



KBox B-SERIES

Embedded Box PC for high-end computing in a small footprint for noise sensitive environments

- ▶ High processing capability: 7th/8th Gen Intel® Core™ i3/i5/i7
- ▶ Low noise design with internal silent fan
- ▶ Small form factor with mITX motherboard
- ▶ Removable 2.5" SSD
- ▶ Various mounting options



KBox C-SERIES

Powerful Embedded Box PC 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
- ▶ IoT ready - simply connected:
Fieldbuses (CAN, PROFINET, PROFIBUS), WiFi option
- ▶ Maintenance-free operation
- ▶ Recovery functionality via rescue button
- ▶ Optional with Kontron WideLink for remote visualization applications

WideLink Technology

Enables the operation of visualization systems at up to 100 meters distance from the control computer

- ▶ Independent from OS or any other software
- ▶ Data communication via one single Ethernet cable
- ▶ Data transmission without time lag or quality loss



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, together with its sister company S&T Technologies, 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.

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

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KBox Family IOT GATEWAYS/ EMBEDDED BOX PC



▶ SMART AUTOMATION

Industrial IoT applications, edge & fog computing

▶ MAINTENANCE FREE

Reducing TCO – driving system availability

▶ FOREVER YOUNG

Maximum innovation – minimum investment

IOT GATEWAYS / EMBEDDED BOX PC

Kontron's KBox family offers intelligent gateways for IoT edge applications including fieldbus connectivity. For control, inspection and data collection tasks on the factory floor powerful and maintenance-free Box PCs with a maximum of flexibility and expansion capabilities are provided. The KBox family is certified for Microsoft Azure IoT Edge and enables scalable edge computing solutions from the sensor to the cloud.



▶ KBox A-SERIES

Compact and flexible Embedded Box PC with gateway functions which handle control & process optimization on-site

