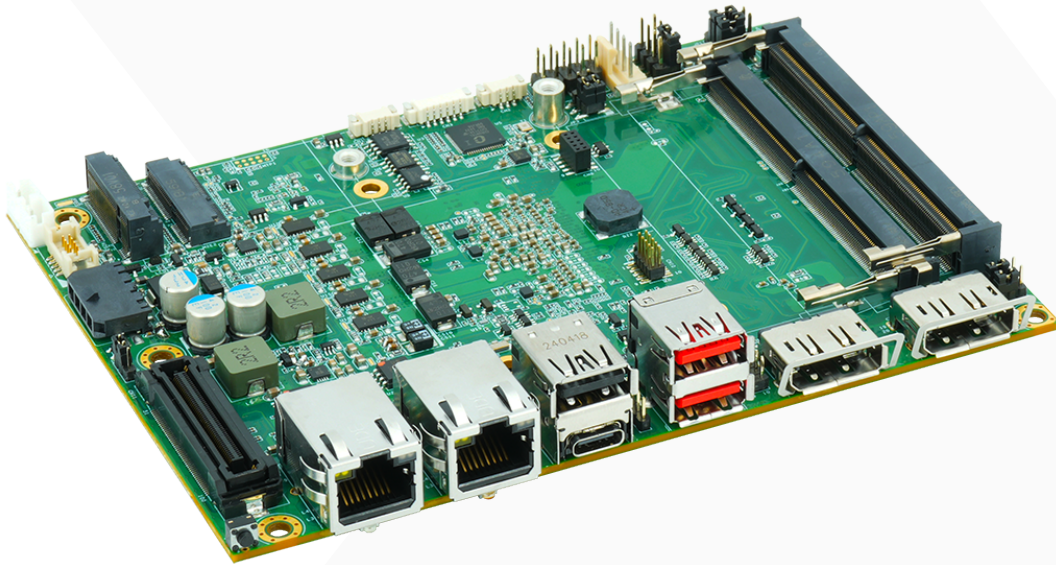


3.5"-SBC-PTL



3.5" Single Board Computer with Intel® Core™ Ultra 300 Series Processors

- Hybrid-core-architecture computing platform with revamped iGPU and integrated NPU
- Time Coordinated Computing / Time Sensitive Networking for real-time control
- Additional rear I/O expansion via board-to-board connector
- Extra graphics / AI acceleration performance expansion via board-to-wire connector
- Industrial-grade operating temperature range for extreme environmental conditions

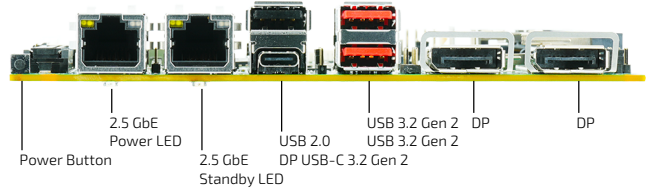
3.5" Single Board Computer with Intel® Core™ Ultra 300 Series Processors

3.5"-SBC-PTL is powered by hybrid-core-architecture Intel® Core™ Ultra 300 Series processors with upgraded iGPU and next-gen integrated NPU, delivering near-dGPU performance and next-level AI acceleration. It features 2.5 GbE with TSN and dTPM 2.0 support,

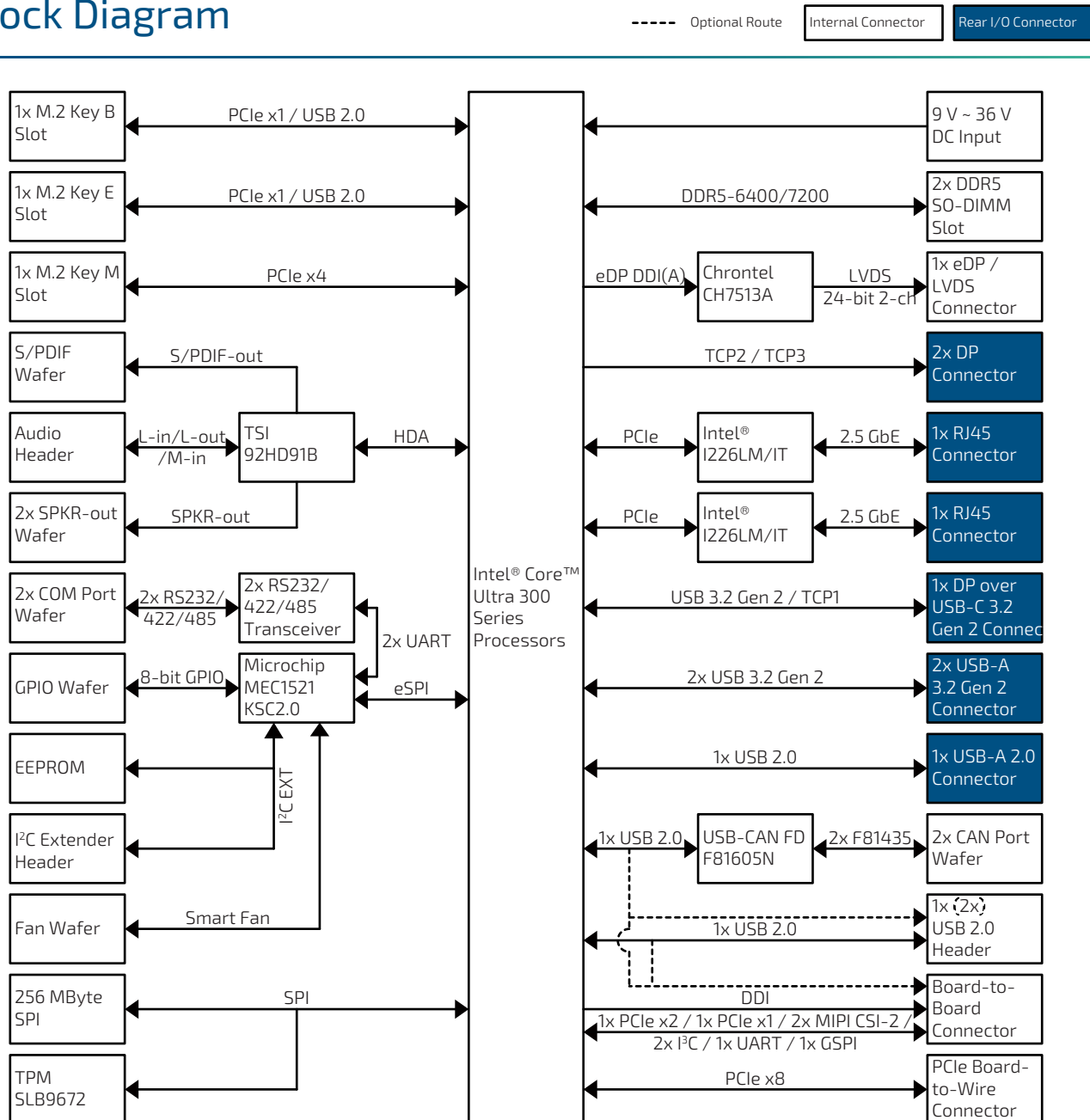
ensuring real-time and secure communications. Finally, the board supports a board-to-board connector and a board-to-wire connector, providing additional I/O ports and extra graphics / AI acceleration card(s) respectively without the restriction of small form factor.

