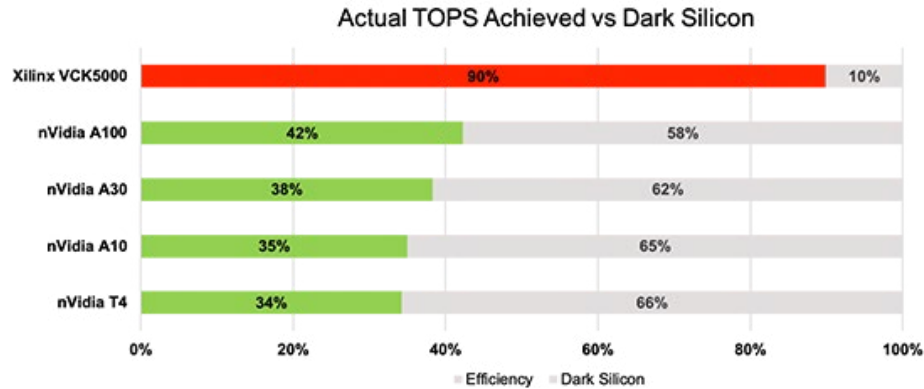


The World's First "0 Dark Silicon" AI Accelerator



Source: <https://developer.nvidia.com/deep-learning-performance-training-inference>

HIGHLIGHTS

AI Inference Development

2x TCO vs Mainstream nVidia GPUs

- > 2x perf/w and perf/\$ compared to nVidia GPUs with standard MLPerf models
- > Archives near 100% compute efficiency
- > Consume less than 100W at card level

2x End-to-End Video Analytics Throughput vs nVidia GPUs

- > Full pipeline from H.264 decode to computer vision to up to 10 AI models
- > Video decode and CV run on x86 CPU or discrete U30 Alveo card
- > Plug-in based pipeline composition from FFmpeg / Gstreamer

Easy to Use with Familiar Frameworks

- > Easy-to-use software flow for any CPU & GPU users, no hardware programming required
- > Run inference from Tensorflow framework directly on board
- > State-of-the-art model supported with mainstream frameworks Pytorch, Tensorflow, Tensorflow 2 and Caffe

AI Engine Development

Power and Performance

- > Up to 10x performance improvements compared to previous generation Xilinx UltraScale+™ with less power in diverse applications

Software Familiarity

- > A familiar software development flow with Vitis unified software platform
- > Accelerate your applications faster with [AI engine C/C++](#)

Mixed Kernel Development

- > Customize your own data pipeline with mixed kernels
- > Develop AIE kernels in C/C++, PL kernels in RTL or HLS, and let Vitis stitch together the full system

SPECIFICATION

CARD SPECIFICATIONS	VCK5000	
Device	VC1902	
Compute	Active	Passive*
Peak INT8 TOPS	145	145
DDR Memory Bandwidth	70	70
Internal SRAM Bandwidth	37	37
Look-up Tables (LUTs)	10	10
PCI Express	12	12
Dimensions		
Height	Full	Full
Length	Full	3/4
Width	Dual Slot	Dual Slot
Memory		
Off-chip Memory Capacity	16 GB	16 GB
Off-chip Total Bandwidth	102.4 GB/s	102.4 GB/s
Internal SRAM Capacity	23.9 MB	23.9 MB
Internal SRAM Total Bandwidth	23.5 TB/s	23.5 TB/s
Interfaces		
PCI Express	Gen3 x 16 / Gen4x 8	Gen3 x 16 / Gen4x 8
Network Interfaces	2x QSFP28 (100GbE)	2x QSFP28 (100GbE)

TAKE THE NEXT STEP

Learn more about Xilinx VCK5000 www.xilinx.com/products/boards-and-kits/vck5000.html

Purchase the VCK5000 Development Card for \$2,745

Get started with Xilinx partner solutions on VCK5000

Get started with Xilinx Vitis AI solution

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