

OVERVIEW

The SC6 4U is the highest density air-cooled FPGA-accelerated computing machine in the world. The SC6 is a complete, standalone server class rack mount system aimed at high performance computing applications. The SC6 is orders of magnitude faster than conventional servers, while maintaining a small physical footprint and consuming a fraction of their energy.

Using Pico's revolutionary software framework, seamless system expansion/upgrade is made easy, as users maintain a familiar Linux work environment. All SC6 systems are PCIe Gen 3 and fully "plug and play" with the various AC-series modules, as well as the groundbreaking EX-801.

Applications

Typical applications include big data, data mining, security and defense, bioinformatics, cryptography, complex simulations/emulations, image and signal processing, transaction verification, and applied financial analytics.

SPECIFICATION SUMMARY

- Up to 48 AC-series modules with Xilinx UltraScale Kintex, or Altera Arria 10 FPGAs
- Also available with the EX-801 backplane featuring four Altera Stratix V FPGAs sharing a 4G Hybrid Memory Cube
- 10-core Xeon E5 2650 V3 Haswell, 2.3 GHz
- Up to 512GB DDR4RDIMM ECC host memory / 1,024GB LRDIMM / 2,048GB LRDIMM 3DS
- Up to 10 x 2.5" internal SSD
- Fully Switched PCIe Gen 3 architecture
- (2) 10GbE Ports (Intel X540-AT2)
- 5+1 12038 Hot-Swap Fans
- Custom configurations available



Standard Specifications & Configurations (Custom Available)

SC6-4U SuperComputer					
	SC6-4U/AC-510	SC6-4U/AC-520	SC6-4U/AC-505	SC6-4U/AC-506	SC6-4U/801
Module	AC-510	AC-520	M-505	M-506	EX-801
FPGAs per Module	1	1	1	1	4*
Max Modules per System	48	24	48	48	1*
FPGA Product No.	Kintex UltraScale	Arria 10	Kintex-7 K325T	Stratix V	Stratix V
Module Bandwidth to Host	x8 PCIe Gen 2	x8 PCIe Gen 2	x8 PCIe Gen 2	x8 PCIe Gen 2	x16 PCIe Gen 3 / x8 PCIe Gen 3
Host Bandwidth	x16 PCIe Gen 3	x16 PCIe Gen 3	x16 PCIe Gen 3	x16 PCIe Gen 3	x16 PCIe Gen 3
Total Local FPGA Memory	4GB HMC	4GB HMC	384GB	384GB	32GB DDR3 4GB HMC
Chassis	4U	4U	4U	4U	4U
Module Resources					
Memory per FPGA	4GB HMC	4GB HMC	8GB DDR3 SODIMM	8GB DDR3 SODIMM	8GB DDR3 1 HMC Link (1G)

* The EX-801 is a fixed-configuration board, versus Pico Computing's backplane/snap-in AC-Series module-based architecture.

Chassis	
Form Factor	4U Rackmount
Dimensions	6.9 x 17.2 x 30.3 inches 176 x 438 x 770 mm
Gross Weight	120 lbs / 54 kg (max)
Power Supply	
Type	RPSU Hot-swap (2+1)
Input	AC 100 – 240V
Frequency	47 – 63 Hz
Output	2,000W @ 100 – 127 VAC 3,200W @ 200 – 240 VAC "80 Plus" Platinum Rating
Host System	
Processor	10-core Xeon E5 2650 V3
DIMM Quantity	12 + 12 DDR4 DIMM Slots; Up to 512GB DDR4RDIMM ECC host memory / 1,024GB LRDIMM / 2,048GB LRDIMM 3DS
LAN	(2) 10GbE Ports (Intel X540-AT2)
USB	USB 2.0



Custom configurations available. Specifications subject to change without notice.