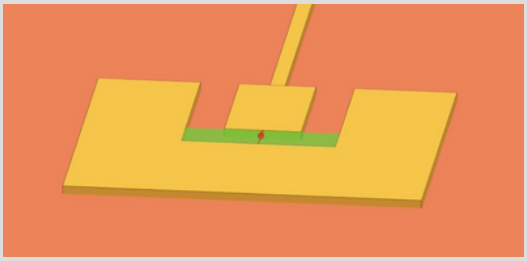
SOLUTION BRIEF

FLEXCOMPUTE | TIDY3D

Introducing the Radio Frequency Photonics Solver



Flexcompute's RF Photonics Solver

Purpose-built to empower Photonic Integrated Circuit (PIC) designers to confidently model everything from high-speed modulators to impedance-matched interconnects.

• *Empowering you to design and validate your active PICs* •

RF Photonics Simulation: A Cornerstone of Modern Connectivity

Simulating photonic RF systems empowers engineers and researchers to design, test, and refine high-frequency optical communication technologies without the expense or limitations of physical prototypes. It enables detailed analysis of signal propagation, interference, and system performance across various optical and hybrid environments. RF simulations are essential for designing active components in photonic integrated circuits (PICs), such as high-speed modulators, photodetectors, and impedance-matched terminations. By leveraging GPU-acceleration at its core, the solver delivers the speed, scalability, and accuracy required to push the boundaries of RF photonics design

BENEFITS

Complex Simulation

Full-wave simulation of long transmission lines

Advanced Modeling

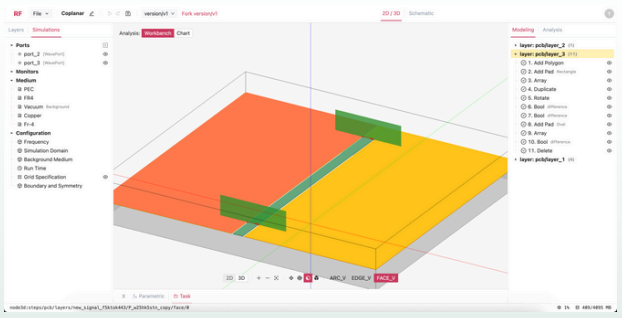
Modeling of lossy metals and dielectrics

Understand interactions

Electro-optic efficiency simulations

Identify and address potential problems

Signal integrity analysis

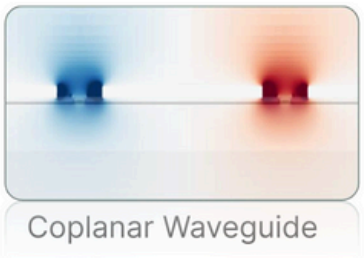


With an intuitive web-based GUI, a powerful Python scripting interface, and seamless integration with PhotonForge, our RF Photonics Solver empowers you to easily design and validate your active PICs.

Bridging the gap between optical and RF simulations

Use the same geometry, material stack, and layout to run both optical and RF simulations for active device simulations, reducing overhead and ensuring design consistency.

2D Mode Solver

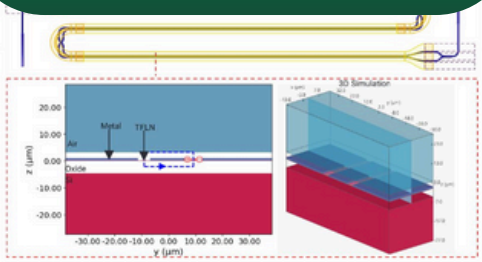


Coplanar Waveguide

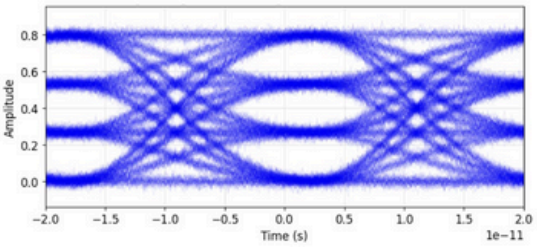
Lumped Elements

Microring modulator

Folded electro-optic modulator



Eye diagram



Unlock the full potential of your photonic integrated circuits by using RF simulation to accurately design and optimize active components.

Ready to accelerate your design workflow?

Learn More

ABOUT FLEXCOMPUTE

At Flexcompute, innovation is not just a principle—it's the foundation of everything we do. Born from the minds of engineers at MIT and Stanford, we push the boundaries of what's possible in simulation technology. We foster a spirit of constant exploration, experimentation, and collaboration to create solutions that redefine the future of product design. With our GPU-native technology, seamlessly integrated into existing workflows, we enable teams to innovate faster, reduce costs, and minimize risks—bringing better products to market in less time. Our mission goes beyond transforming the products we help bring to life—we aim to inspire and fuel the next generation of engineers who will design them by making hardware development as easy as software.

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