



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

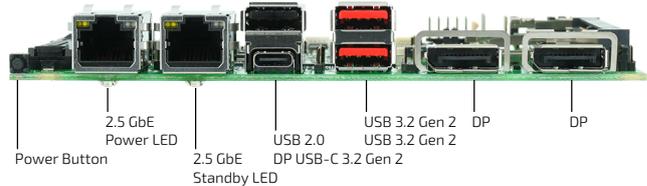
3.5" Single Board Computer with AMD Ryzen™ AI Embedded P100 Series Processors

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

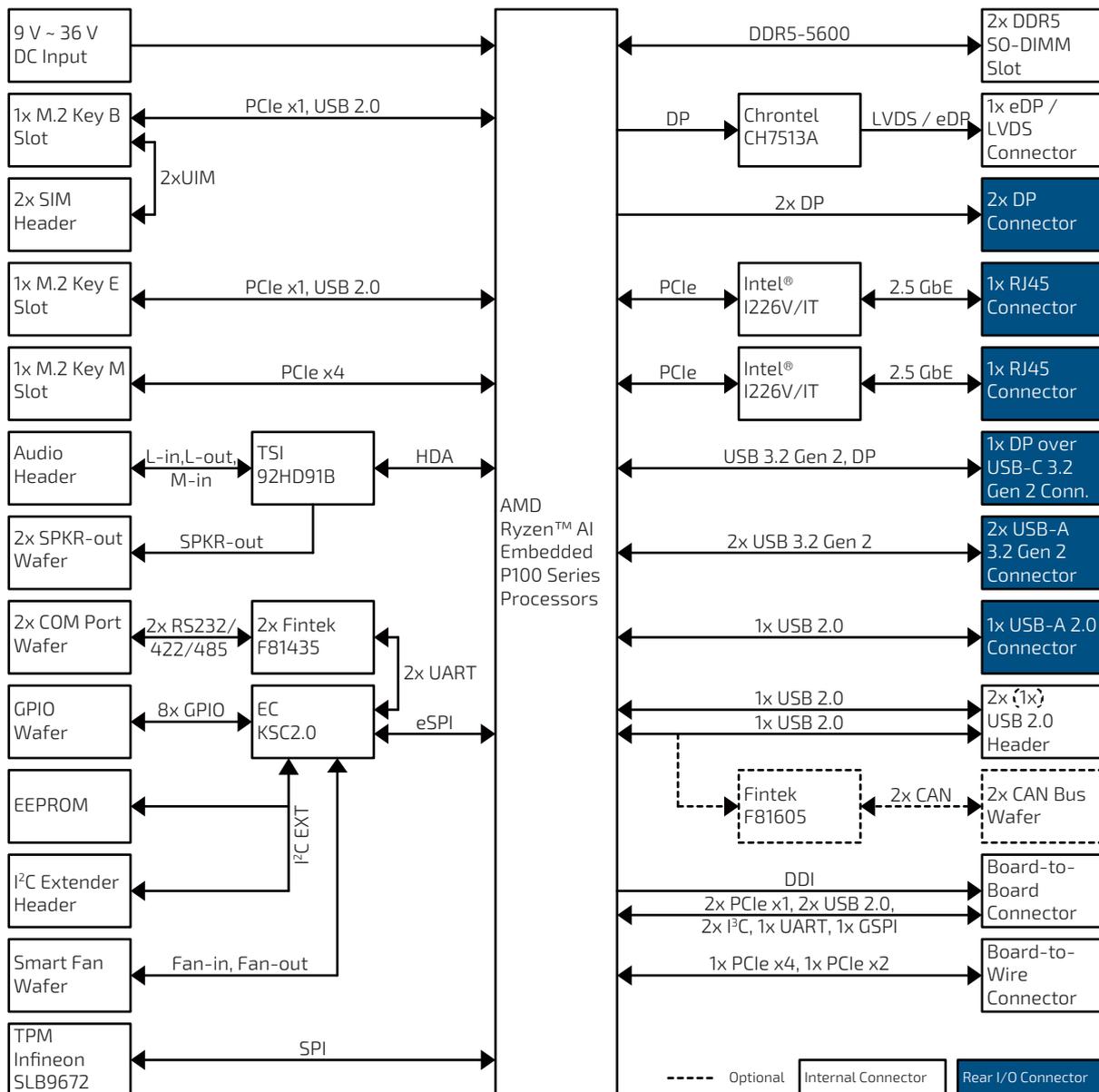
support, ensuring real-time & secure communications. The board supports a board-to-board connector and a board-to-wire connector, providing additional I/O ports and extra graphics / AI acceleration card(s) respectively without the restriction of small form factor.

