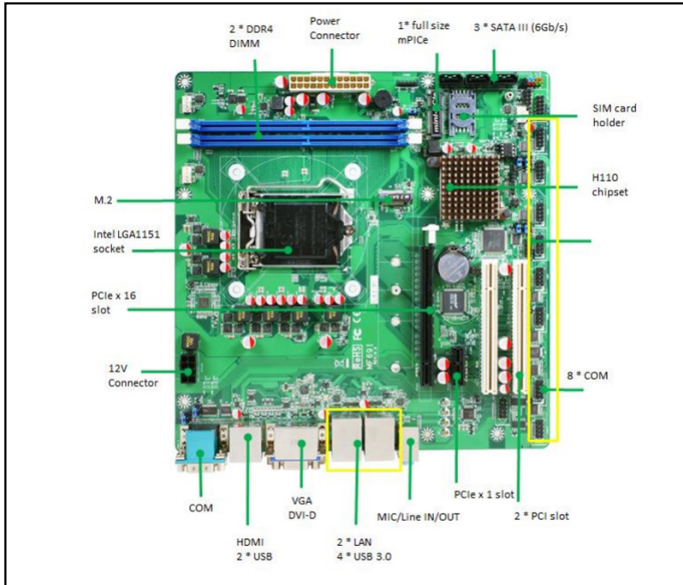


# NMF691-H110



Micro-ATX

MicroATX Motherboard with Intel® LGA1151 6/7th Gen Socket Processor, with H110 Chipset



## Features

- **Power by Intel® LGA1151 6/7th Gen Socket Processor (Formerly Sky Lake/Kaby Lake, TDP 65W)**
- **Versatile Display Outputs: 1 x DVI-D, 1 x HDMI, 1 x VGA**
- **Storage: 3 x SATA III, 1 x mSATA, 1 x M.2 (M Key, 2242/2260/2280/22110)**
- **Additional Expansion: 1 x PCIe x16, 1 x PCIe x1, 2 x PCI, 1 x MiniPCIe and 1 x SIM Slot**
- **Comprehensive I/O: 10 COM ports, 1 GPIO 5 USB 2.0, and 4 USB3.2**
- **Power: ATX input support**
- **Security: Optional TPM Support**

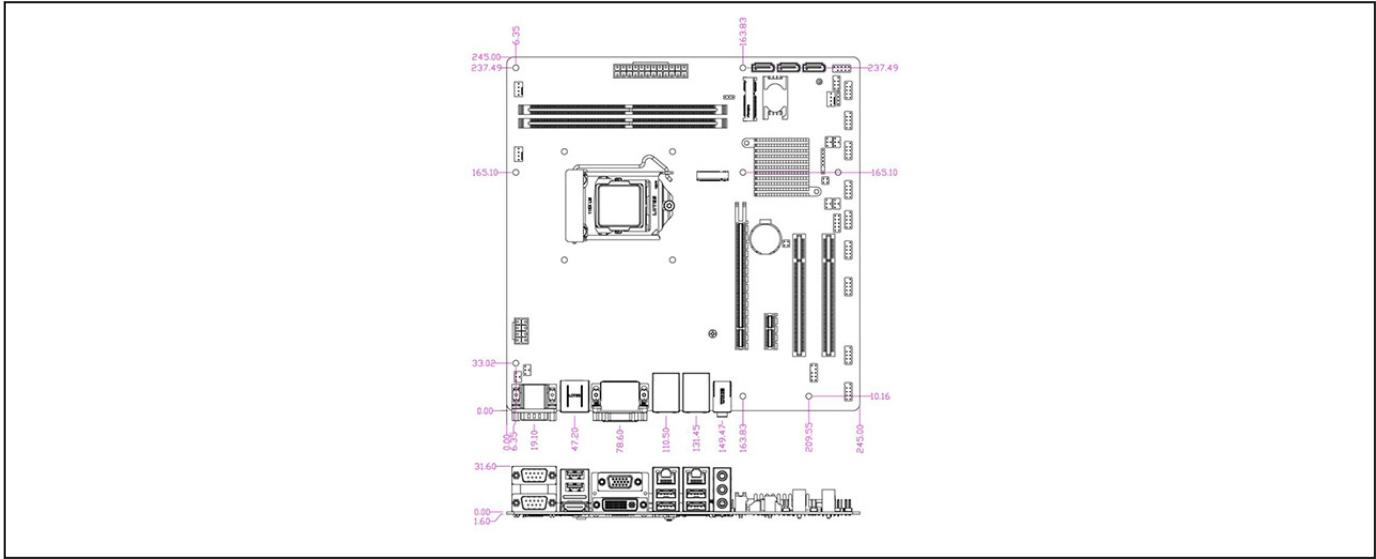
## Packing List

| PART NUMBER        | DESCRIPTION            | QTY |
|--------------------|------------------------|-----|
| NMF691-H110 Series | NMF691-H110 Series M/B | 1   |
| G01-SATA3-BL-1F    | SATA Cable             | 2   |
| G01-COM9X3-30A-2F  | COM Cable              | 2   |
| F04-MB-007-1F      | I/O Shield             | 1   |
| G01-COM9-30A-1F    | COM Cable              | 2   |

