SKY65227-11: WLAN 802.11n Single Band 2.4 GHz MIMO Front-End Module

Features

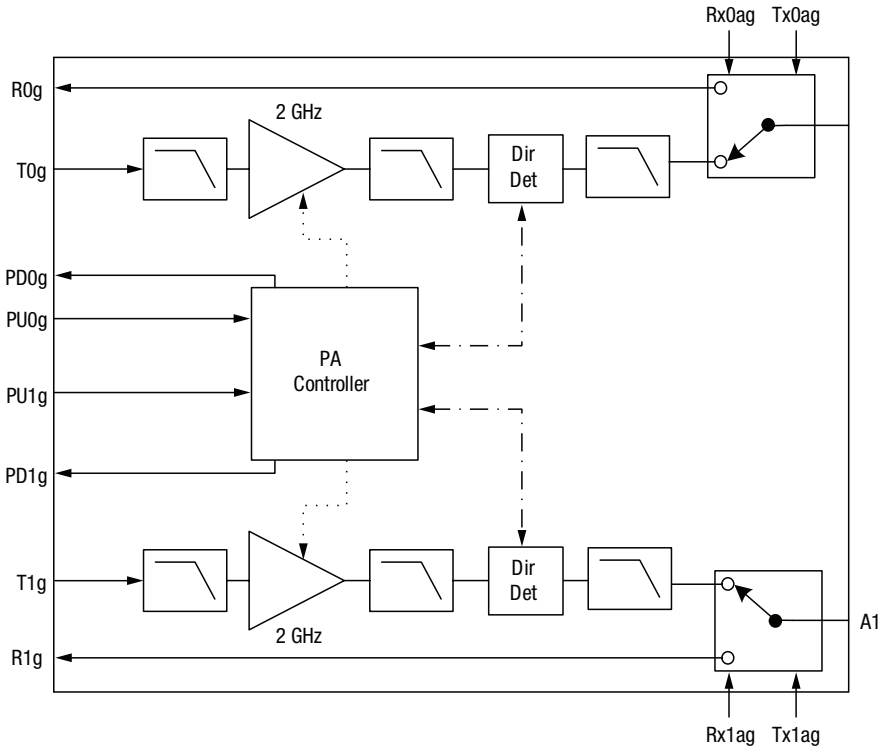
- Two full 2.4 GHz transmit/receive chains
- PCIe, miniPCI, Cardbus and Access Point applications
- Backward-compatible with 802.11b/g standards
- Pin compatible with SKY65225-11 (2.4 GHz)
- P_{OUT} @ 2.5% EVM: 19 dBm (-11b); 19 dBm (-11g)
- Gain matching: < 1.0 dB
- Internal voltage regulation
- Single 3.0–3.6 V power supply
- Temperature-compensated PA bias networks and directional power detection
- Separate digital controls for each PA
- Package size: 10 x 14 x 0.9 mm
- Lead (Pb)-free and RoHS-compliant

Description

The SKY65227-11 nFEM contains two complete 2.4 GHz transmit/receive chains in one compact RF front-end module optimized for single band 2.4 GHz MIMO (multiple in—multiple out) operation, in compliance with the 802.11n draft standard. The SKY65227-11 includes two 2 GHz PAs with integrated input filtering for 3–4 GHz rejection, and temperature-compensated, directional power detector with 20 dB dynamic range. Also included are low loss, high rejection GaAs harmonic filters and T/R switches which provide high linearity in all transmit paths and low loss in all receive paths.

The SKY65227-11 nFEM achieves outstanding gain matching which is a critical requirement for MIMO operation. This is accomplished though mirrored layout symmetry.

The SKY65227-11 is packaged in a lead (Pb)-free, RoHS-compliant laminate package, which measures 140 mm^2. This FEM is designed as a pin to pin compatible version of the SKY65225-11 for 2.4 GHz only.



