



**BittWare**  
a **molex** company

**TeraBox 2102D**  
2U FPGA Server

## 2U FPGA Server with PCIe Gen4

We've integrated one of the most popular 2U data center servers from Dell EMC with our full lineup of Achronix, Intel, and Xilinx FPGA-based cards. BittWare's TeraBox 2102D combines a high-powered dual-CPU (3rd Generation Intel Xeon Scalable) host with high-density FPGA resources.

Configurations include two of BittWare's large double-width cards using Achronix Speedster 7t, Intel Agilex, or Xilinx Virtex UltraScale+ FPGAs. The system can also be configured with six\*\* low-profile cards or up to eight of BittWare's U.2 accelerators. No matter which configuration you choose, you're getting BittWare's installation and support, plus options for Dell server support.



Up to **two** double-wide FPGA cards can be configured or **six\*\*** low-profile cards

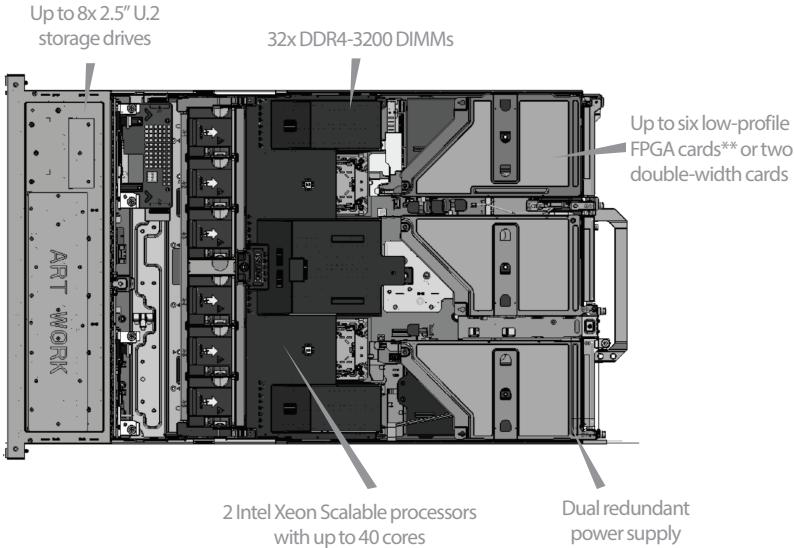


### key features

Up to  
**6 QSFP-DDs**  
for 12x 100G or  
48x 10/25G

Up to **8x U.2**  
**NVMe slots**  
and **32x**  
**DDR4 DIMMs**

Support for BittWare's full  
range of FPGA cards



### chassis key specs

- 2U, depth 27.58 in (700.7mm)
- Processor:** (2) 3rd Generation Intel® Xeon® Scalable processors
- Memory:** 32x ECC DDR4-3200 MT/s DIMMs
- Slots:** (2) DW/FH/FL Gen 4 x16 PCIe slots, (2) SW/HH/HL Gen 4 x16 PCIe slots, (2) SW/FH/HL Gen 4 x8 PCIe slot
- Storage:** up to 8x 2.5" U.2 NVMe Slots
- Power supply:** Platinum up to 2400W, redundant (1+1)



# TeraBox 2102D

2U FPGA Server

The TeraBox 2102D is a 2U FPGA server based on the Dell PowerEdge R750 chassis. This server offers dual 3rd generation Intel Xeon Scalable CPUs along with high PCIe slot density. With configurations of up to six low-profile cards or two of BittWare's large double-width cards, this server is an excellent premium option for the 2U form factor. Dell ProSupport options are also available.

## System Management

For system management, BittWare's FPGA cards are equipped with a Board Management Controller (BMC), which accepts IPMI 2.0 commands. Use it along with BittWare's BittWorks II Toolkit to program the FPGA over USB, monitor card power and temperature, and re-program the onboard clocks. You'll also be able to set points to shut down the card when it gets too hot, access JTAG, or access the software tools remotely.