## Specifications

| SYSTEM                      |  |
|-----------------------------|--|
| MB FORM FACTOR              | Micro-ATX  |
| CPU                         | Intel® LGA1151 6th/7th Gen Socket Processor (Formerly Skylake/Kaby Lake, TDP 65W)  |
| CHIPSET                     | Intel® H110  |
| MEMORY                      | 2 x DDR4 2133MHz, Dual Channel SO-DIMM, up to 32GB   |
| BIOS                        | AMI 64Mb Flash ROM   |
| WATCHDOG TIMER              | 255 Levels   |
| SECURITY                    | TPM (Optional)   |
| DIMENSION (W X D)           | 244.0 (W) x 244.0(D) mm (9.6" x 9.6")  |
| OS SUPPORT                  | Windows® 10 (64bit)<br>Windows® 8 / 8.1 (64bit)<br>Windows® 8 / 8.1 (32bit)<br>Windows® 7 (64bit)<br>Windows® 7 (32bit)<br>Linux |
| POWER                       |  |
| POWER REQUIREMENT           | ATX Power Supply   |
| POWER ON MODE               | AT / ATX   |
| CONNECTOR                   | 24+8-pin ATX PWR   |
| DISPLAY                     |  |
| GPU                         | Intel® Gen9 Graphics supports DX 11/12, OGL4.3 / 4.4   |
| MIPI-DSI                    | 1 x DVI-D (Max. Resolution: 1920 x 1200@60Hz)  |
| HDMI                        | 1 x HDMI 2.0 (Max Resolution: 4096 x 2160@24Hz)  |
| VGA                         | 1 x VGA (Max Resolution: 1920 x 1080 @60Hz)  |
| MULTIPLE DISPLAY            | Support 2 Displays   |
| AUDIO                       |  |
| CODEC                       | Realtek Audio Codec  |
| Line-in                     | 1 x Audio Jack for Line-In   |
| Line-out                    | 1 x Audio Jack for Line-Out  |
| MIC-in                      | 1 x Audio Jack for MIC-In  |
| LAN                         |  |
| ETHERNET                    | 2 x RJ45 for Realtek® RTL8111G GbE   |
| USB PORT                    |  |
| USB                         | 4 x USB 3.0<br>2 x USB 2.0<br>Internal Header for 3 x USB 2.0  |
| SERIAL PORT                 |  |
| COM                         | 1 x DB-9 for RS-232/422/485<br>1 x DB-9 for RS-232<br>Internal Header for 8 x RS-232   |
| INTERNAL I/O                |  |
| GPIO                        | 8-Bit  |
| SMBUS                       | Yes  |
| ADDITIONAL                  | 1 x Chassis Intrusion<br>1 x PS/2<br>1 x Audio Header<br>1 x AT Mode Selection   |
| STORAGE                     |  |
| SATA                        | 3 x SATA III   |
| MINI PCI-E                  | 1 x Full Size Mini-PCIe  |
| EXPANSION                   |  |
| M.2                         | 1 x M-key 2242/2260/2280/22110 (SATA Interface)  |
| PCI-E                       | 1 x PCIe x16<br>1 x PCIe x1<br>2 x PCI   |
| SIM                         | 1 x SIM Card Slot  |
| ENVIRONMENT & CERTIFICATION |  |
| SHOCK                       | 15G, 11ms duration   |
| VIBRATION                   | 1 Grms/ 5- 500Hz/ Operation  |
| OPERATING TEMPERATURE       | 0°C - 60°C (32°F - 140°F)  |
| STORAGE TEMPERATURE         | -20°C - 85°C (-4°F - 185°F)  |
| OPERATING HUMIDITY          | 10 - 90% Relative Humidity, Non-condensing   |
| CERTIFICATION               | CE/FCC Class A   |
| ESG DECLARATION             | EU RoHS<br>China RoHS<br>REACH   |

## Dimension Unit: mm



## Ordering Information

| PART NUMBER           | JNMF691-H110                   | JNMF691T-H110                  |
|-----------------------|--------------------------------|--------------------------------|
| CPU                   | Intel® Socket LGA1151 CPU      | Intel® Socket LGA1151 CPU      |
| SECURITY              |                                | TPM                            |
| POWER REQUIREMENT     | ATX Power Supply               | ATX Power Supply               |
| MIPI-DSI              | 1 x DVI-D                      | 1 x DVI-D                      |
| HDMI                  | 1 x HDMI                       | 1 x HDMI                       |
| VGA                   | 1 x VGA                        | 1 x VGA                        |
| ETHERNET              | 2 x GbE                        | 2 x GbE                        |
| USB                   | 4 x USB 3.0                    | 4 x USB 3.0                    |
| USB                   | 5 x USB 2.0                    | 5 x USB 2.0                    |
| COM                   | 1 x RS-232/422/485             | 1 x RS-232/422/485             |
| COM                   | 9 x RS-232                     | 9 x RS-232                     |
| SATA                  | 3 x SATA III                   | 3 x SATA III                   |
| MINI PCI-E            | 1 x Full mini PCIe             | 1 x Full mini PCIe             |
| M.2                   | 1 x M-Key 2242/2260/2280/22110 | 1 x M-Key 2242/2260/2280/22110 |
| PCI-E                 | 1 x PCIe x16                   | 1 x PCIe x16                   |
| PCI-E                 | 1 x PCIe x1                    | 1 x PCIe x1                    |
| PCI-E                 | 1 x PCI                        | 1 x PCI                        |
| PCI-E                 | 1 x PCI                        | 1 x PCI                        |
| SIM                   | 1 x SIM Card Slot              | 1 x SIM Card Slot              |
| OPERATING TEMPERATURE | 0°C - 60°C (32°F - 140°F)      | 0°C - 60°C (32°F - 140°F)      |