Interactive High Speed Option

PULSONIX

Support for High Speed Designs

Powerful Constraints Driven Design

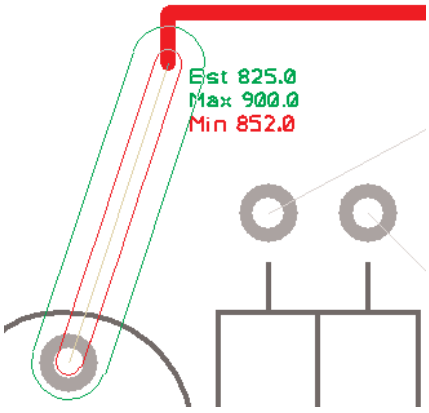
Pulsonix supports a powerful set of constraint driven, rules based, interactive High Speed design features.

With the High Speed features being driven from the Schematic, the design is conceived and defined by the engineer during the early logical capture phase. All constraint rules are passed to the PCB design automatically.

Interactive Net Length Indicators

During track routing, the interactive display shows an 'oval' around the area to be routed indicating whether the track is within the minimum or maximum limits you have set. Colour and textural indicators show whether you are in limits and an estimate of the final track length.

- Net length rules definition (min & max length)
- Interactive net length rules during manual routing
- Graphical net length indicators showing min/max
- Track length min/max rules and Pin-to-Pin rules
- Max number of vias & Via diameter rules
- Min/Max track width rule
- Display of rules during interactive routing
- Display of Min/Max rules using dynamic octagons
- Display of rules in text with dynamic update
- Rule tolerances shown with colour changes
- Rule text size definition

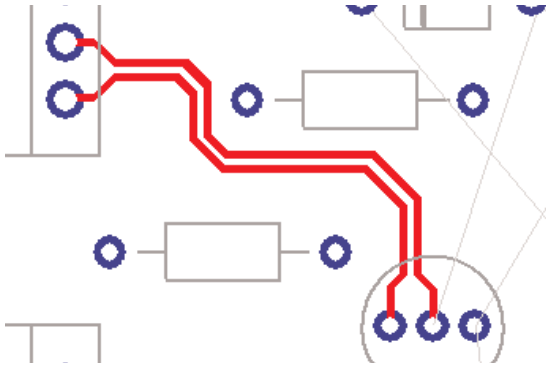


Serpentine Routing

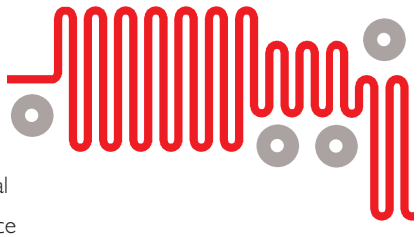
Serpentine Routing enables you to increase the length of high speed nets without introducing spacing errors. You can select a track segment (or segments) and run the Serpentine Routing command where you can define amplitude and separation of each loop, the number of loop cycles to insert, and the amount of additional length required.

Differential Pair Routing

Once defined as Differential Pairs, two nets are routed interactively following a parallel path. The Differential Pairs may have rules that define how close the tracks should be to one another and how much they are allowed to differ in length. These rules also form part of the post-layout Design Rule Checking. Interactive Net Length Indicators may be used at the same time to control the length of the Differential Pairs.



- Differential pair definition and routing
- DRC check and reporting
- Pin-to-Pin rules
- Gap definition rule
- Percentage % pair routing rule
- Length deviation rule
- Rule checks for paired tracks
- Interactive routing of track pairs
- Start/end/remove modes of operation
- 'Clone' mode to add to master already defined
- Pattern control for vias during layer swapping



- Serpentine routing patterns
- Min/Max amplitude
- Number of cycles
- Track separation distance
- Cycle reduction and removal
- Automatic obstacle avoidance
- Additional length rule
- Min/max track length rules obeyed
- Offset controls to allow 'bending' around obstacles

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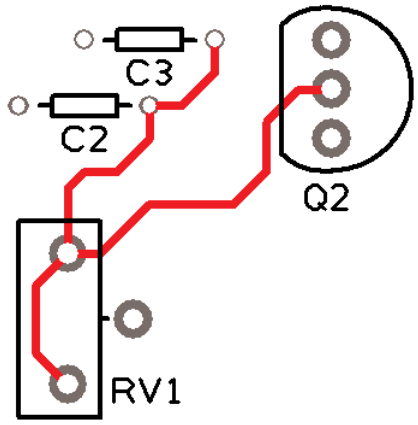
Daisy Chain Routing

The Net Class dialog allows you to create specific track sequences using pin-to-pin rules. Daisy-chain routing gives you precise control over tracks where the exact path required is critical. Once defined, these rules can be checked using the DRC Manufacturing feature.

- Daisy Chain Rules
- Pin-to-Pin topology
- Min/Max length rules support
- Testpoints per net defined



Interactive Spiral Shape Support

The High Speed option also contains RF design features. Specifically, spirals are supported as copper, tracks and shapes. These can be used on electrical and non-electrical layers as required. When created as tracks or copper, they can also be connected to as part of a net. Full DRC checking to these items is also available. Spirals can be added to footprints. Complex spirals can also be used to create components such as planar transformers for use through multi-layer and Embedded component technologies.

- Spirals using intelligent rules supported
- Circular/square spiral shapes
- Gap rules defined
- Number of turns
- Inner spiral width defined
- Aspect ration for non-square shapes
- Corner radius defined for shapes
- Available for Copper & non-elec shapes
- Spirals can be added to Footprints

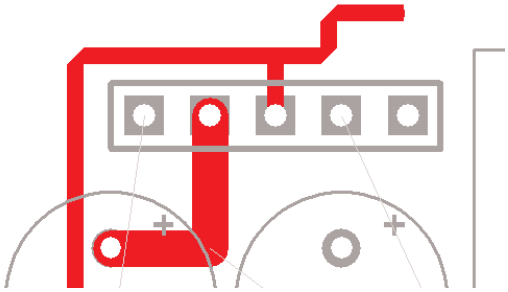
RF Design Support

As an important facet to RF design, Pulsonix contains additional features essential to facilitate this; square-ended tracks and chamfered track corners. Both features can be enabled on a Net Class basis to allow precise control of these features.

Square-ended tracks provide precise track ends when an 'open-ended' square end is required without the use of a landing pad to achieve this.

Chamfered corners allow a traditional 45-degree inside and outside mitre to contain a 90-degree inner corner and 45-degree outer corner, ideal for RF designs.

- Square-ended tracks
- Chamfered track corners for true RF mitres
- Defined within the Net Class rules
- Constrained to local Net Classes



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