

# Design across physics, rooted in photonics

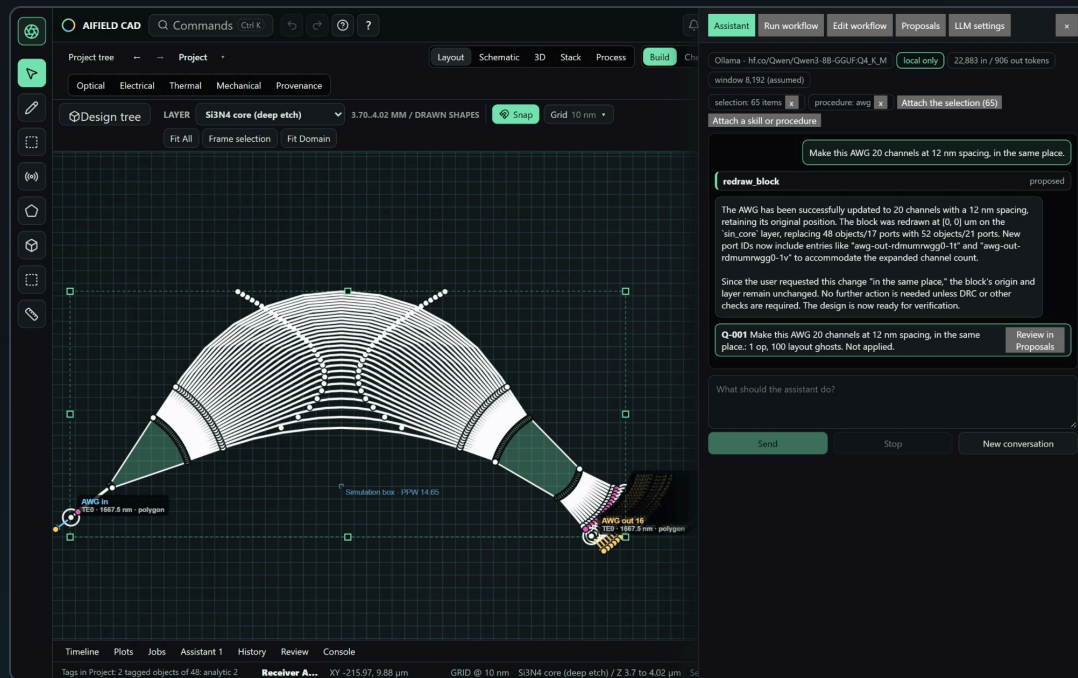
One CAD workflow for photonic circuits, their readout electronics and their thermal behaviour, expanding towards micro-optics and mechanics.

An AI assistant proposes; the designer decides. Alongside it, research into neural electromagnetic fields.