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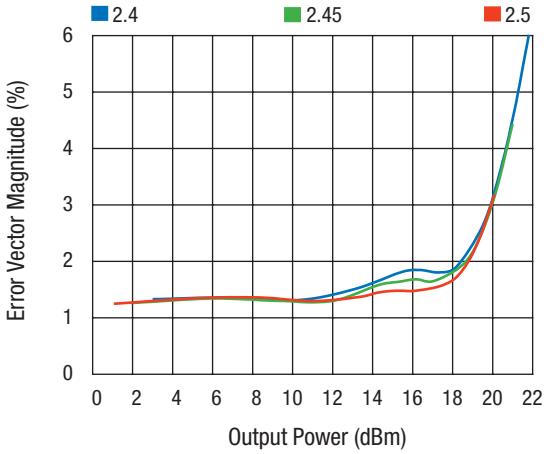
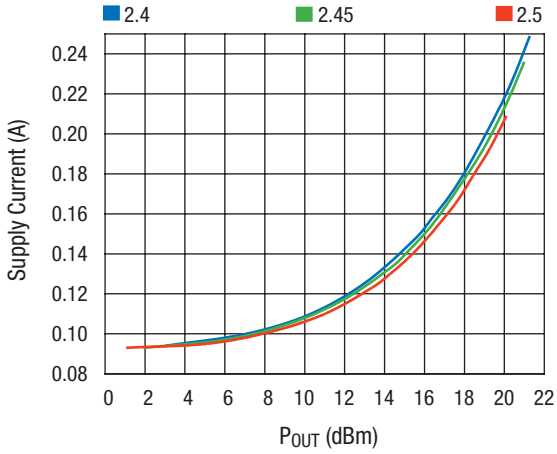
Typical Performance Data (2.4–2.5 and 4.9–5.85 GHz)

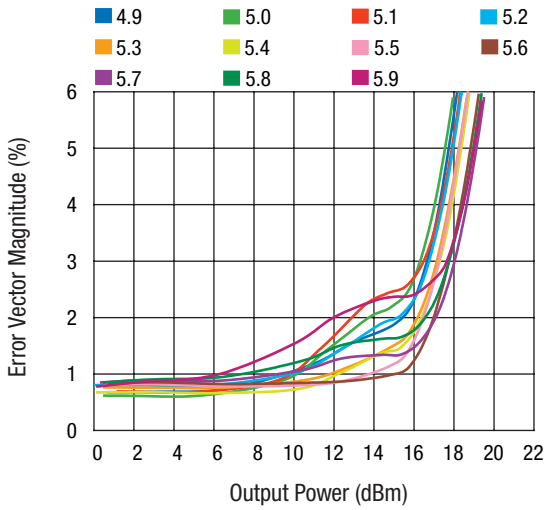
V_{CC} = 3.3 V, T_A = 25° C, OFDM 54 Mbps, Z_0 = 50 Ω



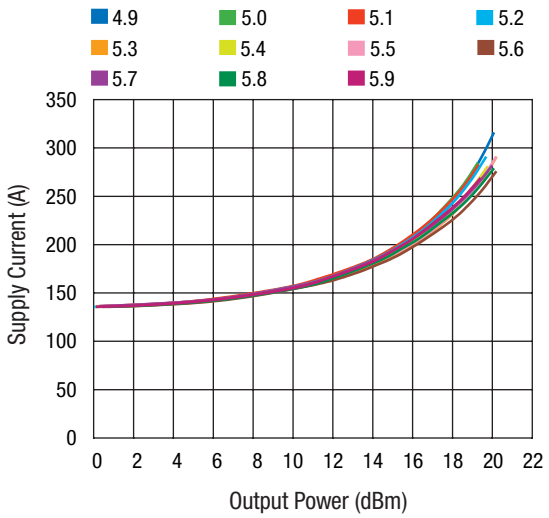
EVM vs. Output Power



Supply Current vs. Output Power



EVM vs. Output Power



Supply Current vs. Output Power

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