

TECH4U-510-788

LGA1700 12th/13th/14th Generation Intel® Core™ i9/i7/i5/i3 ATX Motherboard with DP/HDMI/VGA, DDR4, USB 3.2, M.2



BIS
Regn.No.
R-85000140

Conforming to
BIS Standard
IS 13252
(Part-1): 2010



CE FCC

Specifications

| 14th Generation Processors | CPU | i9-14900 | i9-14900T | i7-14700 | i7-14700T | i5-14500 | i5-14500T | i5-14400 | i5-14400T | i5-14400F | i3-14100 | i3-14100T |
|----------------------------|---|--|------------|-------------|------------|-------------|------------|-------------|-------------|------------|----------|-----------|
| | P-core Base Frequency | 2.0 GHz | 1.1 GHz | 2.1 GHz | 1.3GHz | 2.6 GHz | 1.7 GHz | 2.5 GHz | 1.5 GHz | 2.5 GHz | 3.5 GHz | 2.7 GHz |
| L3 Cache | 36 MB | 36 MB | 33 MB | 33 MB | 24 MB | 24 MB | 20 MB | 20 MB | 20 MB | 20 MB | 12 MB | 12 MB |
| Cores | 24 | 24 | 20 | 20 | 14 | 14 | 10 | 10 | 10 | 4 | 4 | 4 |
| Processor Base Power | 65 W | 35 W | 65 W | 35 W | 65 W | 35 W | 65 W | 35 W | 65 W | 60 W | 35 W | |
| 13th Generation Processors | CPU | i9-13900(E) | i9-13900TE | i7-13700(E) | i7-13700TE | i5-13500(E) | i5-13500TE | i5-13400(E) | i3-13100(E) | i3-13100TE | | |
| | P-core Base Frequency | 2.0 GHz | 1.1 GHz | 2.1 GHz | 1.4 GHz | 2.5 GHz | 1.6 GHz | 2.5 GHz | 3.4 GHz | 2.5 GHz | | |
| L3 Cache | 36 MB | 36 MB | 30 MB | 30 MB | 24 MB | 24 MB | 20MB | 12 MB | 12 MB | | | |
| Cores | 24 | 24 | 16 | 16 | 14 | 14 | 10 | 4 | 4 | | | |
| Processor Base Power | 65 W | 35 W | 65 W | 35 W | 65 W | 35 W | 65W | 60 W | 35 W | | | |
| 12th Generation Processors | CPU | i9-12900(E) | i9-12900TE | i7-12700(E) | i7-12700TE | i5-12500(E) | i5-12400 | i5-12500TE | i3-12100(E) | i3-12100TE | | |
| | P-core Base Frequency | 2.4 GHz | 1.1 GHz | 2.1 GHz | 1.4 GHz | 3.0 GHz | 2.5 GHz | 1.9 GHz | 3.3 GHz | 2.1 GHz | | |
| L3 Cache | 30 MB | 30 MB | 25 MB | 25 MB | 18 MB | 18 MB | 18 MB | 12 MB | 12 MB | | | |
| Cores | 16 | 16 | 12 | 12 | 6 | 6 | 6 | 4 | 4 | | | |
| Processor Base Power | 65 W | 35 W | 65 W | 35 W | 65 W | 65 W | 35 W | 60 W | 35 W | | | |
| Processor System | Socket | LGA 1700 | | | | | | | | | | |
| | Chipset | Q670E | | | | | | | | | | |
| BIOS | AMI 256Mbit SPI Flash | | | | | | | | | | | |
| Expansion Slot | PCI | 2 | | | | | | | | | | |
| | PCIe x4 (Gen 3) | 3 | | | | | | | | | | |
| PCIe x8 (Gen 3) | 1 (x4 link) | | | | | | | | | | | |