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

KBox FAMILY
IOT GATEWAYS/EMBEDDED BOX PC

																											
KBox		KBox A-330-RPI		KBox A-330-MX6		KBox A-203		KBox A-250		KBox A-103		KBox A-150-BYT		KBox A-150-APL		KBox A-150-SKL		KBox A-150-KBL		KBox B-201		KBox B-201-CFL		KBox C-102 Family			
PLATFORM MAINTENANCE-FREE		4.3" SBC 1)		4.3" SBC 1)		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)		3.5" SBC 1) 4) 6)		mITX 2) 4) 6)		mITX 2) 4) 6)		COM Express 1) 2) 3) 4) 5) 6)			
PROCESSOR SYSTEM	CPU	Broadcom® BCM2837B0 Arm®-A53		i.MX6 Dual Arm® Cortex®-A9		Intel Atom® x5-E3930		Intel Atom® x5-E3930/E3940/E3950		Intel Atom® E3815/E3827/E3845		Intel® Celeron® J1900		Intel® Pentium® N4200		6th Generation Intel® Core™ i5-6300U		7th Generation Intel® Core™ i5-7300U		7th Generation Intel® Core™ i3-7101E / i5-7500 / i7-7700		8th Generation Intel® Core™ i3-8100 / i5-8500 / i7-8700		6th Generation Intel® Celeron® G3902E, Core™ i3-6102E / i5-6442EQ / i7-6820EQ, Xeon® E3-1515M			
	MAX. SPEED	Quad-Core 1.2 GHz		Dual-Core 1 GHz		Dual-Core 1.3 /1.8 GHz (Burst)		Quad-Core 1.6 /2.0 GHz (Burst)		Quad-Core 1.91 GHz		Quad-Core 2.0/2.4 GHz (Burst)		Quad-Core 1.1 / 2.5 GHz (Burst)		Dual-Core 2.4 / 3.0 GHz (Burst)		Dual-Core 2.6 / 3.5 GHz (Burst)		Quad-Core 3.6 GHz / 4.2 GHz (Burst)		Hexa-Core 3.6 GHz / 4.2 GHz (Burst)		Quad-Core 2.8 GHz / 3.7 GHz (Burst)			
	SYSTEM CHIPSET	Integrated		Integrated		Integrated		Integrated		Integrated		Integrated		Integrated		AMI® Aptio V5		AMI® Aptio V5		AMI® Aptio 5.x		AMI® Aptio 5.x		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 5.x		AMI® Aptio 5.x		AMI® Aptio 5.x		DDR4 non ECC/ECC			
	MEMORY TECHNOLOGY	LPDDR2		DDR3L		DDR3L ECC		DDR3L ECC		DDR3L ECC		DDR3L		DDR3L		DDR4		DDR4		DDR4		DDR4		DDR4			
MEMORY	MAX. CAPACITY	1 GByte		2 GByte		4 GByte		8 GByte		4 GByte		4 GByte		8 GByte		16 GByte		32 GByte		32 GByte		32 GByte		32 GByte			
	SOCKET	Soldered		Soldered		Soldered		Soldered		Soldered		Soldered		Soldered		2x SODIMM		2x SODIMM		2x SODIMM		2x SODIMM		2x SODIMM			
	GRAPHICS CORE	VideoCore IV OpenGL-ES 1.1/2.0, Full HD 250 MHz		Vivante GC		Intel® HD Graphics 500		Intel® HD Graphics 500		Intel® HD Graphics		Intel® HD Graphics		Intel®HD Graphics 505		Intel® HD Graphics 520		Intel® HD Graphics 620		Intel® HD Graphics 630, DX12		Intel® UHD Graphics 630, DX12		Intel® Xeon®: Intel® Iris™ Pro Graphics P580, Intel® Core™: Intel® HD Graphics 530, Celeron®: Intel® HD Graphics S10			
	MAX. RESOLUTION	1920 x 1080		1920 x 1080		4096 x 2160		4096 x 2160		Full HD (1920 x 1080)		max. 2560 x 1600		4096 x 2160		4096 x 2160		4096 x 2160		4096 x 2304		4096 x 2304		4096 x 2304			
	HDMI / DVI / DP / VGA CONTROLLER	1 / 0 / 0 / 0		1 / 0 / 0 / 0		0 / 0 / 1 / 0		0 / 0 / 1 / 0		0 / 0 / 1 / 1		1 / 0 / 0 / 1		1 / 0 / 1 / 0		0 / 1 / 1 / 0		0 / 1 / 2 / 0		0 / 1 / 1 / 0		0 / 1 / 1 / 0		0 / 0 / 1 (2*) / 0			
ETHERNET	2x Fast Ethernet	2x Fast Ethernet		2x Fast Ethernet		2x GbE: 2x Intel® I210-IT		1x GbE: Intel® I210-IT, 1x Fast Ethernet		2x GbE: 2x Intel® I210-IT		2x GbE: 1x Intel® I210-AT, 1x Realtek RTL8111G		2x GbE: 2x Intel® I210-AT		2x GbE: 1x Intel® I210-AT, 1x Intel® I219-LM		2x GbE: 1x Intel® I210-AT, 1x Intel® I219-LM		2x GbE: 1x Intel® I210-AT, 1x I219-LM		2x GbE: 1x Intel® I210-AT, 1x I219-LM		3x GbE: 2x Intel® I210-IT, 1x I219-LM			