| Engineering software in development



# Photonic CAD with an AI assistant



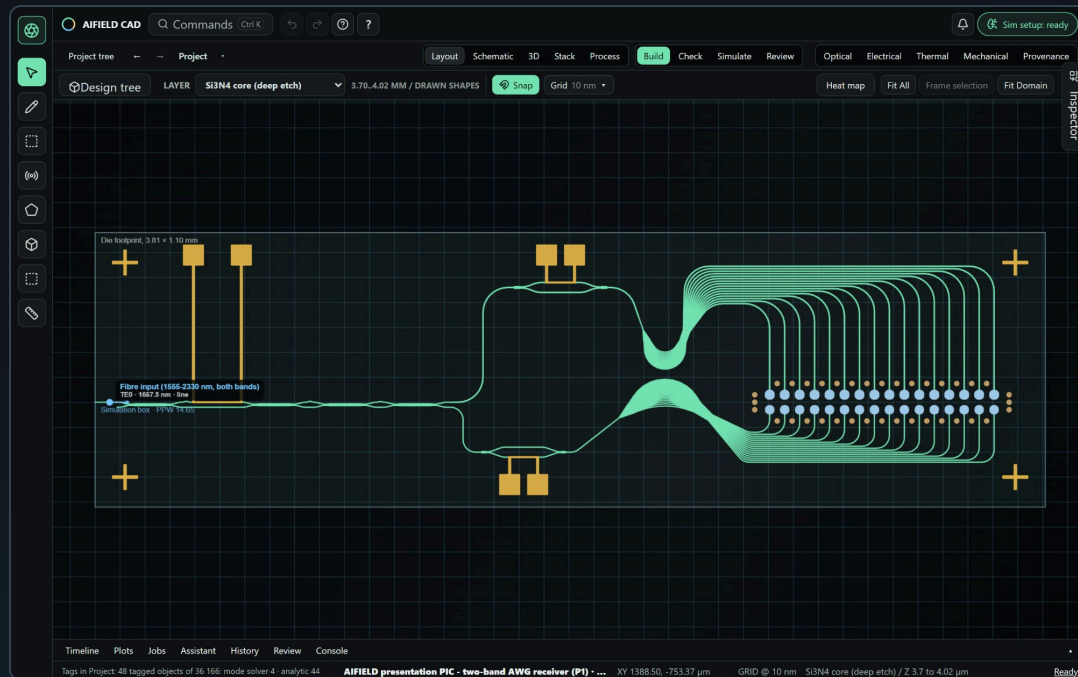
## Geometry stays explicit

Waveguides, star couplers and ports stay visible CAD objects.

The assistant proposes a change. The designer reviews it before it is applied.

A 20-channel proposal drawn as ghosts, not yet applied. AIFIELD CAD, 7 October 2026.

# A receiver test chip built around two AWGs



## 32 spectral channels

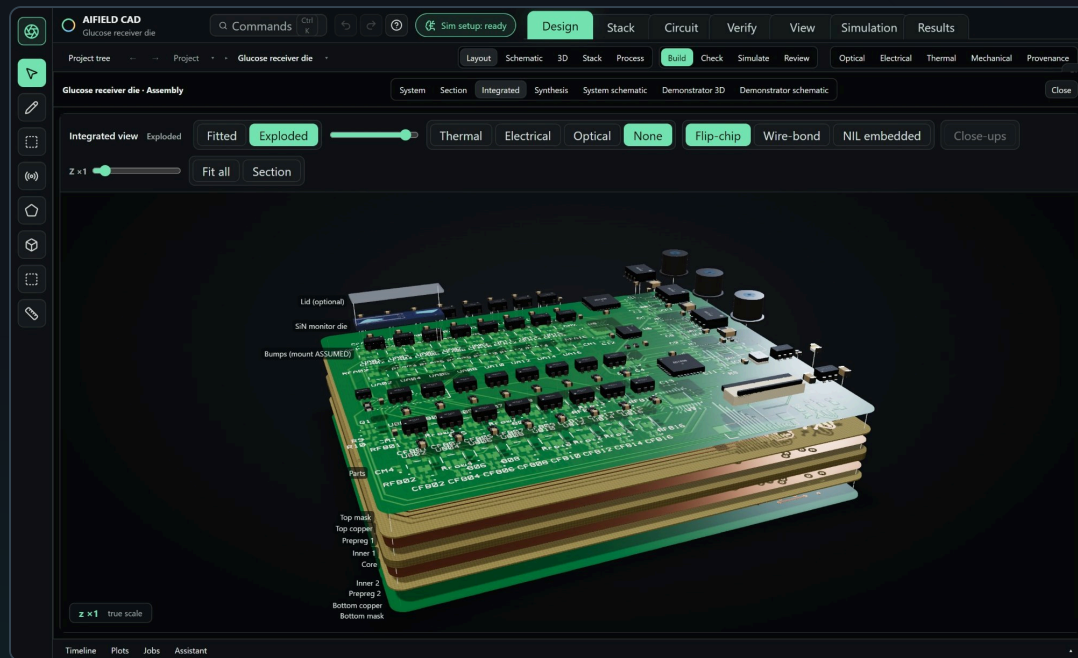
Two AWGs with 16 outputs each, 15 nm channel spacing.

