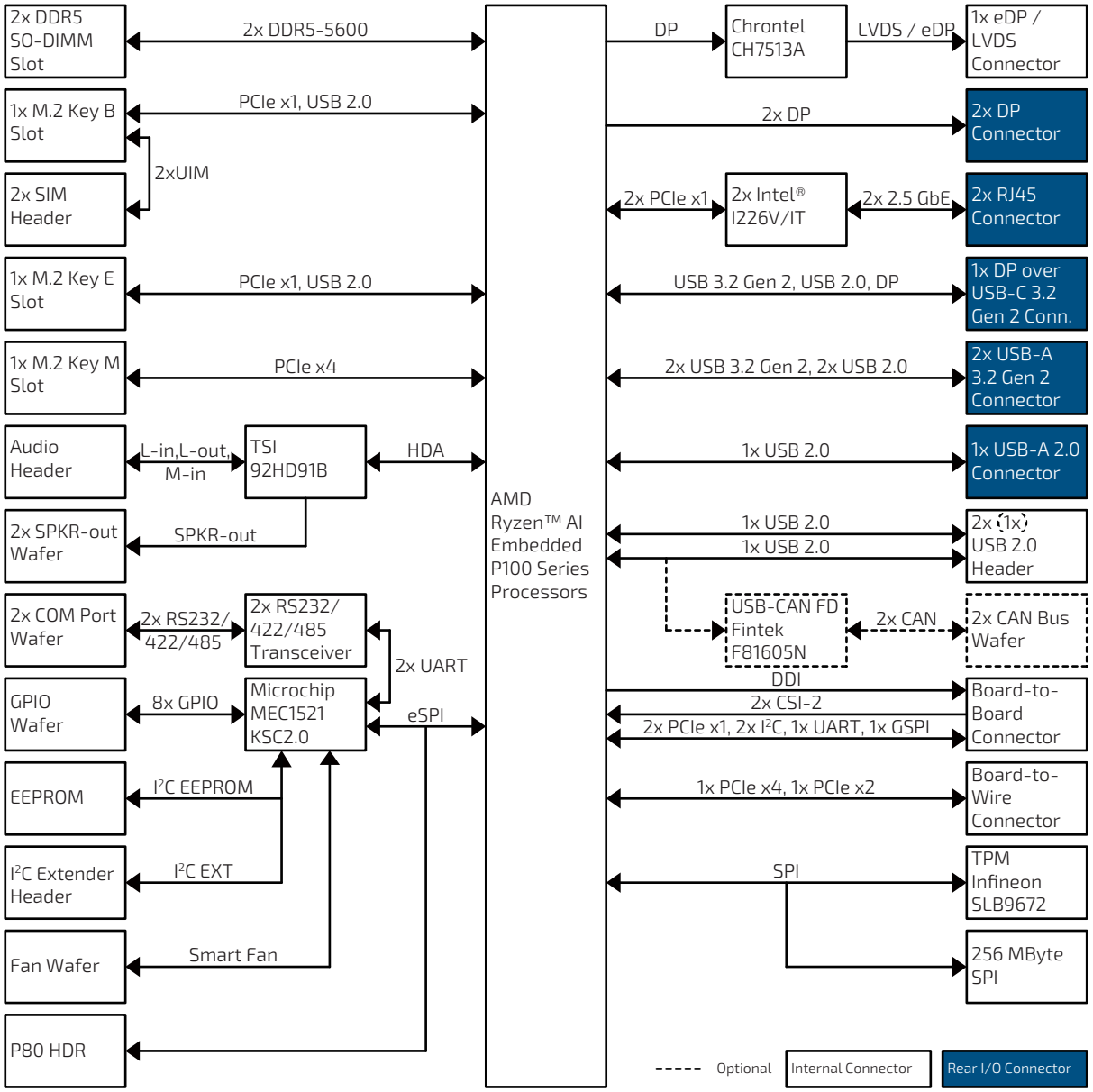
3.5" Single Board Computer with AMD Ryzen™ AI Embedded P100 Series Processors

3.5"-SBC-P100 is powered by AMD Ryzen™ AI Embedded P100 Series processors with integrated GPU Radeon™ RDNA 3.5 & NPU XDNA™ 2, delivering cutting-edge graphics performance and next-level AI inference acceleration. It features 2.5 GbE with TSN and dTPM 2.0 support, ensuring real-time & secure communications. The board supports a board-to-board connector and a board-to-wire connector, providing additional I/O ports and extra graphics / AI acceleration card(s) respectively without the restriction of small form factor.

