

**PRODUCT SUMMARY**

# **SKY77814-11 Power Amplifier Module for LTE FDD Band 7 (2500–2570 MHz) and Band 30 (2305–2315 MHz) and LTE TDD Bands 38/41 (2496–2690 MHz), Band 40 (2300–2400 MHz) and AXGP Band (2545–2575 MHz)**

## **Applications**

- Long-Term Evolution (LTE)
- Evolved Universal Terrestrial Radio Access Networks (EUTRAN)
- Handsets and Data Cards

## **Features**

- Optimized for Average Power Tracking (APT)/compatible with Envelope Tracking Controller (ETC) implementation
- High efficiency broadband: 2.3 GHz to 2.69 GHz
- Supports modulation bandwidth up to 20 MHz
- Small, low profile package
  - 3.0 mm x 4.0 mm x 0.8 mm
  - 24-pad configuration
- MIPI RFFE interface
- $V_{CC2}$  decoupling caps < 125 pF
- Integrated output switch including TDD Tx/Rx function for single SAW architecture
- RF I/O internally matched to 50  $\Omega$

## **Description**

The SKY77814-11 Power Amplifier Module (PAM) is a fully matched, 24-pad surface mount (SMT) module developed for LTE applications. The module includes broadband coverage of LTE FDD Bands 7 and 30, LTE TDD Bands 38/40, and Band 41 in a compact 3.0 x 4.0 mm package. Attaining high efficiencies throughout the entire power range while meeting the stringent linearity requirements of LTE, the SKY77814-11 delivers unsurpassed savings in current consumption for data-intensive applications.

The Gallium Arsenide (GaAs) Microwave Monolithic Integrated Circuit (MMIC) contains all amplifier active circuitry, including input, interstage, and output matching circuits. Output match into a 50  $\Omega$  load, realized off-chip within the module package, optimizes efficiency and power performance. A silicon-on-insulator (SOI) switch following the wideband power amplifier directs the RF output signal to either a band 7 duplexer or to one of three TDD filters supporting bands 38, 40, and 41. Additional throws in the SOI switch allow the reuse of TDD filters in Rx mode by providing paths to either the band 40 Rx port or a shared band 38/41 Rx port. Biasing for the PA MMIC and switch is generated on a CMOS IC controlled through a MIPI RFFE interface.

The SKY77814-11 is manufactured with Skyworks' InGaP GaAs Heterojunction Bipolar Transistor (HBT) process which provides for all positive voltage DC supply operation and maintains high efficiency and good linearity. Optimal performance is obtained with VCC1 and VCC2 sourced from a DC-DC power supply based on target output power. No external supply side switch is required as typical "off" leakage is a few microamperes.



Skyworks Green™ products are compliant with all applicable legislation and are halogen-free. For additional information, refer to Skyworks *Definition of Green™*, document number SQ04-0074.



## Ordering Information

Product Name	Order Number	Evaluation Board Part Number
SKY77814-11 Power Amplifier Module	SKY77814-11	EN40-D895-002

Copyright © 2014, Skyworks Solutions, Inc. All Rights Reserved.

Information in this document is provided in connection with Skyworks Solutions, Inc. ("Skyworks") products or services. These materials, including the information contained herein, are provided by Skyworks as a service to its customers and may be used for informational purposes only by the customer. Skyworks assumes no responsibility for errors or omissions in these materials or the information contained herein. Skyworks may change its documentation, products, services, specifications or product descriptions at any time, without notice. Skyworks makes no commitment to update the materials or information and shall have no responsibility whatsoever for conflicts, incompatibilities, or other difficulties arising from any future changes.

No license, whether express, implied, by estoppel or otherwise, is granted to any intellectual property rights by this document. Skyworks assumes no liability for any materials, products or information provided hereunder, including the sale, distribution, reproduction or use of Skyworks products, information or materials, except as may be provided in Skyworks Terms and Conditions of Sale.

THE MATERIALS, PRODUCTS AND INFORMATION ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE, INCLUDING FITNESS FOR A PARTICULAR PURPOSE OR USE, MERCHANTABILITY, PERFORMANCE, QUALITY OR NON-INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHT; ALL SUCH WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED. SKYWORKS DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. SKYWORKS SHALL NOT BE LIABLE FOR ANY DAMAGES, INCLUDING BUT NOT LIMITED TO ANY SPECIAL, INDIRECT, INCIDENTAL, STATUTORY, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS THAT MAY RESULT FROM THE USE OF THE MATERIALS OR INFORMATION, WHETHER OR NOT THE RECIPIENT OF MATERIALS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Skyworks products are not intended for use in medical, lifesaving or life-sustaining applications, or other equipment in which the failure of the Skyworks products could lead to personal injury, death, physical or environmental damage. Skyworks customers using or selling Skyworks products for use in such applications do so at their own risk and agree to fully indemnify Skyworks for any damages resulting from such improper use or sale.

Customers are responsible for their products and applications using Skyworks products, which may deviate from published specifications as a result of design defects, errors, or operation of products outside of published parameters or design specifications. Customers should include design and operating safeguards to minimize these and other risks. Skyworks assumes no liability for applications assistance, customer product design, or damage to any equipment resulting from the use of Skyworks products outside of stated published specifications or parameters.

Skyworks and the Skyworks symbol are trademarks or registered trademarks of Skyworks Solutions, Inc., in the United States and other countries. Third-party brands and names are for identification purposes only, and are the property of their respective owners. Additional information, including relevant terms and conditions, posted at [www.skyworksinc.com](http://www.skyworksinc.com), are incorporated by reference.