# X13 Multi-Processor

## Highest Performance and Memory Density for Enterprise Applications

### Mission-critical platform with up to 8 processors 128 DIMM slots and flexible I/O

- **4- and 8-way systems with 4th Gen Intel® Xeon® Scalable processors**
- **Compute- and acceleration-optimized 2U configurations**
- **Large memory footprint with up 64 DIMMs in 2U and 128 DIMMs in 8U supporting DDR5-4800MT/s**
- **Up to 12 double-width PCIe 5.0 GPUs in 6U or 2 double-width GPUs in 2U**

### Maximum Configurability and Scalability

X13 multi-processor systems bring new levels of compute performance and flexibility with support for four or eight 4th Gen Intel® Xeon® Scalable processors in a single system, ideal for mission-critical enterprise workloads, in-memory database, analytics, AI and virtualization applications.

### High Memory and Core Density

The multi-processor configurations deliver unprecedented density in a single-node system, with up to 240 cores and 64 DDR5 DIMM slots in 2U or 480 cores and 128 DDR5 DIMM slots in 6U. In addition, the 6U 8-way configuration can provide up to 24 PCIe 5.0 x16 slots in a single chassis to support 12 double-width GPUs or 24 PCIe cards.

### Designed for Data

A large memory footprint is ideal for large database and in-memory compute applications to support even the most memory-intensive applications. Dynamic storage options support direct-attached full-hybrid all NVMe for lower latency with higher throughput and IOPS and up to 24 hot-swap 2.5″ hybrid NVMe/SAS3/SATA3 drive bays in a 6U chassis. Flexible networking is available via an AIOM slot supporting OCP 3.0 NIC devices.

### Powered by 4th Gen Intel® Xeon® Scalable Processors

Multi-processor CPU and core density are further enhanced with 4th Gen Intel® Xeon® Scalable Processors, specially designed to scale up to 8 sockets and with built-in accelerator engines designed to improve performance and efficiency for data-intensive workloads:

- **Intel Data Streaming Accelerator** (Intel DSA) offloads common data movement tasks to reduce overhead and increase CPU and memory workload performance
- **Intel QuickAssist Technology** (Intel QAT) offloads popular compression and cryptographic algorithms, increasing core workload capacity.
- **Intel In-Memory Analytics Accelerator** (Intel IAA) increases query throughput for in-memory database and analytics workloads and decreases memory footprint in analytics.

| Multi-Processor | SYS-241H-TNRTTP | SYS-241E-TNRTTP | SYS-681E-TR |
|---|---|---|---|
| Processor Support | Quad 4th Gen Intel® Xeon® Scalable processors<br>Up to 350W TDP (air cooled)† | Quad 4th Gen Intel® Xeon® Scalable processors<br>Up to 250W TDP (air cooled)† | Octo 4th Gen Intel® Xeon® Scalable processors<br>Up to 350W TDP (air cooled)† |
| Memory Slots & Capacity | 64 DIMM slots; Up to 16TB DDR5-4800MT/s | 64 DIMM slots; Up to 16TB DDR5-4800MT/s | 128 DIMM slots; Up to 32TBDDR5-4800MT/s |
| I/O Ports | 1 VGA port (front)<br>1 DisplayPort (rear)<br>1 RJ45 dedicated IPMI LAN port (rear)<br>2 USB 2.0 ports (front)<br>2 USB 3.0 ports (rear)<br>1 serial port (rear) | 1 VGA port (front)<br>1 DisplayPort (rear)<br>1 RJ45 dedicated IPMI LAN port (rear)<br>2 USB 2.0 ports (front)<br>2 USB 3.0 ports (rear)<br>1 serial port (rear) | 1 VGA port (front)<br>1 DisplayPort (rear)<br>1 RJ45 dedicated IPMI LAN port (rear)<br>1 RJ45 1GbE LAN port (rear)<br>2 USB 2.0 ports (front)<br>2 USB 3.0 ports (rear) |
| Motherboard | X13QEH+ | X13QEH+ | X13OEI-CPU |
| Form Factor | 2U Rackmount<br>812.9mm/32" depth | 2U Rackmount<br>849.3mm/33.4" depth | 6U Rackmount<br>841mm/33.1" depth |
| Expansion Slots | 2 PCIe 5.0 x8 FHFL slots<br>2 PCIe 5.0 x16 FHFL slots<br>2 PCIe 5.0 x16 FHHL slots<br>2 PCIe 4.0/5 x8 LP optional slots<br>2 PCIe 4.0/5 x16 LP optional slots<br>PCIe 5.0 x16 AIOM slots<br>PCIe 5.0 x8 (x16 slot) AIOM slots<br>2 M.2 SATA3/NVMe3 slots | 2 PCIe 5.0 x8 FHFL slots<br>2 PCIe 5.0 x16 FHFL slots<br>2 PCIe 5.0 x16 FHHL slots<br>PCIe 5.0 x16 AIOM slots<br>PCIe 5.0 x8 (x16 slot) AIOM slots<br>2 M.2 SATA3/NVMe3 slots | 12 PCIe 5.0 x16 FHFL slots<br>12 PCIe 5.0 x16 FHFL optional slots<br>2 PCIe 5.0 x16 LP internal optional slots<br>2 M.2 SATA3/NVMe3 slots |
| Drive Bays | 8 hot-swap 2.5" NVMe/SAS3/SATA3 drive bays; optional RAID support via RAID controller AOC | 24 hot-swap 2.5" NVMe/SAS3/SATA3 drive bays; optional RAID support via RAID controller AOC | 24 hot-swap 2.5" NVMe/SAS3/SATA3 drive bays; 24 2.5" NVMe hybrid; optional RAID support via RAID controller AOC |
| Cooling | 3 heavy duty 8cm and 2 6cm fans | 6 heavy duty 6cm fans | 10 heavy duty 8cm fans |
| Power Supply | Redundant 5400W Titanium level (96%) | 1600W Redundant Titanium Level (96%) with PMBus | Redundant 2600W Titanium level (96%) |

† CPUs with high TDP supported under specific conditions. Contact Technical Support for details.