

HES-7™ | ASIC Prototyping

Scalable, Flexible Solution

HES-7™ provides SoC/ASIC hardware verification and software validation teams with a scalable and high quality FPGA-based ASIC prototyping solution backed with an industry leading 1-year limited warranty. Each HES-7 board with dual Xilinx® Virtex®-7 2000T has 4 million FPGA logic cells or up to 24 million ASIC gates of capacity, not including the DSP and memory resources.

The HES-7 prototyping solution was architected to allow for easy implementation and expansion. Using only one or two large FPGAs, rather than multiple low density FPGAs, HES-7 does not require as much labor-intensive partitioning or tool expense. Using a non-proprietary HES-7 backplane connector, HES-7 can easily expand prototype capacity up to 96 million ASIC gates and can include the expansion of daughter boards.

Lowers ASIC Prototyping Costs

With HES-7, Aldec offers a scalable, high quality ASIC prototyping system that lowers the overall cost of ASIC prototyping.

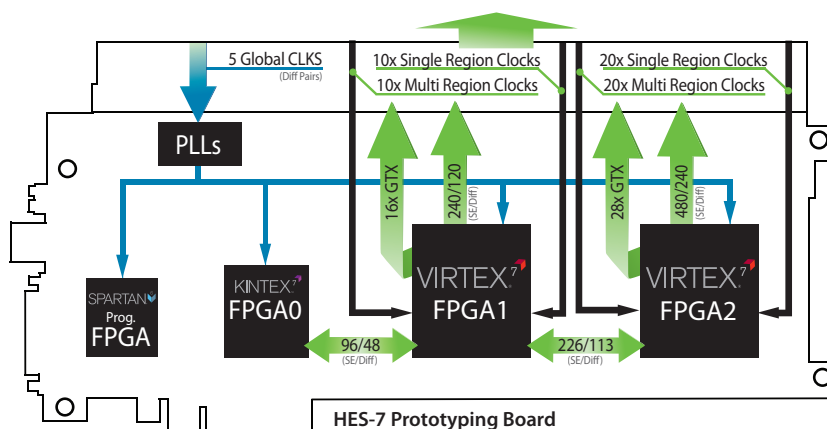
Aldec works diligently to keep its costs lower, through operational efficiencies, high volume manufacturing, and a close partnership with Xilinx which brings superior design implementation and debug software to the process at affordable prices. This in turn is passed along to customers, resulting in lower ASIC prototyping costs.

HES-7 is available in four different, single or dual, FPGA configurations, includes popular interface protocols, abundant I/O and GTX resources that make this prototyping board the perfect fit for any design verification and validation project.

Top Benefits

- **Scalable Capacity from 4 - 96 million ASIC Gates**
- **Easy To Use with Reduced Design Partitioning**
- **Expandable via Non-Proprietary Connector**
- **Superior Quality Backed by Industry Leading 1-Year Warranty**
- **Lowers Cost of Overall ASIC Prototype Process**

Clock Signals - I/O Connectivity



Configuration	Capacity (Up to)	FPGAs	FPGA I/O Connectivity	
			(720 I/O/360 LVDS)	GTX (6.6 Gbps)
HES-7 XV690	4m ASIC Gates	1 XC7VX690T	240/120 FPGA1	16 FPGA1
HES-7 XV1380	8m ASIC Gates	2 XC7VX690T	240/120 FPGA1	16 GTX FPGA1
HES-7 XV2000	12m ASIC Gates	1 XC7V2000T	480/240 FPGA2	28 GTX FPGA2
HES-7 XV4000	24m ASIC Gates	2 XC7V2000T	240/120 FPGA1	16 GTX FPGA1
HES-7 XV4000	24m ASIC Gates	2 XC7V2000T	480/120 FPGA2	28 GTX FPGA2
HES-7 Backplane	96m ASIC Gates	8 XC7V2000T	240/120 FPGA1 (3,5,7)	16 GTX FPGA1 (3,5,7)
HES-7 Backplane	96m ASIC Gates	8 XC7V2000T	480/240 FPGA2 (4,6,8)	28 GTX FPGA2 (4,6,8)

Key Benefits

I/O Connectivity:

- 322 high-speed inter-FPGA connections
 - FPGA0 ↔ FPGA1: 96/48 (SE/Diff)
 - FPGA1 ↔ FPGA2: 226/113 (SE/Diff)
- High-speed 25 Gbps connectors for expansion
 - Backplane and daughterboard interface
- 5 Global clock inputs connected to all FPGAs
- 89 special purpose global lines to all FPGAs
 - For programming, expanded debug, etc.

Customizable Clocking:

- 5 customizable, low skew, global clocks from backplane
 - User programmable PLLs (2KHz to 1.4GHz)
 - MMCX connectors for external clock inputs (0 - 450MHz)
- 60 differential global and local clock inputs from backplane
 - 20 multi-region and single region differential pairs to FPGA1
 - 40 multi-region and single region differential pairs to FPGA2

Memory:

- Up to 16GB of DDR3 memory supported with SO-DIMM sockets
- UP to 64GB of DDR3 with 4 HES-7 boards connected through backplane
- 8GB Flash memory connected to FPGA0
- Micro SD card socket available for stand-alone configuration

Protocol Support:

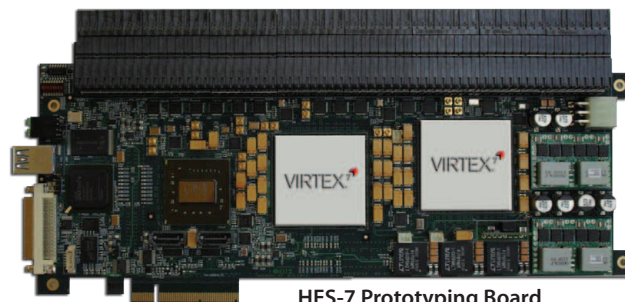
- PCI-Express finger connector for inside PC operation
- PCI-Express cable connector for outside PC operation
- USB 2.0/3.0 connector
- JTAG connector
- 2 SATA Connectors (Device/Host)

Diagnostics:

- Self diagnostic button and status LEDs for hardware diagnostic

Daughterboard Support:

- Leverages non-proprietary 25 Gbps backplane connectors
- Technical specification on the interface available for daughterboard development



HES-7 Prototyping Board

About Aldec

Aldec, Inc. is an industry-leading Electronic Design Automation (EDA) company delivering innovative design creation, simulation and verification solutions to assist in the development of complex FPGA, ASIC, SoC and embedded system designs. With an active user community of over 35,000, 50+ global partners, offices worldwide and a global sales distribution network in over 43 countries - Aldec has established itself as a proven leader within the design verification community.

Aldec delivers high quality EDA solutions for Government, Military, Aerospace, Telecommunications, Safety Critical and Automotive applications. Large companies, including IBM, GE, Qualcomm, Rohde and Schwarz, Bosch, Texas Instruments, Applied Micro, Hewlett Packard, Toshiba, Intel, NEC, Mitsubishi, LG, Hitachi, NASA, Invensys, Westinghouse, Raytheon, Panasonic, Lockheed Martin, Samsung, and mid-size to small firms leverage Aldec EDA verification suites to boost product performance, cut design development cycles and reduce cost.



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