

# Embedded Box PC - KBox Family

# INDUSTRIAL

# COMPUTER PLATFORMS

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## ▶ SMART AUTOMATION

Industrial IoT applications, edge & fog computing

## ▶ MAINTENANCE FREE

Reducing TCO – driving system availability

## ▶ FOREVER YOUNG

Maximum innovation – minimum investment

POSSIBILITIES START HERE



# INDUSTRIAL COMPUTER PLATFORMS – EMBEDDED BOX PC

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Developed for smart automation, Kontron's IoT-ready KBox family accelerates your time to deployment and optimizes TCO.



## KBox A-SERIES

Compact and flexible Industrial Computer Platforms with gateway functions which handle control & process optimization on-site.

- ▶ Scalable processor performance
- ▶ Intelligent IoT gateway for edge analytics, data collection, remote monitoring
- ▶ Fanless design
- ▶ Broad range of interfaces and expansion capabilities
- ▶ Various mounting options (DIN RAIL, wall, desktop, cabinet)
- ▶ Easy customization with proven building blocks



## KBox C-SERIES

Powerful Industrial Computer Platforms especially designed for the industrial control cabinet environment for control, inspection and data collection tasks.

- ▶ 6th Gen Intel® Core™ or XEON® processor
- ▶ Maximum of flexibility and expansion capabilities
- ▶ Maintenance-free operation
- ▶ Rescue functionality (rescue button)
- ▶ Optional with Kontron WideLink for remote visualization applications