	IEEE1588	-		-		yes		yes		yes		yes		yes		yes		yes		yes		yes		yes			
	TEAMING / FAILOVER	-		-		yes / yes		yes / yes		yes / yes		yes / yes		yes / yes		yes / yes		yes / yes		yes / yes		yes / yes		yes / yes			
	STANDARD	CAN		CAN		PROFIBUS*		on request		on request		on request		on request		on request		on request		on request		on request		CAN, PROFIBUS or PROFINET*			
	RS232 / RS422 / RS485	1 / 0 / 1 (RS485 switchable CAN)		1 / 0 / 1 (RS485 switchable CAN)		1 (2*) / 1 / 1		1 / 0 / 0		1 (2*) / 2* / 2*		2 (4*) / 2 / 2		2 (4*) / 2 / 2		2 (4*) / 2 / 2		1 / 0 / 0		1 / 0 / 0		1 / 0 / 0		1 (2*) / 1* / 0			
FIELDBUS MISCELLANEOUS FEATURES	USB 3.0 / 2.0	0 / 2 (OTG)		0 / 2		2 / 0		2 / 0		1 / 2		1 / 2		4 / 0		4 / 0		6 / 4		4 / 3		4 / 3		2 / 2			
	AUDIO	-		-		-		-		-		option		option		option		1x Line in, 1x Line out		1x Line in, 1x Line out		1x Line in, 1x Line out		-			
	OTHERS	4x Digital IOs (with PoE-supply only DI)		4x Digital Out (24V/800mA)		LoRaWAN*		7x Digital IOs 24 V, 1x Digital Input 24 V		Digital IO 4x In / 4x Out TTL		-		-		-		PS2 for keyboard/mouse		PS2 for keyboard/mouse		PS2 for keyboard/mouse		Kontron Widelink for remote visualization applications 4x GPIO LEDs, 2x Buttons: Power / Reset & Rescue			
	WATCHDOG TIMER	yes		yes		yes		yes		yes		yes		yes		yes		yes		yes		yes		yes			
	MINI PCIE / PCIE	1x Raspberry Pi GPIO-Header		-		1 (2*) / 0		2* (1x shared with mSATA) / 0		2 / 0		1 / 0		1 / 0		1 / 0		1 / 0		1 / 0		1 / 0		2 / 4			
EXPANSION	SIM CARD	-		-		yes		yes		yes		yes		yes		yes		-		-		-		2 / 2			
	2.5" SSD	-		-		1*		-		1		1		1		1		1		1		1		-			
	MSATA / M.2 SATA	-		-		1*		1 / 1		1 / 1		1 / 0		0 / 1		0 / 1		1 / 1		1 / 1		1 / 1		2			
	SDCARD	1		1		1		1		-		-		-		1		-		-		-		1			
	ONBOARD FLASH	1 (add. 16 kbit FRAM)		1		1		-		1*		-		-		-		-		-		-		-			
SOFTWARE SUPPORT	MICROSOFT WINDOWS	-		-		Win10		Win10		Win10		Win7, Win8.1, Win10		Win10		Win7, Win10		Win10		Win10		Win10		Win7, Win10 Industry, Win10			
	LINUX	Raspbian		Yocto		Yocto		Yocto		Yocto		Ubuntu		Ubuntu		Ubuntu		Ubuntu		Yocto		Yocto		Yocto			
	SECURITY	-		-		TPM 2.0, Kontron APPROTECT**		TPM 2.0, Kontron APPROTECT**		TPM 2.0, Kontron APPROTECT**		Kontron APPROTECT** on request		Kontron APPROTECT** on request		Kontron APPROTECT** on request		Kontron APPROTECT** on request		Kontron APPROTECT** on request		Kontron APPROTECT** on request		Kontron APPROTECT** on request			
	SECURITY	-		-		on request		on request		on request		-		-		-		-		-		-		on request			
	SECURITY	-		-		yes		yes		yes		on request		yes		yes		yes		yes		yes		yes			
POWER	INPUT VOLTAGE	24 V DC (9...32V DC) / or PoE 802.3af with RPI-PoE-HAT		24 V DC (9...32 V DC)		24 V DC		24 V DC		24 V DC		24 V DC (9...30 V DC)		24 V DC (9...30 V DC)		24 V DC (9...30 V DC)		24 V DC (9...30 V DC)		24 V DC (9...30 V DC)		24 V DC (9...30 V DC)		24V DC (+ 20 %/- 15 %)			
