The Anabrid REDAC Series: Revolutionizing Supercomputing

The REDAC is our first data-center class analog digital hybrid computer. It is specifically designed for solving differential equations, simulating complex models, and forecasting dynamic systems with exceptional speed and throughput —all while operating with minimal or no cooling requirements.

This system excels in a wide range of demanding applications, including realistic simulations of turbulent fluid dynamics, structural and flight dynamics, control systems, route optimization, big data analytics, real-time sensor processing, and much more.

Overview

REDAC is built on a groundbreaking analog dataflow architecture that delivers unparalleled performance, achieving at least 1,000 times the speed of traditional computing systems while consuming 10,000 times less power. It comes fully integrated with a comprehensive suite of software tools from Anabrid, including a powerful compiler, bindings for popular programming languages and libraries, and robust cloud system administration features.

REDAC is available as an on-premise, data-center-grade solution or as a cloud computing service hosted by Anabrid or its certified OEM partners, ensuring flexibility and scalability for diverse user needs.

Anabrid Discrete Computational Core IP

Anabrid is a global leader in advancing analog computing technologies. At the heart of every REDAC processor block is the Anabrid Discrete Computational Core IP, a foundation of cutting-edge innovation. In this series, the processor blocks are implemented as discrete hardware rather than fully integrated CMOS, allowing for unique performance advantages. The Core IP integrates versatile compute units with industry-leading analog-digital hybrid interfaces, enabling efficient computation without the need for external DRAM or traditional digital ALUs. This approach delivers unprecedented performance in a streamlined architecture.
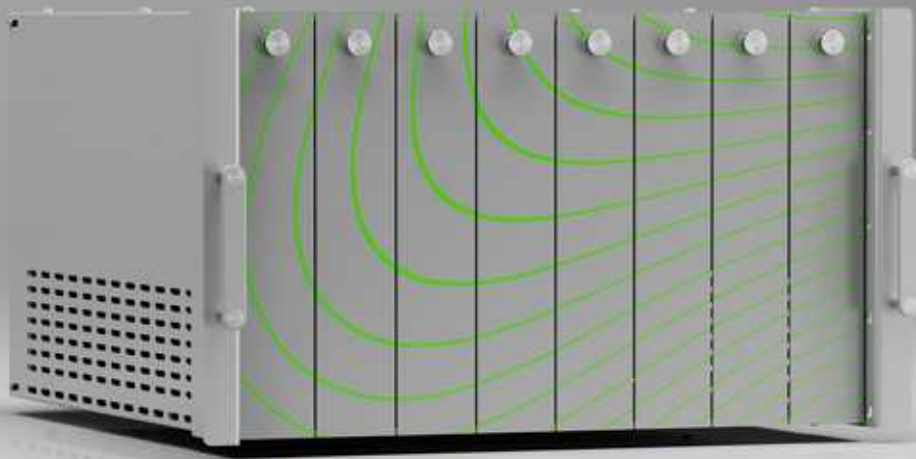
Physical Dimensions

REDAC extends the capabilities of the successful »LUCIDAC cluster« evaluation system, detailed at anabrid.dev/lucidac. The modular 19″ rack-mounted blade-style system integrates approximately 25 clusters within one enclosure at 6HE, called *LUCI Pro*. Typical REDAC installations comprise 7 or more enclosures, filling two full-size server racks, making it a powerful and scalable data center solution for high-performance analog computing.

Product Features per blade enclosure

- 1.000 Compute Units (swappable)
- 16bit compute precision at 100 kHz cutoff
- 600 weight parameters, each 16bit
- Single 100mbit Ethernet uplink (RJ45)
- 48 Analog I/O and 42 digital GPIOs
- -20°C to 80°C operating temperature
- 100W power consumption at 24V DC
- Extendable to data center size thanks to industry leading signal conditioning

Target Applications

- Industrial Machine Vision
- Machine Learning and Edge Processing
- UAV/Drone
- Edge/Embedded control systems
- Aviation and Space
- High Performance Computing
- Engineering Simulation Accelerator

Artist Rendering of a single LUCIDAC Pro Blade System

Pricing for On-Premise Systems

LUCIDAC Pro	Rack mountable 6HE Blade system that integrates 18 clusters at 10 times higher physical density, interconnected with T block concept. Includes all relevant cables, licensed software and handbook. Includes internal ethernet switch, external power supply. Requires a supplementary standard digital computer for hosting the Super Controller software.	Price On Request
REDAC	Ready-to-use industry level rack system including 6 LUCIDAC Pro systems, tightly interconnected, next to a switching router and the Super Controller digital server, licensed Software, cables and handbook.	Price On Request

All prices are net w.r.t VAT, excluding shipping. For T&C see anabrid.com/agb.