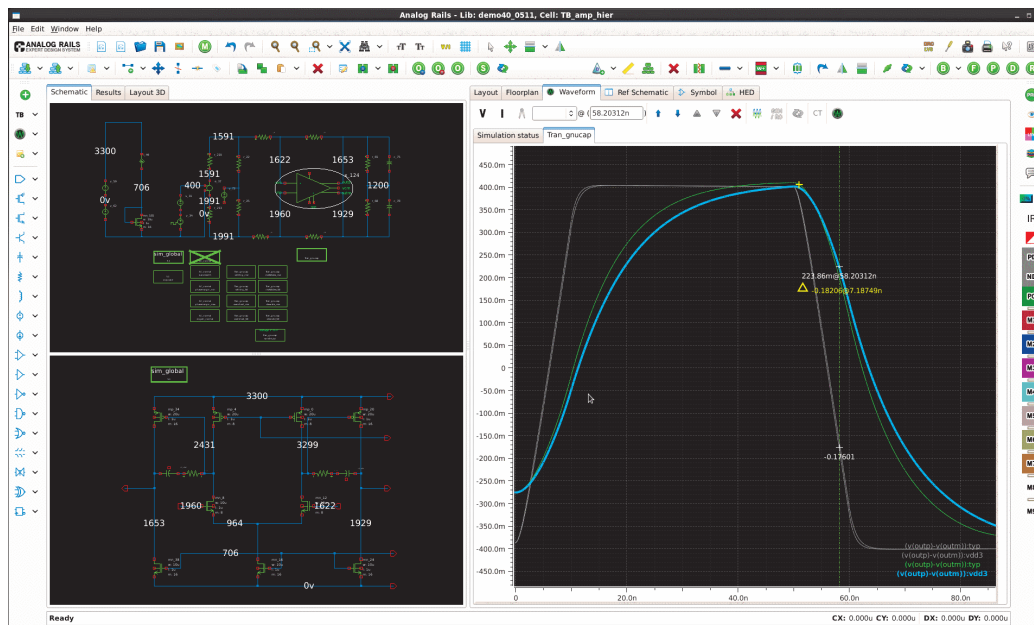


Precision Analog Automation

ANALOG RAILS™ is the key innovator in electronic design automation (EDA), accelerating silicon IP delivery by providing design teams with a unique automated parasitic-aware Correct By Construction™ approach which revolutionizes analog mixed-signal IC design. Customers using ANALOG RAILS™ will have a competitive edge in bringing the best analog mixed-signal products to market quickly while drastically reducing support costs and schedule creep. Design teams efficiently output precision, high-yield analog mixed-signal IP in hours, rather than days, weeks or months, enabling them to be first to market for their high-end integrated circuits and systems on a chip.



**Migrate Existing IP
For Re-use in Any Process!**

Migration automation for accurate and easy porting of analog/mixed-signal designs to new technologies! Simply open any existing OpenAccess schematic in ANALOG RAILS™, select the desired new technology, and let ANALOG RAILS™ unified environment meet specs at that new node, all the while simultaneously optimizing devices in both the schematic and layout, including parasitics! With fully functional and physically verified Correct By Construction™ results in hours, you even gain the luxury of time to further improve on the original design specifications.

| Optimizer | Sensitivity | Mismatch | Measurements | Target | Cost | Filter | 1153.94 | 1153.94 | 0 | 102.113 |
|-----------------------------|-------------|----------|--------------|---------|---------|---------|---------|---------|---|---------|
| Total Cost | | | | | | | 1153.94 | 1153.94 | 0 | 102.113 |
| IR | | | | | | | | | | |
| phasemargin_min | > | 60.0 | 100 | 11.364 | 11.364 | 68.414 | 66.067 | | | |
| phasemargin_max | < | 90.0 | 100 | 11.364 | 11.364 | 68.414 | 66.067 | | | |
| dcgain_normal | > | 60.0 | 100 | 69.536 | 69.536 | 65.505 | 64.810 | | | |
| slewrate_fall | > | 10.0M | 14 | 23.970M | 23.970M | 16.636M | 13.987M | | | |
| slewrate_rise | > | 10.0M | 14 | 23.969M | 23.969M | 16.639M | 13.993M | | | |
| overshoot_rise | < | 5.0 | 12 | 59.269 | 59.269 | 2.7286 | 5.3929 | | | |
| overshoot_fall | < | 5.0 | 12 | 59.270 | 59.270 | 2.7147 | 5.4135 | | | |
| risefall_slew_rise | < | 30.0n | 11 | 19.954n | 19.954n | 28.822n | 34.263n | | | |
| risefall_slew_fall | < | 30.0n | 11 | 19.952n | 19.952n | 28.828n | 34.249n | | | |
| vprobe_pp | < | 1.0 | 10 | 1.9841 | 1.9841 | 853.71m | 906.38m | | | |
| dciprobe | < | 2.0m | 8 | 2.1285m | 2.1285m | 1.4189m | 1.3319m | | | |
| bandwidth | > | 500.0 | 7 | 14.702K | 14.702K | 13.522K | 12.586K | | | |
| settling_fall | < | 500.0n | 5 | 436.37n | 436.37n | 50.473n | 137.03n | | | |
| settling_rise | < | 500.0n | 5 | 436.37n | 436.37n | 50.458n | 137.04n | | | |
| vhr_x_124_x_8_opt_match_236 | > | 50.0m | 1 | 417.39m | 417.39m | 391.75m | 394.10m | | | |
| totalArea | < | 15.7... | 1 | 15.734K | 15.734K | 12.000K | 10.771K | | | |

