

# CIOReview

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**MOST  
PROMISING  
SEMICONDUCTOR  
TECHNOLOGY  
SOLUTIONS  
PROVIDER  
2022**

**Alphacore**

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# Alphacore

## High-Performance Components for Next-Generation Technologies

**I**n the fast-evolving space of wireless communications, new advancements are taking root in radiofrequency (RF) semiconductor technologies. RF integrated circuit designs can deliver high performance at low power and cost, especially in the emerging 5G, automotive, and space communications markets, where there is a high demand for faster interconnectivity at low latencies.

Responding to this need is Alphacore, a frontrunner in high-performance analog and RF designs. Focused on the high-performance, low-power domain, Alphacore delivers tailored RF or mixed-signal intellectual property (IP), custom macros, and complete Application Specific Integrated Circuits offerings exceeding performance requirements for a diverse clientele.

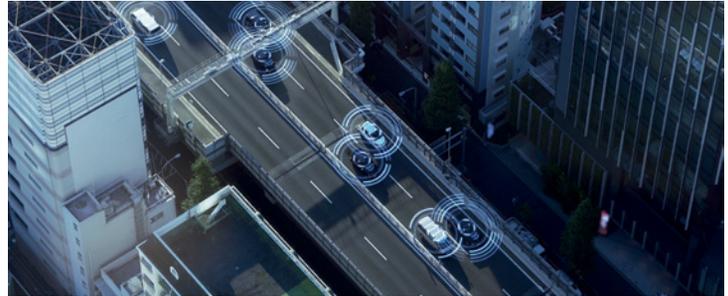
Started as a research company, Alphacore was initially funded by the U.S. Government, Department of Defense, Department of Energy, and Defense Advanced Research Projects Agency. The research helped build a tremendous amount of technology feedstock, which Alphacore has successfully deployed in the commercial domain.

“We design high-performance components and systems for next-generation technologies,” says Ken Potts, COO of Alphacore.

The most notable among Alphacore’s comprehensive offerings include high-performing analog-to-digital converters (ADC) and digital-to-analog converters ideal for high-performance analog, mixed-signal, and RF applications. Its ADCs offer chart-topping performance while maintaining the lowest power consumption. Alphacore also offers specialized image sensor technology currently being deployed in LIDAR and in harsh environments.

Although a small company, Alphacore gains its competitive edge over other players in the semiconductor space with its specialty across a broad range of product areas. Combined with it are Alphacore’s competence and extensive experience in developing innovative analog offerings and mixed-signal components molded to the niche needs of demanding segments like scientific research, aerospace, defense, medical imaging, and homeland security.

Alphacore’s abilities are further enhanced by a highly experienced, cross-functional leadership team and an engineering team that is second to none in the industry. The teams have a combined long history of delivering innovative data converters, RF, analog, mixed-signal products, and complete imaging systems.



Alphacore’s innovative system architecture enables it to easily adapt to different manufacturing technologies when implementing a design at a customer’s lowest cost path if required.

Alphacore is among the handful of companies that acknowledge the importance of radiation hardening to ensure high-performance levels in the 5G communication space. Leveraging its design team of seasoned Radiation Hardened by Design (RHBD) experts, it works with clients on unique applications using proven radiation-hardened techniques. This is aptly exemplified by Alphacore tailoring one of its existing technologies with a large organization to design a quantum compute engine for the latter.

Among market forces that have gained momentum, including IoT and AI, Alphacore specializes in merging AI and image sensing. Its ability to work with very low power is especially beneficial in the AI space, where clients use its technology off the shelf. They further seek Alphacore’s assistance in working on their architecture for next-generation offerings and mapping out future variants of their products in line with their market goals.

To address the various needs in the semiconductor market, Alphacore starts with the needs on the research side for the government that center on the leading-edge application verticals. Processes like basic research and fielding prototypes continue on the government’s side while Alphacore concurrently works with potential commercial customers with similar needs. This allows Alphacore to tailor a product for its target markets while it is still in product development mode and being funded.

Alphacore continues to raise the bar with its competitive offerings in the high-performance, low-power domain, paving the road for next-generation communication systems, AI, and other modern technologies. **CR**

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**The use of innovative systems enables Alphacore to adopt a mobile architecture across different manufacturing technologies**

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*The annual listing of 20 companies that are at the forefront of providing  
Semiconductor Technology solutions and transforming businesses*