

A Versatile Platform To Evaluate GaN Drivers And Transistors

[GaN Systems](#)'s GS-EVB-HB-66508B-RN and GS-EVB-HB-66516T-RN 650-V half-bridge daughter cards, which are rated at 30 A and 60 A respectively, provide a highly versatile platform to evaluate GaN drivers and transistors. The evaluation cards are available in two power levels, up to 3 kW (66508B-RN) and up to 6 kW (66516T-RN) and include the Renesas RAA226110 low-side GaN FET driver. According to the vendor, these cards are the industry's first to provide programmable overcurrent protection with adjustable thresholds and programmable source current for adjustable turn-on slew rate (Figs. 1 and 2).

These power stage designs can be utilized in a wide range of applications from enterprise 1U power supplies (up to 5 kW), high-power density bridgeless totem-pole PFCs, PV inverters, energy storage systems, motor drives, and automotive dc-dc converters and on-board chargers.

According to the vendor, design flexibility, simplicity, and unique features define the evaluation boards. They operate with a GaN Systems' motherboard for easy setup and plug-and-play operation. The evaluation cards also feature integrated V_{GS} regulation at a 2-MHz f_{SW} and functions such as programmable overcurrent protection with adjustable thresholds of 40 mV, 80 mV, 120 mV and differential current sensing as well as a programmable source current for adjustable turn-on slew rate (0.3 A, 0.75 A, or 2 A).

For more information, see the EVALUATION BOARD: GS-EVB-HB-66508B-RN [page](#) and the EVALUATION BOARD: GS-EVB-HB-66516T-RN [page](#). And for more on the Renesas GaN FET driver, see the RAA226110 [page](#).



Fig. 1. The GS-EVB-HB-66508B-RN is a 650-V 30-A GaN half-bridge and RAA226110 gate-driver demonstration board. This evaluation kit consists of two GaN Systems GS66508B 650-V GaN E-mode transistors and all necessary circuits including half-bridge gate drivers, isolated power supplies and optional heatsink to form a functional half-bridge power stage. It allows users to easily evaluate the GaN E-modes performance in any half-bridge-based topology, either with the universal motherboard or the users' own system design. The GS-EVB-HB-66516T-RN is similar but contains a 650-V 60-A GaN half-bridge employing two GaN Systems GS66516T GaN E-mode transistors.

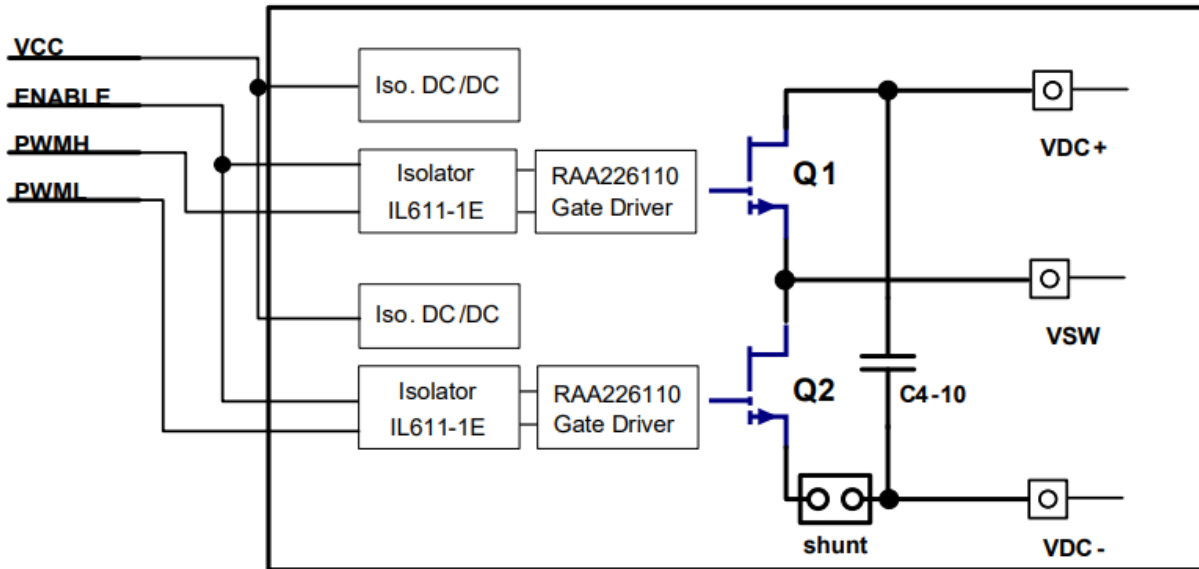


Fig. 2. GaN Systems' two 650-V half-bridge daughter cards are available in two power levels (up to 3 kW and up to 6 kW) and include the Renesas RAA226110 low-side GaN FET driver. These cards are said to be the industry's first to provide programmable overcurrent protection with adjustable thresholds and programmable source current for adjustable turn-on slew rate.