

# HQ-BOX2 | Edge Server



## Flexible & Powerful IoT-Edge / Networking server

- Based on Intel® Xeon D-1700 LCC, 4-10 Cores
- 3x DDR4-ECC channels, up to **384GB memory capacity**
- 2x 2.5GbE(i225) + 1x GbE (i210)
- 8x SFP+ with up to 100Gb Ethernet throughput
- Rugged Fanless design for harsh environments.
- AST2600-based BMC with Display Port (DP) video
- On-board storage: M.2 NVMe + M.2 SATA + eMMC (soldered)
  - M.2 slots have specially designed heatsink mounting points specially designed for transportation environments (shock and vibration protected).
- Extension: 24 lanes of PCIe for Add-on cards and SSD distributed as:
  - 16-Lane PCIe G4, can be bifurcated into 4x, 8x and 16x lanes
  - 8-Lane PCIe G3, can be bifurcated into 2x, 4x, 8x lanes
- Storage options (in addition to the on-board storage)
  - 6x M.2 NVMe SSSD (4x G4 + 2x G3) - HQ-Box2 Storage-M
  - 4 x U.3 (2.5", 17mm, PCIe G4) + AOC - HQ-Box2 Combo
  - A socket for Intel VROC® Enterprise RAID is included
- PCIe Add-on cards (AOC)
  - 1 x AOC (8L G3) + 4 x U.3 SSD - HQ-Box2 Combo
  - 2x AOC – 16L G4 + 8L G3 - HQ-Box2 2X
  - All cards are up to Full Height Half Length (FHHL) size.
- Deep learning and AI inferencing with up to 7x M.2 AI modules



The HQ-Box2 was designed for the (hard) Edge and networking applications. The HQ-Box2 utilizes Intel®'s densest compute and connectivity SOC, and has integrated accelerators such as Intel® QuickAssist Technology (QAT) and Inline IPsec. Combined with a flexible 8-port Ethernet controller, the HQ-Box is the best fit for 5G / Edge network applications. Security features such as Intel® Boot Guard, Intel® SGX & Intel® TME-MT ensure better protection in hostile environments. Real-Time Features TSN (Time Sensitive Networking) and Intel® TCC (Time Coordinated Computing) are supported.

The ability to create a mix of storage and AI accelerators with the HQ-Box2 Storage-M can greatly enhance the capabilities of AI inferencing and deep learning applications.

The built-in Board Management Controller is based on Aspeed most advanced AST2600 BMC enabling secure and safe remote administration and recovery.

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Processor	Intel® Xeon D-1700 and Xeon D-1800 LCC, 4-10 Cores		
Memory	3x DDR4-ECC channels, <b>384GB memory capacity</b>		
Storage	<b>Motherboard :</b>	NVMe SSD: M.2 M-KEY, PCIE3.0 x4, 2280/2260 SATA3 SSD: M.2 B-KEY, 2280 EMMC: Up to 256GB boot media, soldered	
	<b>Extension:</b>	6x M.2 NVMe SSD: M.2 M-KEY, 4x PCIe G4+2x PCIe G3, 2260/2280 4x U.3 (2.5", 17mm, PCIe G4)	
Networking	4x or 8x ports SFP+ 1/10/25 Gigabit configurations 2x I225 (2.5GbE) 1x I210 (1GbE)		
	WWAN / WLAN: 5G,LTE,3G / 802.11ax Wireless with M.2E-KEY slot		
Display	Display port (DP), with BMC		
Interfaces	USB: 2x USB3.0		
	Serial ports: 2x RS232		
Expansion Slots	1x PCIe G4 x16, 1x PCIe G3 x8		
	M.2 M-KEY: 1x sockets, NVME, PCIe4		
	M.2 B-KEY: 1x socket, SATA, USB3.0/2.0 + SIM		
	M.2 E-KEY: 1x socket, PCIe1, USB2.0		
Management	BMC AST2600, OpenBMC, IPMI 2.0, DCMI, iKVM, Virtual Media		
Security	TPM 2.0, SLB9665		
	SECURE BOOT, SECURE FLASH		
Power	12VDC. Reverse polarity, Over/under Voltage protection Optional 240W DC2DC supply: 9-36VDC in / 12VDC out		
Software support	Windows: Win 10 IoT, WS19H1,WS19H2,WS2022, Win11		
	Linux: All major distributions		
	Virtualization: KVM, ACRN, Vmware ESXi, Microsoft Hyper-V		
	RTOS: Wind River VxWorks		
Led	Power, SSD, 2x GPIO		
Mechanical	DIMENSIONS by model:		
	HQ-Box2 Bare: 84x177x237mm (WxDxH)		
	HQ-Box2 2X: 138x176x237mm (WxDxH)		
	HQ-Box2 Storage-M: 92x176x237mm (WxDxH)		
	HQ-Box2 Combo: 153x176x237mm (WxDxH) Note this model is usually mounted horizontally.		
Environment	OPERATING TEMPERATURE	Standard	0°C to 50°C
		Extended*	-20°C to 60°C
		<b>Industrial*</b>	<b>-40°C to 72°C / 75°C</b>
	* On selected configurations		
	STORAGE TEMPERATURE	-40°C to 85°C	
	HUMIDITY	95%@40°C (non-condensing)	
MTBF (hrs)	>100,000		
Certification	EMC: CE, FCC ,AS/NZS, SAFETY: IEC 60950-1, AS/NZS		
Contact	Email	<a href="mailto:sales@heptagonsystems.com">sales@heptagonsystems.com</a>	

