



**BittWare**  
a molex company

**TeraBox 1401B**  
1U FPGA Server

## Extreme Density Standard-Depth FPGA Server

1U, 4 card, PCIe Gen4 x16, AMD EPYC 7002 series

At the extreme of FPGA server density, the TeraBox 1401B gives the highest level of compute and network capability in a 1U chassis. This server provides twice the density of the typical 4U server and the power of 4 of our largest Achronix Speedster7t, Intel Stratix 10 or Xilinx UltraScale+ FPGAs.

This innovative product supports PCIe Gen4 and features an AMD EPYC processor in a standard rack depth chassis.

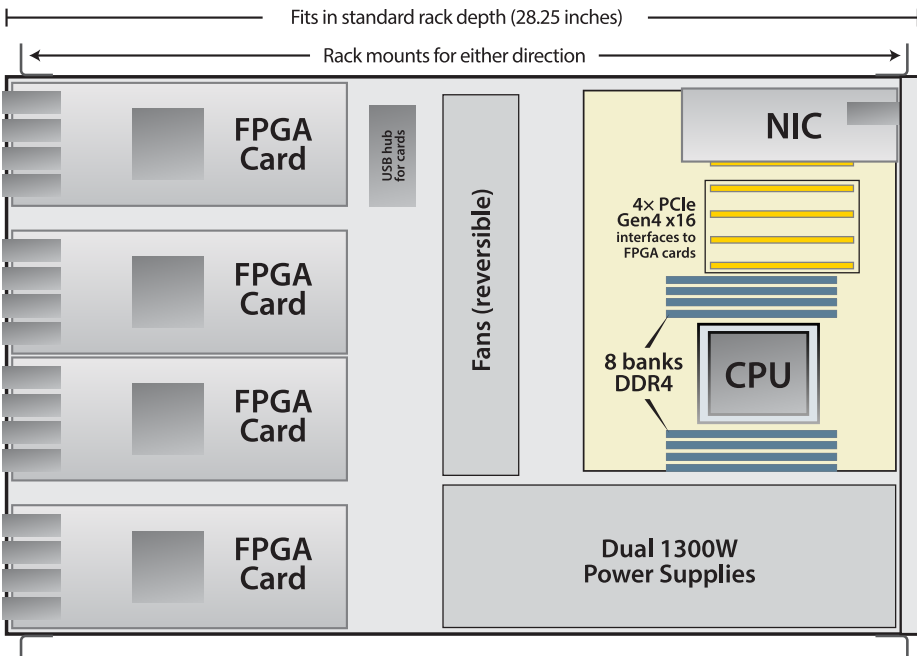


### key features

Up to  
**16 QSFP-DDs**  
for 32x 100G or  
128x 10/25G

**1U**  
4 FPGAs in a  
standard-depth  
1U server

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



### chassis key specs

- 1U depth, 28.25 in (71.75 cm)
- Processor: (1) AMD EPYC 7002 Series Processor
- Memory: 8x DDR4 DIMMs
- Storage: 2x M.2
- Slots: 4x front panel PCIe Gen4 x16;  
1x rear panel low-profile Gen4 x16 NIC slot
- Power supply: 1+1 AC 1300W, 110/220V

# TeraBox 1401B

1U FPGA Server

## BittWare FPGA Cards

The TeraBox 1401B supports up to four dual-slot BittWare PCIe FPGA cards. Choose from a variety of cards based on the Speedster 7t, Stratix 10, or UltraScale+ FPGAs. System specs will vary greatly, depending on the FPGA card you select. For example, with four BittWare UltraScale+ PCIe cards, which support up to 512 Gbytes of DDR4 per card, the chassis can support as much as 2 Terabytes of DDR4 on the FPGA cards in 16 banks. With four Agilinx cards using breakout cables, each chassis supports 48x 100GbE.

## Example System Configuration

The TeraBox 1401B supports many of BittWare's Achronix, Intel or Xilinx FPGA-based PCIe cards. The table below lists system totals when populated with four cards\*:

	FPGA	Cards in Server	Memory	Front Panel System I/O	Processing
<b>S7t-VG6</b>	Speedster7t	4	<ul style="list-style-type: none"><li>32 banks GDDR6 (up to 32 GBytes)</li></ul>	<ul style="list-style-type: none"><li>4x QSFP-DDs, 4x QSFP28s</li><li>24x 100/50/40/25/10 GbE</li></ul>	<ul style="list-style-type: none"><li>2.75 million 6-input lookup tables (LUTs)</li><li>750 Mbits embedded RAM</li></ul>
<b>520N-MX</b>	Stratix 10 MX	4	<ul style="list-style-type: none"><li>8 banks DDR4 (up to 1 Terabyte)</li><li>16 banks QDRII+ (up to 2.3 Gbits)</li></ul>	<ul style="list-style-type: none"><li>16x QSFP28s</li><li>16x 100/50/40/25/10 GbE</li></ul>	<ul style="list-style-type: none"><li>8.4 million system logic elements</li><li>64 GBytes HBM2</li></ul>
<b>IA-840F</b>	Agilinx	4	<ul style="list-style-type: none"><li>16 banks DDR4 (up to 512GBytes)</li></ul>	<ul style="list-style-type: none"><li>12x QSFP-DDs</li><li>24x 100 GbE, or 96x 25/10 GbE</li></ul>	<ul style="list-style-type: none"><li>10.5 million system logic elements</li><li>Up to 34,112 DSP blocks</li></ul>
<b>XUP-VV8</b>	UltraScale+ VU13P	4	<ul style="list-style-type: none"><li>16 banks DDR4 (up to 2 Terabytes)</li><li>32 banks QDRII+ (up to 9.2 Gbits)</li></ul>	<ul style="list-style-type: none"><li>16x QSFP-DDs</li><li>32x 100/50/40/25/10 GbE</li></ul>	<ul style="list-style-type: none"><li>15.2 million system logic cells</li><li>Up to 49.152 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)

Rev 2021.03.04 | March 2021

© BittWare 2021

Speedster is a registered trademark of Achronix Semiconductor Corp. UltraScale, Virtex, and Vivado are registered trademarks of Xilinx Corp. Stratix 10 is a trademark of Intel Corp. All other products are the trademarks or registered trademarks of their respective holders.

## BittWare 1U Server

The TeraBox 1401B server featuring 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.

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