PRODUCT SUMMARY

SKY77606 Multiband Multimode Power Amplifier Module for Quad-Band GSM / EDGE and Tri-Band (Bands I, V, VIII) WCDMA / HSDPA / HSUPA / HSPA+ / LTE

Applications
- Quad-band cellular handsets:
  - Class 4 GSM850 / EGSM900
  - Class 1 DCS1800 / PCS1900
  - Class E2 GSM850 / EGSM900 / DCS1800 / PCS1900
  - Class 12 multi-slot EGPRS
- Multiband 3G handsets
- WCDMA / HSDPA / HSUPA modulated handsets—Bands I, V, VIII
- LTE modulated 4G handsets

Features
- Hybrid architecture: separate GSM, WCDMA paths
- 50 ohm input and output impedances, integrated DC blocking on all ports
- Separate single-ended GSM and WCDMA inputs and outputs
- Integrated coupler with coupled and isolated ports for 3G/4G band operation
- CMOS Compatible three-line logic input plus HB / LB enable
- VCC stages for 2.5G / 3G can attach to battery or buck DC/DC
- Small, low profile package
  - 7 mm x 5 mm x 0.9 mm
  - 32-pad configuration
- 2.5G Features
  - EGPRS Class 12 multi-slot operation
  - Three RF POUT control levels using digital logic interface.
  - Linear PA with bias optimization for efficiency / linearity tradeoff in 8-PSK mode
- 3G Features
  - WCDMA mode supports output power, bandwidth:
    Bands I, V, VIII
  - Three RF POUT control levels using digital logic interface
  - Linear balanced with bias optimization and low / high mode gain switch for best efficiency / linearity trade-off
- 4G features:
  - LTE supports output power, bandwidth bands 1, 5, 8

Description
The SKY77606 is a hybrid, multimode, multiband Power Amplifier Module (PAM) that supports 2.5G and 3G handsets and operates efficiently in GSM, EGPRS, EDGE, WCDMA, and LTE modes. The PAM consists of: a GSM 800 / EGSM 900 PA block, a DCS1800 / PCS1900 PA block, separate WCDMA blocks operating in low and high bands, a logic control block for multiple power control levels, and band enable functions in both cellular and UMTS. RF I/O ports are internally matched to 50 ohm to minimize the number of external components. Extremely low leakage current maximizes handset standby time.

GSM/EDGE: The SKY77606 uses a new compact architecture supporting GSM850, EGSM900, DCS1800 and PCS1900 bands. The PAM also supports 2.5G Class 12 Enhanced General Packet Radio Service (EGPRS) multi-slot operation and EDGE linear modulation.

WCDMA: The SKY77606 uses Switched Load Insensitive Power Amplifier (SLIPA) circuitry to support WCDMA, High-Speed Downlink Packet Access (HSDPA), and High-Speed Uplink Packet Access (HSUPA) modulations at moderate antenna Voltage Standing Wave Ratio (VSWR). This functionality covers multiple bands for 3GPP, including bands I, V, and VIII, and operates at different power modes. The module is fully controllable via three line logic and band-enable interfaces. The InGaP/GaAs die and passive components are mounted on a multi-layer laminate substrate and the assembly encapsulated with plastic overmold.

LTE: The SKY77606 meets spectral linearity requirements of LTE modulation with QPSK/16QAM from 5 MHz to 10 MHz bandwidth, including various resource block allocations, with good power-added efficiency.

Figure 1 presents a functional block diagram.
Figure 1. SKY77606 Functional Block Diagram

Ordering Information

<table>
<thead>
<tr>
<th>Order Number</th>
<th>Manufacturing Part Number</th>
<th>Evaluation Board Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SKY77606</td>
<td>SKY77606-</td>
<td></td>
</tr>
</tbody>
</table>

Copyright ©2011, 2012, 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 RIGHTS; 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, the Skyworks symbol, “Breakthrough Simplicity,” DOR, Helios, HP3, Innovation to Go, Interia, IPAC, LPA, Polar Loop, and System Smart 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, are incorporated by reference.