

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 A-series is designed for a variety of applications in the industrial environment. It comprises intelligent IoT gateways for edge analytics or remote monitoring as well as systems for control and process optimization. All systems feature a fanless design which ensures a significantly prolonged lifespan and high system availability.



▶ **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

The KBox B-Series is based on Kontron's mini-ITX motherboard family offering highest performance with desktop CPUs. Kontron's KBox B-Series can be used for various applications such as medical, gaming, process control, wherever high performance is needed.



▶ **KBox B-SERIES**
High Performance Desktop PC with Wide Extension Capabilities

- ▶ High processing capability: 8th/9th 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
- ▶ PCIe expansion slots

Kontron's KBox C-Series is designed for the industrial control cabinet environment. Based on COMe modules the KBox C-Series is highly scalable and ensures simple upgrades whenever needed. The availability of different housing options guarantees mounting even when space is limited. With its broad range of interfaces, various storage capabilities and expansion slots, the KBox C-Series maximizes flexibility and eases adaptation to the specific application needs.



▶ **KBox C-SERIES**
Powerful Industrial Box PC for Control, Inspection & Data Collection

- ▶ Processor performance up to 8th/9th Gen Intel® Core™ or Xeon® E for demanding applications
- ▶ Highest system availability: Fanless up to 65 °C, redundant PSU option, recovery button, goldcap backup
- ▶ Optimized for control applications: Fieldbus integration & NVRAM option
- ▶ High flexibility and expandability: Up to 4x PCIe Slots, mPCIe & M.2, 4x GbE, 6x USB, up to 3x DP, ...

About Kontron – Member of the S&T Group

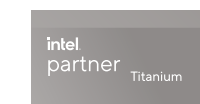
Kontron is a global leader in IoT/Embedded Computing Technology (ECT). As a part of technology group S&T, Kontron offers a combined portfolio of secure hardware, middleware and services for Internet of Things (IoT) and Industry 4.0 applications. With its standard products and tailor-made solutions based 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.

