

KBox Family IoT GATEWAYS/ EMBEDDED BOX PC



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 – 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.



Global Headquarters

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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



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 B-SERIES

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

- ▶ High processing capability: 7th 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 FAMILY

IOT GATEWAYS/EMBEDDED BOX PC



KBox A-203



KBox A-250



KBox A-103



KBox A-150-BYT



KBox A-150-APL



KBox A-150-HSW



KBox A-150-SKL



KBox A-150-KBL



KBox B-201



KBox C-102 Family

PLATFORM MAINTENANCE-FREE

PROCESSOR SYSTEM

MEMORY

GRAPHICS

ETHERNET

FIELDBUS MISCELLANEOUS FEATURES

EXPANSION

STORAGE

SOFTWARE SUPPORT

SECURITY

MIDDLEWARE

POWER

MECHANICAL

ENVIRONMENT

APPROVALS

SMART 1) 2) 4) 6)



PITX 1) 4) 6)



SMART 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)



3.5" SBC 1) 4) 6)



mITX 2) 4) 6)



COM Express 1) 2) 3) 4) 5) 6)



CPU	Intel Atom® x5-E3930	Intel Atom® x5-E3930/E3940/E3950
MAX. SPEED	Dual-Core 1.3 / 1.8 GHz (Burst)	Quad-Core 1.6 / 2.0 GHz (Burst)
SYSTEM CHIPSET	Integrated	Integrated
BIOS	AMI® Aptio V5	AMI® Aptio V5
MEMORY TECHNOLOGY	DDR3L ECC	DDR3L ECC
MAX. CAPACITY	4 GByte	8 GByte
SOCKET	Soldered	Soldered
GRAPHICS CORE	Intel® HD Graphics 500	Intel® HD Graphics 500
MAX. RESOLUTION	4096 x 2160	4096 x 2160
HDMI / DVI / DP / VGA	0 / 0 / 1 / 0	0 / 0 / 1 / 0
CONTROLLER	2x GbE: 2x Intel® I210-IT	1x GbE: Intel® I210-IT, 1x Fast Ethernet
IEEE1588	yes	yes
TEAMING / FAILOVER	yes / yes	yes / yes
STANDARD	Profibus*	on request
RS232 / RS422 / RS485	1 (2*) / 1 / 1	1 / 0 / 0
USB 3.0 / 2.0	2 / 0	2 / 0
AUDIO	-	-
OTHERS	LoRa*	7x Digital I/Os 24 V, 1x Digital Input 24 V
WATCHDOG TIMER	yes	yes
MINI PCIE / PCIE	1 (2*) / 0	2* (1x shared with mSATA) / 0
SIM CARD	yes	yes
2.5" SSD	1*	-
MSATA / M.2 SATA	1* / 0	1 / 1
SDCARD	1	1
ONBOARD FLASH	1	-
MICROSOFT WINDOWS	Win10	Win10
LINUX	Yocto	Yocto
SECURITY	TPM 2.0, Kontron APPROTECT**	TPM 2.0, Kontron APPROTECT**
HYPERVISOR	on request	on request
KEAPI	yes	yes
INPUT VOLTAGE	24 V DC	24 V DC
AC 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
MOUNTING	DIN RAIL, Desktop, Cabinet, Bookmount	DIN RAIL, Desktop, Wallmount, Cabinet
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")
WEIGHT	1 kg (2.20 lbs)	1 kg (2.20 lbs)
COOLING	Fanless	Fanless
OPERATING TEMPERATURE	0 °C to +60 °C (32 °F to 140 °F)	0 °C to +50 °C (32 °F to 122 °F)
RELATIVE HUMIDITY	93 % @ 40 °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
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
IP PROTECTION CLASS	IP 20	IP 20
SAFETY CERTIFICATIONS	UL/CB/CE/FCC	UL/CB/CE/FCC

