


## Resource Reference

Modified by Jason Howie on May 15, 2015

CircuitMaker's unified design environment consists of various *Servers* plugged into a core platform. Together with the core platform itself, these servers provide the resources of the software - its features and functionality. These are delivered in the form of commands, dialogs, panels, and the like. These resources are documented and collated by server. Use the following methods to locate information on a particular resource:

- Within the software, hover over a Ribbon button, menu command, dialog, panel, or design object, and press **F1**.
- Within the documentation, either:
  - Use the pop-up navigation tree to the left of this text (accessed by clicking the  button at the top-left of a page) to browse for the resource required across the various servers (under the Resource Reference section of the tree).
  - Use the **Search** field at the top-right.



Within CircuitMaker, the **F1** shortcut is definitely worth getting acquainted with. Hover the mouse over anything inside CircuitMaker - a button, command, dialog, panel, or design object - and press **F1** to access documentation for it. **F1** also works for specific pages in the *Preferences* dialog, and specific rule constraint pages in the *PCB Rules and Constraints Editor* dialog. And if you're running a command, say you're placing a component and you're not sure how to rotate it, press **F1** for a list of command-dependent shortcuts.

The following sections highlight, and provide quick navigation to, some key areas within the resources documentation.

### Design Environment

[System Panels](#)

[System Preferences](#)

### Schematic Capture

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## **PCB Design**

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## **Text Editing**

[General Editing](#)

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## **PCB Design Rules Reference**

CircuitMaker's PCB Editor uses the concept of *Design Rules* to define the requirements of a design. These rules collectively form an 'instruction set' for the PCB Editor to follow. They cover every aspect of the design - from routing widths, clearances, plane connection styles, routing via styles, and so on, and many of the rules can be monitored in real-time by the online Design Rule Checker (DRC).

Design rules target specific objects and are applied in a hierarchical fashion. Multiple rules of the

same type can be set up. It may arise that a design object is covered by more than one rule with the same scope. In this instance, a contention exists. All contentions are resolved by a priority setting. The system goes through the rules from highest to lowest priority and picks the first one whose scope(s) match the object(s) being checked.

With a well-defined set of design rules, you can successfully complete board designs with varying and often stringent design requirements. And as the PCB Editor is rules-driven, taking the time to set up the rules at the outset of the design will enable you to effectively get on with the job of designing, safe in the knowledge that the rules system is working hard to ensure that success.

The following categories of design rules are available:

[Electrical](#)

[Routing](#)

[Mask](#)

[Plane](#)

[Placement](#)

## Project Compiler Violations Reference

The process of compiling is integral to producing a valid netlist for a project. In fact it is the process of compilation that yields the unified data model of a design – the single model of the data that is accessible across the design domains in CircuitMaker's unified design environment. Connectivity awareness in your schematic diagram can be verified during compilation according to rules defined as part of the options for the design project – on the **Error Reporting** and **Connection Matrix** tabs respectively.

This area of the CircuitMaker documentation provides a comprehensive reference describing each of the possible electrical and drafting violations that can exist in source documents when compiling a project. The various categories of violation are:

[Violations Associated with Buses](#)

[Violations Associated with Components](#)

[Violations Associated with Documents](#)

[Violations Associated with Harnesses](#)

[Violations Associated with Nets](#)

[Violations Associated with Others](#)

[Violations Associated with Parameters](#)



Compiler violations are reported in the *Messages* panel.

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