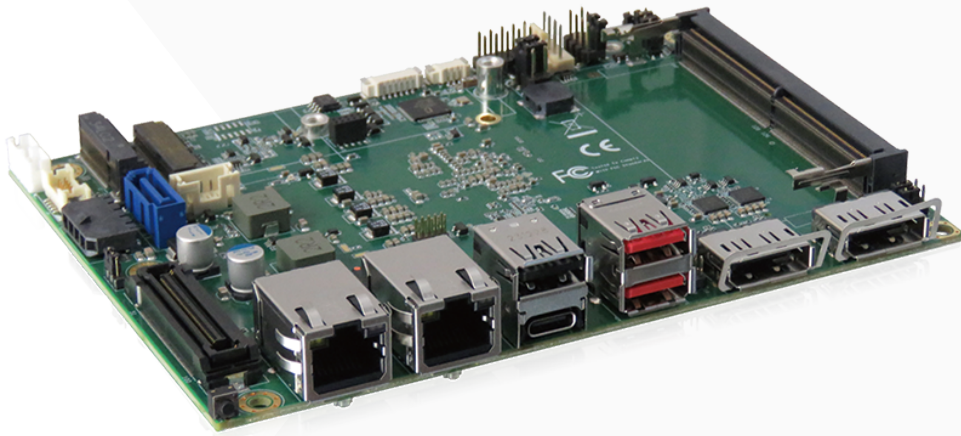


# 3.5"-SBC-AML/ADN



## 3.5" Single Board Computer with Intel® Atom® x7000(R)E Series, Intel® Core™ i3 N-Series & Intel® N-Series Processors

- Upgraded processing and graphics performance + faster AI inference capability
- Next-gen DDR5 memory support with up to 4800 MT/s data transfer rate
- Time Coordinated Computing / Time Sensitive Networking for real-time communication
- Additional Rear I/O expansion via board-to-board connector
- DP Alt Mode over USB-C support to carry video / audio, data & power over a single port

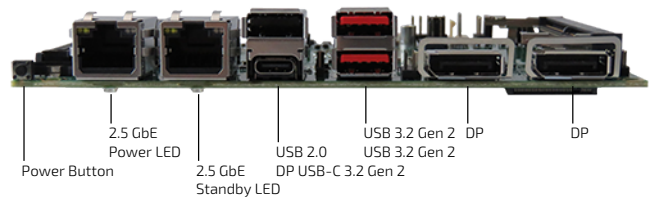
## 3.5" Single Board Computer w/ Intel® Atom® x7000(R)E Series, Core™ i3 N-Series & Intel® N-Series

3.5"-SBC-AML/ADN is a 3.5" single board computer powered by Intel® Atom® x7000RE Series (codenamed Amston Lake), Intel® Atom® x7000E Series, Intel® Core™ i3 N-Series and Intel® N-Series (codenamed Alder Lake N) processors integrated with Intel® UHD Graphics Gen12 as well as support for a next-gen high-speed DDR5 memory. Thus, it can deliver upgraded performance, enhanced

