

Empower RF Systems Announces New Wave of Patents Strengthening Leadership in Advanced RF Power Amplifier Technology

Empower RF Systems, a recognized leader in RF and microwave power amplifier solutions, proudly announces the recent granting of several additional U.S. and international patents that further strengthen its position at the forefront of innovative amplifier technology. The technical team at Empower RF Systems now has seven recognized patent awards.

This award winning technology is integral to the company's high performance standard product and configured systems portfolio. The hardware and software architectures driven by these innovations are implemented across a next generation product portfolio that is yielding industry leading power densities and RF performance in support of mission critical customer applications.

The Director of the United States Patent and Trademark Office

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States of America, or importing into the United States of America, products made by that process, for the term set forth in 35 U.S.C. 154(a)(2) or (c)(1), subject to the payment of maintenance fees as provided by 35 U.S.C. 416(b). See the Maintenance Fee Notice on the inside of the cover.

Michelle K. Lee

Deputy Director of the United States Patent and Trademark Office

Up to 10 GHz

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Patented RF Technology

Key patents awarded in 2024 and 2025 include:

- **US 12,283,923 B2 – Systems and Methods for Controlling a Power Amplifier Output**
This patented technology introduces advanced feedback loop control for power amplifiers, including innovations in accumulator management that enable rapid response to input levels and blanking signals, optimizing efficiency and reliability for mission-critical applications.
- **US 12,255,685 B2 and Korea 2766189 – Power Amplifier System with an Internal Optical Communication Link**
Empower’s novel use of internal optical links represents a significant step forward in amplifier system design, providing enhanced communications between control elements and signal endpoints via fast and interference-immune optical links. This architecture ensures improved

operational coordination and system reliability.

- **US 11,115,121 B2 – Power Amplifier System with an Internal Optical Communication Link**

Building on earlier innovations, this patent covers integrated optical panel communications for complex amplifier arrays, supporting applications requiring precision, low latency, and high channel density.

Other notable innovations include breakthroughs in broadband linearization (US 8,736,365 B2), advanced combiner designs (US 9,093,731 B2), and innovative methods of RF amplifier assembly with superior electromagnetic interference shielding and thermal management (US 9,007,125 B2).

“These latest patents underscore Empower RF’s ongoing commitment to pushing the boundaries of what is possible in power amplifier design,” said Paulo Correa, Chief Technology Officer. “Our patented technologies not only improve efficiency and reliability for our customers, but also set new industry benchmarks for performance, scalability, and system integration.”

Empower RF Systems’ comprehensive patent portfolio covers a diverse range of crucial amplifier system enhancements, ensuring the company’s products continue to deliver best-in-class performance across defense, communications, and scientific research markets.

For additional information about Empower’s portfolio of patented RF technologies and solutions, please visit the company’s website.

Complete Empower RF Patents lineup:
https://www.empowerrf.com/company/patent_technology.php

Complete Empower RF Amplifiers lineup:
http://www.empowerrf.com/products/rf_power_amplifier.php

Empower RF Systems is the technology leader in high power

amplifier solutions for reliable communications, defense, and industrial applications. Our products incorporate the latest semiconductor and power combining technologies and originate from an extensive library of "building block" designs. Solutions range from basic modules to multifunction PA assemblies with embedded real time microprocessor control.