MOTHERBOARDS

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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

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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

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kontron
S&T Group

About Kontron | Member of the S&T Group

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.

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(intel) IoT Solutions Alliance
Premier

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Embedded motherboards
ADVANCED TECHNOLOGY COMPONENTS

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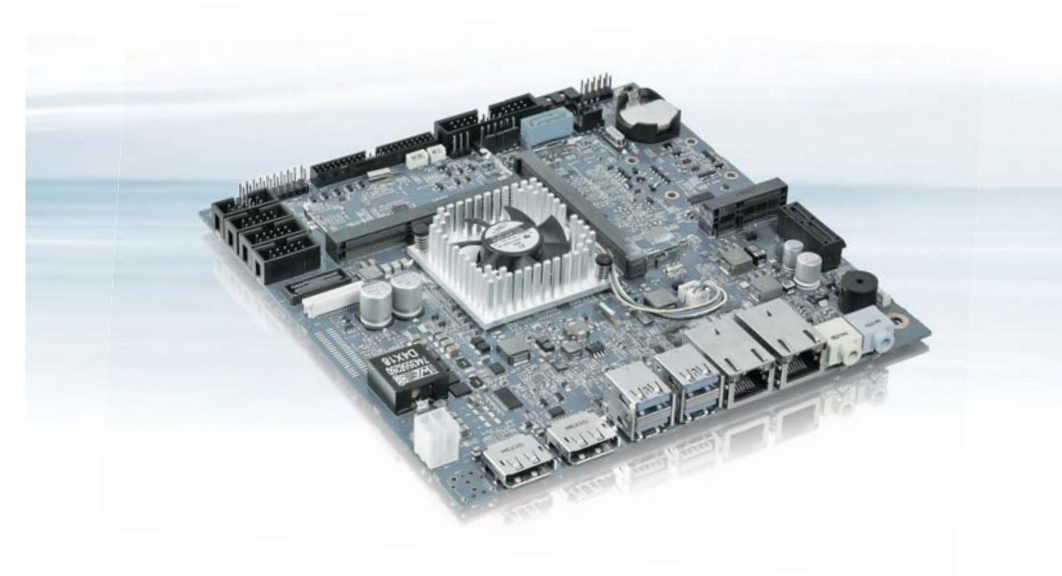
▶ **SMART AUTOMATION**
Ready for Industrial IoT applications

▶ **SECURITY AND LICENSING SOLUTIONS**
Approtect - Kontron Embedded Hard-/
Software Security Solution

▶ **FOREVER YOUNG**
Maximum innovation – minimum investment

POSSIBILITIES START HERE **kontron**
S&T Group

MOTHERBOARDS

	mITX-CFL-S	mITX-DNV	mITX-APL	mITX-KBL-S-C236	mITX-SKL-H	mITX-SKL-S-H110	FlexATX-KBL-S-C236	FlexATX-SKL-S
PROCESSOR	Intel® 8th Generation Core™ CPUs, Intel® Xeon® E3 CPUs	Intel® Atom™ C3338 Intel® Atom™ C3538	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	-	-						
MEMORY	2x DDR4 2400/2666 U-DIMM (ECC support)	1x DDR4 1866 UDIMM (Atom™ C3338 model) 2x DDR4 2133 UDIMM (Atom™ C3538 model)	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	1x eDP 1.4 (4096 x 2304 @ 60 Hz) 1x HDMI 1.4 (on rear, 4096 x 2160 @ 24 Hz / 2560 x 1600 @ 60 Hz) 2x DP (on rear, 4096 x 2304 @ 60 Hz)	RDC® C6139 1x VGA (on rear, 1024 x 768 @ 60 Hz)	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 Indepent Displays (3x DP, 2DP+LVDS)
SPECIAL	-	-	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	3x GbE LAN (RJ45 on rear, 1x Intel® I219-LM, 1x Intel® I210-AT, 1x Intel® I211-AT)	6x GbE LAN (RJ45 on rear, 2x Intel® I210-AT, 4x Marvell® 88E1543)	-	-	-	-	-	-
ONBOARD FLASH	-	-	-	-	-	-	-	-
SATA PORTS	-	-	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 (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	2x RS232/422/485 (DB9 on rear with 5 V / 12 V power output support) 2x RS232 (by wafer)	2x RS232/422/485 (1x DB9 on rear w/ 5 V / 12 V output support, 1x by wafer)	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 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	6x USB 3.1 (rear, w/ C246 / Q370 chipset) 2x USB 3.1 (Trear, w/ C242 chipset) 4x USB 3.0 (rear, w/ C242 chipset) 4x USB 2.0 (by header)	4x USB 3.0 (Type A on rear from HUB) 2x USB 2.0 (by wafer from SoC)	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	Realtek ALC662 1x Line-out (by header) 1x Mic-in (by header) 1x S/PDIF (by header)	-	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 mPCIe / mSATA, 1x PCIe x8 for expansion	-	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	-	TPM 2.0 support	-	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 8-bit DIO (by wafer)	1x 8-bit DIO (by wafer) 1x PS/2 Keyboard / Mouse (by wafer)	-	-	-	-	-	-
POWER SUPPLY	-	-	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.	tbd.	tbd.	tbd.	tbd.	tbd.
SAFETY	CE, FCC Class A	CE, FCC Class A	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	1x Wafer for CPU Smart Fan 1x Wafer for System Smart Fan	1x Wafer for CPU Smart Fan 1x Wafer for System Smart Fan	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 ~ 60 °C -20 °C ~ 80 °C	0 °C ~ 60 °C (Standard) -20 °C ~ 70 °C (Extended)	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	Comply with Emission: EN55022	Comply with Emission: EN55022	Comply with Emission: EN55022	Comply with Emission: EN55022
DIMENSIONS	Mini-ITX, 170 mm x 170 mm	Mini-ITX, 170 mm 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	-	Windows Server, Linux	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

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