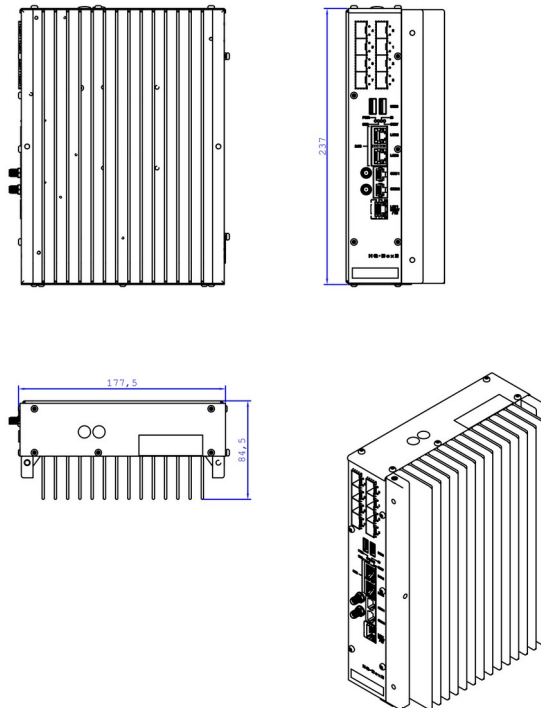
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## HQ-Box2 Model selection

Model	PCIe G4 Slot	PCIe G3 Slot	M.2 SSD	U.3* 2.5" Bay	2.5G / GbE	SFP+	BMC	Wi-Fi / 5G	Dimensions (WxDxH)
<a href="#">Bare</a>	–	–	1x NVMe G3 1x SATA	–	2/1	4+4	AST2600	M.2-B W.Sim M.2-E	84x177x237mm
<a href="#">2X</a>	1	1	1x NVMe G3 1x SATA	–	2/1	4+4	AST2600	M.2-B W.Sim M.2-E	138x176x237mm
<a href="#">Storage-M</a>	–	–	4x NVMe G4 1x NVMe G3 1x SATA M6: +2x NVMe G3	–	2/1	4+4	AST2600	M.2-B W.Sim M.2-E	92x176x237mm
<a href="#">Combo</a>	–	1	1x NVMe G3 1x SATA	4x U.3 hot-swap	2/1	4+4	AST2600	M.2-B W.Sim M.2-E	153x176x237mm

