**BittWare** a molex company

TeraBox 1400B
1U FPGA Server

Preliminary Product Info

Extreme Density 1U FPGA Server
4 Cards with 16x QSFPs

At the extreme of FPGA server density, the TeraBox 1400B gives the highest level of compute and network capability in a 1U chassis. This server provides up to 3.2Terabits/second of I/O and the power of 4 of our largest Achronix Speedster 7t, Intel Stratix 10, or Xilinx UltraScale+ FPGAs. The CPU host also provides premium performance with two Intel Xeon Platinum 8180 processors.
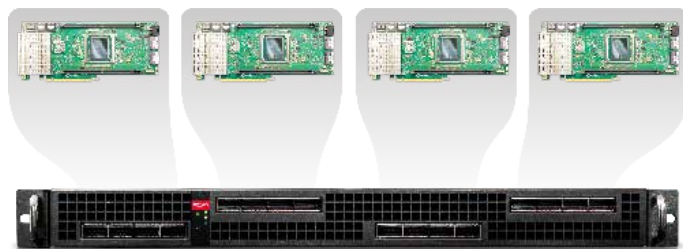
Four Achronix Speedster 7t, Intel Stratix 10, or Xilinx UltraScale+ FPGA cards

key features

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

1U
4 FPGAs in a
1U server

Standard Height
Double Slot
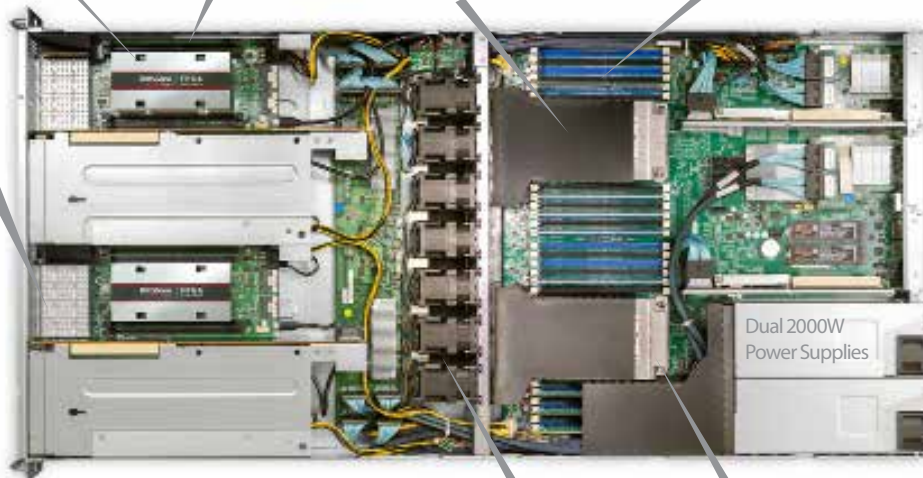Fits any BittWare PCIe card

Achronix, Intel, or Xilinx FPGAs

Up to 2 TB DDR4 direct to FPGA

Two Intel Xeon Scalable Processors

24x ECC DDR4 DIMMs

16 Front-Panel QSFP-DDs for 32x 100G or 128x 40/25/10G using breakout cables

Dual 2000W Power Supplies

Cooling fans for using passive FPGA cards

Two Intel Xeon Scalable Processors

chassis key specs

Processor: Intel® Xeon® Scalable Processors

Memory: 24x ECC DDR4 DIMMs

Slots: 4x PCIe Gen3 x16 with front panel access

Power supply: 2000W redundant PSU

FPGA Cards

The TeraBox 1400B supports up to four dual-slot BittWare PCIe FPGA cards. Choose from a variety of cards based on the Speedster 7t, Stratix 10, or Ultra-Scale+ 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 Stratix 10 cards, each chassis supports 10 million logic elements.

Development Support

BittWare offers complete development support for the PCIe cards in the TeraBox 1400B system.

Our Xilinx FPGA cards are supported by the BittWorks II Toolkit – a collection of libraries and applications that provides complete hardware and FPGA interfaces – along with BittWare's FPGA examples for traditional HDL FPGA development.

Stratix 10 cards include an OpenCL BSP for a high-level software-like FPGA development flow.

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.

Certified Cards

The TeraBox 1400B supports many of BittWare's Achronix, Intel, or Xilinx FPGA-based PCIe cards. The table below lists system totals when populated with four of our certified* cards:

	FPGA	Cards in Server	Memory	I/O	Processing
XUP-VV4	UltraScale+ VU13P	4	• 16 banks DDR4 (up to 2 Terabytes) • 32 banks QDRII+ (up to 9.216 Gbits)	• 3.2 Terabits/sec • 16x 100/50/40/25/10 GbE	• 15 million system logic cells • Up to 49,152 DSP slices
XUP-VVH	UltraScale+ VU37P	4	• 8 banks DDR4 (up to 1 TeraByte) • 16 banks QDRII+ (up to 4.6 Gbits)	• 3.2 Terabits/sec • 16x 100/50/40/25/10 GbE	• 11 million system logic cells • 32 GBytes HBM2

*Contact BittWare for additional FPGA card options.

Server Configurations

Low
- (2) Intel Xeon Bronze 3106 Processors (1.7GHz, 8C/8T)
- 48GB DDR4
- (2) 1TB M.2 SSD
- 2000W Redundant Power Supplies

Medium
- (2) Intel Xeon Silver 4114 Processors (2.2GHz, 10C/20T)
- 96GB DDR4
- (2) 1TB M.2 SSD
- 2000W Redundant Power Supplies

High
- (2) Intel Gold 6132 Processors (2.6GHz, 14C/28T)
- 192GB DDR4
- (2) 1TB M.2 SSD
- 2000W Redundant Power Supplies

Ultra
- (2) Intel Xeon Platinum 8180 Processors (2.5GHz, 28C/56T)
- 768GB DDR4
- (2) 1TB M.2 SSD
- 2000W Redundant Power Supplies

Key Specifications

- Requires 200V-240V
- 17.2"(W) x 35.6"(D) x 1.72"(H)
- 2 FPGAs per CPU, directly connected
- Airflow is front to back

To learn more, visit **www.BittWare.com**

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