

WLAN PA Maintains Performance Over Power Level and Mismatch

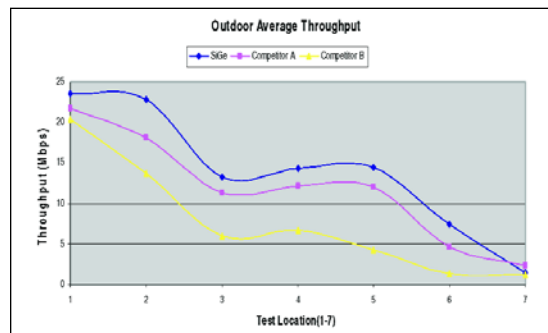
A new power amplifier for 2.4 GHz wireless LAN includes high linearity circuitry and an accurate on-chip power detector to help maintain performance in mismatched conditions

A high performance power amplifier compliant to the 802.11b and 802.11g specifications has been introduced by SiGe Semiconductor. The new Range Charger™ SE2525L delivers a combination of linearity, accuracy and stability to ensure that next-generation Wi-Fi® access points and client solutions provide consumers with faster data access over longer distances.

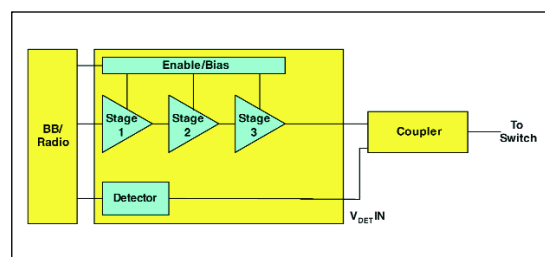
The SE2525L delivers power output of +19 dBm while achieving an Error Vector Magnitude (EVM) of 3 percent operating in 802.11g mode. In 802.11b mode, the SE2525L meets all Adjacent Channel Power Ratio (ACPR) requirements at +23 dBm output power. Optimizing EVM and harmonic performance at both low and high output powers reduces packet error rate to ensure higher data throughput and longer range.

The SE2525L also boosts accuracy and stability at the system level by minimizing the effects of antenna mismatch caused by interaction with surrounding objects. Reverse power fed into the detector can result in errors that drive output power either too high or too low. The SE2525L reduces mismatch by using an on-chip power detector that can be connected to an external low-cost printed coupler. In a 2:1 mismatch situation, the accuracy is 1.0 dB, improving the stability of signal strength and transmission range.

Also integrated on chip are the power enable switch and bias control circuitry. The bias control circuitry is voltage based and allows for better efficiency at lower output powers. Operating from a single 3.3 volt supply, the SE2525L has a typical current consumption of 160 mA in 802.11g mode, and 230 mA in 802.11b mode. The power efficiency ensures battery life requirements are met in mobile applications.



The performance and features of the SE2525L provide improved throughput, as these measurements indicate.



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SiGe's SE2525L is sampling now, supplied in a 4 x 4 mm 16-pin LPCC package. The device is priced at US \$1.59 in 10k quantities.

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