

**TeraBox 1411B**  
1U FPGA Server

## High Density Standard-Depth FPGA Server with Removable Storage

At the extreme of FPGA server density, the TeraBox 1411B gives the highest level of compute and network capability in a 1U chassis as well as removable storage. This server can support up to two of our largest Achronix Speedster7t, Intel Stratix 10, Xilinx UltraScale+, or Intel Agilex FPGAs.

This innovative product supports PCIe Gen4 and up to 4 NVMe Gen4 U.2 drives and features an AMD EPYC processor in a standard rack depth chassis.

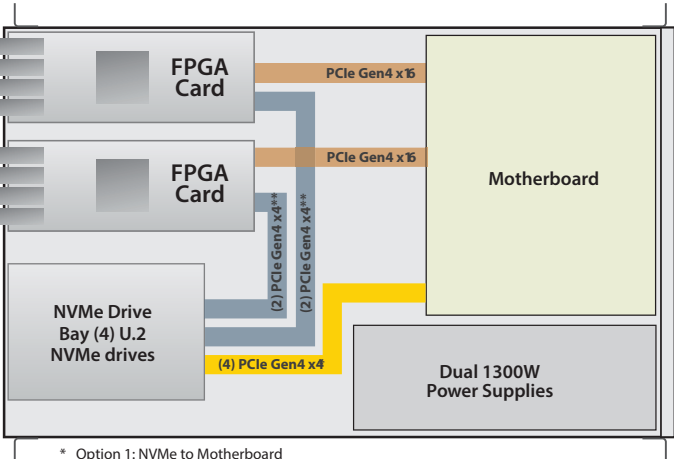


### key features

Up to **8 QSFP-DDs** for 16x 100G or 64x 10/25G

Up to **120TB** of PCIe 4.0 removable storage

Standard Height Double Slot  
Support for BittWare's full range of FPGA cards



\* Option 1: NVMe to Motherboard  
\*\* Option 2: NVMe to FPGA Card

### chassis key specs

- 1U depth, 28.25 in (71.75 cm)
- Processor: (1) AMD EPYC 7002 Series Processor (1401B)
- Ethernet: 2x RJ45 10G base-T by Intel® X550-AT2, 1x RJ45 Dedicated IPMI LAN port by RTL8211E
- Memory: 8x DDR4 DIMMs
- Storage: 2x M.2 drives, 4x Removable U.2 NVMe drives
- Slots: 2x front panel PCIe Gen4 x16
- Power supply: 1+1 AC 1300W, 110/220V

**NVMe-to-Motherboard:**  
1-2 FPGA cards connected directly to the Motherboard (PCIe Gen4 x16)  
(4) drives connected directly to the motherboard  
Up to a total of 120TB

**NVMe-to-FPGA Card:**  
1-2 FPGA cards connected directly to the Motherboard (PCIe Gen4 x16)  
(2) drives connected directly to each FPGA card via OCuLink  
Up to a total of 120TB  
Requires 3rd party IP

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1U FPGA Server

## BittWare FPGA Cards

The TeraBox 1411B supports up to two dual-slot BittWare PCIe FPGA cards. Choose from a variety of cards based on Achronix, Intel, and Xilinx FPGAs. System specs will vary greatly, depending on the FPGA card you select. For example, with two BittWare UltraScale+ PCIe cards, which support up to 512 Gbytes of DDR4 per card, the chassis can support as much as 1 Terabyte of DDR4 on the FPGA cards in 8 banks. With two Agilex cards using breakout cables, each chassis supports 12x 100GbE.

## Certified Cards

The TeraBox 1411B 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	2	<ul style="list-style-type: none"><li>2 banks DDR4 (up to 32GBytes)</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>XUP-VV8</b>	UltraScale+ VU13P	2	<ul style="list-style-type: none"><li>4 banks DDR4 (up to 512 GBytes)</li><li>8 banks QDRII+ (up to 2.3 Gbits)</li></ul>	<ul style="list-style-type: none"><li>4x QSFP-DDs</li><li>8x 100/50/40/25/10 GbE</li></ul>	<ul style="list-style-type: none"><li>3.8 million system logic cells</li><li>Up to 12,288 DSP slices</li></ul>

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



## Server Configurations

### Low

- (1) AMD EPYC 7232P (3.1GHz, 8C/16T) Processor
- 64GB DDR4
- (2) 1 TB M.2 (RAID1)
- (1+1) 1300W Power Supplies

### Medium

- (1) AMD EPYC 7302P (3.0GHz, 16C/32T) Processor
- 128GB DDR4
- (2) 1TB M.2 (RAID1)
- (1+1) 1300W Power Supplies

### High

- (1) AMD EPYC 7502P (2.5GHz, 32C/64T) Processors
- 256GB DDR4
- (2) 1TB M.2 (RAID1)
- (1+1) 1300W Power Supplies

### Premium

- (1) AMD EPYC 7702P (2.0GHz, 64C/128T) Processor
- 512GB DDR4
- (2) 1TB M.2 (RAID1)
- (1+1) 1300W Power Supplies

### Ultra

- (1) AMD EPYC 7702P (2.0GHz, 64C/128T) Processor
- 1TB DDR4
- (2) 1TB M.2 (RAID1)
- (1+1) 1300W Power Supplies

Contact BittWare for additional server configuration options.

To learn more, visit [www.BittWare.com](http://www.BittWare.com)

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## BittWare 1U Server

The TeraBox 1411B server featuring an AMD EPYC processor is exclusive to BittWare and is the ideal platform to unleash the energy-efficient acceleration of BittWare's FPGA cards. This FPGA-optimized 1U server delivers unrivaled performance density and value for a range of compute-intensive applications, including machine learning.

The server is assembled in the USA, is TAA compliant, and offers a 3-year warranty.

## 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.

