3.5" Single Board Computer

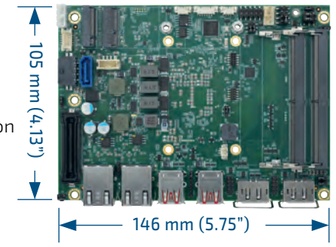
Kontron offers a range of 3.5" single board computers of the high quality, long-term availability and competitiveness to fulfill most different requirements for various applications from diverse vertical markets like Industrial Automation, POS/POI, KIOSK, Digital Signage, Medical, Casino Gaming, Video Surveillance or Transportation.

Kontron's 3.5" single board computers support latest processors and utilize advanced technology components. They are designed for continuous operation (24/7) under harsh operating conditions and on high system load. Most of them come up with three different operating temperature variants: commercial (0 °C ~ 60 °C), extended commercial (-20 °C~ 70 °C) and industrial (-40 °C ~ 85 °C), to cover various environmental conditions of different application scenarios.

Kontron's 3.5" single board computers ensure an extended long-term availability of up to 10 years from the release date, based on embedded key components. In addition, a corresponding portfolio of I/O expansion boards (3.5"-eIO Series) and related 3rd party accessories is also available. Furthermore, Kontron offers many value-added services like detailed documentation, a professional life-cycle management and customizing tools.

3.5"-SBC Family
3.5" Single Board Computer

- Same mechanical design gen-over-gen
- CE / FCC Class B compliant & UR certification
- Full speed USB and Ethernet



3.5"-eIO Series

The comprehensive 3.5" single board computer portfolio is rounded out by a series of I/O and function expansion boards, named 3.5"-eIO.

The 3.5"-eIO expansion boards are designed for Kontron's new generation of 3.5" single board computers with a board-to-board connector soldered on them and can be used to stack additional rear I/O connectors, internal connectors, and expansion slots on the single board computer.

This off-the-shelf expansion board can help system designers reduce time-to-market and development costs. It also minimizes technical risks and creates a more reliable system.

Article	DP	2.5 GbE	DC In	Operating Temperature
3.5"-eIO-GPA-0 1	2	2	1	0 °C ~ 60 °C / 32 °F ~ 140 °F
3.5"-eIO-GPA-1 2	2	2	-	0 °C ~ 60 °C / 32 °F ~ 140 °F
3.5"-eIO-GPA-2-XT 1	2	2	1	-40 °C ~ 85 °C / -40 °F ~ 185 °F
3.5"-eIO-GPA-3	-	2	-	0 °C ~ 60 °C / 32 °F ~ 140 °F
3.5"-eIO-GPA-4-XT	-	2	-	-40 °C ~ 85 °C / -40 °F ~ 185 °F
3.5"-eIO-2ETH	-	2	-	-40 °C ~ 85 °C / -40 °F ~ 185 °F
3.5"-eIO-4ETH 3	-	4	-	-40 °C ~ 85 °C / -40 °F ~ 185 °F

About Kontron

Kontron is a global leader in IoT/Embedded Computing Technology (ECT) and offers individual solutions in the areas of Internet of Things (IoT) and Industry 4.0 through a combined portfolio of hardware, software and services. With its standard and customized products based on highly reliable state-of-the-art technologies, Kontron provides secure and innovative applications for a wide variety of industries. As a result, customers benefit from accelerated time-to-market, lower total cost of ownership, extended product lifecycles and the best fully integrated applications.

For more information, please visit: **www.kontron.com**

About the Intel® Partner Alliance

From modular components to market-ready systems, Intel and the over 1,000+ global member companies of the Intel® Partner Alliance provide scalable, interoperable solutions that accelerate deployment of intelligent devices and end-to-end analytics. Close collaboration with Intel and each other enables Alliance members to innovate with the latest IoT technologies, helping developers deliver first-in-market solutions.