Intel Atom® E3815/E3827/E3845	Intel® Celeron® J1900	Intel® Pentium® N4200	4th Generation Intel® Core™ i5-4300U
Quad-Core 1.91 GHz	Quad-Core 2.0/2.4 GHz (Burst)	Quad-Core 1.1 / 2.5 GHz (Burst)	Dual-Core 1.9/2.9 GHz (Burst)
Integrated	Integrated	Integrated	Integrated
Phoenix SecureCore™	AMI® Aptio V5	AMI® Aptio V5	AMI® Aptio V5
DDR3L ECC	DDR3L	DDR3L	DDR3L
4 GByte	8 GByte	16 GByte	8 GByte
Soldered	1x SODIMM	2x SODIMM	1x SODIMM
Intel® HD Graphics	Intel® HD Graphics	Intel®HD Graphics 505	Intel® HD Graphics
Full HD (1920 x 1080)	max. 2560 x 1600	4096 x 2160	max. 3200 x 2000
0 / 0 / 1 / 1	1 / 0 / 0 / 1	1 / 0 / 1 / 0	0 / 0 / 2 / 0
2x GbE: 2x Intel® I210-IT	2x GbE: 2x Intel® I210-IT	2x GbE: 2x Intel® I210-AT	3x GbE: 2x Intel® I210-AT, 1x I218-LM
yes	yes	yes	yes
yes / yes	yes / yes	yes / yes	yes / yes
Profibus*	on request	on request	on request
1 (2*) / 2* / 2*	2 (4*) / 2 / 2	2 (4*) / 2 / 2	2 (4*) / 2 / 2
1 / 2	1 / 2	4 / 0	4 / 0
-	option	option	option
Digital IO 4x In / 4x Out TTL	-	-	-
yes	yes	yes	yes
2 / 0	1 / 0	1 / 0	1 / 0
yes	yes	yes	yes
1	1	1	1
1 / 0	1 / 0	0 / 1	1 / 0
-	-	1	1
1*	-	-	-
WES7, Win7, Win8.1, Win10	Win7, Win8.1, Win10	Win10	Win7, Win8.1, Win10
Yocto	Ubuntu	Ubuntu	Yocto
Kontron APPROTECT** on request	Kontron APPROTECT** on request	Kontron APPROTECT** on request	Kontron APPROTECT** on request
-	-	-	-
yes	on request	yes	-
24 V DC	24 V DC (9...30 V DC)	24 V DC (9...30 V DC)	24 V DC (9...30 V DC)
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
DIN RAIL, Desktop, Cabinet, VESA	DIN RAIL	DIN RAIL	DIN RAIL
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")
2.5 kg (5.51 lbs)	1.3 kg (2.9 lbs)	1.3 kg (2.9 lbs)	1.3 kg (2.9 lbs)
Fanless	Fanless	Fanless	Fanless
-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)
95 % @ 40 °C (non-condensing)	10% - 90 % @ 39 °C (non-condensing)	10% - 90 % @ 39 °C (non-condensing)	10% - 90 % @ 39 °C (non-condensing)
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
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
IP 20	IP 40	IP 40	IP 40
UL/CB/CE/FCC	UL/CB/CE/FCC	UL/CB/CE/FCC	CE

6th Generation Intel® Core™ i5-6300U	7th Generation Intel® Core™ i5-7300U	7th Generation Intel® Core™ i3-7101E / i5-7500 / i7-7700	6th Generation Intel® Celeron® G3902E, Core™ i3-6102E / i5-6442EQ / i7-6820EQ, XEON® E3-1515M
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)	Quad-Core 2.8 GHz / 3.7 GHz (Burst)
Integrated	Integrated	Intel® Q170	Intel® CM236 or QM170 (Intel® Core™ i5 & Core™ i7)
AMI® Aptio V5	AMI® Aptio V5	AMI® Aptio 5.x	AMI® Aptio V5
DDR4	DDR4	DDR4	DDR4 non ECC/ECC
16 GByte	16 GByte	32 GByte	32 GByte
2x SODIMM	2x SODIMM	2x SODIMM	2x SODIMM
Intel® HD Graphics 520	Intel®HD Graphics 620	Intel® HD Graphics 630, DX12	Intel® Xeone®: Intel® Iris™ Pro Graphics P580, Intel® Core™: Intel® HD Graphics 530, Celeron®: Intel® HD Graphics 510
4096 x 2160	4096 x 2160	4096 x 2304	4096 x 2304
1 / 0 / 1 / 0	1 / 0 / 1 / 0	0 / 1 / 2 / 0	0 / 0 / 1 (2*) / 0
2x GbE: 2x Intel® I210-AT	2x GbE: 2x Intel® I210-AT	2x GbE: 1x Intel® I210-AT, 1x I219-LM	3x GbE: 2x Intel® I210-IT, 1x I219-LM
yes	yes	yes	yes
yes / yes	yes / yes	yes / yes	yes / yes
on request	on request	on request	CAN, Profibus or Profinet*
2 (4*) / 2 / 2	2 (4*) / 2 / 2	1 / 0 / 0	1 (2*) / 1* / 0
4 / 0	4 / 0	4 / 0	2 / 2
option	option	1x Line in, 1x Line out	-
-	-	PS2 for keyboard/mouse	Kontron Widelink for remote visualization applications 4x GPIO LEDs, 2x Buttons: Power / Reset & Rescue
yes	yes	yes	yes
1 / 0	1 / 0	1 / 0	2 / 4
yes	yes	yes	2 / 2
1	1	1	-
0 / 1	0 / 1	1 / 1	2
1	1	1	2 / 0
-	-	-	1
-	-	-	-
Win7, Win10	Win10	Win10	Win7, WES7, Win8.1 Industry, Win10
Kontron APPROTECT** on request	Kontron APPROTECT** on request	Kontron APPROTECT** on request	Yocto
-	-	-	TPM 2.0, Kontron APPROTECT**
yes	yes	yes	on request
24 V DC (9...30 V DC)	24 V DC (9...30 V DC)	12 V DC (external AC/DC adapter provided)	yes
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	24V DC (+ 20 % / - 15 %)
DIN RAIL	DIN RAIL	Desktop, Wall Mount, VESA	External AC/DC adapter optional 90 to 264 V AC, 150 W
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" x 7.48")	External AC/DC adapter optional 90 to 264 V AC, 150 W
1.3 kg (2.9 lbs)	1.3 kg (2.9 lbs)	2 kg (4.4 lbs)	Control cabinet key holes, book size format
Fanless	Fanless	With fan	195 x 290 x 210 mm (7.68" x 11.42" x 8.27")
0 °C to +50 °C (32 °F to 122 °F)	0 °C to +50 °C (32 °F to 122 °F)	0 °C to +45 °C (32 °F to 113 °F)	155 x 290 x 210 mm (6.1" x 11.42" x 8.27")
10% - 90 % @ 39 °C (non-condensing)	10% - 90 % @ 39 °C (non-condensing)	93 % @ 40 °C (non-condensing)	130 x 290 x 210 mm (5.12" x 11.42" x 8.27")
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: 10-150 Hz, 1 G	117 x 290 x 210 mm (4.61" x 11.42" x 8.27")
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	approx. 6 kg (13.22 lbs)
IP 40	IP 40	IP 20	4.75 kg (10.47 lbs)
UL/CB/CE/FCC	UL/CB/CE/FCC	CE/CB/NRTL	approx. 4.6 kg (10.14 lbs)