- AMD Ryzen™ AI Embedded P100 Series Processors
- 2x DDR5 50-DIMM memory socket
- 3x DP (2x Full 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)
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- 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



SYSTEM	PROCESSOR INTEGRATED GRAPHICS INTEGRATED AI ENGINE MEMORY	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) AMD Radeon™ RDNA™ 3.5 (2.8 / 2.8 / 2.8 / 2.8 / 2.7 / 2.7 GHz resp.) AMD XDNA™ 2 (50 / 50 / 50 / 50 / 30 / 30 TOPS resp.) 2x DDR5 5600 SO-DIMM up to 128 GByte (Sideband ECC support)
VIDEO	DISPLAY INTERFACE MULTIPLE DISPLAY	1x eDP (4096 x 2304 @ 120 Hz) / LVDS (24-bit, 2-ch, 1920 x 1200 @ 60 Hz) ⁽¹⁾ 3x DP (7680 x 4320 @ 60 Hz, 2x Full-size DP on rear, 1x DP USB-C on rear) Quadruple Display
AUDIO	AUDIO CODEC AUDIO INTERFACE	TSI 92HD91B 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 ETHERNET PORT	Intel® I226-V/IT 2x 2.5 GbE LAN (RJ45 on rear, TSN support ⁽²⁾)
PERIPHERAL CONNECTION	USB SERIAL PORT OTHER I/Os	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) 2x RS232/422/485 (by header) 8x GPIO (by header) 2x CAN FD Bus (optional, by header, optional, trade off 1x USB 2.0 header)
STORAGE & EXPANSION	M.2 SIM CARD HOLDER BOARD-TO-BOARD CONNECTOR BOARD-TO-WIRE CONNECTOR	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) 2x SIM Card Holder (by header) 1x DDI (DP / HDMI / eDP) 2x PCIe x1 2x USB 2.0 2x I ² C 1x UART 1x GSPi 1x PCIe x4 1x PCIe x2 (p164(i) only)
POWER	INPUT VOLTAGE CONNECTOR	DC 9 V ~ 36 V 1x4-pin pitch 3.0 mm Wafer
FIRMWARE	BIOS WATCHDOG H/W MONITOR REAL TIME CLOCK SECURITY	AMI uEFI BIOS Programmable WDT to generate system reset event Voltages, Temperatures Processor integrated RTC dTPM 2.0 (Infineon SLB 9672)
SYSTEM CONTROL & MONITORING	FP HEADER BUTTON, SWITCH & INDICATOR	1x Header for Reset Button, HDD LED & External Speaker 1x Header for Power Button, Power LED & SM Bus 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 STORAGE TEMPERATURE HUMIDITY	0 °C ~ 60 °C / 32 °F ~ 140 °F (Standard) -40 °C ~ 85 °C / -40 °F ~ 185 °F (Extreme) -20 °C ~ 80 °C / -4 °F ~ 176 °F (Standard) -55 °C ~ 85 °C / -67 °F ~ 185 °F (Extreme) 0% ~ 95 %
COMPLIANCE	EMC SAFETY	CE Class B, FCC Class B, ICES Class B, UKCA Class B UR (UL Recognized), CSA

⁽¹⁾ switchable by BIOS

⁽²⁾ TSN support for models with P121(i) & P132(i) CPUs

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

* For ordering code for APAC, contact your local account manager.

Accessories

NO.	ARTICLE	ORDERING CODE		DESCRIPTION
		EMEA / AMERICA	APAC	
1	DC IN CABLE*	1075-3152	0C502000001920L	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	0I09025PU151A02L	Input: AC 100 V ~ 240 V, output: DC 24 V @ 6.25 A Max. 150 W
7	I/O CARD (3.5"-eIO-GPA-0)	1069-6159	B35EGPA0-001001T	2x DP, 2x 2.5 GbE, 1x UART, 1x I ² C, 1x SMBus, 1x GSPI, 1x DC In, 0 ~ 60 °C
8	I/O CARD (3.5"-eIO-GPA-1)	1069-6922	B35EGPA0-011001T	2x DP, 2x 2.5 GbE, 1x UART, 1x I ² C, 1x SMBus, 1x GSPI, 0 ~ 60 °C
9	I/O CARD (3.5"-eIO-GPA-2-XT)	1073-9682	B35EGPAI-021000T	2x DP, 2x 2.5 GbE, 1x UART, 1x I ² C, 1x SMBus, 1x GSPI, 1x DC In, -40~85°C

(*: standard supplied accessories for single-piece box packing)

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