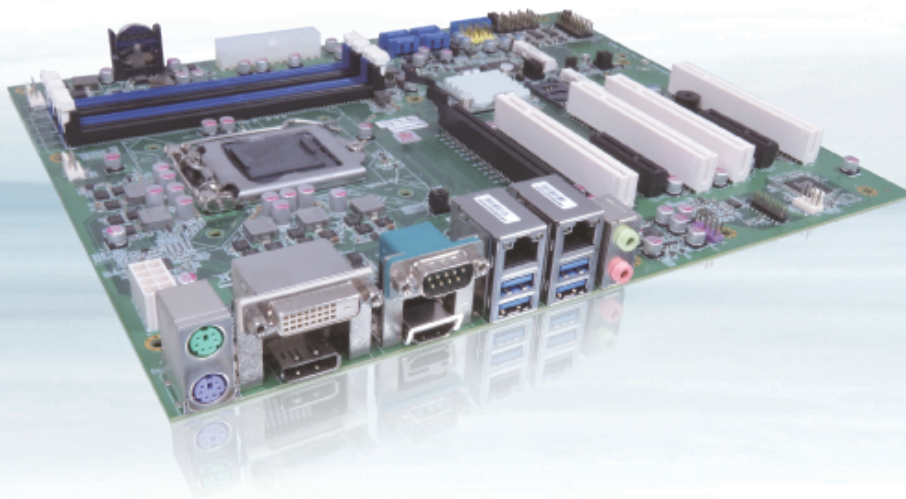


# ATX-KBL-S

## RICH EXPANSION SLOTS

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### ATX INDUSTRIAL MOTHERBOARD WITH 7TH GEN INTEL® CORE™ / CELERON® S-SERIES PROCESSORS

- ▶ 1x HDMI, 1x DP, 1x DVI-D, 1x VGA for display output
- ▶ 2x GbE LAN for Ethernet
- ▶ 6x USB 3.0, 6x USB 2.0, 2x RS232/422/485, 4x RS232, 16-bit DIO
- ▶ 4x SATA 3.0, up to 2x mSATA for storage
- ▶ Up to 2x mPCIe, 4x PCI, 1x PCIe x16, 2x PCIe x4 for expansion

POSSIBILITIES START HERE



# ATX-KBL-S

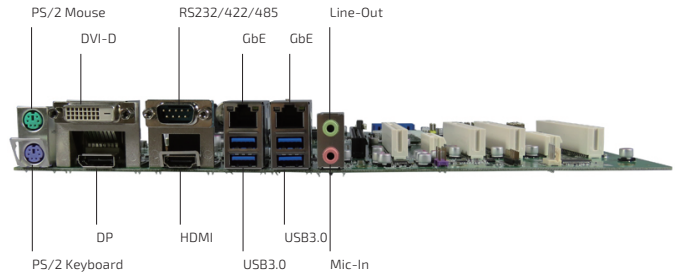
## ATX INDUSTRIAL MOTHERBOARD WITH 7TH GEN INTEL® CORE™ / CELERON® S-SERIES PROCESSORS

ATX-KBL-S is an ATX (Advanced Technology eXtended) form factor industrial-grade motherboard equipped with powerful 7th Generation Intel® Core™ / Celeron® S-Series Processors. It delivers greatly improved graphics performance, power efficiency and wireless connectivity in comparison with the models powered by the previous generation processors.