**Don't Believe It Can Be Done?
Try ANALOG PORTING Service**

Not ready to join the revolution? Don't believe analog automation can actually be done? Seeing is believing! ANALOG PORTING offers lightning fast migration and layout services. Give ANALOG PORTING your schematic and schedule your design review for the very next day! Visit www.analogporting.com for more information.

**Analog Rails Handles Digital
In The Same Environment!**

ANALOG RAILS™ places mixed-signal circuit designers in complete control of their circuits! No need to switch to a different design environment to handle gate-level digital placement and routing. Set the topcell to "D" and if there is no analog content, digital place and route will run. Included is the power and clock mesh, along with clock buffers.



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Sales Office: San Jose, California
Phone: 877-727-2457 (877-7ARAILS)
E-mail: sales@analograils.com
Web: www.analograils.com

Benefits of ANALOG RAILS™

Reduce Cycle Times

Hours instead of weeks! No more time-consuming repeated iteration between circuit and layout designer. Designers always simulate with parasitics from the start. Optimizer is parasitic aware. Place measurements and specs into the schematic and press the button. Design While You Sleep™! Mr. Fixit and the automatic router make ECO's a breeze.

Easily Save Area

Be aggressive! Pack it in! No need to be conservative on layouts. Don't fear last-minute changes. Automation allows circuit designer to quickly try multiple options to determine best design specs. Flatten layout hierarchy to compact even further - without ever losing full intelligence! Additional area efficiency is gained by circuit designers adjusting the design based on full use of black space.

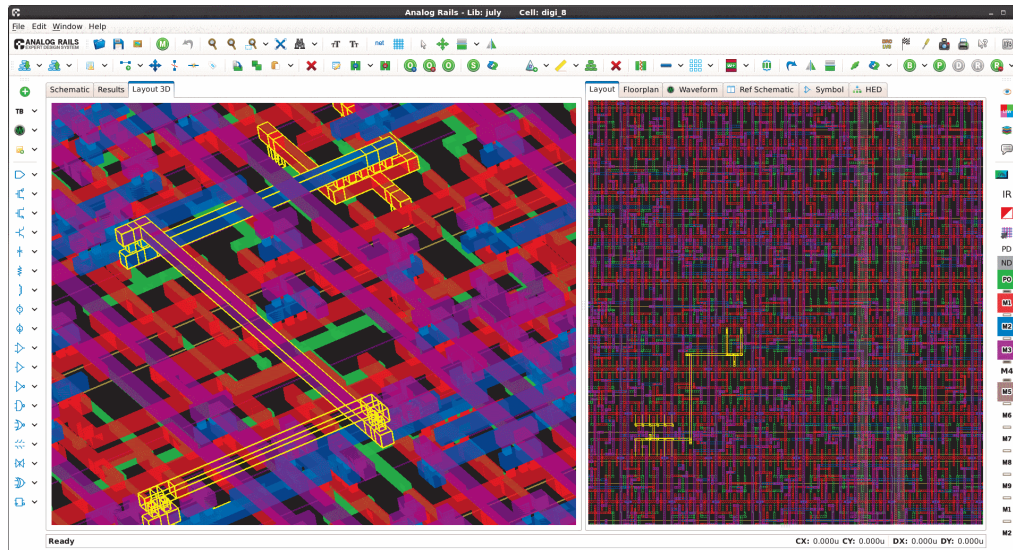
Improve Precision and Quality

Focus on spec tradeoffs & bulletproofing! Full automation gains designers time to improve precision and quality. No more last-minute scrambling. The optimizer allows circuit designers to trade off between specs (power, area, speed). Optimize AC, DC, and transients at the same time over multiple corners. Sensitivity analysis identifies the devices and parameters most affecting each measurement.

Gain Productivity While Reducing Cost

Comprehensive and simple! Layout is the immediate and natural result of circuit design! Why outsource any layout? Protect valuable IP. Leverage analog into SoCs using fast process migration tools. Circuit designers gain productivity from synchronization coupled with powerful 3D IR drop and EM analysis, always with voltage and capacitance backannotation and never losing crossprobing!