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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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-APL		KBox A-150-SKL		KBox A-150-KBL		KBox A-230-LS		KBox B-201-CFL		KBox B-202-CFL		KBox C-102 SERIES				KBox C-103-CFL SERIES			
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)		mITX 1) 2) 4) 6)		mITX 2) 4) 6)		mITX 2) 4) 6)		COM Express 1) 2) 3) 4) 5) 6)				COM Express 1) 2) 3) 4) 5) 6)			
PROCESSOR SYSTEM	CPU	Broadcom® BCM2837B0 Arm®-A53 Quad-Core 1.2 GHz		NXP i.MX6 Dual Core/ULL Arm® Dual-Core 1 GHz		Intel Atom® x5-E3930 Dual-Core 1.3/1.8 GHz (Burst)		Intel Atom® x5-E3930/E3940/E3950 Quad-Core 1.6/2.0 GHz (Burst)		Intel Atom® E3815/E3827/E3845 Quad-Core 1.91 GHz		Intel® Pentium® N4200 Quad-Core 1.1/2.5 GHz (Burst)		6th Gen Intel® Core™ i5-6300U Dual-Core 2.4/3.0 GHz (Burst)		7th Gen Intel® Core™ i5-7300U Dual-Core 2.6/3.5 GHz (Burst)		NXP Dual Cortex®-A72 LS1028A Dual-Core 1.3 GHz		8th/9th Gen Intel® Core™ i3-9100E/i5-9500E/i7-9700E Octa-Core 2.6 GHz/4.4 GHz (Burst)		8th/9th Gen Intel® Core™ i3-9100E/i5-9500E/i7-9700E Octa-Core 2.6 GHz/4.4 GHz (Burst)		6th Gen Intel® Celeron® G3902E, Core™ i3-6102E/i5-6442EQ/i7-6820EQ, Xeon® E3-1515M Quad-Core 2.8 GHz/3.7 GHz (Burst)				8/9th Generation Intel® Celeron® G4930E, Core™ i3-9100HL/i5-8400H/i7-9850HE, Xeon® E-2276ME Six-Core 2.8 GHz/4.5 GHz (Burst)			
	MAX. SPEED	Integrated		Integrated		Integrated		Integrated		Integrated		Integrated		Integrated		Integrated		Integrated		Intel® H310 or Q370		Intel® H310 or Q370		Intel® CM236 or QM170 (Intel® Core™ i5 & Core™ i7)				Intel® CM246 (Xeon®) or QM370			
MEMORY	BIOS	-		-		AMI® Aptio V5		AMI® Aptio V5		Phoenix SecureCore™		AMI® Aptio V5		AMI® Aptio V5		AMI® Aptio V5		AMI® Aptio V5		AMI® Aptio 5.x		AMI® Aptio 5.x		AMI® Aptio V5				AMI® Aptio V5			
	MEMORY TECHNOLOGY	LPDDR2		DDR3L		DDR3L ECC		DDR3L ECC		DDR3L ECC		DDR4		DDR4		DDR4		4 GByte		DDR4 ECC		DDR4		DDR4 non ECC/ECC				DDR4 non ECC/ECC			
GRAPHICS	MAX. CAPACITY	1 GByte		512 MB ULL, 2Gbyte Dual Core		4 GByte		8 GByte		4 GByte		16 GByte		32 GByte		32 GByte		32 GByte		32 GByte		32 GByte		32 GByte				64 GByte			
	SOCKET	Soldered		Soldered		Soldered		Soldered		Soldered		Soldered		2x SODIMM		2x SODIMM		Soldered		2x SODIMM		2x SODIMM		2x SODIMM				2x SODIMM			
GRAPHICS	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 505		Intel® HD Graphics 520		Intel® HD Graphics 620		Vivante GC7000		Intel® UHD Graphics 630, DX12		Intel® UHD Graphics 630, DX12		Intel® Xeon®: Intel® Iris™ Pro Graphics P580, Intel® Core™: Intel® HD Graphics 530, Intel® Celeron®: HD Graphics 510				Intel® Xeon®: Intel® UHD Graphics P630, Intel® Core™: Intel® UHD Graphics 630, Intel® Celeron®: Intel® UHD Graphics 610			
	MAX. RESOLUTION	1920 x 1080		1920 x 1080		4096 x 2160		4096 x 2160		Full HD (1920 x 1080)		4096 x 2160		4096 x 2160		4096 x 2160		4096 x 2160		4096 x 2304		4096 x 2304		4096 x 2304				4096 x 2304			
ETHERNET	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		1/0/1/0		1/0/1/0		1/0/1/0		0/1/2/0		0/1/2/0		0/1/2/0		0/0/1 (2*)/0				0/0/2 (3*)/0			
		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: 2x Intel® I210-AT		2x GbE: 1x Intel® I210-AT, 1x Intel® I219-LM		2x GbE: 1x Intel® I210-AT, 1x Intel® I219-LM		4x GbE TSN Switch ports, 1x GbE TSN, 1x GbE		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				4x GbE: 3x Intel® I210-IT, 1x I219-LM			
FIELDBUS MISCELLANEOUS FEATURES	IEEE1588	-		-		yes		yes		yes		yes		yes		yes		yes		yes		yes		yes				yes			
	TEAMING/FAILOVER STANDARD	-		-		yes/yes		yes/yes		yes/yes		yes/yes		yes/yes		yes/yes		yes/yes		yes/yes		yes/yes		yes/yes				yes/yes			
FIELDBUS MISCELLANEOUS FEATURES	RS232 / RS422/RS485	CAN		CAN		PROFIBUS*		PROFIBUS*		PROFIBUS*		2 (4*)/2/2		2 (4*)/2/2		2 (4*)/2/2		on request		on request		on request		CAN, PROFIBUS or PROFINET*				1x CAN, 1x PROFIBUS / PROFINET / ETHERCAT*			
		1/0/1 (RS485 switchable CAN)		1/0/1 (RS485 switchable CAN)		1 (2*)/1/1		1 (2*)/1/1		1 (2*)/2*/2*		2 (4*)/2/2		2 (4*)/2/2		2 (4*)/2/2		1 (2*)/0/1*		1/0/0		1/0/0		1 (2*)/1*/0				1 (2*)/1 (2*)/1			
FIELDBUS MISCELLANEOUS FEATURES	USB 3.0/2.0	-		-		2/0		2/0		1/2		4/0		4/0		4/0		1/1		4/3		6/2		2/2				3/3			
	AUDIO	-		-		-		-		-		option		option		option		-		1x Line in, 1x Line out		-		-				-			
FIELDBUS MISCELLANEOUS FEATURES	OTHERS	4x Digital I/Os		4x Digital I/Os		-		7x Digital I/Os 24 V, 1x Digital Input 24 V		Digital IO 4x In/4x Out TTL		-		-		-		3x LEDs (Power, SSD, GP), Reset switch		PS2 for keyboard/mouse		PS2 for keyboard/mouse		4x GPIO LEDs, 2x Buttons: Power / Reset & Rescue				8x Digital I/Os*, 4x GPIO LEDs, 2x Buttons: Power/Reset & Recovery			
		-		-		yes		yes		yes		yes		yes		yes		yes		yes		yes		yes				yes			
EXPANSION	WATCHDOG TIMER	yes		yes		yes		yes		yes		yes		yes		yes		yes		yes		yes		yes				yes			
	MINI PCIe/PCIe/M.2	-		-		1 (2*)/0/0		2/0/0		1 (2*)/0/0		1/0/1		1/0/1		1/0/1		1/0/1		1/0/1		1/0/1		1/2/1				1/2/1			
STORAGE	SIM CARD	-		-		yes		yes		yes		yes		yes		yes		yes		-		-		-				yes			
	2.5" SSD	-		-		1		1		1		1		1		1		-		-		1 (2*)		1				1			
STORAGE	MSATA/M.2 SATA	-		-		1/0		1/1		1/0		0/1		0/1		0/1		1/1		1/1		1/1		2/0				0/2			
	SDCARD	1		1		1		1		1		1		1		1		1		-		-		1				1			