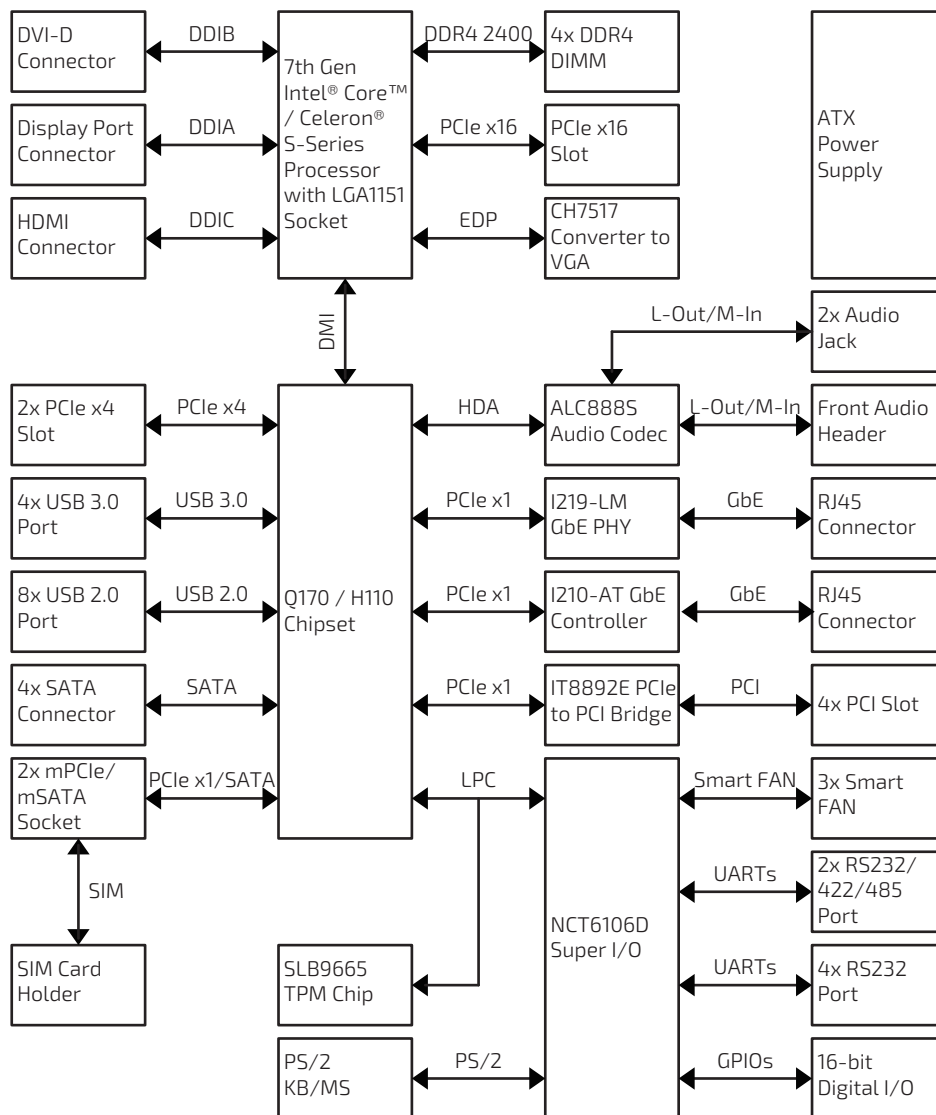
In addition to 1x HDMI, 1x DP, 1x DVI-D, 1x VGA, 6x USB 3.0, 6x USB 2.0, 2x RS232/422/485, 4x RS232, 16-bit DIO and 2x GbE LAN for display support, peripheral applications and wired networking, it features a great number of expansion slots / sockets for wireless functionality, storage expansion and industrial legacy device connection, including PCI, PCIe x16, PCIe x4, mPCIe / mSATA, and SATA slots / sockets.

### PRODUCT HIGHLIGHTS

- ▶ 7th Gen Intel® Core™ / Celeron® S-Series CPU (FCLGA1151 Socket)
- ▶ Intel® Q170 Express Chipset
- ▶ 4x DDR4 UDIMM memory socket
- ▶ 1x HDMI, 1x DP, 1x DVI-D, 1x VGA for display support
- ▶ 2x GbE LAN for Ethernet
- ▶ 6x USB 3.0, 6x USB 2.0 for USB device connection
- ▶ 2x RS232/422/485, 4x RS232 for serial device connection
- ▶ 16-bit DIO for device / signal control
- ▶ 4x SATA 3.0, up to 2x mSATA for storage
- ▶ RAID support
- ▶ Up to 2x mPCIe, 4x PCI, 1x PCIe x16, 2x PCIe x4 for expansion



