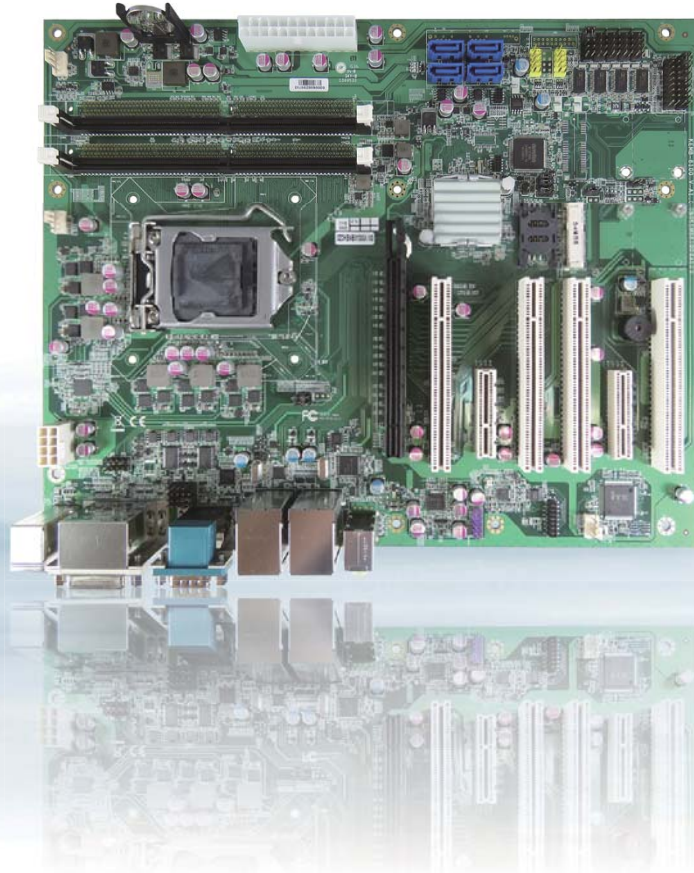


ATX-KBL-S

DESIGNED FOR GRAPHICS-INTENSIVE APPLICATIONS



ATX INDUSTRIAL MOTHERBOARD WITH INTEL® KABY LAKE S-SERIES PROCESSORS

- ▶ 1x HDMI, 1x DP, 1x DVI-D, 1x VGA for display output
- ▶ 2x GbE LAN for Ethernet
- ▶ Up to 6x USB 3.0, up to 6x USB 2.0, 2x RS232/422/485, 4x RS232, 1x 16-bit DIO
- ▶ 4x SATA, up to 2x mSATA for storage
- ▶ Up to 2x mPCIe, 4x PCI, 1x PCIe x16, 2x PCIe x1 or 2x PCIe x4 / PCIe x2 / PCIe x1 for expansion

