

# ThinkSystem AMD Alveo V70 Datacenter Accelerator Adapter

## Product Guide

The ThinkSystem AMD Alveo V70 Datacenter Accelerator Adapter is an energy-efficient AI inference card designed for video analytics and natural language processing (NLP) workloads and offers industry standard framework support, directly compiling models trained in TensorFlow and PyTorch. It offers AI Engines that provide a tightly integrated heterogeneous compute platform for NLP and Convolutional and Recurrent Neural Networks (CNN/RNN) acceleration, targeting cloud and edge applications.

The following figure shows the ThinkSystem AMD Alveo V70 Datacenter Accelerator Adapter.



Figure 1. ThinkSystem AMD Alveo V70 Datacenter Accelerator Adapter

### Did you know?

The Alveo V70 accelerator is well suited for edge applications. With a 75W power envelope, the V70 is an efficient accelerator that helps reduce cost per AI channel and provides high channel density for video applications.

## Part number information

The following table shows the part numbers for the Alveo V70 accelerator.

**Orderable from October:** The part number and feature code listed here are planned to be orderable in late October.

Table 1. Ordering information

Part number	Feature code	Description
4X67A86560	BVVC	ThinkSystem AMD Alveo V70 Datacenter Accelerator Adapter

The option part number includes the following:

- One Alveo V70 accelerator
- full-height (3U) adapter bracket attached
- Low-profile (2U) adapter bracket
- Documentation

## Use cases

The Alveo V70 accelerator is suitable for the following AI Inference use cases:

- Video Content Analysis
- Natural Language Processing
- Smart City / Smart Retail

## Technical specifications

The following table lists the processing specifications and performance of the Alveo V70 accelerator.

Table 2. Specifications

Feature	Specification
Architecture	AMD XDNA – Versal AI Core
AI engine	2nd Gen AIE-ML tiles
Peak INT8 integer performance	404 TOPS*
Peak BF16 floating point performance	202 TOPS*
Memory bandwidth	47.6 TB/s for internal memory 76.8 GB/s for external DDR
High-density video decoder	96 channels of 1920x1080p (10 frames per second using H.264/H.265)
Host interface	PCIe Gen5 x8
Form Factor	Half Height, Half Length
Cooling	Passive
Power (TDP)	75 W

\* with 50% weight sparsity

## Server support

The Alveo V70 accelerator is planned to be supported in the following server:

- ThinkSystem SE455 V3

## Software

AMD Vitis™ AI provides a comprehensive AI inference development platform for AMD adaptive SoCs and Alveo™ data center accelerators providing standard framework support, directly compiling models trained in TensorFlow and PyTorch . Vitis AI plugs into common software developer tools and utilizes a rich set of optimized open-source libraries to empower software developers with machine learning acceleration as part of their software code.

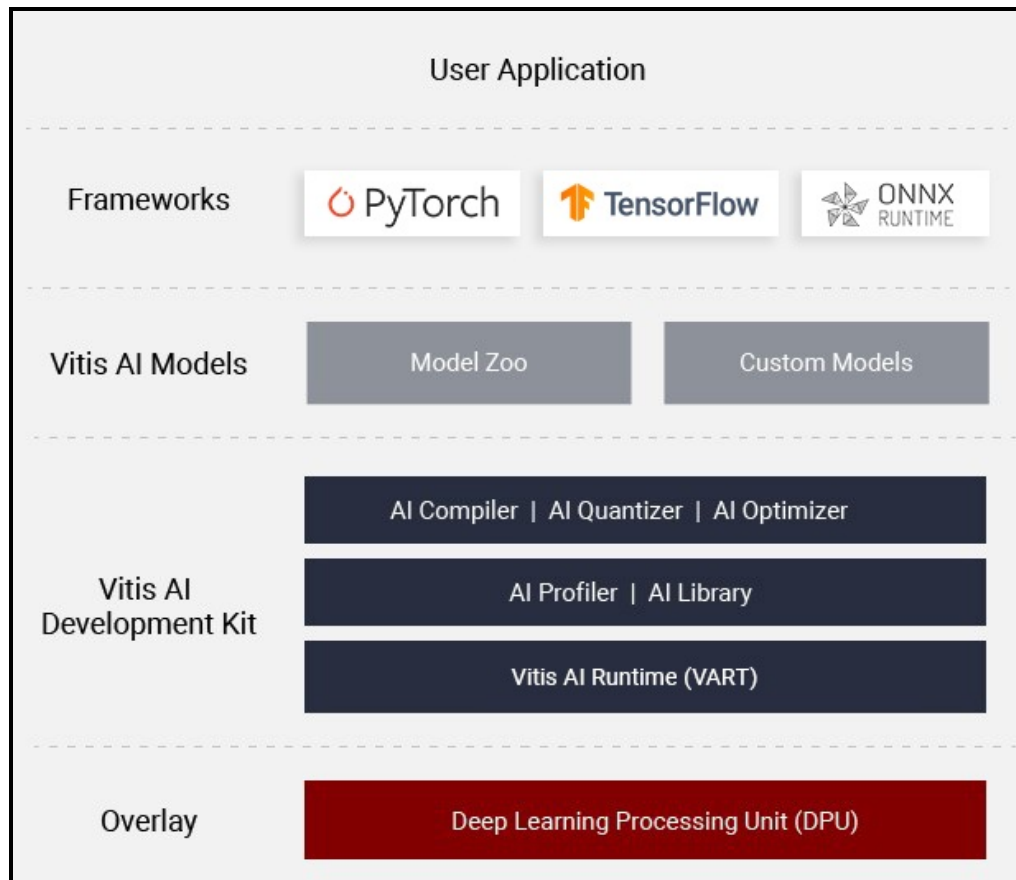


Figure 2. Programming model

For more information see the AMD Vitis Unified Software Platform page:  
<https://www.xilinx.com/products/design-tools/vitis/vitis-platform.html>

## Auxiliary power cables

The Alveo V70 accelerator does not require an auxiliary power cable.

## Regulatory approvals

The Alveo V70 accelerator has the following regulatory approvals:

- RCM
- BSMI
- CE
- FCC
- ICES
- KCC
- cUL, UL
- VCCI

## Operating environment

The Alveo V70 accelerator has the following operating characteristics:

- Ambient temperature
  - Operational: 0°C to 50°C
  - Non-operational: -40°C to 75°C
- Humidity: 5-85% relative humidity

## Warranty

One year limited warranty. When installed in a Lenovo server, the adapter assumes the server's base warranty and any warranty upgrades.

## Related publications

For more information, refer to these documents:

- ThinkSystem and ThinkAgile GPU Summary:  
<https://lenovopress.lenovo.com/lp0768-thinksystem-thinkagile-gpu-summary>
- ServerProven compatibility:  
<http://www.lenovo.com/us/en/serverproven>
- AMD Alveo V70 product page:  
<https://www.xilinx.com/applications/data-center/v70.html>
- AMD Vitis Unified Software Platform page:  
<https://www.xilinx.com/products/design-tools/vitis/vitis-platform.html>

## Related product families

Product families related to this document are the following:

- [GPU adapters](#)

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