

PRODUCT SUMMARY

# SKY77629-21 Multimode Multiband Power Amplifier Module for Quad-Band GSM/EDGE – Hexa-Band (I, II, III, IV, 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/ LTE-modulated handsets for Bands I, II, III, IV, V, VIII

## 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
- CMOS-compatible, two-wire MIPI logic inputs (SCLK, SDATA)
- VCC stages for 2.5G can attach to battery or buck DC/DC
- Low capacitance VCC interface for 3G/4G supports Envelope Tracking compatibility
- Small, low profile package:
  - 7 mm x 5 mm x 0.9 mm
  - 42-pad configuration

### 2.5G FEATURES:

- EGPRS Class 12 multi-slot operation
- Four RF POUT control levels using RFFE interface
- Linear PA with bias optimization for efficiency/linearity trade-off in 8-PSK mode

### 3G FEATURES:

- WCDMA mode supports output power, bandwidth for bands I, II, III, IV, V, VIII (and sub-bands IX, X, XVIII, XIX, XXVI) through an integrated band-select switch
- Digital bias optimization through RFFE interface for best efficiency/linearity tradeoff
- Optimized for envelope tracking system

### 4G FEATURES:

- Optimized for Average Power Tracking system
- LTE supports output power bandwidth bands 1, 2, 3, 4, 5, 8 (and sub-bands 9, 10, 18, 19, 20, 26)

## Description

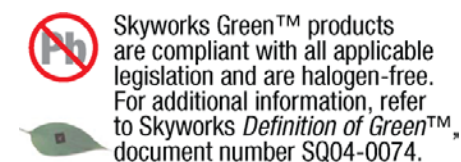
The SKY77629-21 is a hybrid, multimode multiband (MMMB) Power Amplifier Module (PAM) that supports 2.5G and 3G/4G handsets and operates efficiently in GSM, EGPRS, EDGE, WCDMA, and LTE modes. The PAM consists of a GSM 800/EGSM 900 PA block, a DCS1800/PCS1900 PA block, separate WCDMA blocks operating in 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  $\Omega$  to minimize the number of external components. Extremely low leakage current maximizes handset standby time. The InGaP/GaAs die and passive components are mounted on a multi-layer laminate substrate and the assembly encapsulated in plastic overmold.

**GSM/ EDGE:** The SKY77629-21 uses a new compact architecture supporting the 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 SKY77629-21 uses an enhanced architecture to support WCDMA, High-Speed Downlink Packet Access (HSDPA), High-Speed Uplink Packet Access (HSUPA), and LTE modulations; cover multiple bands for 3GPP, including bands I, II, IV, V, and VIII; operate at different power modes. The module is fully controllable via MIPI interface.

**LTE:** The SKY77629-21 meets spectral linearity requirements of LTE modulation with QPSK/16QAM up to 20 MHz bandwidth, including various resource block allocations, with good power-added efficiency

Figure 1 is a functional block diagram of the SKY77629-21 module.



## Ordering Information

Product Name	Order Number	Evaluation Board Part Number
SKY77629-21 Multimode Multiband Power Amplifier Module	SKY77629-21	EN40-D566-003

Copyright © 2013, 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, the Skyworks symbol, and "Breakthrough Simplicity" 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.