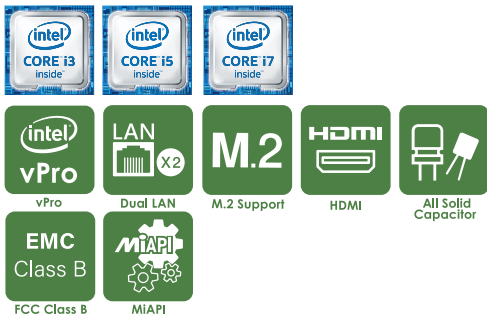
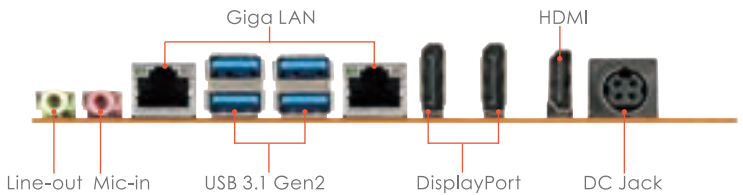
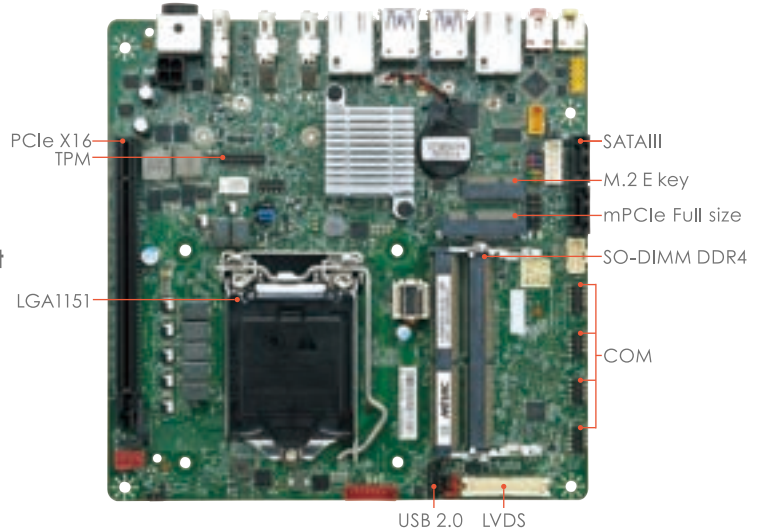


PH14FEI

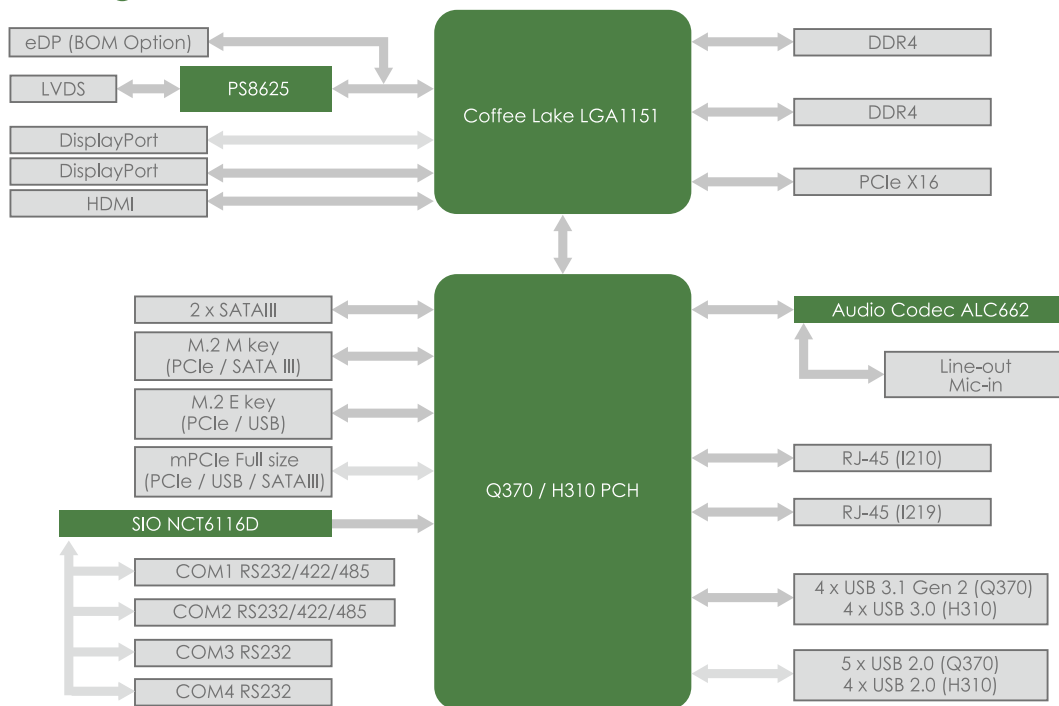
Thin Mini-ITX Form Factor
Intel® Coffee Lake Processor with H310/Q370 Chipset

