Energous EN3210 Power Amplifier

Boosting Wireless Power with Precision and Efficiency

The EN3210 is a high-power, high-efficiency CMOS RF power amplifier optimized for use with the EN4100 Transmitter SoC. Together, they form the heart of Energous' wireless power transmitter architecture—delivering consistent, closed-loop wireless power to IoT devices, sensors, and tags.

With integrated power detectors, temperature sensing, and SPI-based control, the EN3210 provides real-time adaptability and robust RF performance for industrial-grade wireless power delivery.

Designed for wireless edge devices like ESLs, RFID tags, and low-power sensors, the EN3210 enables scalable deployment of RF-based wireless power in environments that demand reliability, minimal maintenance, and small form factors.

Key Benefits

- **RF-based power transmission** – smaller footprint than coil-based systems
- **Orientation & spatial freedom** – no need for precise alignment
- **Eliminates mechanical connectors** – ideal for sealed, waterproof designs
- **Integrated power management** – fewer external components required
- **Secure communication** – supports 2-way authentication with 128-bit encryption
- **Simplified design architecture** – requires only an external crystal and PA

Product Highlights

- Single-channel CMOS RF power amplifier
- Input and output power detectors
- Integrated temperature sensor
- Analog multiplexer
- Adjustable via SPI-compatible serial interface
- Designed to pair with EN4100 Transmitter SoC

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Device Overview

Category	Specification
Amplifier Type	Single-channel CMOS RF PA
Interface	SPI
Detectors	Input and output power monitoring
Sensors	Integrated temperature sensor
Voltage Supply	1.0V, 1.8V and 3.3V
Temperature Range	Chip Level: -40C to 85C System level: -20C to 60C
Form Factor	QFN40P600X600X80-49N

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