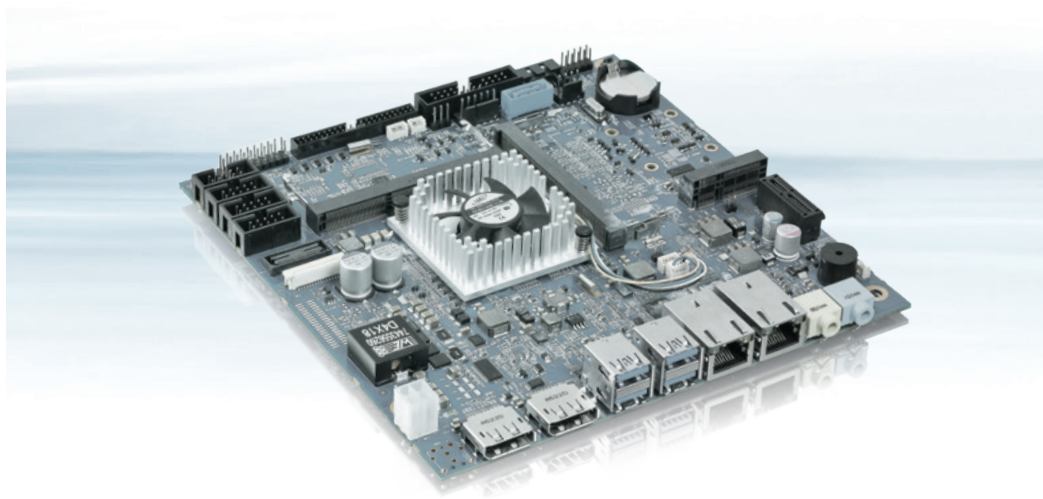


Embedded motherboards

ADVANCED TECHNOLOGY COMPONENTS



▶ **SMART AUTOMATION**

Ready for Industrial IoT applications

▶ **SECURITY AND LICENSING SOLUTIONS**

Approtect - Kontron Embedded Hard-/
Software Security Solution

▶ **FOREVER YOUNG**

Maximum innovation – minimum investment

POSSIBILITIES START HERE



MOTHERBOARDS



Kontron offers a broad range of high quality longevity motherboards from Mini-ITX to full size ATX, covering Embedded and Server market. This variety of motherboards serves the different needs of our customers in almost all applications. These motherboards are based on newest processors and chipset platforms, and utilize advanced technology components.



MINI-ITX

Mini-ITX is the new compact standard motherboard form factor which is mechanically compatible with ATX motherboards. Kontron offers Embedded Mini-ITX motherboards with long life and many industrial features.

Kontron also offer „thin-mITX Formfactor“ for a smaller Integration into Systems.



FLEX-ATX

Flex-ATX is a Micro-ATX compatible small factor motherboard standard. Micro-ATX Motherboards use the same power connectors as ATX Motherboards and are compatible with CPUs from major manufacturers.

KONTRON TRAINING ACADEMY



Custom Scheduled Trainings: As scheduled trainings may not match your needs or schedule, Kontron offers you the ability to create your own training schedule based on geography and course requirements. The following courses are currently available:

- ▶ Windows Embedded Training
- ▶ MicroTCA Training
- ▶ Network Switch Training

For more information about the Kontron Training Academy:

<https://www.kontron.com/support-and-services/services/kontron-training-academy>

MOTHERBOARDS



mITX-BW

mITX-E38

mITX-APL

mITX-KBL-S-C236

mITX-SKL-H

mITX-SKL-S-H110

FlexATX-KBL-S-C236

FlexATX-SKL-S

| | | | | | | | | |
|------------------------------|---|---|---|--|--|--|--|---|
| PROCESSOR | - | - | Intel® Atom™ E39xx series and Celeron® N3350 | Intel® Xeon® E3, Core™ i7/i5 | Intel® Xeon® E3, Core™ i7/i5, Celeron® G3900E | Intel® Core i7/i5/i3 | Intel® Xeon® E3, Core™ i7/i5 | Intel® Xeon® E3, Core™ i7/i5 |
| SOC | N3700 SKU (4core), 1.6 GHz, max. 6 W TDP | E3815 SKU (1core), 1.46 GHz, max. 5 W TDP | - | - | - | - | - | - |
| MEMORY | 2x 8 GByte SODIMM slot supporting DDR3L-1600 | 1x 8 GByte SODIMM slot supporting DDR3L-1066 | 1x DDR3L 1.35 V SODIMM 1867 MHz (up to 8 GByte) | 2x DDR4 ECC/Non ECC SODIMM 2133 MHz (up to 32 GByte) | 2x DDR4 SODIMM 2133 MHz (up to 32 GByte) | 2x DDR4 Non ECC SODIMM 2133 MHz (up to 32 GByte) | 2x DDR4 ECC/Non ECC SODIMM 2133 MHz (up to 32 GByte) | 2x DDR4 ECC/Non ECC SODIMM 2133 MHz (up to 32 GByte) |
| GRAPHICS INTERFACE | 2x independent graphic outputs (2x Display Port 1.1a) 400 MHz, 16 Execution Units | 2x independent graphic outputs (2x Display Port 1.1a) | 3x Independent Displays (DP/LVDS) | 3x Independent Displays (3x DP, 2DP+LVDS) | 3x Independent Displays (2x DP; 1x LVDS) | 2x Independent Displays (1x DP, 1x LVDS/VGA) | 3x Independent Displays (3x DP, 2DP+LVDS) | 3x Independent Displays (3x DP, 2DP+LVDS) |
| SPECIAL | SIM card holder | - | TPM, Hardware Security, eMMC, CAN Bus | TPM2.0, hardware security device, M.2 (2280, Socket 3, M-Key) | TPM2.0, hardware security device, M.2 (2280, Socket 3, M-Key), SPI Fast Interface, SIM | TPM2.0, HDMI | TPM2.0, hardware security device, M.2 (2280, Socket 3, M-Key) | TPM2.0, hardware security device, M.2 (2280, Socket 3, M-Key) |
| ETHERNET | - | 2x RJ45 10/100/1000 Mb/s Ethernet | - | - | - | - | - | - |
| ONBOARD FLASH | uSD | - | - | - | - | - | - | - |
| SATA PORTS | 2x SATA Gen 2 (1 port shared with mSATA) | 2x SATA Gen 2 (1 port shared with mSATA) | 2x SATA Gen 3.0 | 4x SATA Gen 3.0 | 4x SATA Gen 3.0 | 3x SATA Gen 3.0 | 6x SATA Gen 3.0 | 6x SATA Gen 3.0 |
| MPCIe / MSATA SLOT | 1x mPCIe / mSATA slot | 1x mPCIe / mSATA slot | 1x (Full size) | 1x Mini-PCIe (Full size) with USB2.0 | 1x Mini-PCIe with USB 2.0/PCI/SATA and external to SIM | 1x Mini-PCIe (Half size) with USB2.0 | 1x Mini-PCIe (Full size) with USB2.0 | 1x Mini-PCIe (Full size) with USB2.0 |
| SERIAL PORTS | 4x RS232, 1x RS485 | 2x Serial ports UART 16550 | 1 x RS232 (Internal); 1 x RS422/RS485 Half duplex (Internal) | 1x RS232; 1x RS485 Half duplex / 2 pairs RS422 | 1x RS232; 1x RS485 Half duplex / RS422 | 1x RS-232/422/485 1x RS-232 2x RS-232(Internal) | 1x RS232; 1x RS485 Half duplex / 2 pairs RS422 | 1xRS232; 1xRS485 Half duplex / 2 pairs RS422 |
| LAN PORTS | 2x GBE | 2x GBE | 2x RJ-45 LAN Port | 4x Ethernet on rear IO Gigabit-LAN (10/100/1000 MBit) | 4x Ethernet on front IO Gigabit-LAN (10/100/1000 MBit), 2x optional | 2x Ethernet on rear IO Gigabit-LAN (10/100/1000 MBit) | 4x Ethernet on rear IO Gigabit-LAN (10/100/1000 MBit) | 4x Ethernet on rear IO Gigabit-LAN (10/100/1000MBit) |
| USB PORTS | 4x USB 3.0 | 4x USB 2.0, 1x USB 3.0 | 4x USB 3.0/2.0 (Rear), 2x USB 2.0 (Internal) | 2x USB 3.0 (Rear) + 2x USB 2.0 (Rear) + 2x USB 2.0 (Front Header) + 1x USB 2.0 (mPCIe) | 2x USB 3.0 (Internal) + 1x USB 3.0 (Client) + 2x USB 3.0 (Rear I/O) + 2x USB 2.0 (Rear I/O) + 2x USB 2.0 (Front Header) + 1x USB 2.0 (mPCIe) | 4x USB 3.0 (Rear) + 2x USB 2.0 (Front Header) + 1x USB 2.0 (mPCIe) | 2x USB 3.0 (Rear) + 2x USB 2.0 (Rear) + 2x USB 2.0 (Front Header) + 1x USB 2.0 (mPCIe) + 2x USB 3.0 (Internal) | 2x USB 3.0 (Rear)+ 2x USB 2.0 (Rear) + 2x USB 2.0 (Front Header) + 1x USB 2.0 (mPCIe) + 2x USB 3.0 (Internal) |
| AUDIO | HD Analog audio interface (Line-In, Line-Out, Mic-In, SPDIF) | HD Analog audio interface (Line-In, Line-Out, Mic-In, SPDIF) | HD Analog audio interface (Line-In, Line-Out, Mic-In, SPDIF) | HD Analog audio interface (Line-In, Line-Out, Mic-In, SPDIF) | HD Analog audio interface (Line-In, Line-Out, Mic-In, SPDIF) | HD Analog audio interface (Line-In, Line-Out, Mic-In, SPDIF) | HD Analog audio interface (Line-In, Line-Out, Mic-In, SPDIF) | HD Analog audio interface (Line-In, Line-Out, Mic-In, SPDIF) |