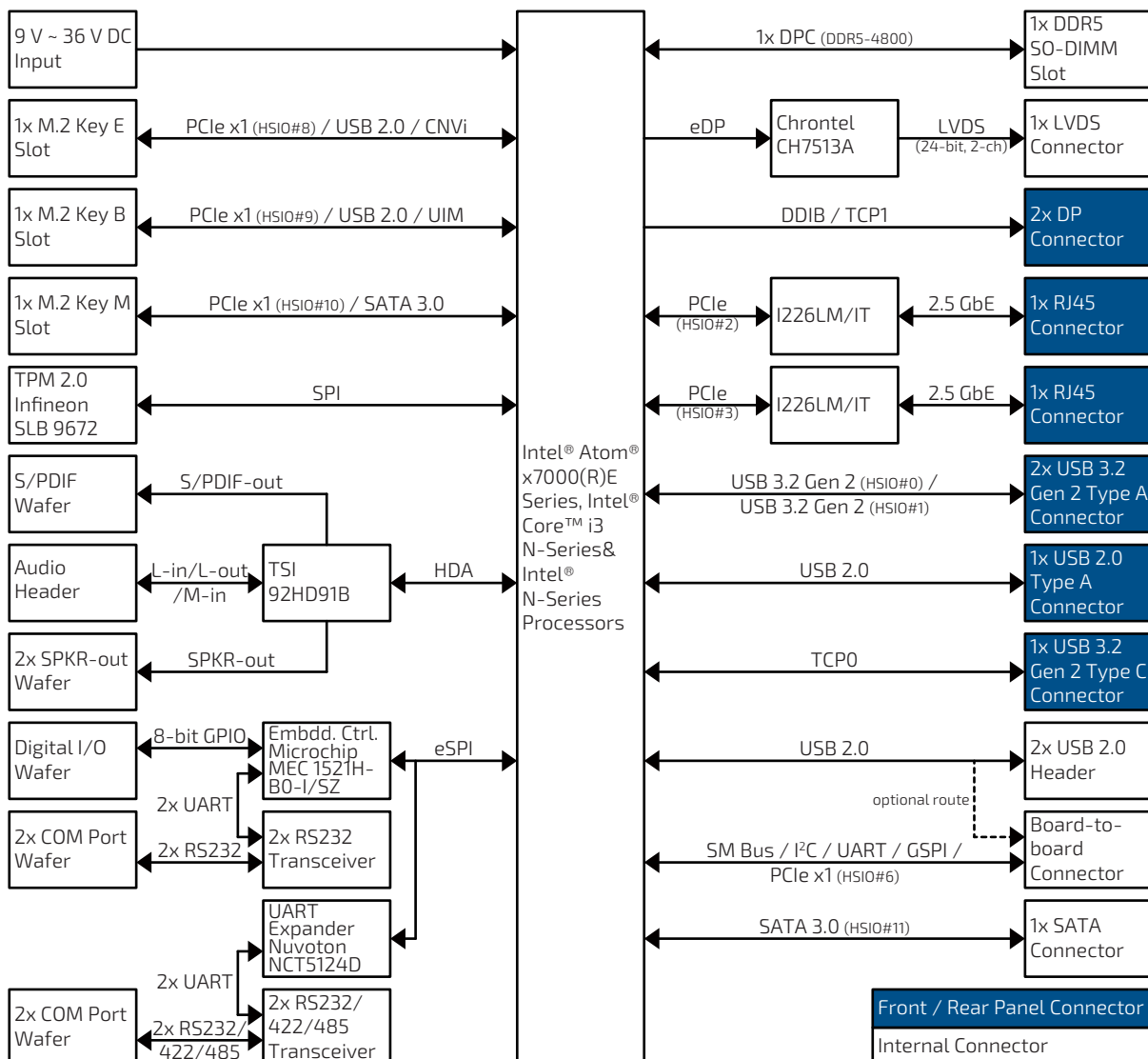
media transcoding and faster AI inference. Partial models support time sensitive networking (TSN) for real-time communication, making it an ideal baseboard to be integrated into a compact IoT edge system or an all-in-one solution for a variety of applications, such as smart retail, industrial automation, healthcare, video processing and office automation.

- ▶ Intel® Atom® x7000(R)E Series Processors
- ▶ Intel® Core™ i3 N-Series Processors
- ▶ Intel® N-Series Processors
- ▶ 1x DDR5 SO-DIMM memory socket
- ▶ 2x 2.5 GbE LAN for Ethernet
- ▶ 3x DP (2x full DP, 1x USB-C), 1x LVDS for 3-display support
- ▶ 3x USB 3.2 Gen 2 (2x Type A, 1x Type C), 3x USB 2.0 for USB
- ▶ 2x RS232/422/485, 2x RS232 (Tx / Rx) for serial devices
- ▶ 4x DI, 4x DO for device / signal control
- ▶ 1x SATA 3.0 for storage device
- ▶ 1x M.2 Key B for SSD, WWAN or other possible expansion
- ▶ 1x M.2 Key E for WLAN, Bluetooth or other expansion

- ▶ 1x M.2 Key M for SSD
- ▶ 1x Board-to-board connector for additional rear I/Os
- ▶ TPM 2.0 support
- ▶ Extreme operating temperature range: -40 °C ~ 85 °C