### BLOCK DIAGRAM



► TECHNICAL INFORMATION

<b>SYSTEM</b>	<b>PROCESSOR CHIPSET MEMORY</b>	7th Gen Intel® Core™ / Celeron® S-Series Processors (FCLGA1151 Socket) Intel® Q170 4x DDR4 2133 / 2400 UDIMM up to 64 GByte (Core™) 4x DDR4 2133 UDIMM up to 64 GByte (Celeron®)
<b>VIDEO</b>	<b>GRAPHICS  DISPLAY INTERFACE  MULTIPLE DISPLAY</b>	Intel® HD Graphics 630 (Core™) Intel® HD Graphics 610 (Celeron®) 1x DP (on rear, 4096 x 2304 @ 60 Hz) 1x HDMI (on rear, 2560 x 1600 @ 60 Hz / 4096 x 2160 @ 24 Hz) 1x DVI-D (on rear, 1920 x 1200 @ 60 Hz) 1x VGA (by header, 1920 x 1200 @ 60 Hz) Triple
<b>AUDIO</b>	<b>AUDIO CODEC AUDIO INTERFACE</b>	Realtek ALC888S 2x Line-out (1x on rear, 1x by header) 2x Mic-in (1x on rear, 1x by header)
<b>NETWORK CONNECTION</b>	<b>ETHERNET</b>	2x GbE LAN (RJ45 on rear, 1x Intel® I219-LM, 1x Intel® I210-AT)
<b>PERIPHERAL CONNECTION</b>	<b>USB  SERIAL PORT  OTHER I/Os</b>	6x USB 3.0 (4x Type A on rear, 2x by header) 6x USB 2.0 (by header) 2x RS232/422/485 (1x DB9 on rear, 1x by header, w/ power selection) 4x RS232 (by header, 2x w/ power selection) 1x PS/2 Keyboard (Mini-DIN on rear) 1x PS/2 Mouse (Mini-DIN on rear) 1x 16-bit DIO (by header)
<b>STORAGE &amp; EXPANSION</b>	<b>SATA mSATA / mPCIe PCI PCIe  SIM CARD HOLDER</b>	4x SATA 3.0 (RAID support) 2x mSATA / mPCIe (1x full size, 1x half size) 4x PCI (32-bit/33 MHz) 2x PCIe x4 1x PCIe x16 1x SIM Card Cage (Mini type)
<b>POWER</b>	<b>CONNECTOR &amp; INPUT VOLTAGE</b>	2x12-pin ATX connector (DC +5 V / -5 V / +12 V / -12 V / +3.3 V / 5 VSB) 2x4-pin ATX connector (DC 12 V)
<b>FIRMWARE</b>	<b>BIOS WATCHDOG H/W MONITOR REAL TIME CLOCK SECURITY iAMT</b>	AMI uEFI BIOS w/ 128 Mb SPI Flash Programmable WDT to generate system reset event Input & Core Voltages, CPU & System Temperatures Chipset integrated RTC TPM 2.0 (Infineon SLB 9665) Depending on CPU
<b>SYSTEM CONTROL &amp; MONITORING</b>	<b>FP HEADER</b>	1x Header for Reset button, HDD LED & External Speaker 1x Header for Power button, Power LED & SM bus
<b>COOLING</b>	<b>FAN</b>	1x Wafer for CPU Smart Fan 1x Wafer for System Smart Fan 1x Wafer for AUX Smart Fan
<b>SOFTWARE</b>	<b>OS SUPPORT</b>	Windows 10, Linux
<b>MECHANICAL</b>	<b>DIMENSIONS (L x W)</b>	ATX (304.8 mm x 244 mm / 12" x 9.6")
<b>ENVIRONMENTAL</b>	<b>OPERATING TEMPERATURE STORAGE TEMPERATURE HUMIDITY</b>	0 °C ~ 60 °C / 32 °F ~ 140 °F -20 °C ~ 80 °C / -4 °F ~ 176 °F 0 % ~ 95 %
<b>CERTIFICATION</b>	<b>EMC &amp; SAFETY</b>	CE Class A, FCC Class A

## ▶ ORDERING INFORMATION

ARTICLE	DESCRIPTION
ATX-KBL-S-Q170	Intel® Q170 Chipset, 4x DDR4 UDIMM, 6x USB 3.0, 6x USB 2.0, 2x mPCIe / mSATA, 2x PCIe x4 (x4 / x2 / x1 signal), w/ TPM, w/ RAID, Operating temperature: 0 °C ~ 60 °C

### ACCESSORIES

ARTICLE	PART NO.	DESCRIPTION
I/O SHIELD	0F0000000000280L	SUS304 T = 0.2 mm
COM PORT CABLE*	0C5020000003660L	DP-2.54-10P 2*5P Pitch: 2.54 mm, L = 300 mm
USB 3.0 CABLE*	0C5020000004280L	Internal DP 2.0 20 pin 2x10P to Type A, L = 450 mm
USB 2.0 CABLE (2 PORT)*	0C5040000000110L	2.54 mm 2x5P to 2x USB connectors, L = 34 cm
SATA CABLE*	0C5020000004240L	With Lock, SATA 1x7P Pitch: 1.27 mm, L = 460 mm
VGA CABLE*	0C5020000002870L	WL2004H-2x8P 2x8P 2.0 pitch to D-SUB 15P, L = 300 mm

(\* : Optional)

## ▶ PRODUCT CONTACT POINT

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