Features

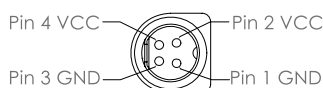
- Up to Intel® Coffee Lake-R 9th i9 35W & 8th i7 95W(6cores) LGA processor
- Intel® H310/Q370 Chipset
- Intel® vPro technology support (Q370)
- 2 x DDR4 SO-DIMM up to 32GB
- 5 phase power design
- Support triple display for HDMI, DisplayPort and LVDS/eDP
- 1 x M.2 M 2280, 1 x M.2 E 2230, 1 x mPCIe Full size, 1 x PCIe X16
- 2 x Intel® Gigabit Ethernet
- DC-in 12V (Optional: 12~24V SKU)



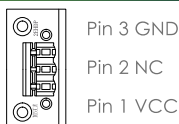
Block Diagram



PH14FEI-XXXX-12V(Output)



PH14FEI-XXXX-24V(Output)



Power Ordering Information

| MiTAC PN | Description |
|--------------|--|
| 442110000147 | 12V 180W adapter for PH14FEI-XXXX-12V |
| 442110000151 | 24V 120W adapter (for 35W CPU only) for PH14FEI-XXXX-24V |
| 442110000149 | 24V 220W adapter for PH14FEI-XXXX-24V |