| PCIe x16 (Gen 4)* | 1 | | | | | | | | | | | |
| Memory | Technology | Dual Channel DDR4 3200 Non-ECC UDIMM | | | | | | | | | | |
| | Max Capacity | 128 GB | | | | | | | | | | |
| Sockets | 4 x 288-pin DIMM | | | | | | | | | | | |
| Graphics | Controller | Chipset integrated Intel UHD Graphics | | | | | | | | | | |
| | VRAM | Shares system memory is subjected to OS | | | | | | | | | | |
| Ethernet | Interface | 10/100/1000 Mbps | | | | | | | | | | |
| | Controller | GbE LAN1: Intel I219-LM (PHY); GbE LAN2: Intel I210-AT | | | | | | | | | | |
| Connector | 2 x RJ-45 | | | | | | | | | | | |
| SATA | Max. Data Transfer Rate | 600 MB/s | | | | | | | | | | |
| | Channel | 4 | | | | | | | | | | |
| RAID | 0, 1, 5, 10 | | | | | | | | | | | |
| Rear I/O | VGA | 1 (Resolution up to 1920 x 1200 @ 60Hz) | | | | | | | | | | |
| | HDMI | 1 (Resolution up to 3840 x 2160 @ 60Hz) | | | | | | | | | | |
| DisplayPort | 1 (Resolution up to 4096 x 2304 @ 60Hz) | | | | | | | | | | | |
| Ethernet | 2 | | | | | | | | | | | |
| USB | 8 (2 x USB 3.2 Gen 2, 2 x USB 3.2 Gen 1, 4 x USB 2.0) | | | | | | | | | | | |
| Audio | 2 (Line-out, Mic-in) | | | | | | | | | | | |
| Serial | 1 (RS-232) | | | | | | | | | | | |
| Watchdog Timer | Output | System reset | | | | | | | | | | |
| | Interval | Programmable 1 – 255 sec | | | | | | | | | | |
| Power Requirement | Power On | Intel Core i 65W , DDR4 32 GB x 4 | | | | | | | | | | |
| | Voltage | +3.3 V | +5 V | +12 V | +5 Vsb | -12 V | -5 V | | | | | |
| Current | 1.41 A | 2.42 A | 0.24 A | 0.13 A | 0.04 A | 0.05 A | | | | | | |
| Internal Connectors | USB | 6 (2 x USB 3.2 Gen 1 via pin header, 2 x USB 2.0 via pin header, 2 x USB 2.0 type A connector) | | | | | | | | | | |
| | Serial | 5 (4 x RS-232, 1 x RS-232/422/485) | | | | | | | | | | |
| SATA | 4 | | | | | | | | | | | |
| M.2 | 1 (PCIex4 Gen 4 M-key 2280 type) | | | | | | | | | | | |
| SPI | 1 (Optional dTPM 2.0 module available) | | | | | | | | | | | |
| GPIO | 8-bit | | | | | | | | | | | |
| Environment | Operating | Non-Operating | | | | | | | | | | |
| | Temperature | 0 – 60 °C (32 – 140 °F), depends on CPU loading and system thermal solution | | | | | | | | | | |
| Humidity | 95% @ 40 °C, non-condensing | | | | | | | | | | | |
| Physical Characteristics | Dimension (W x H x D) | 482 x 177 x 479 mm (19" x 7" x 18.9") | | | | | | | | | | |

