BittWare a **molex** company

TeraBox 1411B
1U FPGA Server

High Density Standard-Depth FPGA Server
with Removable Storage

AMD EPYC

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 removeable 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.
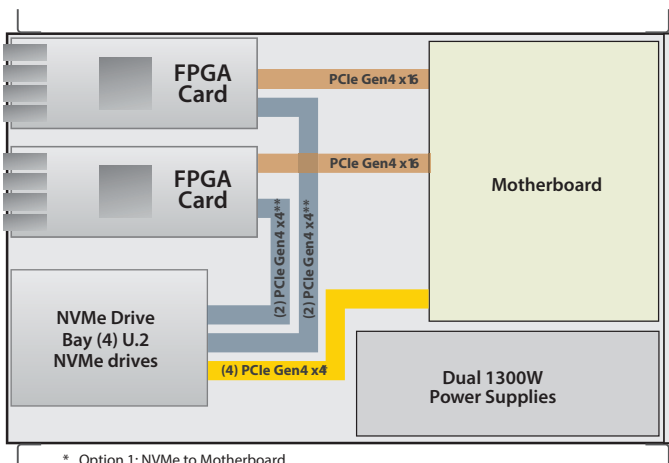
key features

| 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

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

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

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.

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.

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
S7t-VG6	Achronix Speedster7t	2	• 4 banks GDDR6 (up to 16 GBytes)	• 1x QSFP-DD, 1x QSFP • 6x 100/50/40/25/10 GbE	• 692K 6-input lookup tables (LUTs) • 375 Mbits embedded RAM
IA-840F	Agilex AGF027	2	• 4 banks DDR4 (up to 128 GBytes)	• 3x QSFP-DDs • 6x 100 GbE, or 24x 25/10 GbE	• 2.6 million system logic elements • Up to 8,528 DSP blocks
IA-420F	Agilex AGF014	2	• 2 banks DDR4 (up to 32GBytes)	• 1x QSFP-DD • 2x 100 GbE, or 8x 25/10GbE	• 1.4 million system logic elements • Up to 4,510 DSP blocks
XUP-VV8	UltraScale+ VU13P	2	• 4 banks DDR4 (up to 512 GBytes) • 8 banks QDRII+ (up to 2.3 Gbits)	• 4x QSFP-DDs • 8x 100/50/40/25/10 GbE	• 3.8 million system logic cells • Up to 12,288 DSP slices

* 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

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