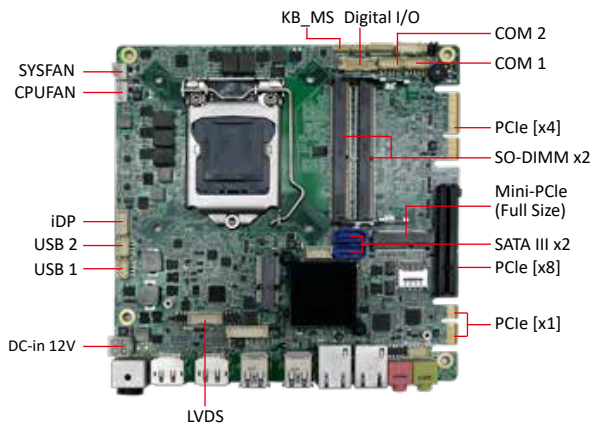


# AMIX-KBL5

Intel® Q170/H110 based Mini-ITX Low profile Motherboard supports Intel® 6th & 7th Gen Core™ i7/i5/i3/ Celeron® Processors with HDMI/DP/iDP/LVDS(eDP), 2 SATA III, 2 COM, 8 USB, Dual Intel® GbE LAN.



## Key Features

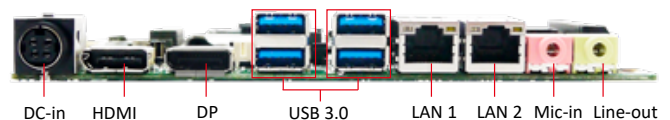
- Intel® 6th/7th Gen Core™ i7/i5/i3/ Celeron® processors with Intel® Q170/H110 chipset
- Two 260-pin SO-DIMM up to 32GB DDR4 2133MHz SDRAM
- Multi-Display: HDMI/DP/iDP/LVDS(eDP)
- Two Intel® Gigabit Ethernet ports
- 1 PCIe (x8), 2 Mini-PCle (1 combo mSATA, 1 w/ micro-SIM) expansion slots
- 2 SATA III, 2 COM, 4 USB 3.0 and 4 USB 2.0
- DC-in 12V
- EuP/ErP 2013 Ready
- Support Intel® AMT v11.0 (w/ Q170) and TPM v1.2/v2.0 (optional)

## Product Specification

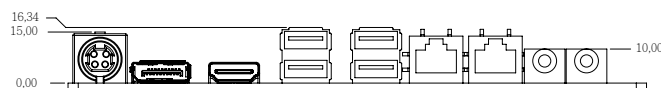
|                          |                                                                                                                                                      |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| System Processor/Chipset |                                                                                                                                                      |
| Processor                | Intel® 6th/7th Gen Core™ i7/i5/i3/ Celeron® processors (LGA1151)                                                                                     |
| Chipset                  | Intel® Q170/H110 PCH                                                                                                                                 |
| BIOS                     | AMI UEFI Flash ROM                                                                                                                                   |
| Memory                   |                                                                                                                                                      |
| Technology               | DDR4 SDRAM up to 2133 MHz                                                                                                                            |
| Max. capacity            | Up to 32GB                                                                                                                                           |
| Socket                   | 2 x 260-Pin SO-DIMM                                                                                                                                  |
| Display                  |                                                                                                                                                      |
| Graphics                 | Intel® HD Gen 9 Graphics                                                                                                                             |
| Display interface        | 1 x HDMI v1.4, 1 x DP v1.2, 1 x iDP<br>1 x LVDS(eDP) (2ch 18/24-bit, co-layout eDP)                                                                  |
| Multi-display            | Up to three independent displays (H110 only support Dual-display)                                                                                    |
| Resolution               | HDMI: 4096 x 2160 @ 24Hz (max)<br>DP/iDP: 4096 x 2304 @ 60Hz (max)<br>LVDS: 1920 x 1200 @ 60Hz (max)<br>eDP: 1920 x 1080 @ 60Hz (max)                |
| Ethernet                 |                                                                                                                                                      |
| Interface                | 10/100/1000 Mbps                                                                                                                                     |
| Controller               | LAN1: Intel® I219 GbE PHY w/ AMT v11.0 (only Q170 w/ Core i7/i5 supports)<br>LAN2: Intel® I210 GbE                                                   |
| Connector                | 2 x RJ45 (rear I/O)                                                                                                                                  |
| Audio                    |                                                                                                                                                      |
| Interface                | Line-out, Mic-in                                                                                                                                     |
| CODEC                    | Realtek ALC662 HD Audio Codec                                                                                                                        |
| Expansion Slot           |                                                                                                                                                      |
| PCI Express              | 1 x PCIe (x1) gold finger<br>1 x PCIe (x4) gold finger<br>1 x PCIe (x8)                                                                              |
| Mini-PCle                | 1 x Half size<br>1 x Full size w/ micro-SIM (combo mSATA)                                                                                            |
| SATA                     |                                                                                                                                                      |
| Max. data transfer rate  | 6.0Gb/s                                                                                                                                              |
| Port                     | 2 x SATA III                                                                                                                                         |
| I/O                      |                                                                                                                                                      |
| Audio                    | Line-out, Mic-in (rear I/O)<br>Line-out, Mic-in (pin-header)                                                                                         |
| USB                      | 4 x USB 3.0 (rear I/O)<br>4 x USB 2.0 (box-header)                                                                                                   |
| COM                      | 1 x RS-232/422/485 (box-header)<br>1 x RS-232 (box-header)                                                                                           |
| HDMI/VGA/DVI/DP/LVDS     | 1 x HDMI v1.4 and 1 x DP v1.2 (rear I/O)<br>1 x iDP (box-header)<br>1 x LVDS (box-header, co-layout eDP, optional)<br>1 x eDP (box-header, optional) |
| PS/2 Port                | 1 x PS/2 Keyboard and Mouse (box-header)                                                                                                             |
| DIO                      | 1 x 16-bit Programmable GPIO (box-header)                                                                                                            |