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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)	Quad-Core 2.8 GHz / 3.7 GHz (Burst)
Integrated	Integrated	Intel® Q170	Intel® CM236 or QM170 (Intel® Core™ i5 & Core™ i7)
AMI® Aptio V5	AMI® Aptio V5	AMI® Aptio 5.x	AMI® Aptio V5
DDR4	DDR4	DDR4	DDR4 non ECC/ECC
16 GByte	16 GByte	32 GByte	32 GByte
2x SODIMM	2x SODIMM	2x SODIMM	2x SODIMM
Intel® HD Graphics 520	Intel®HD Graphics 620	Intel® HD Graphics 630, DX12	Intel® Xeone®: Intel® Iris™ Pro Graphics P580, Intel® Core™: Intel® HD Graphics 530, Celeron®: Intel® HD Graphics 510
4096 x 2160	4096 x 2160	4096 x 2304	4096 x 2304
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yes	yes	yes	yes
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on request	on request	on request	CAN, Profibus or Profinet*
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-	-	PS2 for keyboard/mouse	Kontron Widelink for remote visualization applications 4x GPIO LEDs, 2x Buttons: Power / Reset & Rescue
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1	1	1	-
0 / 1	0 / 1	1 / 1	2
1	1	1	2 / 0
-	-	-	1
-	-	-	-
Win7, Win10	Win10	Win10	Win7, WES7, Win8.1 Industry, Win10
Kontron APPROTECT** on request	Kontron APPROTECT** on request	Kontron APPROTECT** on request	Yocto
-	-	-	TPM 2.0, Kontron APPROTECT**
yes	yes	yes	on request
24 V DC (9...30 V DC)	24 V DC (9...30 V DC)	12 V DC (external AC/DC adapter provided)	yes
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IP 40	IP 40	IP 20	approx. 4.6 kg (10.14 lbs)
UL/CB/CE/FCC	UL/CB/CE/FCC	CE/CB/NRTL	3.8 kg (8.38 lbs)

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AMI® Aptio V5	AMI® Aptio V5	AMI® Aptio 5.x	AMI® Aptio V5
DDR4	DDR4	DDR4	DDR4 non ECC/ECC
16 GByte	16 GByte	32 GByte	32 GByte
2x SODIMM	2x SODIMM	2x SODIMM	2x SODIMM
Intel® HD Graphics 520	Intel®HD Graphics 620	Intel® HD Graphics 630, DX12	Intel® Xeone®: Intel® Iris™ Pro Graphics P580, Intel® Core™: Intel® HD Graphics 530, Celeron®: Intel® HD Graphics 510