

BittWare
a **molex** company

TeraBox 1412B
1U FPGA Server

High Density Standard-Depth FPGA Server with Removable Storage

At the extreme of FPGA server density, the TeraBox 1412B 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 Intel Xeon processor in a standard rack depth chassis.

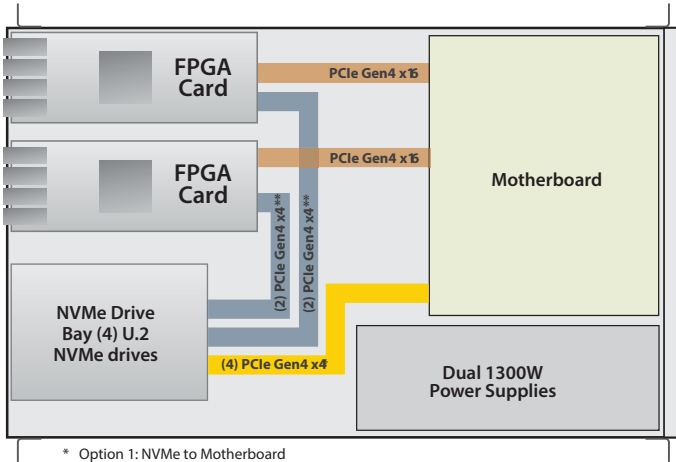


key features

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) Intel 3rd Gen Xeon Processor
- 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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BittWare FPGA Cards

The TeraBox 1412B supports up to two dual-slot BittWare PCIe FPGA cards. Choose from a variety of cards based on Achronix, Intel, or 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 1412B 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	<ul style="list-style-type: none">4 banks GDDR6 (up to 16 GBytes)	<ul style="list-style-type: none">1x QSFP-DD, 1x QSFP6x 100/50/40/25/10 GbE	<ul style="list-style-type: none">692K 6-input lookup tables (LUTs)375 Mbits embedded RAM
IA-840F	Agilex AGF027	2	<ul style="list-style-type: none">4 banks DDR4 (up to 128 GBytes)	<ul style="list-style-type: none">3x QSFP-DDs6x 100 GbE, or 24x 25/10 GbE	<ul style="list-style-type: none">2.6 million system logic elementsUp to 8,528 DSP blocks
IA-420F	Agilex AGF014	2	<ul style="list-style-type: none">2 banks DDR4 (up to 32GBytes)	<ul style="list-style-type: none">1x QSFP-DD2x 100 GbE, or 8x 25/10GbE	<ul style="list-style-type: none">1.4 million system logic elementsUp to 4,510 DSP blocks
XUP-VV8	UltraScale+ VU13P	2	<ul style="list-style-type: none">4 banks DDR4 (up to 512 GBytes)8 banks QDRII+ (up to 2.3 Gbits)	<ul style="list-style-type: none">4x QSFP-DDs8x 100/50/40/25/10 GbE	<ul style="list-style-type: none">3.8 million system logic cellsUp to 12,288 DSP slices

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



Server Configurations

Low

- (1) Intel Xeon 4309Y 2.8 GHz Processor
8 cores (16 virtual CPUs/Hyperthreads)
- 64GB DDR4
- (2) 1 TB M.2
- (1+1) 1300W Power Supplies

Medium

- (1) Intel Xeon 5318N 2.1 GHz Processor
- 24 cores (48 virtual CPUs/Hyperthreads)
- 128GB DDR4
- (2) 1TB M.2
- (1+1) 1300W Power Supplies

High

- (1) Intel Xeon 6330N 2.2 GHz Processor
28 cores (56 virtual CPUs/Hyperthreads)
- 256GB DDR4
- (2) 1TB M.2
- (1+1) 1300W Power Supplies

Premium

- (1) Intel Xeon 8351N 2.4 GHz Processor
36 cores (72 virtual CPUs/Hyperthreads)
- 512GB DDR4
- (2) 1TB M.2
- (1+1) 1300W Power Supplies

Ultra

- (1) Intel Xeon 8351N 2.4 GHz Processor
36 cores (72 virtual CPUs/Hyperthreads)
- 1TB DDR4
- (2) 1TB M.2
- (1+1) 1300W Power Supplies

Contact BittWare for additional server configuration options.

BittWare 1U Server

The TeraBox 1412B server featuring an Intel 3rd Gen Xeon 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.

To learn more, visit www.BittWare.com

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