# KBox FAMILY

## INDUSTRIAL COMPUTER PLATFORMS



KBOX		KBox A-203		KBox A-250		KBox A-103		KBox A-152-SKL		KBox A-153-APL		KBox A-154-KBL		KBox C-102 Family			
PLATFORM MAINTENANCE-FREE		SMARC 1) 2) 4) 6)		PITX 1) 4) 6)		SMARC 1) 2) 4) 6)		3.5" SBC 1) 4) 6)		3.5" SBC 1) 4) 6)		3.5" SBC 1) 4) 6)		COM Express 1) 2) 3) 4) 5) 6)			
PROCESSOR SYSTEM	CPU	Intel Atom® x5-E3930		Intel Atom® x5-E3930/E3940/E3950		Up to Intel Atom® E3845		6th Generation Intel® Core™ i5-6300U		Intel® Pentium® Quad Core™ N4200		7th Generation Intel® Core™ i5-7300U		6th Generation Intel® Core™, Celeron®, XEON®			
	MAX. SPEED	Dual-Core 1.3 GHz (Turbo 1.8 GHz)		Dual-Core 1.3 GHz (Turbo 1.8 GHz)		Quad-Core 1.91 GHz		Dual Core, 2.4 / 3.0 GHz (Burst)		Quad Core, 1.1 / 2.5 GHz (Burst)		Dual Core, 2.6 / 3.5 GHz (Burst)		Quad-Core 2.8 GHz			
	SYSTEM CHIPSET	Integrated		Integrated		Integrated		Integrated		Integrated		Integrated		Intel® CM236 or QM170 (Intel® Core™ i5 & Core™ i7)			
	BIOS	AMI® Aptio V5		AMI® Aptio V5		Phoenix SecureCore™		AMI® Aptio V5		AMI® Aptio V5		AMI® Aptio V5		AMI® Aptio V5			
MEMORY	MEMORY TECHNOLOGY	DDR3L ECC		DDR3L ECC		DDR3L ECC		DDR4		DDR3L		DDR4		DDR4 non ECC/ECC			
	MAX. CAPACITY	4 GByte		8GB		4 GByte		16 GB		16 GB		16 GB		32 GByte			
	SOCKET	Soldered		Soldered		Soldered		2x SODIMM		2x SODIMM		2x SODIMM		2x 50-DIMM			
GRAPHICS	GRAPHICS CORE	Intel® HD Graphics 500		Intel® HD Graphics 500		Intel® HD Graphics		Intel HD Graphics 520		Intel HD Graphics 505		Intel HD Graphics 620		Intel® Xeon®: Intel® Iris™ Pro Graphics P580, Intel® Core™: Intel® HD Graphics 530, Celeron®: Intel® HD Graphics 510			
	MAX. RESOLUTION	4096 x 2160		4096x2160		Full HD (1920 x 1080)		4096x2160		4096x2160		4096x2160		4096x2304			
	HDMI / DVI / DP / VGA	0 / 0 / 1 / 0		0 / 0 / 1 / 0		0 / 0 / 1 / 1*		1 / / 0 / 1 / 0		1 / / 0 / 1 / 0		1 / / 0 / 1 / 0		0 / 0 / 2* / 0			
ETHERNET	G: 10 / 100 / 1000, F: 10 / 100	2x G		2x G		2x G		2x G		2x G		2x G		3x G			
	IEEE1588	yes		yes		yes		-		-		-		yes			
	TEAMING	yes		yes		yes		-		-		-		yes			
	FAILOVER	yes		yes		yes		-		-		-		yes			
MISCELLANEOUS	AUDIO	-		-		-		option		option		option		-			
	RS232 / RS422 / RS485	2* / 1 / 1		2* / 1 / 1		2 / 1* / 1*		2 (4) / 2 / 2		2 (4) / 2 / 2		2 (4) / 2 / 2		2* / 1* / 0			
	USB 3.0 / 2.0	2 / 0		2 / 0		1 / 2		4 / 0		4 / 0		4 / 0		2 / 2			
	OTHERS	SIM Card slot		SIM Card slot		Digital IO 4x In / 4x Out TTL		SIM card slot		SIM card slot		SIM card slot		8x LEDs 2x Buttons Power / Reset & Rescue			
	WATCHDOG TIMER	yes		yes		yes		-		-		-		yes			
	MINI PCIE / PCIE	2* / 0		2* / 0		2 / 0		1		1		1		2 / 4      2 / 2      2 / 1      2 / 0			
STORAGE	2.5" HDD / SSD	1*		1*		1		1		1		1		1			
	MSATA / M.2 SATA	1* / 0		1* / 1*		1 / 0		0 / 1		0 / 1		0 / 1		0 / 2			
	SDCARD / COMPACT-FLASH / CFAST	1 / 0 / 0		1 / 0 / 0		1* / 0 / 0		1 / 0 / 0		1 / 0 / 0		1 / 0 / 0		1 / 0 / 0			
	ONBOARD FLASH	1		1		1		-		-		-		0			
SOFTWARE SUPPORT	MICROSOFT WINDOWS	WIN10		WIN10		WES7, WIN8.1, WIN7, WIN10		Win7, Win10		Win10		Win10		WIN7, WES7, WIN8.1 Industry, WIN10			
	LINUX	Yocto		Yocto		Yocto		Ubuntu		Ubuntu		Ubuntu		Yocto			
	VXWORKS	on request		on request		on request		-		-		-		on request			
MIDDLEWARE	HYPERVISOR	on request		on request		on request		-		-		-		on request			