ANALOG RAILS™ CORRECT BY CONSTRUCTION™



Synchronized Schematic & Layout Editor

Capture complete design intent including constraints, capacitance, and voltage backannotation. Schematic and 3D layout are always synchronized! Cross probe to the layout at all times. Store simulation test benches with schematics. Process migration tools easily import existing topologies from any node. Full hierarchical crossprobing and backannotation among schematic, 3D layout, and waveform keeps designers informed at all times.

Simulate Parasitics at All Times

Always simulating with parasitics makes your simulator the most accurate! ANALOG RAILS™ is simulator agnostic. Includes the TSMC-approved MSIM simulator, infinite GnuCap^{plus} licenses and easily integrates any HSPICE-compatible simulator into the flow. All simulators use accurate layout parasitics. STI stress effects & well proximity. Includes coupling capacitance extraction and selected-net RC extraction.

Analysis/Measurements in the Schematic

Streamline testing and simplify debugging! Place settling time, overshoot, bandwidth, phase margin, rise time, and precise custom measurements as on/off symbols directly into the schematic along with ac, dc, transient, and pss analysis components. Script using known languages of your simulator. Voltage and device backannotation tracks waveform time points.

Center Designs and Improve Reliability

Bulletproof your designs with optimization and sensitivity analysis options. Choose properties to optimize such as transistor operating regions. Devices are automatically sized over all corners. Run AC, DC, and transient analysis all at the same time on many machines without needing multiple testbench schematics. Run sensitivity analysis to pinpoint the largest contributors of measurement deviation to further immunize the design against variation.

Correct by Construction™ Layout!

Manual and automatic layout! Both much more powerful than the competition. Place single ended and differential mosfets, fringecaps, mimcaps, resistors, & bipolars. Devices snap, repel, and permute based on schematic connectivity. Collision avoidance on all wiring. Built-in DRC and LVS (Mr. Checkit, Mr. Fixit, Mr. Nudgit) ensure correctness. Add differentially-aware density fill for yield. Don't trust us? Easily re-verify with any industry standard physical verification tool and foundry rule deck. Includes Calibre® physical verification interface.

Routing-Aware Placer

Your choice of placements! The placer easily handles just about anything thrown at it, especially analog core blocks such as PLLs and switched capacitor circuits. Preserve or flatten hierarchies. Automatically place common-centroid structures with guard rings, multiple dummies, and extended wells to reduce the STI stress and well-proximity effects. Iterate bottom up and top down.

Rigorous Automatic Routing

Manual and automatic routing! Manually route, if desired, and then let the automatic router finish the job. Not only does the router complete 100%, the router is RF aware, and sensitive signals are handled with care. ANALOG RAILS™ certainly knows differentials, and routes them with shielded walls, dummy extensions, and enforces symmetrical density fill. The power supply mesh reduces the IR drop where it counts. Need to make a schematic change? Blow away the routes, make changes, then reroute.

Modern Approach

Built from the ground up for automation! ANALOG RAILS™ was designed for automation from the start using the industry compliant OpenAccess database. No legacy patches. Adaptive techfile. Member of Si2 since 2004.

ANALOG RAILS™ Premium

- Automatic differential structures
- Automatic analog placer
- Automatic digital place and route
- Automatic electrically aware router
- Differential route with shields
- Differential aware density filler
- Automatic power supply mesh
- Automatic compactor
- Delete, update, re-autoroute
- EM diagnostics on the layout
- Click two points for 3D IR drop
- Cx and RCx wiring extraction
- Plus all features of Basic & Front End
- Easily learned in just a day or two

ANALOG RAILS™ Basic

- Easy-to-use analog friendly system
- Schematic & 3D layout synchronized
- Crossprobing at all times
- Flatten with no information lost
- Primitives morph as needed
- Diodes generated back into schematic
- Handles analog and RF FETs
- Mr. Checkit, Mr. Fixit, Mr. Nudgit
- Interactive Calibre® PV interface
- Parasitics on the fly (e.g., sa, sb, sc)
- Mimic layout feature
- Three-dimensional layout viewer
- Plus all features of Front End
- Easily learned in a day

ANALOG RAILS™ Front End

- Process migration tool included
- Unified schematic, waveform and HED
- Infinite supply of simulator licenses
- Foundry-approved MSIM license
- Analysis/measures saved in schematic
- Built-in AC, DC, & trans measurements
- Customized measurements
- Backannotate waveform transients
- Optimize dc, ac, transient over corners
- Sensitivity pinpoints key culprits
- Easily learned in less than a day

Schedule a Demo Today

Seeing is believing!. Easy evaluation plan. No-hassle sales process. So easy, a circuit designer can test the tools in a day or two.



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