



GRF5507 ¼W Power Amplifier Delivers the Ultimate in Native Linearity

New InGaP HBT Power Amplifier from Guerrilla RF Provides 24dBm of Output Power for Cellular Applications Requiring Exceptional Native Linearity Over Temperature Extremes

GREENSBORO, NC—August 25, 2020—Guerrilla RF introduces the **GRF5507**, one of ten new ¼ W linear power amplifiers being released over the next two quarters as part of the company’s expansion into the cellular market. These new InGaP HBT amplifiers were designed specifically for 5G/4G wireless infrastructure applications requiring exceptional native linearity over temperature extremes of -40°C to 85°C.

Spanning a frequency range of 700-800MHz, the GRF5507 variant is tuned to operate within the n12, n14, n28 and n29 5G new radio (NR) bands. The device can deliver over 24dBm of linear power over the entire -40°C to 85°C temperature range while maintaining ACLR levels of better than -45dBc, IMD3 levels < -20dBm, EVM levels < 1% and PAE Efficiencies > 15% – all without the aid of supplemental linearization schemes like digital pre-distortion (DPD).

The ability to beat the -45dBc ACLR performance metric without DPD is critical for cellular applications like home and commercial repeaters/boosters, femtocells, picocells and cable loss compensators associated with automotive ‘shark fin’ antennas. In each of these use cases, the sensitivity to cost, power and size constraints prohibits the use of elaborate linearization techniques like DPD. Instead, designers must rely on the power amplifier’s native linearity to meet the stringent emissions mask requirements imposed by the latest 5G and 4G standards.

During the development of the GRF55xx series, Guerrilla RF consulted directly with its base of customers to ensure the devices delivered the best blend of power and linearity, thus maximizing the effective range and throughput for their cellular systems. Guerrilla RF also designed the entire family of devices to be fully footprint compatible, enabling its customer base to rapidly customize their designs for a myriad of cellular frequencies.

When describing the motivation behind the GRF5507’s development, Ryan Pratt, CEO and founder of Guerrilla RF, stated, “The GRF55xx family builds upon the groundbreaking work which we started a year ago with the release of the GRF5504/9 series of 5W InGaP HBT power amplifiers. These new ¼ W PAs were created specifically to meet the needs of our strategic customers in the cellular and automotive industries. Together with the original GRF5504/9

series, the GRF55xx family will serve as the beachhead for Guerrilla RF's expansion into the growing power amplifier market."

The GRF55xx family comes in pin-compatible 3mm x 3mm, 16-pin QFN packages. As noted above, the common footprint enables a single design to address multiple bands via simple component swaps.

Pricing and Availability

Samples and evaluation boards are available now for the GRF5507. Prices start at \$1.55 (10,000-up, FOB USA). Visit www.guerrilla-rf.com/goto/GRF5507 for additional details.

About Guerrilla RF

Guerrilla RF provides high performance monolithic microwave integrated circuits (MMICs) to wireless OEMs in multiple market segments, including 5G/4G macro and small cell base stations, cellular repeaters/DAS, automotive SDARS/V2X/DAB, mission-critical military communications, navigation and high-fidelity wireless audio. For more information, please visit <https://guerrilla-rf.com> or follow the company on [LinkedIn](#).