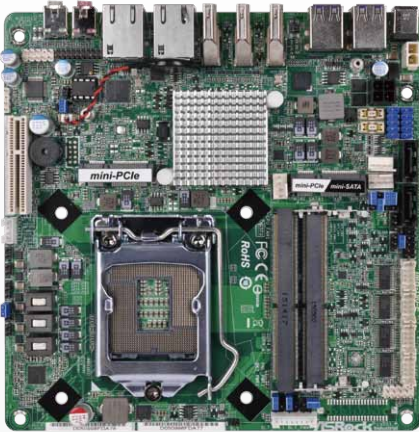


# IMB-190 / IMB-190-E

## Mini-ITX Motherboard

### Spotlight Features

- Socket LGA1151 for Intel Core i7/i5/i3/Celeron (Skylake-S)
- Intel® Gen9 Intel Graphics DX 11/12, OGL4.3/4.4
- Supports Dual Channel DDR4 2133MHz, 2 x SO-DIMM, up to 16GB system memory
- 3 x HDMI, 1 x Dual Channel 24-bit LVDS/eDP
- 4 xUSB 3.0, 4 x USB 2.0, 2 x SATA3
- 1 x Mini-PCIe, 1 x PCIe x4 Slot , 1 x mSATA
- Gigabit LAN : 2 x Intel Lan
- 1 x TPM Header
- 12V / 19~24V DC-in



### Specifications

Processor System	IMB-190	IMB-190-E
Dimension	Mini-ITX (6.7-in x 6.7-in)	
CPU	Socket LGA1151 for Intel Core i7/i5/i3/Celeron (Skylake-S)	
Core Number	(By CPU Max 4)	
Max Speed	(By CPU)	
L3 Cache	(By CPU)	
Chipset	Q170	
BIOS	UEFI	
Expansion Slot		
PCIe	1 x PCIe x4 slot	
Mini-PCIe	2 x Mini-PCIe (1 x full size colay with mSATA, 1 x half size, both with USB signal)	
mSATA	1 (colay with full size Mini-PCIe)	
Memory		
Technology	Dual Channel DDR4 2133 MHz SDRAM	
Max.	16G	
Socket	2 x SO-DIMM	
Graphics		
Controller	Intel® Gen9 Intel Graphics DX 11/12, OGL4.3/4.4	
VRAM	Shared Memory	
VGA	Supports max. resolution 1920 x 1200	
LVDS	Dual channel 24-bit co-lay with eDP, max resolution 1920 x 1200@60Hz	
HDMI	HDMI1: Supports HDMI 2.0, max resolution 4096 x 2160@60Hz HDMI2,3: Supports HDMI 1.4a, max resolution 4096 x 2160@30Hz	
DVI	No	
Display Port	No	
Multi Display	Yes (Triple Display)	
Ethernet		
Interface	10/100/1000 Mbps	
Controller	1 x Intel i210, 1 x Intel i219LM	
Connector	2 x RJ 45	
SATA		
Max Data Transfer Rate	SATA3 (6.0Gb/S), Supports RAID 0/1/5/10	

Rear I/O	IMB-190	IMB-190-E
VGA	0	
HDMI	3	
DVI-I/D	0	
Display Port	0	
Ethernet	2	
USB	4 x USB 3.0	
Audio	2 (Mic-in, Line-out)	
Serial	0	
e-SATA	0	
PS/2	0	
Internal Connector		
USB	4 ( 2*2.54 pitch header USB 2.0 compliant)	
LVDS/Inverter	1/1	0/0
eDP	0	1
VGA	1	0
Serial	4 x RS-232 (COM1, 2 support RS-232/422/485)	
SATA	2 x SATA3 (6.0Gb/s)	
m-SATA	1	
Mini-PCIe	2	
Parallel	0	
IrDA	0	
GPIO	4 x GPI + 4 x GPO	
SATA PWR Output Con	1	
Speaker Header	1	
Watchdog Timer		
Output	From Super I/O to drag RESETCON#	
Interval	256 segments, 0,1,2...255sec/min	
Power Requirements		
Input PWR	12V / 19~24V DC-in (DC Jack / 4-pin ATX PWR Con)	
Power On	AT/ATX Supported AT : Directly PWR on as power input ready ATX : Press button to PWR on after power input ready	
Environment		
Operating Temperature	0°C – 60°C	