	KEAPI	yes		yes		yes		soon		soon		soon		yes			
POWER	INPUT VOLTAGE	12/24 V DC		24 V DC		24 V DC		9...30V DC		9...30V DC		9...30V DC		24V DC (+ 20 %/- 15 %)			
	ADAPTER	AC to DC 24 V/ 2.5 A (60W) optional		AC to DC 24 V/ 2.5 A (60W) optional		AC to DC 24 V/ 2.5 A (60W) optional		-		-		-		AC to DC 24 V/ 2.5 A (150W) optional			
MECHANICAL	MOUNTING	DIN RAIL, Desktop, Cabinet, Bookmount		DIN RAIL, Desktop, Wallmount, Cabinet		DIN RAIL, Desktop, Wallmount, Cabinet, VESA		DIN RAIL		DIN RAIL		DIN RAIL		Control cabinet key holes, book size format			
	DIMENSION (W X H X D)	150 x 57 x 95 mm (5.91" x 2.24" x 3.74")		150 x 58 x 100 mm (5.91" x 2.28" x 3.94")		210 x 65 x 140 mm (8.27" x 2.56" x 5.51")		75 x 180 x 134 mm (2.95" x 7.09" x 5.28")		75 x 180 x 134 mm (2.95" x 7.09" x 5.28")		75 x 180 x 134 mm (2.95" x 7.09" x 5.28")		195 x 290 x 210 mm (7.68" x 11.42" x 8.27")      155 x 290 x 210 mm (6.1" x 11.42" x 8.27")      130 x 290 x 210 mm (5.12" x 11.42" x 8.27")      117 x 290 x 210 mm (4.61" x 11.42" x 8.27")			
	WEIGHT	1 kg (2.20 lbs)		1 kg (2.20 lbs)		2.5 kg (5.51 lbs)		1.3 kg (2.9 lbs)		1.3 kg (2.9 lbs)		1.3 kg (2.9 lbs)		approx. 6 kg (13.22 lbs)      4.75 kg (10.47 lbs)      approx. 4.6 kg (10.14 lbs)      3.8 kg (8.38 lbs)			
ENVIRONMENT	COOLING	Fanless		Fanless		Fanless		Fanless		Fanless		Fanless		Fanless			
	OPERATING TEMPERATURE	0 °C to 60 °C (32 °F to 140 °F)		0 °C to 60 °C (32 °F to 140 °F)		-20 °C to 60 °C (-4 °F to 140 °F)		0 °C to +50 °C (32 °F to 122 °F)		0 °C to +50 °C (32 °F to 122 °F)		0 °C to +50 °C (32 °F to 122 °F)		with Intel® Core™ i5-6442EQ: 0 °C to + 65 °C (32 °F to 149 °F) with Intel® Core™ i7/XEON®: 0 °C to + 50 °C (32 °F to 122 °F)			
	RELATIVE HUMIDITY	93 % @ 40 °C non-condensing		93 % @ 40 °C non-condensing		95 % @ 40 °C non-condensing		10% - 90% @39°C (non condensing)		10% - 90% @39°C (non condensing)		10% - 90% @39°C (non condensing)		93 % @ 40 °C non-condensing			
	VIBRATION	Vibration operational: IEC 60068-2-6 10-500 Hz, 1 G		Vibration operational: IEC 60068-2-6 10-500 Hz, 1 G		Vibration operational: IEC 60068-2-6 10-500 Hz, 1 G <sup>1)</sup>		Vibration operational: IEC 60068-2-6 10-500 Hz, 1 G		Vibration operational: IEC 60068-2-6 10-500 Hz, 1 G		Vibration operational: IEC 60068-2-6 10-500 Hz, 1 G		Vibration operational: IEC 60068-2-6 5-150 Hz, 1 G			
	SHOCK	Shock operational: IEC 60068-2-27 half sine 11 ms 15 G		Shock operational: IEC 60068-2-27 half sine 11 ms 15 G		Shock operational: IEC 60068-2-27 half sine 11 ms 15 G		Shock operational: IEC 60068-2-27 half sine 11 ms 15 G		Shock operational: IEC 60068-2-27 half sine 11 ms 15 G		Shock operational: IEC 60068-2-27 half sine 11 ms 15 G		Shock operational: IEC 60068-2-27 half sine 11 ms 15 G			
APPROVALS	SAFETY CERTIFICATIONS		UL/CB/CE/ FCC		CE/ FCC		UL/CB/CE/ FCC		CE		CE		UL/CB/CE/FCC				

<sup>1)</sup>No moving parts <sup>2)</sup>No battery required <sup>3)</sup>Hold up time >10 ms <sup>4)</sup>Remote system diagnostics

<sup>5)</sup>Rescue Button (RSQ) Operation <sup>6)</sup>Power On/Off options <sup>\*)</sup>Optional

## 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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