- Intel® Core™ Ultra 300 Series processors
- 2x DDR5 50-DIMM memory socket
- 3x DP (2x Stnd. DP, 1x USB-C), 1x eDP / LVDS for video output
- 2x 2.5 GbE LAN for Ethernet
- 3x USB 3.2 Gen 2 (2x Typ. A, 1x Typ. C), 2x USB 2.0 (1x Typ. A)
- 2x RS232/422/485 for serial device connection
- 8x GPIO for device / signal control
- 2x CAN Bus for industrial networking
- 2x CAN Bus for industrial networking
- 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	Intel® Core™ Ultra X9 388H (4P+8E+4LPE, 18M, ~ 5.1 GHz, 15 W ← 25 W) Intel® Core™ Ultra X7 358H (4P+8E+4LPE, 18M, ~ 4.8 GHz, 15 W ← 25 W) Intel® Core™ Ultra 7 366H (4P+8E+4LPE, 18M, ~ 4.8 GHz, 15 W ← 25 W) Intel® Core™ Ultra 7 356H (4P+8E+4LPE, 18M, ~ 4.7 GHz, 15 W ← 25 W) Intel® Core™ Ultra 5 336H (4P+4E+4LPE, 18M, ~ 4.6 GHz, 15 W ← 25 W) Intel® Core™ Ultra 5 335 (4P+0E+4LPE, 12M, ~ 4.6 GHz, 12 W ← 25 W) Intel® Core™ Ultra 5 325 (4P+0E+4LPE, 12M, ~ 4.5 GHz, 12 W ← 25 W) 2x DDR5 6400/7200 SO-DIMM up to 128 GByte
	MEMORY	
VIDEO	GRAPHICS CONTROLLER	Intel® Arc™ B390 (Core™ Ultra X9 & X7) Intel® Graphics (others)
	DISPLAY INTERFACE	1x eDP / LVDS (24-bit, 2-ch)
	MULTIPLE DISPLAY	3x DP (2x Standard DP on rear, 1x DP USB-C on rear) 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) 1x S/PDIF Out (by header)
NETWORK CONNECTION	ETHERNET CONTROLLER	Intel® I226-LM/IT
	ETHERNET PORT	2x 2.5 GbE LAN (RJ45 on rear)
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) 2x USB 2.0 (1x Type A on rear, 1x by header & +1 in case of no CAN Bus)
	SERIAL PORT	2x RS232/422/485 (by header)
	OTHER I/Os	8x GPIO (by header) 2x CAN Bus (by header, -2 in case of 2x USB 2.0 by header or on B2B)
STORAGE & EXPANSION	M.2	1x M.2 Key B (Type 3042/3052/2280, w/ PCIe x1 / USB 2.0 / 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	1x SIM Card Holder (by header)
	BOARD-TO-BOARD CONNECTOR	1x DDI (DP / HDMI / eDP) 2x MIPI CSI-2 (2x2 / 1x4) 1x PCIe x2 / 2x PCIe x1 1x PCIe x1 2x I ² C (up to 2x Camera support) 1x UART 1x GSPI
	BOARD-TO-WIRE CONNECTOR	2x USB 2.0 (optional, trade off 1x USB 2.0 header + 2x CAN Bus) 1x PCIe x8 / 2x PCIe x4 (Core™ Ultra 7 366H / 7 356H 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
	BUTTON, SWITCH & INDICATOR	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	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

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	Refer to 3.5"-eIO-GPA datasheet for supported functions
8	I/O CARD (3.5"-eIO-GPA-1)	1069-6922	B35EGPA0-011001T	Refer to 3.5"-eIO-GPA datasheet for supported functions
9	I/O CARD (3.5"-eIO-GPA-2-XT)	1073-9682	B35EGPAI-021000T	Refer to 3.5"-eIO-GPA datasheet for supported functions

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

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