POSSIBILITIES START HERE



ATX-KBL-S

ATX INDUSTRIAL MOTHERBOARD WITH INTEL® KABY LAKE S-SERIES PROCESSORS

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

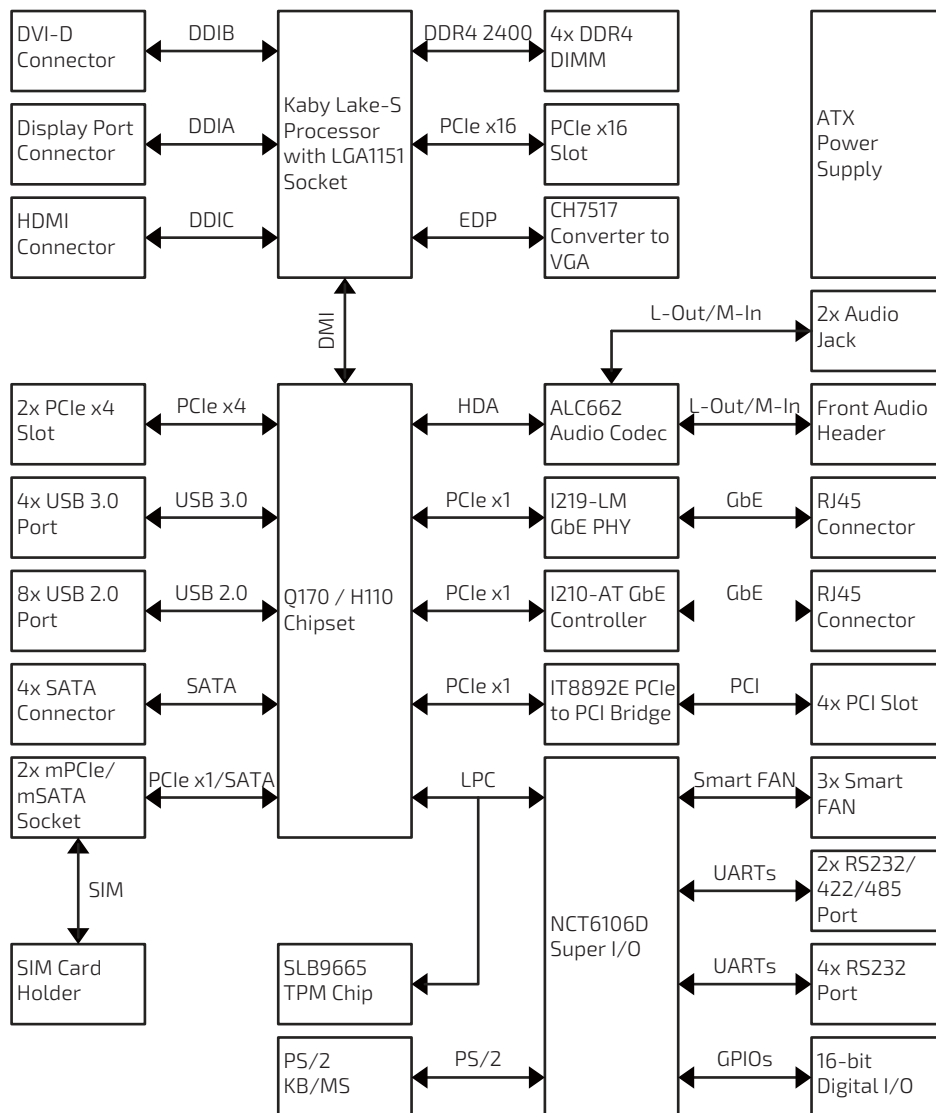
In addition to 1x HDMI, 1x DP, 1x DVI-D, 1x VGA, up to 6x USB 3.0, up to 6x USB 2.0, 2x RS232/422/485, 4x RS232, 16-bit DIO and 2x GbE LAN for display support, peripheral applications and wired networking, it features a great number of expansion slots / sockets for wireless functionality, storage expansion and industrial legacy device connection, including PCI, PCIe x16, PCIe x4 / PCIe x2 / PCIe x1, mPCIe, SATA, mSATA slots / sockets.

PRODUCT HIGHLIGHTS

- ▶ Intel® Kaby Lake S-Series Processor (FCLGA1151 Socket)
- ▶ Intel® H110 / Q170 Express Chipset
- ▶ 2x DDR4 UDIMM memory socket
- ▶ 1x HDMI, 1x DP, 1x DVI-D, 1x VGA for triple display support
- ▶ 2x GbE LAN for Ethernet
- ▶ Up to 6x USB 3.0, up to 6x USB 2.0, 6x COM, 1x 16-bit DIO
- ▶ 4x SATA, up to 2x mSATA for storage
- ▶ RAID support (models with Q170 chipset only)
- ▶ Up to 2x mPCIe, 4x PCI, 1x PCIe x16, 2x PCIe x1 or 2x PCIe x4 / x3 / x1



