MANO520
Mini-ITX SBC with LGA1151 9th/8th Gen Intel® Core™ i7/i5/i3 Processor, Dual DisplayPort++, HDMI, LVDS, USB 3.0, mSATA, M.2 and Dual GbE LAN

Features
- LGA1151 9th/8th gen Intel® Core™ i7/i5/i3 processor
- Intel® H310 chipset (Q370 optional)
- 2 DDR4 SO-DIMM for up to 32GB of memory
- 4 USB 3.0 and 4 USB 2.0
- 4 COM ports
- 3 SATA-600 and 1 mSATA
- PCIe x16 and M.2 Key E

Core System
- CPU: LGA1151 9th/8th gen Intel® Core™ i7/i5/i3, Intel® Pentium® processors, Gold/Comer® processors (up to 65W)
- System Memory: 2 x 260-pin DDR4-2666/2400 SO-DIMM up to 32GB
- Chipset: Intel® H310 (optional)
- BIOS: AMI
- SSD: 1 x mSATA
- Watchdog Timer: 255 levels, 1 to 255 sec.
- Expansion Interface: 1 x PCIe x16, 1 x M.2 Key E 22 x 30
- Battery Lithium: Lithium 3V/220mAh
- Power Input: Standard 12V ATX power
- AT Mode: Auto Power Function supported
- Dimensions: 170 x 170 mm
- Board Thickness: 1.6 mm
- Operating Temperature: 0°C to +60°C (+32°F to +140°F)
- Humidity: 10% - 95% relative humidity, non-condensing

I/O
- SATA: 3 x SATA-600
- Hardware Monitoring: Detect CPU/system temperature, voltage and fan speed
- Ethernet: 1 x 10/100/1000 Mbps Ethernet with Intel® i211-AT; supports Wake-on-LAN, PXE Boot ROM
- Audio: HD Codec audio as MIC-in/Line-in/Line-out with Realtek ALC882
- USB: 4 x USB 3.0, 4 x USB 2.0
- Serial: 1 x RS-232/232/485 (with +5V/12V power)
- 3 x RS-232
- PS/2 Combo Port: N/A
- TPM: Onboard TPM 2.0 (optional)
- SIM Bus: N/A
- Digital I/O: 8-channel in/out programmed

Display
- Chipset: Intel® integrated Gfx graphic engine
- Memory Size: Share system memory
- Display Interface: 2 x DisplayPort++, 1 x HDMI, 1 x LVDS, 18/24-bit single/dual channel

Packaging Information

Ordering Information

Standard
- MANO520PHGGA-H310 (P/N: E38M520100) Mini-ITX SBC with LGA1151 9th/8th gen Intel® Core™ processor, Intel® H310, DisplayPort++, HDMI, LVDS, 2 GbE LAN and HD Audio

Optional
- MANO520PHGGA-Q370 Mini-ITX SBC with LGA1151 8th gen Intel® Core™ processor, Intel® Q370, DisplayPort++, HDMI, LVDS, 2 GbE LAN and HD audio
- 594M5002100E 2 x COM port, P=2.0 mm, L=300 mm
- 594E8422800E 2 x USB 2.0 wafer cable with bracket, P=2.0 L=180 mm
- 59384500100E SBC04500 audio cable with bracket, P=2.0 mm, L=420 mm

* All specifications and photos are subject to change without notice.