

# EMA iTrain Online

Internet-based training solutions

# eLearning

## iTrain Online Key Features

- iTrain is self-paced eLearning that allows you to train at your own pace
- 24/7 online availability lets you fit coursework into your schedule
- iTrain offers live online technical support to answer your questions as they arise
- Provides up to 60 hours of eLearning over a six-month period
- Materials based on EMA's popular classroom training
- Evaluate your skills and progress with iTrain's "Knowledge Tests"

## Available eLearning Courses

### PCB DESIGN

- Cadence® OrCAD® Capture
- Cadence OrCAD Layout Basics
- Cadence OrCAD Layout Advanced
- Cadence OrCAD PCB Editor
- Cadence SPECCTRA® for OrCAD

### CIRCUIT SIMULATION

- Analog Simulation with Cadence PSpice®
- Cadence PSpice Advanced Analysis

### TIMING ANALYSIS

- EMA TimingDesigner®



## Internet-based eLearning Solutions for Electronic Design

EMA iTrain Online™ provides self-paced Internet eLearning solutions for Cadence OrCAD PCB design tools and EMA TimingDesigner. Each iTrain course teaches concepts and skills through a text-based, three-step "explain", "demonstrate", and "hands-on" learning process. This approach includes laboratory exercises designed to quickly boost your confidence and productivity.

### A Wide Range of Electronic Design Topics

iTrain enables you to become proficient in many different aspects of PCB design, circuit simulation and timing analysis. Experience with the tools and design flow reduces work and streamlines the entire design process.

### EMA Live Support

Live technical support is available from 9 AM to 5 PM EST Monday through Friday to answer your questions as they arise.

### Available 24/7

Designed to meet the needs of the busy professional, EMA iTrain courses can be completed from any computer with an Internet connection—with just a few mouse clicks!

## Web-based delivery

The EMA iTrain Online website requires an active Internet connection.

iTrain users will be sent a unique personal identification number (PIN) for initial access to the site. The PIN number allows the user to set up a personalized user ID and password.

All necessary lab files are available for quick and easy download through the EMA iTrain website at <http://education.ema-eda.com>.

As an added level of security, only one user with the PIN information can be signed on at any given time. This allows all users to feel comfortable about signing on from all locations throughout their work environment.

## System requirements

- Intel® Pentium® 200 MHz or equivalent processor
- Minimum of 64 MB RAM
- Minimum of 256 MB swap space
- 800 x 600 minimum display resolution (1024 x 768 recommended)
- Windows 2000®, Windows NT® 4.0(SP4 or higher), Windows 98®, or Windows XP Professional® Editions
- Internet Explorer 6 / Firefox 1.5 or greater
- Javascript enabled

## How to purchase

- Order online at [www.ema-eda.com/edastore](http://www.ema-eda.com/edastore)
- eMail us at [info@ema-eda.com](mailto:info@ema-eda.com)
- Call us at 877.362.3321

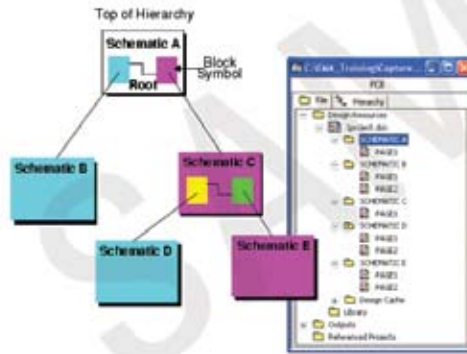
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## Lesson 7: Building and Processing a Hierarchical Design

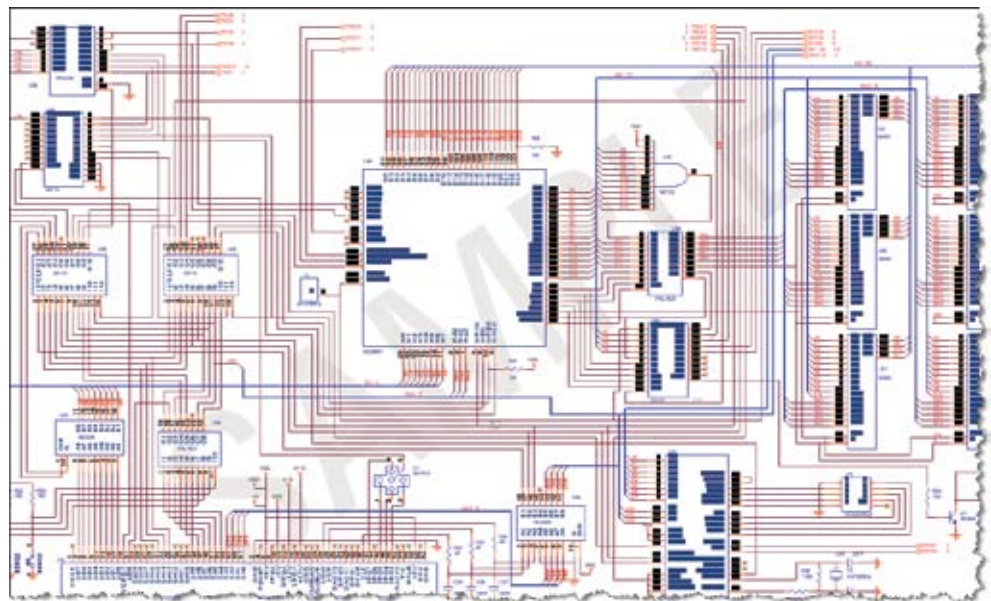
### Lesson Objectives

- After you complete this lesson you will be able to:
- Discuss the structure of a hierarchical design
  - Use special port symbols to connect a schematic and hierarchical block
  - Create a hierarchical block
  - Annotate a hierarchical design
  - Perform a Design Rule Check on a hierarchical design

### Hierarchical Design



When you embed a schematic folder inside another schematic folder, you have created a hierarchical design. The process requires a block symbol which represents a schematic or functional model. When the block symbol is used once in a schematic, the result is called a simple hierarchy (in the accompanying diagram). When the block symbol is used two or more times, the design is called a complex hierarchy.



*Proven training materials and real-world lab examples provide a rich training experience.*

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