PRODUCT SUMMARY

SKY77446 LIPA® Module for WCDMA / HSDPA / HSUPA / HSPA+ Band I (1920–1980 MHz)

Applications

- WCDMA handsets

Features

- Low voltage positive bias supply
  - 3.0 V to 4.6 V
- Good linearity
- High efficiency at all power levels
  - 18.5% @ 15 dBm
- Large dynamic range
- Small low profile package
  - 4 mm x 3 mm x 0.9 mm
  - 10-pad configuration
- Power down control
- InGaP
- Supports low collector voltage operation
- Digital V_{EN}
- No V_{REF} required
- Digital or analog control
- Integrated Directional Coupler

NEW Skyworks Green™ products are RoHS (Restriction of Hazardous Substances)-compliant, conform to the EIA/EICTA/JEITA Joint Industry Guide (JIG) Level A guidelines, are halogen free according to IEC-61249-2-21, and contain < 1,000 ppm antimony trioxide in polymeric materials.

The SKY77446 Load-Insensitive Power Amplifier (LIPA®) module is a fully matched 10-pad surface mount module developed for Wideband Code Division Multiple Access (WCDMA) applications. This small and efficient module packs full 1920–1980 MHz bandwidth coverage into a single compact package. Because of high efficiencies attained throughout the entire power range, the SKY77446 delivers unsurpassed talk-time advantages. The SKY77446 meets the stringent spectral linearity requirements of High Speed Downlink Packet Access (HSDPA) data transmission with high power added efficiency. A directional coupler integrated into the module eliminates the need for any external coupler.

The single Gallium Arsenide (GaAs) Microwave Monolithic Integrated Circuit (MMIC) contains all active circuitry in the module. The MMIC contains on-board bias circuitry, as well as input and interstage matching circuits. Output match into a 50-ohm load is realized off-chip within the module package to optimize efficiency and power performance.

The SKY77446 operates as a load-insensitive power amplifier providing high linearity in the presence of high RF mismatch up to 3:1 VSWR. The module is manufactured with Skyworks' InGaP GaAs Heterojunction Bipolar Transistor (HBT) BiFET process that provides for all positive voltage DC supply operation while maintaining high efficiency and good linearity. No VREF voltage is required. Power down is accomplished by setting the voltage on VEN to zero volts. No external supply side switch is needed as typical "off" leakage is a few microamperes with full primary voltage supplied from the battery.

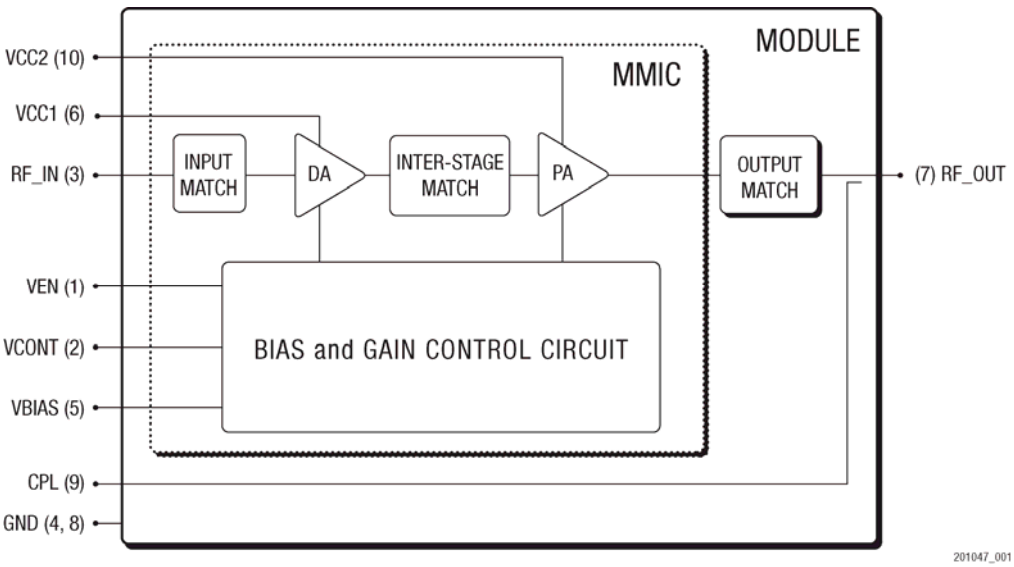

Figure 1. SKY77446 Functional Block Diagram

Ordering Information

Model Number	Manufacturing Part Number	Product Revision	Package	Operating Temperature
SKY77446	SKY77446		MCM 4 mm x 3 mm x 0.9 mm	–20 °C to +85 °C