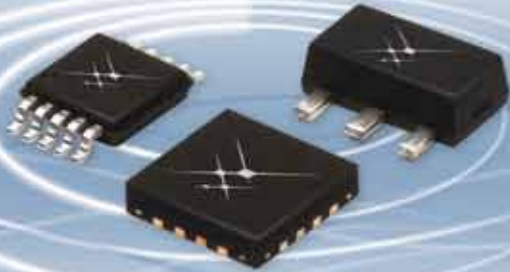




**SKYWORKS®**

BREAKTHROUGH SIMPLICITY



# Solutions Spotlight

Spring 2010



## Skyworks Solutions

Skyworks Solutions, Inc. is an innovator of high reliability analog and mixed signal semiconductors. Leveraging core technologies, Skyworks offers diverse standard and custom linear products supporting automotive, broadband, cellular infrastructure, energy management, industrial, medical, military and mobile handset applications. The Company's portfolio includes amplifiers, attenuators, detectors, diodes, directional couplers, front-end modules, hybrids, infrastructure RF subsystems, mixers / demodulators, phase shifters, PLLs / synthesizers / VCOs, power dividers / combiners, receivers, switches and technical ceramics.

Headquartered in Woburn, Massachusetts, USA, Skyworks is worldwide with engineering, manufacturing, sales and service facilities throughout Asia, Europe and North America.

At Skyworks, we turn complexity into simplicity, and simplicity into your competitive advantage.

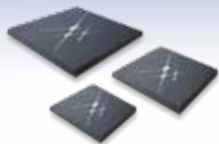
 For information on Skyworks Green Initiative™, visit [www.skyworksinc.com](http://www.skyworksinc.com)

## The Skyworks Advantage

- Broad front-end module and precision analog product portfolio
- Market leadership in key product segments
- Solutions for all air interface standards, including CDMA2000, GSM / GPRS / EDGE, LTE, WCDMA, WLAN and WiMAX
- Engagements with a diverse set of top-tier customers
- Analog, RF and mixed-signal design capabilities
- Access to all key process technologies: GaAs HBT, pHEMT, BiCMOS, SiGe, CMOS, RF CMOS and silicon
- World-class manufacturing capabilities and scale
- Unparalleled level of customer service and technical support
- Commitment to technology innovation



## **intera™** Front-End Modules



### **CDMA / WCDMA**

*SKY77425, SKY77433, SKY77435, SKY77436,  
SKY77438, SKY77451, SKY77462*

### **EDGE**

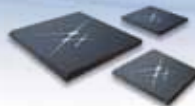
*SKY77519, SKY77521, SKY77524, SKY77528,  
SKY77529, SKY77544, SKY77546, SKY77549*

### **GSM / GPRS**

*SKY77517, SKY77518, SKY77531, SKY77542,  
SKY77543, SKY77547, SKY77548, SKY77552*

- Multiband / multimode power amplifiers
- High-linearity Tx / Rx switches
- Single multichip module design
- Reduced handset design time
- Superior handset talk and standby times

## **iPAC™, System Smart™, and LIPA™ PA Modules**



### **CDMA2000**

*SKY77163, SKY77164, SKY77166, SKY77176, SKY77183,  
SKY77184, SKY77190, SKY77192*

### **Quad-Band GSM / GPRS / EDGE**

*SKY77318, SKY77336, SKY77344, SKY77346, SKY77444*

### **TD-SCDMA**

*SKY77198*

### **WCDMA**

*SKY77173, SKY77174, SKY77175, SKY77177, SKY77181,  
SKY77182, SKY77186, SKY77187, SKY77188, SKY77189,  
SKY77191, SKY77195, SKY77196, SKY77197, SKY77446,  
SKY77447, SKY77448, SKY77701, SKY77702, SKY77703,  
SKY77704, SKY77705*

- Compact form factors
- Outperform stringent linearity requirements
- Highly efficient for improved talk times
- Fully matched
- Broadband operation up to 6 GHz

## PAs and FEMs for LTE

*SKY77441, SKY77445, SKY77449, SKY77453, SKY77455, SKY77456, SKY77457, SKY77458, SKY77706, SKY77708, SKY77709*



4 x 4 x 0.85 mm  
4 x 7 x 1.1 mm

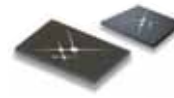
Skyworks' multimode and multiband family of products provides the most complete and flexible set of options for companies developing and building 4G applications, including 4G-enabled handsets, infrastructure basestations, wireless PC cards, and a variety of other embedded solutions.

These solutions support the largest selection of bands (13) including LTE-FDD for the United States (the SKY77449 and SKY77453) and LTE-TDD for China (the SKY77441), and the industry's first LTE front-end module for Band VII.