- AMD Ryzen™ AI Embedded P100 Series Processors
- 2x DDR5 SO-DIMM memory socket
- 3x DP (2x Std. DP, 1x USB-C), 1x eDP / LVDS for video output
- 2x 2.5 GbE LAN for Ethernet with TSN support
- 3x USB 3.2 Gen 2 (2x Typ. A, 1x Typ. C), 3x USB 2.0 (1x Typ. A)
- 2x RS232/422/485 for serial device connection
- 8x GPIO for device / signal control
- 2x CAN FD Bus for industrial networking (optional)
- 1x M.2 Key B for SSD, WWAN or other expansion
- 1x M.2 Key E for WLAN, Bluetooth or other expansion
- 1x M.2 Key M for NVMe SSD
- 1x board-to-board connector for additional rear I/Os
- 1x board-to-wire connector for extra GPU / AI performance
- TPM 2.0 support
- Wide power input voltage range available: DC 9 V ~ 36 V
- Extreme temperature model available: -40 °C ~ 85 °C



Block Diagram



Technical Information

SYSTEM	PROCESSOR	AMD Ryzen™ AI Embedded P164 (8C, 16M, ~ 5 GHz, 15 W ← 28 W → 54 W TDP) AMD Ryzen™ AI Embedded P164i (8C, 16M ~ 5 GHz, 15 W ← 28 W → 54 W TDP) AMD Ryzen™ AI Embedded P132 (6C, 8M, ~ 4.5 GHz, 15 W ← 28 W → 54 W TDP) AMD Ryzen™ AI Embedded P132i (6C, 8M, ~ 4.5 GHz, 15 W ← 28 W → 54 W TDP) AMD Ryzen™ AI Embedded P121 (4C, 8M, ~ 4.4 GHz, 15 W ← 28 W → 54 W TDP) AMD Ryzen™ AI Embedded P121i (4C, 8M, ~ 4.4 GHz, 15 W ← 28 W → 54 W TDP)
	INTEGRATED GRAPHICS	AMD Radeon™ RDNA™ 3.5 (2.8 / 2.8 / 2.8 / 2.8 / 2.7 / 2.7 GHz resp.)
	INTEGRATED AI ENGINE	AMD XDNA™ 2 (50 / 50 / 50 / 50 / 30 / 30 TOPS resp.)
	MEMORY	2x DDR5 5600 SO-DIMM up to 128 GByte (Sideband ECC support)
VIDEO	DISPLAY INTERFACE	1x eDP (1920 x 1200 @ 60 Hz) / LVDS (24-bit, 2-ch, 1920 x 1200 @ 60 Hz) [1] 3x DP (7680 x 4320 @ 60 Hz, 2x Std. DP on rear, 1x DP USB-C on rear)
	MULTIPLE DISPLAY	Quadruple Display
AUDIO	AUDIO CODEC	TSI 92HD91B
	AUDIO INTERFACE	1x Speaker-out (Stereo, by header) 1x Line-in (by header) 1x Line-out (by header) 1x Mic-in (by header)
NETWORK CONNECTION	ETHERNET CONTROLLER	Intel® I226-V/IT
	ETHERNET PORT	2x 2.5 GbE LAN (RJ45 on rear, TSN support [2])
PERIPHERAL CONNECTION	USB	3x USB 3.2 Gen 2 (2x Type A on rear, 1x Type C on rear w/ DP & PD 5 V / 3 A) 3x USB 2.0 (1x Type A on rear, 2x by header & -1 in case of CAN Buses)
	SERIAL PORT	2x RS232/422/485 (by header)
	OTHER I/Os	8x GPIO (by header) 2x CAN FD Bus (optional, by header, optional, trade off 1x USB 2.0 header)
STORAGE & EXPANSION	M.2	1x M.2 Key B (Type 3042/3052/2280, w/ PCIe x1 / USB 2.0 / 2x UIM) 1x M.2 Key E (Type 2230, w/ PCIe x1 / USB 2.0) 1x M.2 Key M (Type 2280, w/ PCIe x4)
	SIM CARD HOLDER	2x SIM Card Holder (by header)
	BOARD-TO-BOARD CONNECTOR	1x DDI 2x MIPI CSI-2 2x PCIe x1 2x I^2C 1x UART 1x GSPI
	BOARD-TO-WIRE CONNECTOR	1x PCIe x4 1x PCIe x2 (P164(i) only)
POWER	INPUT VOLTAGE	DC 9 V ~ 36 V
	CONNECTOR	1x4-pin pitch 3.0 mm Wafer
FIRMWARE	BIOS	AMI uEFI BIOS
	WATCHDOG	Programmable WDT to generate system reset event
	H/W MONITOR	Voltages, Temperatures
	REAL TIME CLOCK	Processor integrated RTC
	SECURITY	dTPM 2.0 (Infineon SLB 9672)
SYSTEM CONTROL & MONITORING	FP HEADER	1x Header for Reset Button, HDD LED & External Speaker 1x Header for Power Button, Power LED & SM Bus
	BUTTON, SWITCH & INDICATOR	1x Standby LED (Yellow, on rear) 1x Power LED (Green, on rear) 1x Power Button (on rear)
COOLING	FAN	1x Wafer for Smart Fan
SOFTWARE	OS SUPPORT	Windows 11, Linux
MECHANICAL	DIMENSION (L x W)	ECX (146 mm x 105 mm / 5.75" x 4.13")
ENVIRONMENTAL	OPERATING TEMPERATURE	0 °C ~ 60 °C / 32 °F ~ 140 °F (Standard) -40 °C ~ 85 °C / -40 °F ~ 185 °F (Extreme)
	STORAGE TEMPERATURE	-20 °C ~ 80 °C / -4 °F ~ 176 °F (Standard) -55 °C ~ 85 °C / -67 °F ~ 185 °F (Extreme)
	HUMIDITY	0 % ~ 95 %
COMPLIANCE	EMC	CE Class B, FCC Class B, ICES Class B, UKCA Class B
	SAFETY	UR (UL Recognized), CSA

