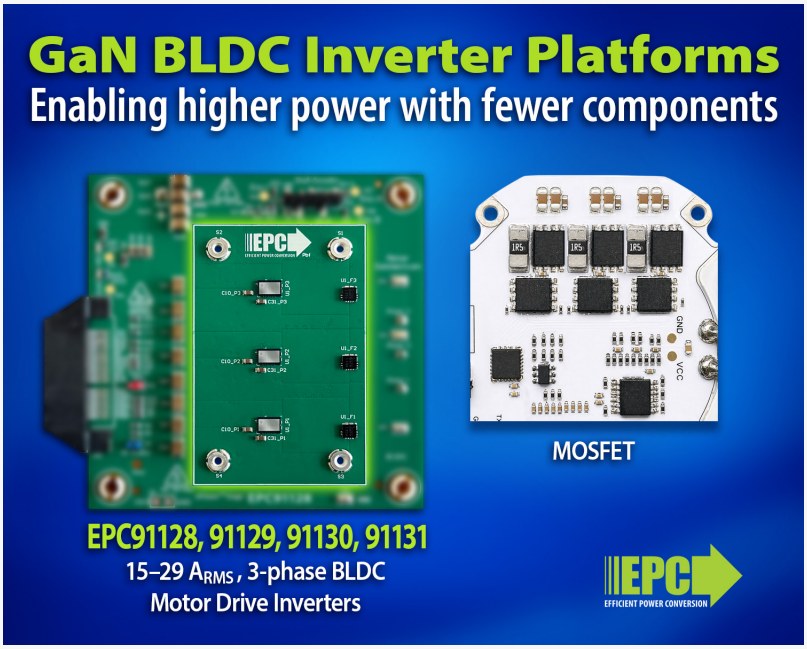
EPC Targets High-Density Motion Systems with GaN ePower™ Stage Technology

EPC91128–EPC91131 boards enable rapid BLDC inverter development supporting up to 29 ARMS phase current.



GaN BLDC Inverter Platforms

EL SEGUNDO, CA, UNITED STATES, June 3, 2026 /EINPresswire.com/ -- Efficient Power Conversion (EPC), the world leader in enhancement-mode gallium nitride (eGaN®) power devices, today introduced the EPC91128, EPC91129, EPC91130, and EPC91131 evaluation boards - compact, high-performance 3-phase BLDC motor drive inverter platforms designed to accelerate development of next-generation motor control systems using GaN technology.

The boards are built around EPC's integrated EPC23108–EPC23111 ePower™ Stage ICs. They can handle input voltages from 10 V to 80 V and output currents up to 29 ARMS. This makes it easy to test them quickly for use in robotics, industrial automation, e-mobility auxiliaries, and battery-powered systems.

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>
> *Alex Lidow*

The evaluation boards combine important inverter functions like gate drivers, current sensing, voltage sensing, housekeeping supplies, temperature monitoring, and protection features. This lets engineers quickly build prototypes of high-efficiency motor drive solutions with very little extra circuitry. Optimized switching performance helps cut down on torque ripple and noise while still allowing for flexible dv/dt control for tuning applications.

All four boards support both complementary PWM and single-PWM control schemes (depending on variant) and are compatible with controller

platforms from Microchip, Texas Instruments, STMicroelectronics, and Renesas, enabling fast integration into existing development environments.

A key highlight of the new EPC91128–EPC91131 evaluation platforms is their demonstrated performance in a real motor-drive setup during experimental validation. In testing with a 48 V DC bus and switching frequencies up to 100 kHz, the EPC91128 and EPC91129 inverter boards - paired with a compatible controller interface - successfully powered a 3 kW BLDC motor while delivering 15 ARMS steady-state phase current without a heatsink and up to 20 ARMS with natural-convection cooling and a heatsink attached. Under pulsed conditions, the system supported peak currents up to 29 ARMS, highlighting the capability of the integrated ePower™ Stage IC architecture to handle demanding dynamic motor loads. Similarly, the EPC91130 and EPC91131 variants demonstrated 10 ARMS steady-state operation without a heatsink and 15 ARMS with heatsink assistance, with pulsed current capability reaching 18 ARMS. These results confirm that the compact GaN-based inverter boards can sustain meaningful power levels suitable for industrial-grade motor-control evaluation platforms while maintaining thermal headroom and switching performance at high frequencies.

“These new inverter evaluation boards represent an important step in making GaN technology more accessible for high-performance motor-drive applications,” said Alex Lidow, CEO of EPC. “As designers continue to push toward higher efficiency, higher switching frequencies, and more compact power electronics systems, solutions like the EPC91128 through EPC91131 platforms help accelerate the transition from silicon to GaN across robotics, industrial automation, and emerging battery-powered motion platforms.”

“The EPC91128–EPC91131 boards give engineers a ready-to-use platform to evaluate our latest ePower™ Stage ICs in real motor-drive conditions,” added Marco Palma, Vice President, Motor Drive Marketing and System Engineering at EPC. “With built-in current and voltage sensing, protection features, flexible PWM control options, and compatibility with several mainstream controller boards, developers can quickly prototype three-phase inverter designs and focus on optimizing system performance rather than building the power stage from the ground up.”

Complete design support files, including schematics, bill of materials (BOM), and Gerber files, are available for download from the EPC91128/29–EPC91130/31 product page.

Price and Availability

The EPC91128/29 evaluation boards are priced at $ 634.57. The EPC91130/31 evaluation boards are priced at $ 629.63.

Reference design boards and devices are available for immediate delivery from Digi-Key at: https://www.digikey.com/en/supplier-centers/epc and Mouser at https://eu.mouser.com/manufacturer/epc/

About EPC
EPC is the leader in enhancement mode gallium nitride (eGaN®) based power management. Founded in 2007 by experts in power electronics, semiconductors, and business management, the company leverages cutting-edge technology to advance the field of power electronics through the development and commercialization of GaN-based power devices. eGaN FETs and integrated circuits provide performance many times greater than the best silicon power MOSFETs in applications such as DC-DC converters, remote sensing technology (lidar), motor drives for eMobility, robotics, and drones, and satellites.

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