Band B: 1555–1780 nm

Band A: 2105–2330 nm

A test chip designed in AIFIELD, not yet fabricated. AIFIELD CAD, 12 October 2026.

# The chip and its readout, designed together



## Optical and electrical context

The assembly view connects the photonic die to the detectors and the readout board.

A design model with assumed packaging, not an assembled prototype.

# Checks that changed the design

---

## Spectrometer footprint

A sweep of 432 variants found no fit within the chosen boundary. The next design used fewer arms and a higher order.

---

## Substrate leakage

A non-negligible loss estimate changed the oxide-thickness discussion with the foundry.

---

## Heater temperature

A spatial thermal model showed a large difference from the earlier one-dimensional estimate.

---

Our internal design campaign, September 2026. No chip was fabricated in it.

---

# Where the work stands

## Working today

---

Photonic and electronic CAD

---

Optical circuit and mode calculations

---

Thermal design calculations

---

AI proposals with designer approval

## Next to prove

---

Qualification of the integrated workflow

---

Comparison with fabricated devices

---

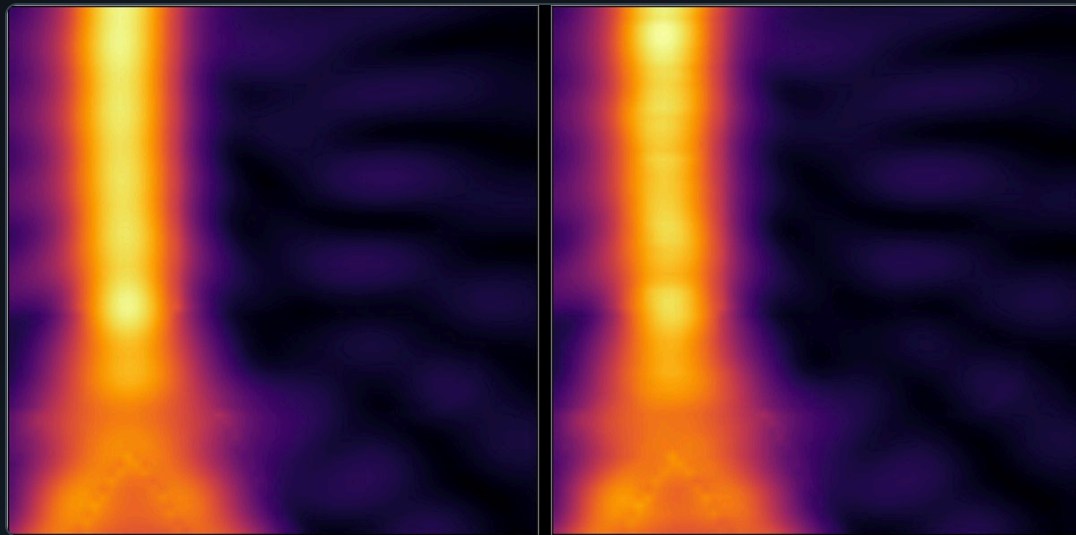
Neural fields for a whole instrument

---

Reliable acceleration of full solvers

A design example is not a measured device.

# Neural field prediction is our research track



## Learned fields, checked against our solver

We compare field tiles from the learned model with our own solver to see what it reproduces and where it fails.

A selected example. It does not show whole-instrument accuracy or a speed advantage.

# A closer look at your design

Talk to us about a CAD demonstration, a design problem or a research collaboration.

[info@artifactory.tech](mailto:info@artifactory.tech)

[artifactory.tech/en/projects/aifield/](https://artifactory.tech/en/projects/aifield/)

The technical deck and the investor presentation are available on request.