## The TeraBox Advantage

Choosing a TeraBox FPGA server means knowing you are getting a pre-configured and tested solution. This includes setup and installation of your FPGA cards and associated hardware, your choice of operating system, and development tools. Your TeraBox arrives ready for use—giving your team more time for development and deployment.

## Example System Configuration

The TeraBox 2102D supports many of BittWare's Achronix, Intel, or Xilinx FPGA-based PCIe cards. The table below lists specifications for some of our certified cards\*:

	FPGA	Cards per Server	Memory	Front Panel System I/O	Processing
<b>S7t-VG6</b>	Achronix Speedster7t	2	<ul style="list-style-type: none"><li>4 banks GDDR6 (up to 16 GBytes)</li></ul>	<ul style="list-style-type: none"><li>1x QSFP-DD, 1x QSFP</li><li>6x 100/50/40/25/10 GbE</li></ul>	<ul style="list-style-type: none"><li>692K 6-input lookup tables (LUTs)</li><li>375 Mbits embedded RAM</li></ul>
<b>IA-840F</b>	Agilex AGF027	2	<ul style="list-style-type: none"><li>4 banks DDR4 (up to 128 GBytes)</li></ul>	<ul style="list-style-type: none"><li>3x QSFP-DDs</li><li>6x 100 GbE, or 24x 25/10 GbE</li></ul>	<ul style="list-style-type: none"><li>2.6 million system logic elements</li><li>Up to 8,528 DSP blocks</li></ul>
<b>IA-420F</b>	Agilex AGF014	6**	<ul style="list-style-type: none"><li>2 banks DDR4 (up to 32 GBytes)</li></ul>	<ul style="list-style-type: none"><li>1x QSFP-DD</li><li>2x 100 GbE, or 8x 25/10GbE</li></ul>	<ul style="list-style-type: none"><li>1.4 million system logic elements</li><li>Up to 4,510 DSP blocks</li></ul>
<b>IA-220-U2</b>	Agilex AGF014	7***	<ul style="list-style-type: none"><li>2 banks DDR4 (up to 16 GBytes)</li></ul>		<ul style="list-style-type: none"><li>1.4 million system logic elements</li><li>Up to 4,510 DSP blocks</li></ul>

\* Subject to availability. Contact BittWare for additional FPGA card options.

\*\* 4 cards with PCIe x16, 2 cards with PCIe x8

\*\*\* 8 cards possible but will lose the 960GB storage drive

 Achronix

 intel

 AMD  
XILINX

## Server Configurations

### Low

- (2) Intel Xeon Silver 4309Y (2.8GHz, 8C/16T) Processors
- 16GB DDR4-2666
- BOSS-S2 controller card + with 2 M.2 Sticks 240GB (RAID 1)
- (1) 960GB Data Center NVMe Read Intensive AG Drive U2 Gen4
- (1+1) 1400W Power Supplies

### Medium

- (2) Intel Xeon Gold 6334 (3.6GHz, 8C/16T) Processors
- 128GB DDR4-3200
- BOSS-S2 controller card + with 2 M.2 Sticks 240GB (RAID 1)
- (1) 960GB Data Center NVMe Read Intensive AG Drive U2 Gen4
- (1+1) 2400W Platinum Power Supplies

### High

- (2) Intel Xeon Platinum 8358P (2.6GHz, 32C/64T) Processors
- 256GB DDR4-3200
- BOSS-S2 controller card + with 2 M.2 Sticks 240GB (RAID 1)
- (1) 960GB Data Center NVMe Read Intensive AG Drive U2 Gen4
- (1+1) 2400W Platinum Power Supplies

### Ultra

- (2) Intel Xeon Platinum 8380 (2.3GHz, 40C/80T) Processors
- 512GB DDR4-3200
- BOSS-S2 controller card + with 2 M.2 Sticks 240GB (RAID 1)
- (1) 960GB Data Center NVMe Read Intensive AG Drive U2 Gen4
- (1+1) 2400W Platinum Power Supplies

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