| PCIe SLOTS | 1x PCIe x1 slot | 1x PCIe x1 slot | - | 1x PCIe x16 (Gen 3) | 1x PCIe x16 (Gen 3) | 1x PCIe x16 (Gen 3) | 1x PCIe x16 (Gen 3) + 1x PCIe x 4 + 1x PCIe x 1 | 1x PCIe x16 (Gen 3) + 1x PCIe x 4 + 1x PCIe x 1 |
| TPM | Yes | - | - | TPM2.0, Hardware Security Device | TPM2.0, Hardware Security Device | TPM2.0 | TPM2.0, Hardware Security Device | TPM2.0, Hardware Security Device |
| I/O FEATURES | 1x mPCIe® 2.0 port (x1 lane), PCIe® x1 connector, Kontron embedded feature connector with ADC, DAC and up to 160 GPIO | 1x mPCIe® 2.0 port (x1 lane), PCIe® x1 connector, Kontron embedded feature connector with ADC, DAC and up to 160 GPIO | - | - | - | - | - | - |
| POWER SUPPLY | Single supply 12/24 V DC, Internal and external connector | Single supply 12 V DC, Internal and external connector | Single supply 12-24 V DC (External) + ATX 12 V 4 pin (Internal) | ATX PWR 20pin + 4pin (Internal Input Power) | 12/24 V | ATX PWR 20pin + 4pin (Internal Input Power) | ATX PWR 24pin | ATX PWR 24pin |
| MTBF | tbd | Prediction Model: Telcordia Issue 2 Method I Case 3, 40° C & 60° C | tbd. | tbd. | tbd. | tbd. | tbd. | tbd. |
| SAFETY | IEC 60950-1: 2005, 2nd Edition UL 60950-1, CSA C22.2 No. 60950-1 | IEC 60950-1: 2005, 2nd Edition UL 60950-1, CSA C22.2 No. 60950-1 | IEC 60950-1: 2005, UL 60950-1, CSA 60950-1 | IEC 60950-1: 2005, 2nd Edition UL 60950-1, CSA C22.2 No. 60950-1 | IEC 60950-1: 2005, 2nd Edition UL 60950-1, CSA C22.2 No. 60950-1 | IEC 60950-1: 2005, 2nd Edition UL 60950-1, CSA C22.2 No. 60950-1 | IEC 60950-1: 2005, 2nd Edition UL 60950-1, CSA C22.2 No. 60950-1 | IEC 60950-1: 2005, 2nd Edition UL 60950-1, CSA C22.2 No. 60950-1 |
| COOLING SOLUTIONS | Passive and active cooling solutions | Passive and active cooling solutions | Passive and active cooling solutions | Active cooling solutions | Passive and active cooling solutions | Passive and active cooling solutions | Active cooling solutions | Passive and active cooling solutions |
| OPERATING TEMPERATURE | 0 °C to 60 °C | 0 °C to 60 °C | 0 °C to 60 °C | 0 °C to 60 °C | 0 °C to 60 °C | 0 °C to 60 °C | 0 °C to 60 °C | 0 °C to 60 °C |
| REGUALTORY | Comply with Emission: EN55022, Immunity EN55022, RoHS | Comply with Emission: EN55022, Immunity EN55022, RoHS | Comply with Emission: EN55022, Immunity EN55022, RoHS | Comply with Emission: EN55022 | Comply with Emission: EN55022 | Comply with Emission: EN55022 | Comply with Emission: EN55022 | Comply with Emission: EN55022 |
| DIMENSIONS | Thin Mini-ITX, 170 x 170 mm | Thin Mini-ITX, 170 x 170 mm | Thin Mini ITX, 170 x 170 mm | Thin Mini-ITX, 170 x 170 mm | Thin Mini-ITX, 170 x 170 mm | Thin Mini-ITX, 170 x 170 mm | Thin Mini-ITX, 170 x 170 mm | Thin Mini-ITX, 170 x 170 mm |
| OPERATING SYSTEMS | Win7, Win8.1, WES7, Linux | Win7, Win8, WES7, WES8, Linux, WxWorks | Win10, Win10 IoT, Linux | Win7, Win8.1, Win10, WES7, Linux | Win7, Win8.1, Win10, WES7, Linux | Win7, Win8.1, Win10, Linux | Win7, Win8.1, Win10, WES7, Linux | Win7, Win8.1, Win10, WES7, Linux |

About Kontron – An S&T Company

Kontron is a global leader in IoT/embedded computing technology (ECT). As a part of technology group S&T, Kontron offers a combined portfolio of secure hardware, middleware and services for Internet of Things (IoT) and Industry 4.0 applications. With its standard products and tailor-made solutions based on highly reliable state-of-the-art embedded technologies, Kontron provides secure and innovative applications for a variety of industries. As a result, customers benefit from accelerated time-to-market, reduced total cost of ownership, product longevity and the best fully integrated applications overall.

About the Intel® Internet of Things Solutions Alliance

From modular components to market-ready systems, Intel and the 400+ global member companies of the Intel® Internet of Things Solutions 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.



IoT Solutions
Alliance
Premier

Global Headquarters

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