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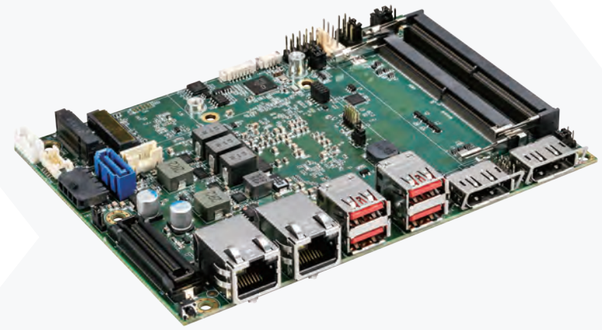
3.5" Single Board Computer

3.5"-SBC Family



Low-power Small Form Factor
Ideal to be integrated into a variety of compact fanless systems

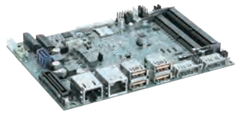
Unique Expansion Connector
Easy to expand additional connectors & functions

Commercial & Industrial Operating Temperature
For all environmental conditions

3.5"-SBC Family

3.5" Single Board Computer

3.5"-SBC-RPL
3.5"-SBC-RPH



3.5"-SBC-TGL

3.5"-SBC-WLU

3.5"-SBC-KBL

3.5"-SBC-AML/ADN
3.5"-SBC-AMH/ADH

3.5"-SBC-EKL

3.5"-SBC-VR1000

		3.5"-SBC-RPL 3.5"-SBC-RPH	3.5"-SBC-TGL	3.5"-SBC-WLU	3.5"-SBC-KBL	3.5"-SBC-AML/ADN 3.5"-SBC-AMH/ADH	3.5"-SBC-EKL	3.5"-SBC-VR1000
System	Processor	**Intel® Core™** i7-1365UE (10C, 12M, 1.7/4.9 GHz, 12↩15→28 W) i5-1345UE (10C, 12M, 1.4/4.6 GHz, 12↩15→28 W) i3-1315UE (6C, 10M, 1.2/4.5 GHz, 12↩15→28 W) i7-1365URE (10C, 12M, 1.7/4.9 GHz, 12↩15→28 W) i5-1345URE (10C, 12M, 1.4/4.6 GHz, 12↩15→28 W) i3-1315URE (6C, 10M, 1.2/4.5 GHz, 12↩15→28 W) **Intel®** U300E (5C, 8M, 1.1/4.3 GHz, 12↩15→28 W)	**Intel® Core™** i7-1185G7E (4C, 12M, 1.8/4.4 GHz, 12↩15→28 W) i5-1145G7E (4C, 8M, 1.5/4.1 GHz, 12↩15→28 W) i3-1115G4E (2C, 6M, 2.2/3.9 GHz, 12↩15→28 W) i7-1185GRE (4C, 12M, 1.8/4.4 GHz, 12↩15→28 W) i5-1145GRE (4C, 8M, 1.5/4.1 GHz, 12↩15→28 W) **Intel® Celeron®** 6305E (2C, 4M, 1.8 GHz, 15 W)	**Intel® Core™** i7-8665UE (4C, 8M, 1.7/4.4 GHz, 15 W) i5-8365UE (4C, 6M, 1.6/4.1 GHz, 15 W) i3-8145UE (2C, 4M, 2.2/3.9 GHz, 15 W) **Intel® Celeron®** 4305UE (2C, 2M, 2.0 GHz, 15 W)	**Intel® Core™** i7-7600U (2C, 4M, 2.8/3.9 GHz, 15 W) i5-7300U (2C, 3M, 2.6/3.5 GHz, 15 W) i3-7100U (2C, 3M, 2.4 GHz, 15 W) **Intel® Celeron®** 3965U (2C, 2M, 2.2 GHz, 15 W)	**Intel® Atom®** x7211RE (2C, 6M, 1.0/3.2 GHz, 6 W) x7433RE (4C, 6M, 1.5/3.4 GHz, 9 W) x7835RE (8C, 6M, 1.3/3.6 GHz, 12 W) **Intel® Core™** i3-N305 (8C, 6M, 1.8/3.8 GHz, 9↩15 W) **Intel®** N97 (4C, 6M, 2.0/3.6 GHz, 12 W)	**Intel® Atom®** x6211E (2C, 1.5M, 1.3/3.0 GHz, 6 W) x6212RE (2C, 1.5M, 1.2 GHz, 6 W) x6425RE (4C, 1.5M, 1.9 GHz, 12 W) **Intel® Celeron®** J6413 (4C, 1.5M, 1.8/3.0 GHz, 10 W)	**AMD Ryzen™** V1605B (4C, 4M, 2.0/3.6 GHz, 12↩15→25 W) V1202B (2C, 4M, 2.3/3.2 GHz, 12↩15→25 W) R1606G (2C, 4M, 2.6/3.5 GHz, 12↩15→25 W) R1505G (2C, 4M, 2.4/3.3 GHz, 12↩15→25 W) R1305G (2C, 4M, 1.5/2.8 GHz, 8→10 W)