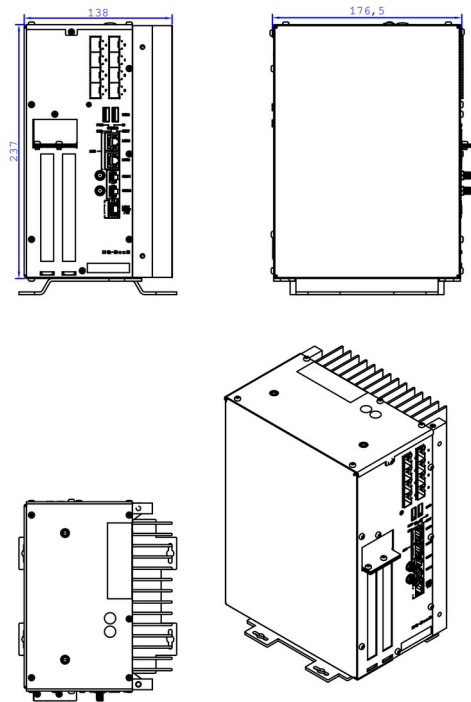
## Model Dimensions

### HQ-Box2 Bare dimensions

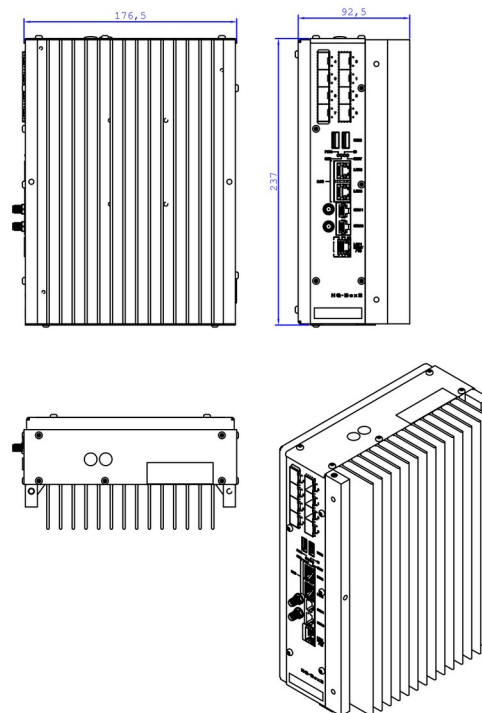


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## HQ-Box2 2X Dimensions (shown with desktop mount)

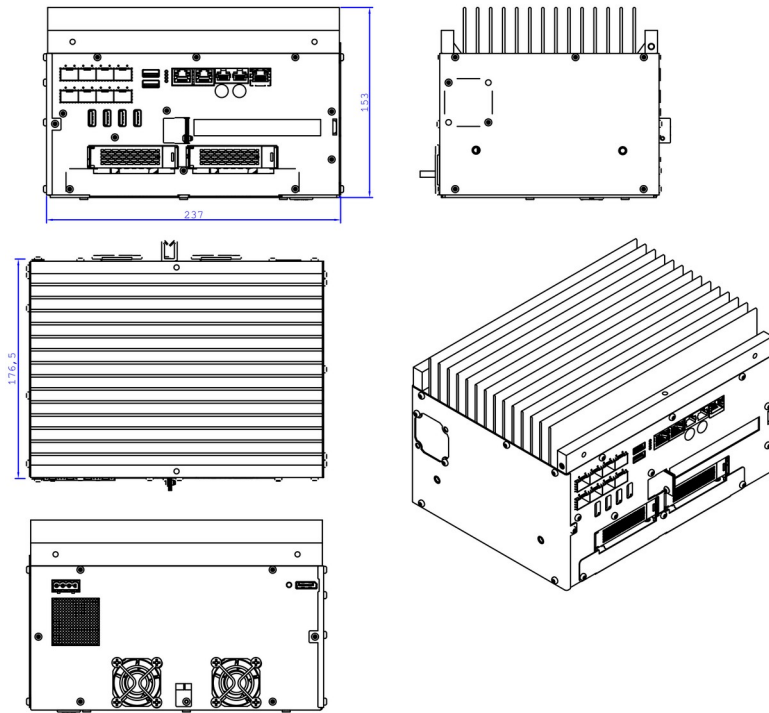


## HQ-Box2 Storage-M Dimensions



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## HQ-Box2 Combo Dimensions



With car mount and 240W DC2DC:

