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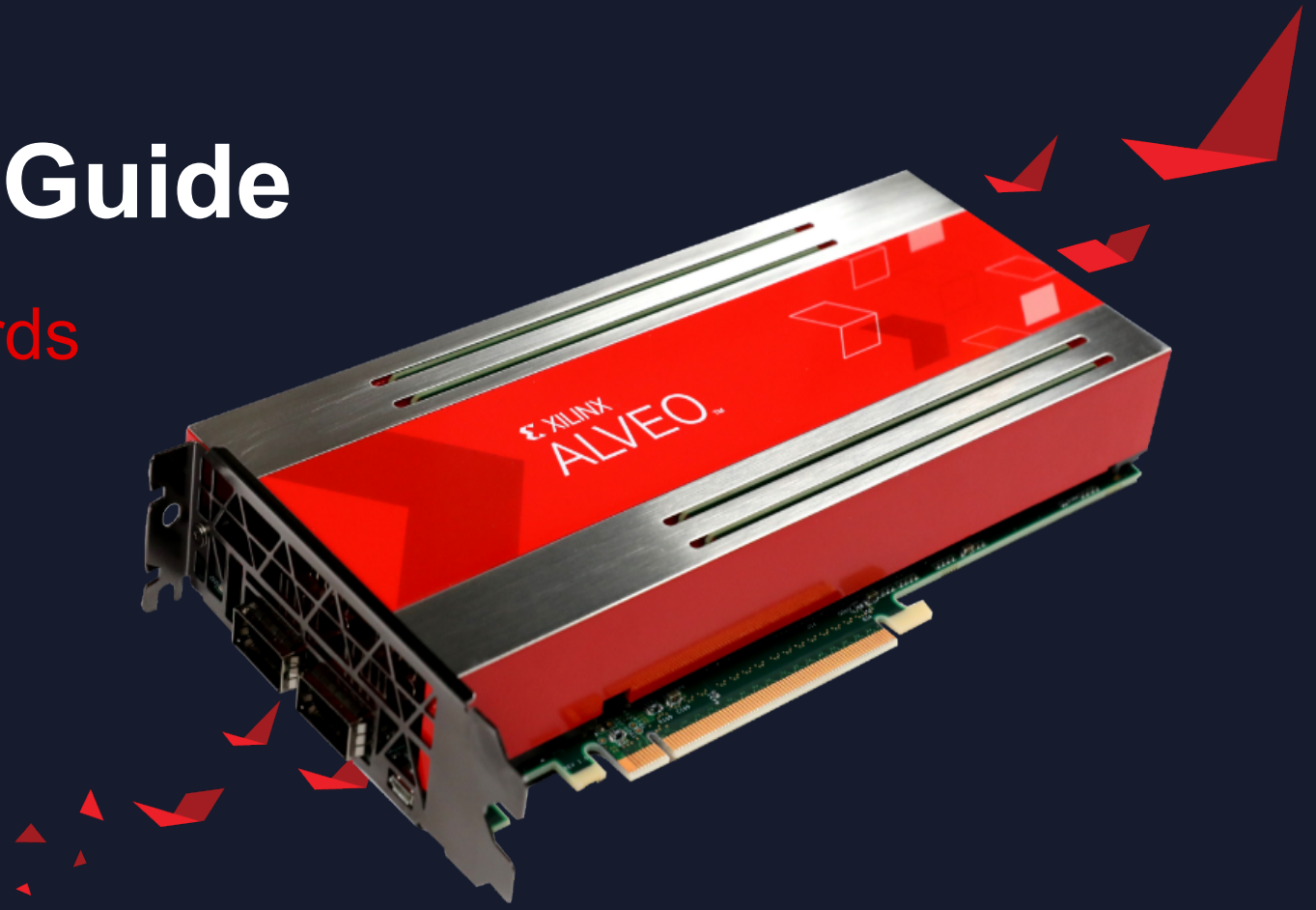
ALVEO™

Product Selection Guide

Data Center Accelerator Cards



	Feature	Alveo U200	Alveo U250	Alveo U280	Alveo U50	Alveo U55C
Dimensions	Width	Dual Slot	Dual Slot	Dual Slot	Single Slot	Single Slot
	Form Factor, Passive Form Factor, Active	Full Height, ¾ Length Full Height, Full Length	Full Height, ¾ Length Full Height, Full Length	Full Height, ¾ Length Full Height, Full Length	Half Height, ½ Length	Full Height, ½ Length
Logic Resources [1]	Look-Up Tables	1,182K	1,728K	1,304K	872K	1,304K
	Registers	2,364K	3,456K	2,607K	1,743K	2,607K
	DSP Slices	6,840	12,288	9,024	5,952	9,024
DRAM Memory	DDR Format	4x 16GB 72b DIMM DDR4	4x 16GB 72b DIMM DDR4	2x 16GB 72b DIMM DDR4	–	–
	DDR Total Capacity	64GB	64GB	32GB	–	–
	DDR Max Data Rate	2400MT/s	2400MT/s	2400MT/s	–	–
	DDR Total Bandwidth	77GB/s	77GB/s	38GB/s	–	–
	HBM2 Total Capacity	–	–	8GB	8GB	16GB
	HBM2 Total Bandwidth	–	–	460GB/s	316GB/s[2]	460GB/s
Internal SRAM	Total Capacity	43MB	57MB	43MB	28MB	43MB
	Total Bandwidth	37TB/s	47TB/s	35TB/s	24TB/s	35TB/s
Interfaces	PCI Express®	Gen3 x16	Gen3 x16	Gen3 x16, 2xGen4 x8, CCIX	Gen3 x16, 2xGen4 x8, CCIX	Gen3 x16, 2x Gen4 x8
	Network Interface	2x QSFP28	2x QSFP28	2x QSFP28	1x QSFP28	2x QSFP28
Power and Thermal	Thermal Cooling	Passive, Active	Passive, Active	Passive, Active	Passive	Passive
	Typical Power	100W	110W	100W	50W	125W
	Maximum Power	225W	225W	225W	75W	150W
Time Stamp	Clock Precision	–	–	–	IEEE Std 1588	-
Tool Support	Vitis™ Developer Environment	Yes	Yes	Yes	Yes	Yes
Solutions	Solutions & Libraries	Acceleration Application Libraries and Solutions				

Alveo™ Compute Accelerator Cards

Notes
1. Logic resources shown without platform usage; refer to card user guides for platform resource usage.
2. A-U50-P00G-PQ-G measured 316GB/s peak HBM2 bandwidth, 201GB/s nominal.

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Alveo™ SmartNIC Accelerator Cards

	Feature	Alveo U25	Alveo SN1022
Dimensions	Width	Single Slot	Single Slot
	Form Factor	Half Height, ½ Length	Full Height, ½ Length
Logic Resources [1]	Look-Up Tables	523K	1,030K
	Registers	1,045K	2,059K
DRAM Memory	DDR Format	- 1x 2GB x 40 DDR4-2400 - 1x 4GB x 72 DDR4-2400	- 1x 4GB x 72 DDR4-2400 (Arm® Processor) - 2x 4GB x 72 DDR4-2400 (FPGA)
Interfaces	PCI Express®	Gen3 x16, 2xGen3 x8	Gen 3 x16, Gen 4 x8
	Link Speeds	10/25GbE	100GbE
	Network Interface	2x SFP28	2x QSFP28
	Arm Processor	Integrated Quad-core Cortex®-A53 Arm Processor	Discrete 16-core Cortex-A72 Processor
Power and Thermal	Thermal Cooling	Passive	Passive
	Thermal Design Power	40W	70W
	Total Power	75W	75W
Networking	Stateless Offloads	Yes	Yes
	Tunneling Offloads	VXLAN, NVGRE, Geneve, Custom	VXLAN, NVGRE, Custom
	SR-IOV	Yes	Yes
	Advanced Packet Filtering	Yes	Yes
	Acceleration / Offloads	DPDK, Onload®	DPDK, Onload, Open Virtual Switch (OVS), Virtio-net, Virtio-blk, vDPA, Ceph RBD Client offload
Manageability	PMCI Protocols	NC-SI, PLDM Monitoring and Control, PLDM MCTP	NC-SI, PLDM Monitoring and Control, PLDM MCTP
	PMCI Transports	MCTP SMBus, MCTP PCIe VDM	MCTP SMBus, MCTP PCIe VDM
	Boot Support	PXE and UEFI	UEFI
Software Plugins	Software and FPGA Extensibility via Dynamically Loadable Plugins	No	Yes
Tool Support	Vitis™ Developer Environment	Yes	Yes