	Memory	2x DDR5 5200 SO-DIMM	2x DDR4 3200 SO-DIMM	2x DDR4 2400 SO-DIMM (Core™) 2x DDR4 2133 SO-DIMM (Celeron®)	2x DDR4 2133 SO-DIMM	1x DDR5 4800 SO-DIMM	2x DDR4 3200 SO-DIMM	2x DDR4 2400 SO-DIMM
Video	Graphics Controller	Intel® Iris® Xe Graphics	Intel® Iris® X^e Graphics (Core™ i7 / i5) Intel® UHD Graphics (Core™ i3 / Celeron®)	Intel® UHD Graphics 620 (Core™) Intel® UHD Graphics 610 (Celeron®)	Intel® HD Graphics 620 (Core™) Intel® HD Graphics 610 (Celeron®)	Intel® UHD Graphics Gen12	Intel® UHD Graphics Gen11	AMD Radeon™ Vega 8 (V1605B) AMD Radeon™ Vega 3 (V1202B & R1000)
	eDP / LVDS / eDP+LVDS Combo	0 / 1 (4K120, 24bit 2ch 2K60)	1 (24bit 2ch 2K60) / 0	1 (24bit 2ch 2K60) / 0	1 (24bit 2ch 2K60) / 0	1 (24bit 2ch 2K60) / 0	1 (24bit 2ch 2K60) / 0	1 (18/24bit 2ch 2K60) / 0
	DP / HDMI 2.0	2 (8K60 on rear) / 0 (RPL) 1 (8K60 on rear) / 1 (4K60 on rear) (RPH)	2 (8K60* on rear) / 0	2 (4K60 on rear) / 0	1 (4K60 on rear) / 1 (4K60 on rear)	2 (4K60 on rear) / 0 (AML/ADN) 1 (4K60 on rear) / 1 (4K60 on rear) (AMH/ADH)	2 (4K60 on rear) / 0	1 (4K60 on rear) / 1 (4K60 on rear)
Audio	Speaker-Out	1 (Stereo)	1 (Stereo)	1 (Stereo)	1 (Stereo)	1 (Stereo)	1 (Stereo)	1 (Stereo)
	Line-In / Line-Out / Mic-In	1 / 1 / 1	1 / 1 / 1	1 / 1 / 1	1 / 1 / 1	1 / 1 / 1	1 / 1 / 1	1 / 1 / 1
	S/PDIF-Out	1	0	0	0	1	0	0
Network Connection	Ethernet Controller	Intel® I226-LM/IT	Intel® I226-LM/IT & Intel® I210-AT/IT	Intel® I219-LM & Intel® I210-AT	Intel® I219-LM & Intel® I210-AT	Intel® I226-V/IT	Intel® I226-LM/IT	Intel® I210-AT & Intel® I211-AT
	2.5 GbE / GbE	2 (on rear, TSN support*) / 0	1 (on rear, TSN support**) / 1 (on rear)	0 / 2 (on rear)	0 / 2 (on rear)	2 (on rear, TSN support*) / 0	2 (on rear, TSN support*) / 0	0 / 2 (on rear)
Peripheral Connection	USB Type-C	0	0	0	0	1 (on rear, v3.2 G2 w/ DP & PD 5 V / 3 A)	0	0
	USB 3.2 Gen 2 / 3.2 Gen 1 / 2.0	4 (on rear) / 0 / 3	4 (on rear) / 0 / 4	4 (on rear) / 0 / 4	0 / 4 (on rear) / 2	2 (on rear) / 0 / 3 (1x on rear)	2 (on rear) / 0 / 6 (2x on rear)	4 (on rear, V1000) / 0 / 4 (V1000) 2 (on rear, R1000) / 0 / 6 (2x on rear, R1000)
	RS232/422/485 / RS232 / UART	0 / 2 (Tx / Rx only)	2 / 0	2 / 0	2 / 0	4 (2x Tx/Rx only in RS232) / 0	2 / 0	2 / 2
	DIO / DI / DO	0 / 4 / 4	8 / 0 / 0	8 / 0 / 0	8 / 0 / 0	0 / 4 / 4	8 / 0 / 0	8 / 0 / 0
	CAN / SPI / I²C	2 / 0 / 0	0 / 0 / 0	0 / 0 / 0	0 / 0 / 0	0 / 0 / 0	2 (w/ Intel® PSE) / 1 (GP-SPI, w/ Intel® PSE) / 1	0 / 0 / 0
