

ThinMini-ITX Form Factor  
Intel Coffee lake Q370 / H310 chipset

# PH12FEI



## Features

- Support Intel Coffee lake processors
- Dual channel DDR4 260-pin SO-DIMM
- Intel® vPro business-grade technology support (with Q370 chipset)
- Dual high speed Gigabit Ethernet connection
- Two M.2 (NGFF) connector for expansion
- Features 3 SATA3 (6Gbps)
- Dual display connectivity by DP & HDMI
- Embedded LVDS / eDP connectivity
- Onboard 2/4 serial ports



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### Sales Contact

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Item	Spec	SKU-B	SKU-D	SKU-i
Form Factor	Mini-ITX, 6.7" x 6.7" (170mm x 170mm)	v	v	v
Processor	CPU Type: Intel Coffee lake Processor	v	v	v
	CPU Core: Dual Core / Quad Core / Hexa core			
	Socket: Socket LGA1151			
Chipset	TDP: Support up to 65W CPU types	v	v	v
	Chipset Series: Intel® Q370 Chipset			
Memory	Chipset Series: Intel® H310 Chipset	2	2	2
	Memory Type: DDR4 @ 1.2V, 2666 MHz (Unbuffered Non-ECC)			
	Memory Channel: Dual Channel			
	Memory Capacity: Support total up to 32GB			
Audio Controller	ECC Support: No	v	v	v
	Memory Socket: 260-pin So-DIMM socket			
Expansion Capability	Codec: HD audio codec, Realtek ALC662	v	v	v
	PCIe 3.0 x 4 slot			
External I/O	M.2 (NGFF) M key 2242/2280 (PCIe / SATA) for storage	v	v	v
	M.2 (NGFF) E key 2230 (PCIe / USB) for wireless			
	HDMI out	1	1	1
	DP-out	1	1	1
	USB 3.1 gen 2 (10 Gb/s)	4 (USB 3.0)	4	4
	RJ-45	2	2	2
	Line-out	1	1	1
	Mic-in	1	1	1
Internal I/O	DC-in	1	1	1
	LVDS Connector (40Pin) / (colay eDP 40pin)	1	1	1
	Front audio Header (Mic / HP)	1	1	1
	DMIC Header	1	1	1
	Internal Speaker (support 2W)	1	1	1
	USB 2.0 ports	5	6	6
	Serial port header (one configurable for RS232/422/485)	4	2	4
	MiAPI Programmable header (support GPIO x 10, SMBUS x 1, UART x 1, Watchdog x1) with API library supported for Windows OS	1	1	1
	SATA 3.0 6 Gb/s (PCH Q series Support RAID 0, 1)	3	3	3
	SATA power	1	1	1
	Front Panel header	1	1	1
	panel backlight power setting header (default 19V, option 12V)	1	1	1
	LVDS inverter power header	1	1	1
	Clear CMOS header	1	1	1
	Panel power Header (default 5V, option to 12V, 3.3V)	1	1	1
	CPU fan header	1	1	1
SYS fan header	1	1	1	
Legacy I/O	Nuvoton NCT6116D	v	v	v
Security	Intel® vPro™ Technology support		v	v
	TPM security by Nuvoton NPCT750AAAYX (optional)	(v)	(v)	(v)
LAN Support	Intel® I219 Gigabit (10/100/1000 Mb/s) LAN	v	v	v
	Intel® I210 Gigabit (10/100/1000 Mb/s) LAN	v	v	v
BIOS	Support for Advanced Configuration and Power Interface (ACPI) setting	v	v	v
Instantly Available PC Technology	Suspend to RAM support	v	v	v
Hardware Monitor Subsystem	Wake on PCI Express, LAN, front panel, serial, and USB ports	v	v	v
	Hardware monitoring through the Nuvoton6104D legacy I/O controller, including Remote thermal sensor			
Power Requirement	Speed control for 4-pin system fan header and 4-pin CPU fan header	v	v	v
	DC-in 19V (5.1 mm/ID, 7.4 mm/OD) / ATX 2pin			
Environment	DC-in 12V (2.5 mm/ID, 5.5 mm/OD) / ATX 4pin	v	v	v
	Operating Temperature : 0°C to +60°C			
Safety	Storage Temperature : -20°C to +80°C	v	v	v
	CE			
Operating System	FCC	v	v	v
	Windows 10 64bit, Linux (support by request)			

## Packing List

- PH12FEI Mainboard
- 50CM SATA Cable
- 45CM SATA Power Cable
- 2\*IO Shield (Half and Full height)
- Driver CD
- Quick Guide