



**People
Knowledge
Innovation.**

eCADSTAR™
BEYOND ENGINEERING

eCADSTAR Essentials

Professional Development Courses from Quadra

Ensure you get the most from your software with our Personal Development Courses. We're an accredited eCADSTAR training provider and all of our courses are delivered by experienced, specialist trainers. Our courses are designed to support your training needs and deliver results.

Course Description

This course covers the fundamental principles of the eCADSTAR software, delegates learn all the basics of eCADSTAR through to the advanced design tools and techniques. On the first day delegates will be shown not only how to create schematic symbols, footprints and parts but how to utilise online resources to quickly and easily harvest IPC compliant devices for use in their library. There will be no training library provided as all elements will be made or downloaded during the training.

On the second day, delegates will start a new schematic and add the devices they created during day one. Delegates will gather additional devices from our online ECIP resources to create the schematic. DRC checks will be performed and the results reviewed and amended accordingly.

The third day focuses on transferring a completed schematic to a new blank PCB. All board geometry will need to be drawn, checked and dimensioned and routing completed. A 3D enclosure will be imported to allow for mechanical checks and delegates will learn basic and advanced routing techniques. Finally, delegates will perform a conductor and placement focused board level DRC check and a Board/device to enclosure mechanical check. Time permitting delegates will be able to experience the power of eCADSTAR's 'Divided Design' which focuses on collaborative, concurrent design.

On the final day, delegates will prepare their design for output by utilising the automatic Legend distribution, adding tooling drawings, performing non-conductor focused DRC and configuring the various outputs. Gerber, Drill, ODB etc.

Who is this course for?

New users of eCADSTAR.

Course Objectives

The objective of this course is to provide delegates with a thorough understanding of the principles of library management, schematic capture, PCB design, validation & documentation processes.

Pre-requisites

Basic understanding of electronics and PCB design layouts.

Duration

Four days.

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Training Course Outline

Day 1:

Web Configurations

('ECIP' electronic component information partners)
ZGS support configuration / Access
ECIP Service Configuration & Preferences
ECIP Mapping
ECIP Usage and Expert insight

General Customisation

Application & Product configurations
QAT Quick access tool bar manipulation
Function Keys, Strokes & Macros
User defined menus
Exporting & Importing
Dock-able panels & GUI insight

Library creation & Web Part download

Create an entirely new, empty library
Create template designs by importing & manipulating existing Tech & Rule data
Use ECIP to download a part.
Explore, edit & copy all the various elements of the downloaded part

Symbol Creation

Micro IC gate & power block creation
Create a Resistor & Capacitor
Create PWR & GND symbols

Pad & Padstack Creation

Create a range of PADS
Create a range of PADSTACKS
Review layer options & non-functional lands
Pad creation shortcuts – Expert insight

Footprint Creation using wizard

Create a QFN an 0402
3D model alignment
Power/ heat slug management
Alternate Footprints

Part Creation

IC & discrete devices
Define swappable pins
Review Version control
Manipulate Part elements
User defined attributes
Copying content between libraries
All device elements
Stack up information & Rules.

Day 2:

Schematic Entry

Application Configuration
Border Import

Template file creation
Grids & Zones
Part or Symbol Entry
Applying filters to the library search & saving per device type
Attribute visibility
Element selection criteria
Revision control
Connection entry methods
Bus connectivity
Inter/Intra sheet connections
Copying circuits
Hierarchical Block creation
Component Browser Mode
Filtering & Cross probe
Design specific attributes
Insight into Variants
Checking & Reporting
Understanding SCH DRC
BOM output configuration.

Day 3:

Drawing features

Understanding the Layer navigation
Board Outline Creation
Layout Area definition
Mounting holes/slots – best practice
Dimensioning
Layer / feature duplication

Placement & Distribution

Selection techniques
Understanding DRC modes
Defining & using Groups
Cross probe placement
Defining Placement obstructs
Reviewing placement Issues

Routing

Layer options & mapping
Routing configuration options
Basic routing
Differential pair configuration
Constraint Browser
Advanced routing & semi-automatic routing tools
Copper Floods
Via Stitching
Thermal connectivity manipulation.
Defining dynamic teardrops.
Test point addition.
Via span configuration for HDI tech

PCB DRC component & conductor focus

Understanding the dynamic DRC
Creating DRC reports
DRC approval options

Design Re-use

Import Alien data into your design & use back annotation
Re-use channels at PCB. Best practice
Create a library of PCB blocks

Mechanical Checking

Importing, Aligning & Rotating 3D data within our PCB editor
Changing 3D display modes
Understanding 3D collision notices
Checking for interference fits
Checking/measuring for specific clearance geometry from board elements to mechanical features
Checking of conductor elements to mechanical features

* Collaborative Concurrent Design

Working with your fellow students you will complete a small design using the powerful 'divided design' tool. You will all see each other's changes reflected in your design Live on 'the big screen' as you work together. Tricks & tips for successful collaborative design.

Day 4:

Synchronicity checks

Sch versus PCB
Library versus SCH & PCB
Replacing/Updating devices

Legends & Graphical Items

Automatic Refdes distribution
Drawing ancillary Text

DRC for Non-conductor Legend & Mask

Understanding the dynamic DRC for non-conductor elements

Drill table Addition

Manufacturing output configuration
Gerber Configuration & Creation
Excellon Drill configuration & creation
ODB++ configuration & Creation
Standard Part List Export
Customisable Parts list configuration including
Automatic insertion data.

* Collaborative Concurrent Design is dependent on Network access/suitability and if the course is external to Quadra Training Facilities.