Storage & Expansion	SATA	1 (v3.0)	1 (v3.0)	1 (v3.0)	1 (v3.0, Celeron®) 2 (v3.0, others)	1 (v3.0)	1 (v3.0)	2 (v3.0)
	mPCIe	0	0	0	1 (PCIe x1 / USB 2.0 / UIM)	0	0	1 (PCIe x1 / USB 2.0 / UIM)
	M2. Key B	1 (PCIe x1 / USB 2.0 / SATA 3.0 / UIM)	1 (PCIe x1 / USB 2.0 / SATA 3.0 / UIM)	1 (PCIe x1 / USB 2.0 / USB 3.2 / UIM)	1 (SATA 3.0 / USB 2.0 / UIM)	1 (PCIe x1 / USB 2.0 / UIM)	1 (PCIe x1 / USB 2.0 / UIM)	0
	M.2 Key E	1 (PCIe x1 / USB 2.0 / CNVi)	1 (PCIe x1 / USB 2.0 / CNVi)	1 (PCIe x1 / USB 2.0 / CNVi)	0	1 (PCIe x1 / USB 2.0 / CNVi)	1 (PCIe x1 / USB 2.0 / SDIO / UART / I²C)	0
	M.2 Key M	1 (PCIe x4)	1 (PCIe x4)	1 (PCIe x4 / SATA 3.0)	0	1 (SATA 3.0 (default) / PCIe x1 (optional))	1 (SATA 3.0)	1 (PCIe x4)
	Board-to-board Connector	1 (DDI/TCP/PCIe x2/PCIe x1/SM Bus/I²C/UART/GSPI)	1 (2xDDI/PCIex2/PCIex1/SM Bus/I²C/UART/GSPI)	0	0	1 (PCIex1/SM Bus/I²C/UART/GSPI)	1 (2x PCIex2/SM Bus/I²C/UART/GSPI)	0
Power	Input Voltage	DC 9 V ~ 36 V DC 12 V	DC 12 V	DC 12 V	DC 12 V	DC 9 V ~ 36 V	DC 12 V	DC 12 V
Security	Security	dTPM 2.0	dTPM 2.0	dTPM 2.0	dTPM 2.0 (Core™ i7 / i5)	dTPM 2.0	dTPM 2.0	dTPM 2.0
Software	OS Support	Windows 11, Windows 10, Linux	Windows 10, Linux	Windows 10, Linux	Windows 10, Linux	Windows 11, Windows 10, Linux	Windows 10, Linux	Windows 10, Linux
Environmental	Operating Temperature	0 °C ~ 60 °C / 32 °F ~ 140 °F (Standard) -40 °C ~ 85 °C / -40 °F ~ 185 °F (Extreme)	0 °C ~ 60 °C / 32 °F ~ 140 °F (Standard) -40 °C ~ 85 °C / -40 °F ~ 185 °F (Extreme)	0 °C ~ 60 °C / 32 °F ~ 140 °F (Standard)	0 °C ~ 60 °C / 32 °F ~ 140 °F (Standard) -20 °C~ 70 °C / -4 °F ~ 158 °F (Extended)	0 °C~ 60 °C / 32 °F ~ 140 °F (Standard) -40 °C ~ 85 °C / -40 °F ~ 185 °F (Extreme)	0 °C ~ 60 °C / 32 °F ~ 140 °F (Standard) -40 °C ~ 85 °C / -40 °F ~ 185 °F (Extreme)	0 °C ~ 60 °C / 32 °F ~ 140 °F (Standard) -20 °C ~ 70 °C / -4 °F ~ 158 °F (Extended)
Compliance	EMC	CE, FCC, ICES, UKCA Class B	CE, FCC, ICES Class B	CE, FCC, ICES Class B	CE Class B, FCC Class B	CE, FCC, ICES, UKCA Class B	CE, FCC, ICES, UKCA Class B	CE, FCC, ICES Class B
	Safety	UR (UL Recognized)	-	-	-	UR (UL Recognized)	UR (UL Recognized), CSA	-

* TSN support only for Core™

* 2x 8K for Core™ i7 / i5, 1x 8K for Core™ i3 / Celeron®
** TSN support only for Core™ GRE Series

* TSN support only for Atom®

* TSN support only for Atom® RE Series