## Block Diagram



SYSTEM	PROCESSOR (STANDARD)	Intel® Atom® x7211RE (Dual Core, 6M Cache, 1.0 / 3.2 GHz, 6 W TDP) Intel® Atom® x7433RE (Quad Core, 6M Cache, 1.5 / 3.4 GHz, 9 W TDP) Intel® Core™ i3-N305 (Octa Core, 6M Cache, 1.8 / 3.8 GHz, 9 W ← 15 W TDP) Intel® N97 (Quad Core, 6M Cache, 2.0 / 3.6 GHz, 12 W TDP)
	PROCESSOR (PROJECT BASE)	Intel® Atom® x7213RE (Dual Core, 6M Cache, 2.0 / 3.4 GHz, 9 W TDP) Intel® Atom® x7835RE (Octa Core, 6M Cache, 1.3 / 3.6 GHz, 12 W TDP) Intel® Atom® x7211E (Dual Core, 6M Cache, 1.0 / 3.2 GHz, 6 W TDP) Intel® Atom® x7213E (Dual Core, 6M Cache, 1.7 / 3.2 GHz, 10 W TDP) Intel® Atom® x7425E (Quad Core, 6M Cache, 1.5 / 3.4 GHz, 12 W TDP) Intel® N50 (Dual Core, 6M Cache, 1.0 / 3.4 GHz, 6 W TDP) Intel® N200 (Quad Core, 6M Cache, 1.0 / 3.7 GHz, 6 W TDP)
	MEMORY	1x DDR5 4800 SO-DIMM up to 32 GByte
VIDEO	GRAPHICS DISPLAY INTERFACE	Intel® UHD Graphics Gen12 1x LVDS (24-bit, 2-ch, 1920 x 1200 @ 60 Hz) 3x DP (4096 x 2160 @ 60 Hz, 2x Full-size DP on rear, 1x DP USB-C on rear)
	MULTIPLE DISPLAY	Triple Display
AUDIO	AUDIO CODEC AUDIO INTERFACE	TSI 92HD91B 1x Speaker-out (Stereo, 3 W, 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	2x 2.5 GbE LAN (RJ45 on rear, Intel® I226-LM/IT, TSN support*)
PERIPHERAL CONNECTION	USB	3x USB 3.2 Gen 2 (2x Type A on rear, 1x Type C (w/ DP & PD 5 V / 3 A) on rear) 3x USB 2.0 (1x Type A on rear, 2x by header (optl. routed to B2B connector))
	SERIAL PORT	2x RS232/422/485 (by header)
	OTHER I/Os	2x RS232 (Tx / Rx, by header) 4x DI (by wafer) 4x DO (by wafer)
STORAGE & EXPANSION	SATA M.2	1x SATA 3.0 1x M.2 Key B (Type 2242 / 3042 / 3052 / 2280, w/ PCIe x1 / USB 2.0 / UIM) 1x M.2 Key E (Type 2230, w/ PCIe x1 / USB 2.0 / CNVi) 1x M.2 Key M (Type 2280, w/ SATA 3.0 (default) / PCIe x1 (optional))
	SIM CARD HOLDER BOARD-TO-BOARD CONNECTOR	1x SIM Card Holder (by header) 1x PCIe x1 1x SM Bus 1x I <sup>2</sup> C 1x UART 1x GSPi 2x USB 2.0 (optional, replacing the route to 2x internal USB 2.0)
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 w/ 256 Mb SPI Flash Programmable WDT to generate system reset event Voltages, Temperatures Processor integrated RTC TPM 2.0 Support (Infineon SLB 9672)
SYSTEM CONTROL & MONITORING	BUTTON, SWITCH & INDICATOR	1x Power Button (on rear) 1x Power LED (Green, on rear) 1x Standby LED (Yellow, on rear) 1x Internal Buzzer
	FP HEADER	1x Header for Reset Button, HDD LED & External Buzzer 1x Header for Power Button, Power LED & SM Bus
COOLING	FAN	1x Wafer for Smart Fan
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) -20 °C ~ 70 °C / -4 °F ~ 158 °F (Extended) -40 °C ~ 85 °C / -40 °F ~ 185 °F (Extreme)
	STORAGE TEMPERATURE	-20 °C ~ 80 °C / -4 °F ~ 176 °F (Standard) -40 °C ~ 85 °C / -40 °F ~ 185 °F (Extended) -55 °C ~ 85 °C / -67 °F ~ 185 °F (Extreme)
	HUMIDITY	0 % ~ 95 %
COMPLIANCE	EMC & SAFETY	CE Class B, FCC Class B, UR (UL Recognized)

\* TSN support for models with Atom® processors

# Ordering Information

ARTICLE	DESCRIPTION
3.5"-SBC-AML-0-x7211RE-XT	Intel® Atom® x7211RE, Operating Temperature: -40 °C ~ 85 °C
3.5"-SBC-AML-1-x7433RE-XT	Intel® Atom® x7433RE, Operating Temperature: -40 °C ~ 85 °C
3.5"-SBC-ADN-0-N97	Intel® N97, Operating Temperature: 0 °C ~ 60 °C
3.5"-SBC-ADN-4-i3-N305	Intel® Core™ i3-N305, Operating Temperature: 0 °C ~ 60 °C

(Contact your account manager for other processor variants or other operating temperature ranges.)

## Global Headquarters

**Kontron Europe GmbH**

Gutenbergstraße 2  
85737 Ismaning, Germany  
Tel.: + 49 821 4086-0  
info@kontron.com

[www.kontron.com](http://www.kontron.com)

