

PRODUCT SUMMARY

SKY78010 SkyOne® Multiband Multimode Front-End Module for Quad-Band GSM / GPRS / EDGE – Penta-Band (Bands I, II, IV, V, VIII) WCDMA / HSPA / 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 / HSPA / HSPA+ / LTE-modulated handsets for bands I, II, IV, V, VIII

Features

- Hybrid architecture: separate GSM, WCDMA paths
- 50 Ω I/O impedances, integrated DC blocking on all ports
- Separate single-ended GSM and WCDMA inputs and outputs
- Integrated coupler with coupled port for 3G/4G band operation
- Integrated 2.5G DCS/PCS Rx filter
- CMOS-compatible four-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 9.8 mm x 1.05 mm
 - 60-pad configuration
- 2.5G features:
 - EGPRS Class 12 multi-slot operation
 - Two RF P_{OUT} control levels using digital logic interface
 - Linear PA with bias optimization for efficiency/linearity trade-off in 8PSK mode
- 3G features:
 - WCDMA mode supports output power, bandwidth for bands I, II, IV, V, VIII through integrated select switch
 - Two RF P_{OUT} control levels using digital logic interface
 - Linear amplifiers with bias optimization and low/high mode gain switch for best efficiency/linearity tradeoff
- 4G features:
 - LTE supports output power, bandwidth bands I, II, IV, V, VIII
 - Bands I, II, IV up to 20 MHz bandwidth
 - Bands V, VIII up to 10 MHz bandwidth

Description

The SKY78010 is a hybrid, multimode, multiband Front-End Module (FEM) that supports 2.5G and 3G / 4G handsets and operates efficiently in GSM, GPRS, EDGE, WCDMA, HSPA, and LTE modes. The FEM consists of a GSM800/EGSM900 PA block, a DCS1800/PCS1900 PA block, separate WCDMA blocks operating in the 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 Ω 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.

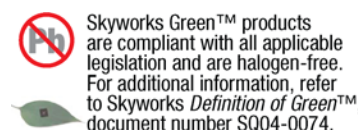
GSM / EDGE: The SKY78010 uses a new compact architecture supporting the GSM850, EGSM900, DCS1800 and PCS1900 bands. The FEM also supports 2.5G Class 12 Enhanced General Packet Radio Service (EGPRS) multi-slot operation and EDGE linear modulation.

WCDMA: The SKY78010 uses an enhanced architecture to: support WCDMA/High-Speed Downlink Packet Access (HSDPA) and High-Speed Uplink Packet Access (HSUPA) 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 four logic lines and band-enable interfaces.

LTE: The SKY78010 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.

Receiver Section: The SKY78010 has integrated Duplexers, RX SAWs and SP12T SOI switch to provide 2G / 3G / 4G Rx paths from antenna to LNA port of RFIC. Optimized “Rx paths and matching circuits” with well-grounded guard trace (high Tx–Rx isolation) inside module mitigate de-sense problem and enhance sensitivity performance.

TRx Port: The SKY78010 provides three vacant broadband TRx ports for additional band requirements.



Ordering Information

Product Name	Order Number	Evaluation Board Part Number
SKY78010 SkyOne® Multiband Multimode Front-End Module	SKY78010	

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 "Breakthrough Simplicity" DCR Helios HIP3 Innovation to Go Intera iPAC LIPA 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.