[1] switchable by BIOS
[2] TSN support for models with P121(i) & P132(i) CPUs

Ordering Information

ARTICLE	ORDERING CODE*	DESCRIPTION	
	EMEA / AMERICA	PROCESSOR	OPERATING TEMPERATURE
COMING SOON			

* Standard shipment in bulk packaging. For ordering code for APAC or for box packaging, contact your local account manager.

Accessories

NO.	ARTICLE	ORDERING CODE		DESCRIPTION
		EMEA / AMER	APAC	
1	DC IN CABLE[1]	1075-3152	0C5020000001920L	1x4P 3.0 pitch to EHDP-2P 5.08 pitch + JST 110 1x2P, L = 230 mm
2	COM PORT CABLE	1064-2427	0C5020000005130L	1x10P 1.25 mm pitch to DB9 connector, L = 350 mm
3	GPIO CABLE	1065-3137	0C5020000003360L	D-SUB-9P (Female) to MX51021-10P 1x10P 1.25 mm pitch, L = 200 mm
4	USB CABLE (2 PORT)	1069-7893	0C5020003000010L	2x5P 2.0 mm pitch to 2x USB 2.0 Type A female w/ bracket, L = 27 cm
5	AUDIO CABLE	1070-1245	0C5020000005840L	2x5P 1.25 mm pitch to 3x 3.5 mm ear phone jack, L = 400 mm
6	ADAPTER	1074-9217	0I0902SPU151A02L	Input: AC 100 V ~ 240 V, output: DC 24 V @ 6.25 A Max. 150 W
7	I/O CARD (3.5"-eIO-GPA-3[2])	1073-6700	B35EGPA0-131002T	Refer to 3.5"-eIO-GPA datasheet for supported functions
8	I/O CARD (3.5"-eIO-GPA-4-XT[2])	1073-8651	B35EGPAI-141002T	Refer to 3.5"-eIO-GPA datasheet for supported functions

[1] Standard supplied accessories for APAC single-piece box packaging
[2] Customized model. Contact your local account manager for detailed information.

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The Power of IoT

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