# Single Board Computer

***Industrial Motherboard***

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**KINO-AQ170**

***Mini-ITX SBC supports LGA 1151 Intel® Core™ i7/i5/i3, Pentium® or Celeron® CPU with Intel® Q170, HDMI 2.0/HDMI+DP/VGA, Dual Intel® GbE, SATA 6Gb/s, USB 3.1 Gen 1 (5Gb/s), PCIe Mini, HD Audio and RoHS***

Dual-channel DDR4 2133 MHz

Front panel

**HDMI 2.0** Ultra HD (4,096x2,160@60Hz)

SATA 6Gb/s

USB 2.0

4 x RS-232

PCIe x8

2 x RS-232/422/485

|  |  |  |
| --- | --- | --- |
|   | **HDMI 1.4**  | **HDMI 2.0** |
| **Bandwidth** | 10.2Gbps | 18Gbps |
| **4K@30hz** | Yes | Yes |
| **4K@60hz** | No | Yes |
| **Up to 32 Audio Channels** | No | Yes |

iDP

# *Specifications*

CPU

DIO PCIe Mini (mSATA support)

VGA LAN 1 LAN 2

LGA 1151 socket supports Intel® 6th/7th generation Core™ i7/i5/i3, Pentium® or Celeron® processor

Chipset Intel® Q170 BIOS

UEFI BIOS

Memory

Two 260-pin 2133 MHz dual-channel DDR4 SDRAM SO-DIMM support up to 64GB Graphics Engine

Intel® HD Graphics Gen 9 support for DX11/12, OCL 2.x, OGL 4.3/4.4, ES 2.0

Decode/Encode for HEVC, VP8, VP9 2, VDENC Display Output

Triple independent display

1 x HDMI 2.0 (up to 4096x2160@60Hz)

1 x HDMI/DP (up to 3840x2160@60Hz) 1 x VGA (up to 1920x1200)

2 x USB 2.0 HDMI+DP HDMI 2.0



DDR4

2133

# *Features*

ULTRA**HD**

4 x USB 3.1 Gen 1

***USB***

USB 3.1

Audio

Expansion

PCIe Mini

1. x iDP interface for HDMI, LVDS, VGA, DVI, DP (up to 3840x2160@60Hz) Ethernet

KINO-AQ170-2019-V10

LAN1: Intel® I219LM with (Intel® AMT 11.0 support)

LAN2: Intel® I211 PCIe controller with NCSI support External I/O Interface

1. x USB 2.0

4 x USB 3.1 Gen 1 (5Gb/s) Internal I/O Interface

2 x RS-232/422/485 (2x5 pin, P=2.0)

4 x RS-232 (2x5 pin, P=2.0)

4 x SATA 6Gb/s (RAID 0/1/5/10 supported) 4 x USB 2.0 (2x4 pin, P=2.0)

Audio

Realtek ALC662 HD Audio codec

2 x Audio jacks (line-out, mic-in) on rear IO 1 x Front audio (2x5-pin)

Front Panel

1 x Front panel (1x10 pin, power LED, HDD LED, power button, reset button) LAN LED: 2 x LAN LED (1x2 pin)

SMBus: 1 x SMBus (1x4 pin) I²C: 1 x I²C (1x4 pin)

Digital I/O: 8-bit digital I/O (2x5 pin) Expansion

1 x PCIe x8 slot

1 x Full-size PCIe Mini card slot (support mSATA)

Chassis Intrusion Detection: 1 x Chassis intrusion connector (1x2 pin) Watchdog Timer

Software programmable supports 1~255 sec. system reset by super I/O

Power Supply ATX power supply Fan Connector

1 x CPU smart fan (1x4 pin)

1 x System smart fan (1x4 pin) Power Consumption

3.3V@0.62A, 5V@3.3A, 12V@7.51A, 5VSB@0.23A

(Intel® Core™ i7 6700K 4.0GHz CPU with 16 GB (two 8 GB) 2133 MHz DDR4 memory) Operating Temperature: -20°C ~ 60°C

Operating Humidity: 5% ~ 95%, non-condensing Dimensions: 170mm x 170mm

Weight: GW: 900g / NW: 450g CE/FCC compliant

* LGA 1151 Intel® 6th/7th generation Core™ i7/i5/i3, Pentium® or Celeron® processor

and DDR4 2133MHz memory support

* Support HDMI 2.0 (4096x2160@60Hz)
* Dual Intel® GbE support Intel® AMT 11.0
* Triple display via HDMI 2.0/HDMI/DP 1.2/VGA/iDP
* High speed I/O interface for USB 3.1 Gen 1 (5Gb/s), SATA 6Gb/s and mSATA support
* Support IEI jumpless

# *Packing List*

|  |  |
| --- | --- |
| 1 x KINO-AQ170 single board computer | 2 x SATA cable |
| 1 x I/O shielding | 1 x QIG |

***Ordering Information***

|  |  |
| --- | --- |
| Part No. | Description |
| KINO-AQ170-R10 | Mini-ITX SBC supports 6th generation Intel® Core™ i7/i5/i3, Pentium® and Celeron® processor, HDMI 2.0/HDMI/DP/VGA, SATA 6Gb/s, dual Intel® GbE, USB 3.1 Gen 1 (5Gb/s), PCIe Mini, HD Audio and RoHS |
| 32001-008600-200-RS | Dual-port USB cable, 210mm, P=2.0 |
| 32205-002700-200-RS | RS-232/422/485 cable, 230mm, P=2.0 |
| CF-1156C-R20 | LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W |
| CF-1156D-R20 | LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W |
| CF-115XE-R10 | High performance LGA1155/LGA1156 cooler kit, 95W |
| DP-DP-R10 | DisplayPort to DP converter board (for IEI connector) |
| DP-DVI-R10 | DisplayPort to DVI-D converter board (for IEI connector) |
| DP-HDMI-R10 | DisplayPort to HDMI converter board (for IEI connector) |
| DP-LVDS-R10 | DisplayPort to 24-bit dual-channel LVDS converter board (for IEI connector) |
| DP-VGA-R10 | DisplayPort to VGA converter board (for IEI connector) |