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	Feature	Alveo U30[1]
Dimensions	Width	Single Slot
	Form Factor, Passive Form Factor, Active	Half Height, ½ Length
Logic Resources[2]	Look-Up Tables	460K
	Registers	920K
	DSP Slices	3,456
Video support	Video Codec Unit (VCU)	Hardened
	Codec	H.264 and H.265
	Video Transcodes per Card	2 x 4kp60, 8 x 1080p60,16 x 1080p30, 32 x 720p30
DRAM Memory	DDR Format	2 x 4GB 72b DDR4
	DDR Total Capacity	8GB
	DDR Max Data Rate	2400MT/s
	DDR Total Bandwidth	38GB/s
Internal SRAM	Total Capacity	11MB
	Total Bandwidth	10TB/s
Interfaces	PCI Express®	Gen3 x8, 2 x Gen3 x4[3]
	Network Interface	–
Power and Thermal	Thermal Cooling	Passive
	Typical Power	40W
	Maximum Power	75W
Tool Support	Vivado® Design Suite	No
	FFmpeg with Xilinx Video Plugins	Yes
	Vitis™ Developer Environment	No
Solutions	Solutions & Libraries	Video Transcoding Solutions

Alveo™ Media Accelerator Cards

Notes
1. The Alveo U30 Media Accelerator Card is designed for use in Xilinx real-time evaluation servers or turn-key high-density video transcoding appliances offered by Xilinx VARs.
2. Logic resources shown are without platform usage. User does not have access to these resources on the Alveo U30 card.
3. Servers need to support bifurcation for users to take advantage of both Zynq® UltraScale+™ devices on the Alveo U30 card.

Alveo Data Center Accelerator Cards Ordering Information

A	-	U###yy	-	P	64G	-	PQ	-	G

Product Name
Alveo

Card Name
U200
U250
U280
U50
U55C
U30MA

Cooling
P: Passive
A: Active

DDR Memory
00G: 0GB
08G: 8GB
32G: 32GB
64G: 64GB

Solution Qualification
ESx: Engineering sample, not qualified for volume production
PQ: Fully qualified for volume production

RoHS Indicator
G: RoHS 6/6

U### - 3 Digits for ¾ or Full Length
U## - 2 Digits for Half Length
yy - Feature Option

Verify all data in this document with the device data sheets or product guides found at www.xilinx.com/alveo

Alveo SmartNIC Accelerator Cards Ordering Information

XILINX ALVEO™

A	-	SN	#	#	#	#	-	X	#	X	-	PQ

Product Name
Alveo

SmartNIC

Device Family
1: UltraScale+

Reserved

Link Speed
0: 10Gb/s
1: 25Gb/s
2: 100Gb/s

Port Count
1: Single
2: Dual
4: Quad

Cooling
P: Passive
A: Active

DDR Memory
1: 4GB
2: 6GB
3: 8GB
4:12GB
5:16GB

Encryption
E: Enabled
N: Disabled

Solution Qualification
ESx: Engineering sample, not qualified for volume production
PQ: Fully qualified for volume production

A	-	U##	-	P	##G	-	PQ	-	G

Product Name
Alveo

Card Name
U25

Cooling
P: Passive

DDR Memory
06G: 6GB

Solution Qualification
ESx: Engineering sample, not qualified for volume production
PQ: Fully qualified for volume production

RoHS Indicator
G: RoHS 6/6

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