PH14FEI Mini-ITX

| MECHANICAL | |
|-----------------------|--|
| Form Factor | Mini-ITX: 6.7" x 6.7" (170mm x 170mm) |
| SYSTEM | |
| Processor | 9th & 8th Gen Intel® Coffee Lake LGA1151 Socket Processor, Core i7/i5/i3 6-core TDP Max. 95W, Core i9 8-core TDP Max 35W |
| Chipset | Intel® Q370 (Support RAID 0 / 1) support vPro / Intel H310 |
| Memory | DDR4 2666MHz, 2 x 260-pin SO-DIMM, Max. 32GB (Non-ECC) |
| Graphics | Intel® HD Graphics |
| Ethernet | Intel® I219-LM Giga LAN + Intel® I210-AT Giga LAN |
| Audio I/O Chipset | Realtek® ALC662 |
| TPM | Nuvoton NCT6116D TPM Header (option TPM-SPI-NPCT750) |
| Expansion Slot | 1 x PCIe X16 slot 1 x Mini PCIe Full size (SATA, USB, PCIe) 1 x M.2 2260 / 2280 M key (PCIe, SATA) * H310 only supports M.2 SATA SSD 1 x M.2 2230 E key (PCIe, USB 2.0) |
| BIOS | AMI BIOS, 256 Mbit SPI |
| H / W Monitor | Temperature Monitor, Voltage Monitor, Fan Monitor |
| Watchdog Timer | 1~255 Steps by Software Program |
| Smart Fan Control | CPU Fan / System Fan |
| GRAPHICS | |
| VGA | — |
| DVI | — |
| HDMI | Up to 4K (4096 x 2160) @30 Hz |
| DisplayPort | Up to 4K (4096 x 2304) @60 Hz |
| 2nd DisplayPort | Up to 4K (4096 x 2304) @60 Hz |
| LVDS | Up to 1920 x 1200 @60 Hz |
| eDP (Option) | Up to 4K (4096 x 2304) @60 Hz |
| REAR I/O | |
| USB | 4 x USB 3.1 Gen. 2 (10Gb/S) (Q370) / 4 x USB 3.0 (H310) |
| Display I/O | 1 x HDMI 1.4, 2 x DisplayPort 1.2 |
| Audio I/O | 1 x Mic-in, 1 x Line-out |
| LAN I/O | 2 x RJ-45 |
| Serial Port | — |
| PS/2 Port | — |
| Others | 1 x DIN 4-pin DC Jack |
| INTERNAL CONNECTORS | |
| Storage | 2 x SATAIII |
| USB | 5 x USB 2.0 (Q370), 4 x USB 2.0 (H310) |
| Display I/O | 1 x LVDS (Optional eDP SKU available) 1 x Backlight Connector |
| Audio I/O | 1 x Speaker 2W |
| Serial Port | 4 x RS232 (two supports RS232/422/485 select by BIOS) |
| PS/2 Port | — |
| Parallel Port | — |
| GPIO | 1 x MiAPI Header (Programmable) |
| Fan | 1 x 4-pin CPU Fan Connector, 1 x 4-pin System Fan Connector |
| Power | 1 x ATX 4-pin Power Connector, 1 x AT / ATX Mode Select Jumper |
| Others | 1 x Front Audio Header (Mic-in / Line-out), 1 x CMOS Jumper, 1 x panel power select header, 1 x backlight power select header, 1x buzzer header |
| POWER REQUIREMENT | |
| Power Input | DC-in 12V DIN 4-pin connector / ATX 4pin 12V *optional 12V-24V SKU |
| ENVIRONMENTAL | |
| Operating Temperature | 0 ~ 60°C (32 ~140°F) |
| Storage Temperature | -40 ~ 85°C (-40 ~185°F) |
| Operating Humidity | 10% ~ 95% R/H, non-condensing |
| Certification | CE & FCC Class B |
| OS | |
| OS Support | Windows® 10 64-bit Linux (support by request) |

Ordering Information

| Model Number | Chipset | DisplayPort / HDMI | LVDS / eDP | USB 3.1 / 2.0 | Line-out / Mic-in | RS-232 LAN | M.2 2230 E key / M.2 2280 M key | mPCIe Full size | PCIe X16 | Power |
|------------------|-------------|--------------------|------------|---------------|-------------------|------------|---------------------------------|-----------------|----------|--------------|
| PH14FEI-H310-12V | Intel® H310 | 1 / 1 | 1 / 0 | 4 / 4 | 1 / 1 | 4 2 | 1 / 1 | 1 | 1 | DC-in 12V |
| PH14FEI-Q370-12V | Intel® Q370 | 2 / 1 | 1 / 0 | 4 / 5 | 1 / 1 | 4 2 | 1 / 1 | 1 | 1 | DC-in 12V |
| PH14FEI-H310-24V | Intel® H310 | 1 / 1 | 1 / 0 | 4 / 4 | 1 / 1 | 4 2 | 1 / 1 | 1 | 1 | DC-in 12~24V |

Optional Peripheral

| Model Number | TPM-SPI-NPCT750 | Description | Nuvoton NPCT750 TPM2.0 |
|--------------|-----------------|-------------|------------------------|
| | | | |

Packing List

| Packing |
|--|
| <ul style="list-style-type: none"> 1 x Motherboard 1 x 50cm SATA Cable 2 x I/O Bracket (Half and Full Height) |