|                       |                                                                                                                     |
|-----------------------|---------------------------------------------------------------------------------------------------------------------|
| SMBus                 | 1 x SMBus (pin-header)                                                                                              |
| Other                 |                                                                                                                     |
| TPM                   | Infineon TPM v1.2 / TPM v2.0 (optional)                                                                             |
| Power Requirement     |                                                                                                                     |
| Power connector       | 1 x ATX (+12V 2x2-pin)<br>1 x DC-Jack 4-pin                                                                         |
| Power type            | DC-in 12V                                                                                                           |
| Power mode            | AT / ATX (by jumper selection)                                                                                      |
| Watchdog Timer        |                                                                                                                     |
| Interval              | Programmable 1~255 sec/min                                                                                          |
| Output                | System reset                                                                                                        |
| Environment           |                                                                                                                     |
| Operating temperature | 0°C ~ 60°C (32°F ~ 140°F) standard<br>-20°C ~ 70°C (-4°F ~ 158°F) optional<br>-40°C ~ 70°C (-40°F ~ 158°F) optional |
| Storage temperature   | -40°C ~ 80°C (-40°F ~ 176°F)                                                                                        |
| Relative humidity     | 0%~ 95% (non-condensing)                                                                                            |
| Form Factor           |                                                                                                                     |
| Dimensions (L x W)    | Mini-ITX (Low Profile)<br>170mm x 170mm (6.69" x 6.69")                                                             |
| Energy                | EuP/ErP 2013 Ready                                                                                                  |

## Rear I/O



## Dimensions



## Ordering Information

| Part Number          | Description                                                                                              |
|----------------------|----------------------------------------------------------------------------------------------------------|
| AMIX-KBL5-Q170       | Mini-ITX, Intel 7th Gen Q170, HDMI/DP/iDP/LVDS, 2SATA/2COM/8USB/2LAN, DC(12V)/DC-Jack(Lock), Low Profile |
| AMIX-KBL5-H110 (MOQ) | Mini-ITX, Intel 7th Gen H110, HDMI/DP/iDP/LVDS, 2SATA/2COM/8USB/2LAN, DC(12V)/DC-Jack(Lock), Low Profile |

## Optional Accessories

| Part Number  | Description               |
|--------------|---------------------------|
| TBD          | I/O Shield                |
| VK00000700A9 | SATA cable                |
| VK00002600A9 | SATA Power cable          |
| NAAA000200BI | Cooler w/ FAN for LGA115x |

## Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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