Insight, Analysis, and Advice on Signal Processing Technology

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FPGAs for DSP:
An Independent Perspective

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Berkeley Design Technology, Inc. (BDTI)

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Founded in 1991, BDTI is an independent technology analysis firm focused on digital signal processing applications

BDTI helps system developers make confident technology and business decisions through:
- Independent benchmarking and analysis of chips, tools, and other technologies
- Insightful publications on technologies and trends
- Expert product development advice

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FPGAs for DSP:
An Independent Perspective

FPGAs for DSP, 2nd Edition

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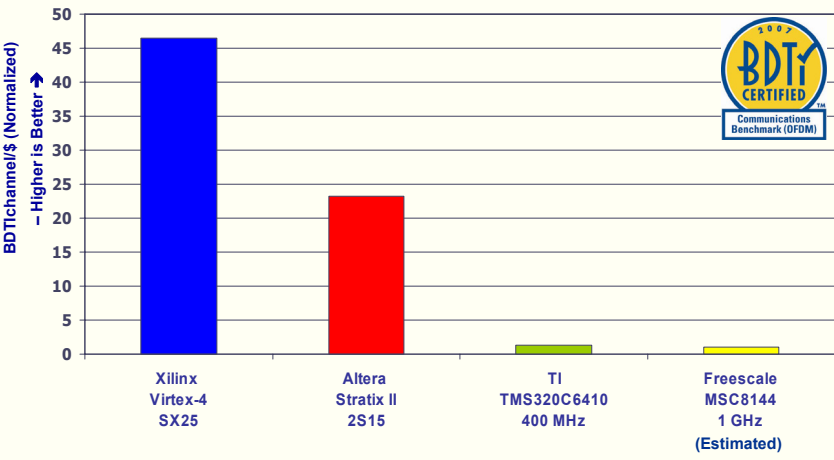In October, BDTI completed its second in-depth, independent analysis of FPGAs for DSP applications

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BDTI Communications Benchmark (OFDM)™

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New BDTI-Certified Cost-Performance Optimized Results

BDTIchannel/$ (Normalized)
↑ Higher is Better ↑

Xilinx	Altera	TI	Freescale
Virtex-4	Stratix II	TMS320C6410	MSC8144
SX25	2S15	400 MHz	1 GHz
			(Estimated)

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Some Key Findings

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- High-end FPGAs can outstrip DSPs on certain DSP tasks
  - Computation-intensive, highly parallelizable tasks
  - High-end FPGAs can beat DSPs in terms of throughput and throughput-per-dollar on these tasks

- DSP have a large advantage in development infrastructure, time-to-market, developer familiarity

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Some Critical Open Questions

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- How do FPGAs perform in other signal processing applications?

- How does FPGA energy efficiency stack up vs. DSPs?

- Will FPGA development get easier/faster?
  - Are high-level tools the answer?

- Will FPGAs effectively challenge processors head-on?
  - FPGA-as-processor use model

- Can FPGAs make better use of growing transistor counts with advancing fabrication processes?

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For More...

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- Big-picture perspective and hands-on, how-to advice

☐ Request free detailed excerpts from *FPGAs for DSP, 2nd Edition*
- ➔ Send email to fpga_samples@BDTI.com

☐ Visit www.BDTI.com for the latest benchmark scores

☐ Visit BDTI at ESC booth 416 to preview *FPGAs for DSP*

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