	AC ADAPTER	External AC/DC adapter		External AC/DC adapter		External AC/DC adapter optional, 90 to 264 V AC, 70 W		External AC/DC adapter optional, 90 to 264 V AC, 70 W		External AC/DC adapter optional, 90 to 264 V AC, 70 W		External AC/DC adapter optional, 90 to 264 V AC, 65 W		External AC/DC adapter optional, 90 to 264 V AC, 65 W		External AC/DC adapter optional, 90 to 264 V AC, 65 W		External AC/DC adapter optional, 90 to 264 V AC, 65 W		External AC/DC adapter optional, 90 to 264 V AC, 150 W		External AC/DC adapter optional, 90 to 264 V AC, 150 W		External AC/DC adapter optional 90 to 264 V AC, 150 W			
	MOUNTING	DIN RAIL, Cabinet		DIN RAIL, Cabinet		DIN RAIL, Desktop, Cabinet, Bookmount		DIN RAIL, Desktop, Wallmount, Cabinet		DIN RAIL, Desktop, Cabinet, VESA		DIN RAIL		DIN RAIL		DIN RAIL		DIN RAIL		Desktop, Wall Mount, VESA		Desktop, Wall Mount, VESA		Control cabinet key holes, book size format			
	DIMENSION (W x H x D)	111 x 25 x 76 mm		111 x 25 x 76 mm		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")		50 (58 with SSD carrier) x 180 x 134 mm (1.97 (2.28)" x 7.09" x 5.28")		50 (58 with SSD carrier) x 180 x 134 mm (1.97 (2.28)" x 7.09" x 5.28")		50 (58 with SSD carrier) x 180 x 134 mm (1.97 (2.28)" x 7.09" x 5.28")		50 (58 with SSD carrier) x 180 x 134 mm (1.97 (2.28)" x 7.09" x 5.28")		190 x 60 x 190 mm (7.48" x 2.36" 7.48")		190 x 60 x 190 mm (7.48" x 2.36" 7.48")		195 x 290 x 210 mm (7.68" x 11.42" x 8.27")			
	WEIGHT	approx. 0.3 kg (0.66 lbs)		approx. 0.3 kg (0.66 lbs)		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)		1.3 kg (2.9 lbs)		2 kg (4.4 lbs)		2 kg (4.4 lbs)		155 x 290 x 210 mm (6.1" x 11.42" x 8.27")			
ENVIRONMENT	COOLING	Fanless		Fanless		Fanless		Fanless		Fanless		Fanless		Fanless		Fanless		Fanless		With fan		With fan		117 x 290 x 210 mm (4.61" x 11.42" x 8.27")			
	OPERATING TEMPERATURE	0 °C to +55 °C (32 °F to 131 °F)		0 °C to +55 °C (32 °F to 131 °F)		0 °C to +60 °C (32 °F to 140 °F)		0 °C to +50 °C (32 °F to 122 °F)		-20 °C to +60 °C (-4 °F to 140 °F)		0 °C to +40 °C/+50 °C with opt. heat sink (32 °F to 104 °F/122 °F with opt. heat sink)		0 °C to +40 °C/+50 °C with opt. heat sink (32 °F to 104 °F/122 °F with opt. heat sink)		0 °C to +40 °C/+50 °C with opt. heat sink (32 °F to 104 °F/122 °F with opt. heat sink)		0 °C to +45 °C (32 °F to 113 °F)		0 °C to +45 °C (32 °F to 113 °F)		with Intel® Core™ i3/i5: 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		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)		93 % @40 °C (non-condensing)		93 % @ 40 °C non-condensing					
	VIBRATION	Vibration operational (tbc): IEC 60068-2-6: 10-500 Hz, 1 G		Vibration operational (tbc): 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: 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: 10-500 Hz, 1 G		Vibration operational: IEC 60068-2-6: 10-500 Hz, 1 G		Vibration operational: IEC 60068-2-6: 5-500 Hz, 1G		Vibration operational: IEC 60068-2-6: 5-500 Hz, 1G		Vibration operational: IEC 60068-2-6 10-150 Hz, 1 G			
	SHOCK	Shock operational(tbc): IEC 60068-2-27 half sine 11 ms 15 G		Shock operational(tbc): 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		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	IP PROTECTION CLASS	IP 20		IP 20		IP 20		IP 20		IP 20		IP 20		IP 20		IP20		IP 20		IP 20		IP 20		IP 20			
	SAFETY CERTIFICATIONS	CE		CE		UL/CB/CE/FCC		UL/CB/CE/FCC		UL/CB/CE/FCC		UL/CB/CE/FCC		UL/CB/CE/FCC		UL/CB/CE/FCC		UL/CB/CE/FCC		CE/CB/NRTL		CE/CB/NRTL		UL/CB/CE/FCC			