* The PCIe x16 slot, from CPU, can only support graphic cards and storage cards according to the specification recommended by Intel. Other types of add-on cards might not work properly. For the compatible device list validated on the PCIe x16 slot, please refer to the user manual.

Features

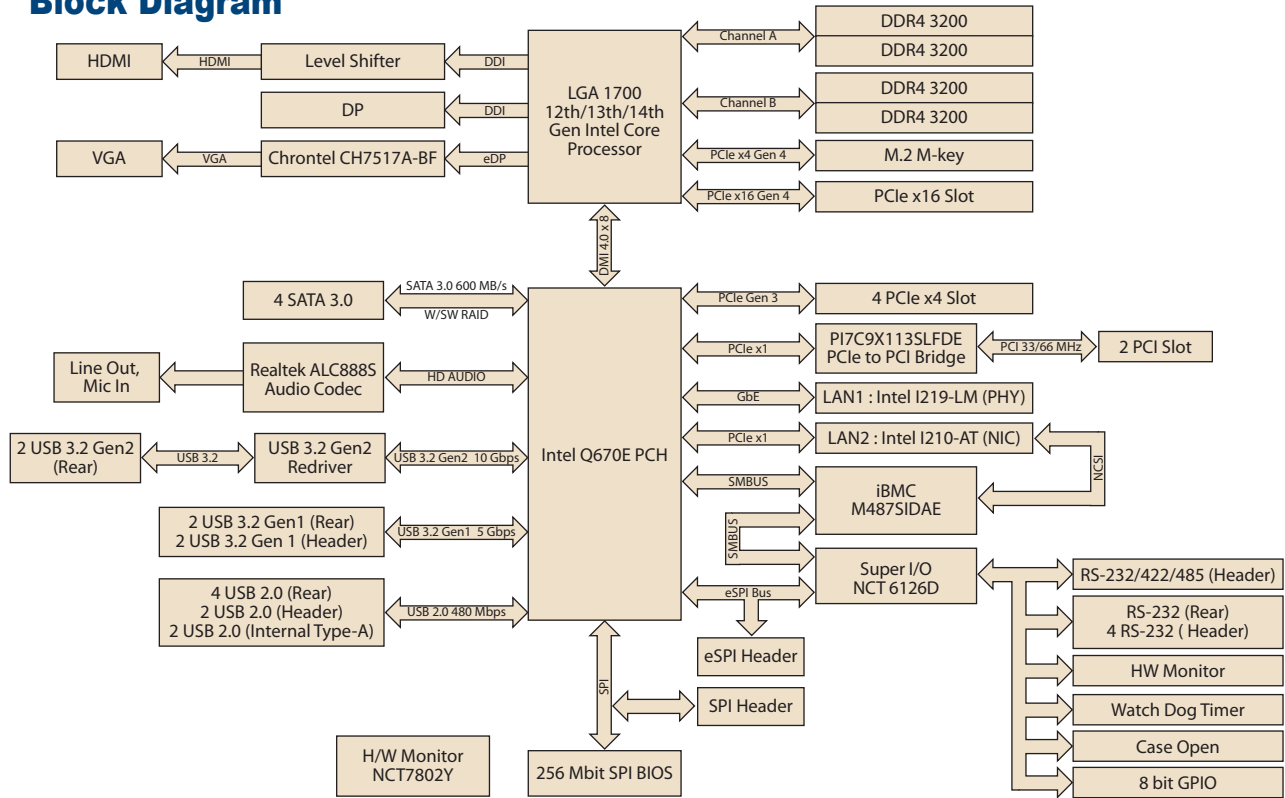
- * Intel® 12th/13th/14th generation Core™ i9/i7/i5/i3 processor with Q670E chipset
- * Four DIMM sockets up to 128GB DDR4.
- * Triple displays - HDMI, DVI-D & VGA.
- * M.2, SATA 3.0, RAID 0, 1, 5, 10, USB 3.2 Gen 2
- * 5 RS-232 serial ports
- * 1 PCIe x16 (Gen 4), 1 PCIe x8 (Gen 3) and 3 PCIe x4 (x2 Gen 3 link), and 2 PCI expansion slots
- * Supports Single ATX power supply and redundant ATX power supplies.
- * Easy to install front-accessible drive bays to hold three 5.25" and one 3.5" disk drives.
- * Front-accessible USB interfaces.
- * Designed to withstand environmental extremes, such as shock, vibration and high temperature.
- * Front LEDs indicate power status, and HDD activity.
- * Lockable front door prevents unauthorized access.
- * Dual front-accessible filtered cooling fans provide optimized and streamlined airflow.
- * Supports Internal 5.25" DVD-RW.

Note 1: Legacy platform is not supported.

Note 2: dTPM 2.0 module is required to enable Intel vPro and TPM technologies.

Note 3: Intel® Platform Trust Technology (Intel® PTT) ready for Windows 11.

Block Diagram



Ordering Information

| Part number | Chipset | Memory | Display | USB 3.2 Gen 2 | USB 3.2 Gen 1 | USB 2.0 | COM | GbE LAN | AMT | M.2 | SATA 3.0 | SW RAID | iBMC |
|----------------|---------|--------------------------------------|-----------------|---------------|---------------|---------|-----|---------|-----|-----|----------|---------|------|
| TECH4U-510-788 | Q670E | Non-ECC UDIMM DDR4 3200 up to 128 GB | VGA + HDMI + DP | 2 | 4 | 8 | 6 | 2 | Yes | 1 | 4 | Yes | Yes |

Front View



Rear View



I/O View