BLOCK DIAGRAM



TECHNICAL INFORMATION

System	Processor Chipset Memory	Intel® Kaby Lake S-Series Processors (FCLGA1151 Socket) Intel® H110 Intel® Q170 4x DDR4 2133 / 2400 UDIMM up to 64 GByte
Video	Graphics Display Interface Multiple Display	Intel® HD Graphics 630 / 610 1x HDMI (on rear, 2560 x 1600 @ 60 Hz / 4096 x 2160 @ 24 Hz) 1x DP (on rear, 4096 x 2304 @ 60 Hz) 1x DVI-D (on rear, 1920 x 1200 @ 60 Hz) 1x VGA (by header, 1920 x 1200 @ 60 Hz) Triple
Audio	Audio Codec Audio Interface	Realtek ALC662 2x Line-out (1x on rear, 1x by header) 2x Mic-in (1x on rear, 1x by header)
Network Connection	Ethernet	2x GbE LAN (RJ45 on rear, 1x Intel® I219-LM, 1x Intel® I210-AT)
Peripheral Connection	USB Serial Port Other I/Os	4x USB 3.0 (Type A on rear, for model w/ H110) 6x USB 3.0 (4x Type A on rear, 2x by header, for model w/ Q170) 4x USB 2.0 (by header, for model w/ H110) 6x USB 2.0 (by header, for model w/ Q170) 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)
Storage & Expansion		4x SATA (RAID support for model w/ Q170) 2x mSATA / mPCIe (1x full size, 1x half size, for model w/ Q170) 1x mPCIe (full size, for model w/ H110) 4x PCI (32-bit/33 MHz) 2x PCIe x1 (for model w/ H110) 2x PCIe x4 / PCIe x2 / PCIe x1 (for model w/ Q170) 1x PCIe x16 1x SIM Card Cage
Power	Connector & Input Voltage	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)
Firmware	BIOS Watchdog H/W Monitor Real Time Clock TPM iAMT	AMI uEFI BIOS w/ 128 Mb SPI Flash Programmable WDT to generate system reset event Input & Core Voltages, CPU & System Temperatures Chipset integrated RTC Supported for model w/ Q170 (Infineon SLB 9665 TPM 2.0) Depending on CPU
System Control & Monitoring	FP Header	1x Header for Reset button, HDD LED & External Speaker 1x Header for Power button, Power LED & SM bus
Cooling	FAN	1x Wafer for CPU Smart Fan 1x Wafer for System Smart Fan 1x Wafer for AUX Smart Fan
Software	OS Support	Windows 7, Windows 8, Windows 10, Linux
Mechanical	Dimension (L x W)	ATX (304.8 mm x 244 mm / 12" x 9.6")
Environmental	Operation Temperature Storage Temperature Humidity	0 °C ~ 60 °C / 32 °F ~ 140 °F -20 °C ~ 80 °C / -4 °F ~ 176 °F 0 % ~ 95 %
Certification	EMC & Safety	CE, FCC Class A

► ORDERING INFORMATION

ARTICLE	DESCRIPTION
ATX-KBL-S-H110	Intel H110 Chipset, 4x USB 3.0, 4x USB 2.0, 1x mPCIe, 2x PCIe x1, w/o TPM, w/o RAID
ATX-KBL-S-Q170	Intel Q170 Chipset, 6x USB 3.0, 6x USB 2.0, 2x mPCIe / mSATA, 2x PCIe x4 / PCIe x2 / PCIe x1, w/ TPM, w/ RAID

OPTIONAL ACCESSORIES - CABLING

COM PORT CABLE	10-pin pitch = 1.25 mm to DB-9 connector, L = 35 cm
DIO CABLE	
USB 2.0 CABLE	2.54 mm 10-pin to 2x USB connectors with bracket, L = 30 cm
USB 3.0 CABLE	Internal DP 2.0 20pin 2x 10P to Type A Female Screw Mount Connector, L = 450 mm
SATA CABLE	7-pin connector with lock, L = 46 cm

► GLOBAL HEADQUARTERS

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