- QPSK, 16 QAM for up to 20 MHz bandwidth, 100 resource blocks
- Linear LTE PAM power @ 3.4 V of 27.5 dBm
- Supports low collector operation (1.5 V)
- Supports low power mode
- Low current consumption
- Skyworks InGaP BiFET technology

## PAs and FEMs for WLAN

*SKY65249, SKY65225, SKY65296*



4 x 4 x 0.9 mm  
10 x 14 x 0.9 mm

- Integrated front-end modules and discrete power amplifiers for 802.11a,b,g,n
- High-efficiency power amplifiers with integrated power detection
- Low-loss switches for Tx / Rx and antenna diversity
- Harmonic filtering to meet FCC regulatory requirements

## Wideband Linear Power Amplifier for 400–2700 MHz Applications

*SKY65162*



2.4 x 4.5 x 1.5 mm

- OIP3: up to 48 dBm
- Output  $P_{1\text{ dB}}$  = 29 dBm
- Gain = 24 dB
- On-chip biasing circuit



## Wireless Connectivity

### High Power WLAN Power Amplifiers

*SKY65137*



6 x 6 x 1.3 mm

- Frequency: 4.9–6.0 GHz
- $OP_{1\text{ dB}}$ : 32.5 dBm; gain: 26 dB
- Output power: 25 dBm @ 3% EVM
- Integrated input / output matching circuits and coupler-detector

*SKY65152*



6 x 6 x 1.05 mm

- Frequency: 2.4–2.5 GHz
- $OP_{1\text{ dB}}$ : 33 dBm; gain: 31 dB
- Output power: 27 dBm @ 2.5% EVM
- Integrated input / output matching circuits and coupler-detector

### Low Noise Amplifiers and High Performance Receive Modules for WLAN

*SKY65404, SKY65405, SKY65507*



1.5 x 1.5 x 0.45 mm  
2 x 2 x 0.55 mm

- Internally optimized for 2.4 GHz and 5.8 GHz WiFi frequency bands
- Ultra low noise figure and high IIP3
- Low-loss switches for Tx / Rx
- Small form factor, ideal for mobile / portable applications

## Infrastructure

### 2-Stage Low Noise pHEMT Amplifiers for Infrastructure

*SKY65084-360LF, SKY65048-360LF, SKY65049-360LF, SKY65066-360LF*



2 x 2 x 0.9 mm

- Ultra-low noise figure  $\leq 0.70$  dB
- Excellent input and output return loss
- High output OIP3  $\geq 34$  dBm
- $OP_{1\text{ dB}} \geq 16$  dBm

### Wideband Integrated VCO Synthesizer for Cellular Base Stations and Wireless Communications Systems

*SKY73134*



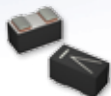
5 x 5 x 1 mm

- Ultra wide continuous frequency range: 0.375–5.6 GHz
- Very low noise integer-N frequency synthesizer
- Simple programming with automatic VCO selection
- Flexible configuration allows connection to external VCO or PLL

## Precision Analog Components

### 0201 Surface Mount Low Barrier Silicon Schottky Diodes

*SMS7621-096, SMS7630-093*

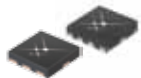


0.5 x 0.25 x 0.25 mm

- Low profile 0201 SMT package: 90% smaller than SC-79
- Suitable for use up to 100 GHz
- Low parasitic impedance (CP < 0.05 pF, LS < 0.2 nH)

### WLAN Ultrasmall, Thin, SPDT, SP3T, SP4T Switches

*SKY13323-378LF, SKY13314-374LF, SKY13317-373LF, SKY13322-375LF, SKY13351-378LF*



1.5 x 1.5 x 0.45 mm  
2 x 3 x 0.75 mm  
1 x 1 x 0.5 mm

- Frequencies: 0.1–6 GHz
- Insertion loss: 0.3–0.5 dB typ. @ 2.4 GHz, 0.6–1.2 dB @ 6 GHz
- Isolation 25 dB typ. @ 2.4 GHz, 20 dB typ. @ 6 GHz

### Skyworks Solutions, Inc.

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Email: [sales@skyworksinc.com](mailto:sales@skyworksinc.com) • [www.skyworksinc.com](http://www.skyworksinc.com)

### Surface Mount Shunt PIN Diode for High Power T/R Switch Applications

*SMP1302-085LF*



2 x 2 x 0.9 mm

- Low thermal resistance (40 °C/W)
- Suitable for 50 W CW T/R switches
- Low capacitance (0.3 pF)
- Low distortion performance

### Fixed Attenuators 0–30 dB, DC–40 GHz

*ATN3590 Series*



0.725 x 0.700 x 0.100 mm

- Fixed value, absorptive devices
- Available attenuation values range from 0 to 10 dB (in 1 dB steps), and 12, 15, 20, and 30 dB
- Excellent return loss: 30 dB, typical
- Enhanced power handling: 2 W

### Digital Attenuators

*SKY12340-364LF, SKY12407-321LF, SKY12338-337LF*



5 x 5 x 0.90 mm  
3 x 3 x 0.75 mm

- SKY12340-364LF: 300 kHz–2.0 GHz five-bit digital attenuator with serial-to-parallel driver, QFN 32L 5 x 5 mm
- SKY12407-321LF: 50–600 MHz, 12 dB 100 Ω differential single bit digital attenuator, QFN 12L 3 x 3 mm
- SKY12338-337LF: 0.35–4.0 GHz two-bit digital attenuator, QFN 12L 3 x 3 mm