

## Features

- Intel Skylake/Kaby Lake Core i3/i5/i7 LGA1151 processor
- Intel H110/Q170 Chipset
- Intel vPro technology support (Q170)
- 2 x DDR4 SO-DIMM, up to 32GB
- Support triple displays for HDMI, Displayport, and LVDS/eDP
- Support PCIe x4 (Gen. 3) slot and Mini PCIe slot
- 4 x SATA III support RAID 0, 1, 5, 10
- 2 x Intel Gigabit Ethernet
- 6 x USB2.0, 4 x USB3.0, 4 x COM, 1 x GPIO
- DC-in 12/19V power input



### Core System

|                       |   |
|-----------------------|---|
| CPU                   | Intel 6th/7th Skylake/Kaby Lake LGA1151 Socket Processor<br>TDP Max. 65W                              |
| System Memory         | 2 x 260-pin DDR4 1866/2133MHz SO-DIMM, up to 32GB (Non-ECC)   |
| Chipset               | Intel H110/Q170 (Support RAID 0/1/5/10)   |
| BIOS                  | AMI   |
| Storage               | 4 x SATAIII (Q170)  |
| Watchdog Timer        | 1 - 255 steps by software program   |
| Expansion Slot        | Mini PCIe Half size (PCIe/USB)<br>Mini PCIe Full / Half size (PCIe/USB/SATA)<br>PCIe x4 (Gen. 3) slot |
| Power Input           | DC-in 19V / ATX 2-pin 19V<br>DC-in 12V / ATX 4-pin 12V  |
| Smart Fan Control     | CPU Fan / System Fan  |
| Dimensions            | 170 x 170 mm  |
| Operating Temperature | 0°C to +60°C (+32°F to +140°F)  |
| Storage Temperature   | -20°C to +70°C (-4°F to +158°F)   |
| Humidity              | 10% to 95% relative humidity, non-condensing  |

### Rear I/O

|             |  |
|-------------|--|
| USB         | 4 x USB 3.0  |
| Display I/O | 1 x HDMI 1.4<br>1 x Display Port 1.2                       |
| Audio I/O   | 1 x Mic-in / 1 x Line-out                                  |
| LAN I/O     | 2 x RJ-45, Intel I219-LM Giga LAN + Intel I210-AT Giga LAN |
| Serial Port | -  |
| PS/2 Port   | -  |
| Others      | 1 x DC Jack  |

### Internal Connectors

|               |  |
|---------------|--|
| USB           | 6 x USB 2.0  |
| Display I/O   | 1 x Backlight Connector<br>1 x LVDS                          |
| Audio I/O     | 1 x Line-out   |
| Serial Port   | 4 x RS-232   |
| Parallel Port | 1 x Parallel Port Header                                     |
| GPIO          | 1 x GPIO Header (Programmable support 10-bit GPIO)           |
| FAN           | 1 x 4-pin CPU Fan Header / 1 x 4-pin System Fan Header       |
| Power         | 1 x ATX Power Connector/ 1 x AT/ATX Mode Select Jumper       |
| Others        | 1 x COMS Jumper / 1 x Front Audio Header (Mic-in & Line-out) |

### Graphics

|              |                               |
|--------------|-------------------------------|
| Chipset      | Intel HD Graphics             |
| VGA          | -                             |
| DVI          | -                             |
| HDMI         | Up to 4K (3840 x 2160) @ 30Hz |
| Display Port | Up to 4K (4096 x 2304) @ 60Hz |
| LVDS         | Up to 1920 x 1200 @ 60Hz      |
| eDP (Option) | Up to 4K (4096 x 2304) @ 60Hz |

### Others

|                |                              |
|----------------|------------------------------|
| OS Support     | Windows 10, Windows 7, Linux |
| Certifications | CE / FCC Class B             |

### Ordering Information

|             |  |
|-------------|--|
| MF-H110     | H110 Chipset, 1 x DP, 1 x HDMI, 1 x LVDS, 4 x USB3.0, 4 x USB2.0<br>3 x SATAIII, 2 x RS-232, DC-in 19V |
| MF-Q170-19V | Q170 Chipset, 1 x DP, 1 x HDMI, 1 x LVDS, 4 x USB3.0, 6 x USB2.0<br>4 x SATAIII, 2 x RS-232, DC-in 19V |
| MF-Q170-12V | Q170 Chipset, 1 x DP, 1 x HDMI, 1 x LVDS, 4 x USB3.0, 6 x USB2.0<br>4 x SATAIII, 4 x RS-232, DC-in 12V |