

Course Description

This course provides a system-level understanding of power and thermal issues related to designing with the Versal™ ACAP.

The emphasis of this course is on:

- Estimating power using power analysis
- Managing thermal design
- Understanding Versal device packaging
- Using the Versal PCB Schematic Checklist for accelerating PCB design

Level – ACAP 2

Course Details

- 1 day live instructor led training (in person or online)
 - 7 lectures
 - 2 labs

Price – \$800 or 8 Xilinx Training Credits

Course Part Number – ACAP-POWER-BD

Who Should Attend? – Hardware designers and system architects wanting to develop an effective power distribution network for the Versal ACAP.

Prerequisites

- [Designing with the Versal ACAP: Architecture and Methodology](#) training
 - Optional: [Signal Integrity and Board Design](#) course
- Familiarity with the Vivado® Design Suite

Software Tools

- Vivado Design Suite 2020.2
- XPE for the Versal ACAP devices

Hardware

- Architecture: Xilinx Versal ACAPs

Check with [Morgan Advanced Programmable Systems, Inc.](#) for the specifics of the in-class lab board or other customizations. After completing this comprehensive training, you will have the necessary skills to:

- Design an efficient power distribution network for a Versal ACAP design
- Leverage the Vivado Design Suite XPE tool for power estimation
- Dynamically manage power consumption

Course Outline

Day 1

- **Versal ACAP Architecture Overview for Existing Xilinx Users**
Introduces to students that already have familiarity with Xilinx architectures the new and updated features found in the Versal ACAP devices. {Lecture}
- **Power and Thermal Solutions Overview**
Introduces key power and thermal concepts and explores some of capabilities of the Versal ACAP devices and introduces the power distribution network flow. {Lecture, Lab, Demo}
- **Packaging and Power Integrity**
Describes key elements when modeling a PDN and dives deeper into packaging considerations. {Lecture}
- **Power Management**

Discusses power domains and how they can be controlled along with basic techniques used to lower overall power consumption. {Lecture}

- **Power Supply Backgrounder**

Reviews linear and switching power supplies and common terms used to specify power supply characteristics. {Lecture}

- **Designing the Power Supply**

Consolidates the thermal management concepts of the course for achieving a successful design. {Lecture}

- **PCB Design Verification – Versal ACAP Schematic Checklist**

Reviews PCB design verification using the Schematic Checklist. {Lecture, Lab}

Register Today

Morgan Advanced Programmable Systems, Inc. (Morgan A.P.S.) delivers public and private courses in locations throughout the central US region; including Iowa, Illinois, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota and Wisconsin.

Visit morgan-aps.com/training, for full course schedule and training information.



You must have your tuition payment information available when you enroll. We accept credit cards (Visa, MasterCard, or American Express) as well as purchase orders and Xilinx training credits.

Student Cancellation Policy

- Students cancellations received more than 7 days before the first day of class are entitled to a 100% refund. Refunds will be processed within 14 days.
- Student cancellations received less than 7 days before the first day of class are entitled to a 100% credit toward a future class.
- Student cancellations must be sent [here](#).

Morgan A.P.S. Course Cancellation Policy

- We regret from time-to-time classes will need to be rescheduled or cancelled.
- In the event of cancellation, live on-line training may be offered as a substitute.
- Morgan A.P.S. may cancel a class up to 7 days before the scheduled start date of the class; all students will be entitled to a 100% refund.
- Under no circumstances is Morgan A.P.S. responsible or liable for travel, lodging or other incidental costs. Please be aware of this cancellation policy when making your arrangements.
- For additional information or to schedule a private class contact us [here](#).

Online training with real hardware

During the Covid-19 period, some companies do not allow their staff to participate in live in-person training.

- Consequently, Morgan Advanced Programmable Systems, Inc. has set up a training VPN where engineer participants can take classes online using the same computers and devCards used during in-person training.

- Even better, and upon request, you can use these computers after hours on training days to experiment with labs. This is not possible for in-person training.
- Additionally, just like in-person training, the laptops and devCards, tools, OS, and licensing are setup in advance.
- In some ways, live online-training is better than in-person...for example, you can grant the instructor permission to look at your Vivado, PetaLinux terminal, or Vitis for extended periods of time if your lab is not going exactly as planned to a missed step.
- This is often more comfortable than two engineers crowding around a laptop screen.

Taking remote training also allows you to learn some tips and tricks for working remote. Whether your devCard is in the lab down the hall, or across the world via VPN, you can control your Xilinx based device quickly and efficiently.