

PRODUCT SUMMARY

SKY77457 Front-End Module for LTE / EUTRAN Band V (Tx 824-849 MHz), (Rx 869-894 MHz)

Applications

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

Features

- QPSK, 16QAM, 64QAM modulations
- Up to 20 MHz bandwidths
- Up to 100 resource blocks
- Linear power at 3.3 V
 - LTE: 25 dBm
 - WCDMA: 26 dBm
- Duplexer Tx-Rx attenuation and isolation: 50 dB
- Integrated Power Detector, interstage filter and duplexer
- Low voltage positive bias supply: 3.0 V to 4.6 V
- Supports low collector voltage operation down to 1.5 V
- Excellent linearity, efficiency
- Large dynamic range
- Low Profile 16-pad package: 4 mm x 7 mm x 1.05 mm
- Analog bias current control in low power mode using VBA pad
- InGaP BiFET Technology
- Skyworks Green™ Packaging

NEW

Skyworks Green™ products are lead (Pb)-free, RoHS (Restriction of Hazardous Substances)-compliant, conform to the EIA/EICTA/JEITA Joint Industry Guide (JIG) Level A guidelines, and are free from antimony trioxide and brominated flame retardants.



Description

The SKY77457 Front-End Module (FEM) is a fully matched, 16-pad surface mount module developed for LTE/EUTRAN applications. Small and efficient, this LTE FEM integrates the interstage filter, input and output matching, power amplifier, power detection, and duplexer into a single 4 mm x 7 mm x 1.05 mm package. The SKY77457 meets the stringent spectral linearity requirements of LTE with QPSK/16QAM modulations from 1.4 to 20MHz bandwidth and full or partial resource block allocations with high power added efficiency. The FEM incorporates Inter-Stage Filter and Duplexer, InGaP BiFET PA, and output power detector.

Integration of the RF front-end greatly simplifies the design of the 4G-compatible handset radio or data card as all critical matching between the interstage filter, PA, power detection, and duplexer is optimized within the single module component. By optimizing the efficiency of the InGaP BiFET PA MMIC, reducing RF loss between the integrated components and within the Duplexer itself, and improving the match between the PA and the Duplexer, this FEM achieves low current at maximum output power that significantly reduces the power dissipated in the LTE-enabled handsets or data cards. Primary bias to the SKY77457 is supplied via the VCC1 and VCC2 pads directly from a three-cell Ni-Cad, a single-cell Li-Ion, or other suitable batteries with outputs in the 3.0 to 4.6 volt range, while the bias network is powered up with the VCCB pad. DC-DC converter operation can be supported with lower power operation down to 1.5V. Power down is accomplished by setting a logic low level on the VEN pad. No external supply side switch is needed as typical “off” leakage is 100 microamperes with full primary voltage supplied from the battery. The VMODE pad is used to switch between high and low power modes to reduce current consumption and gain in the back – off conditions. VBA is used to further control the current consumption in the low power mode.

This small package uses Skyworks’ low cost, multi - layer laminate substrate technology and is approximately half the size of individually packaged component solutions. The SKY77457 front-end module can save handset and data card designers significant board space and design-cycle time, and significantly simplify supply chain and sourcing of RF components.

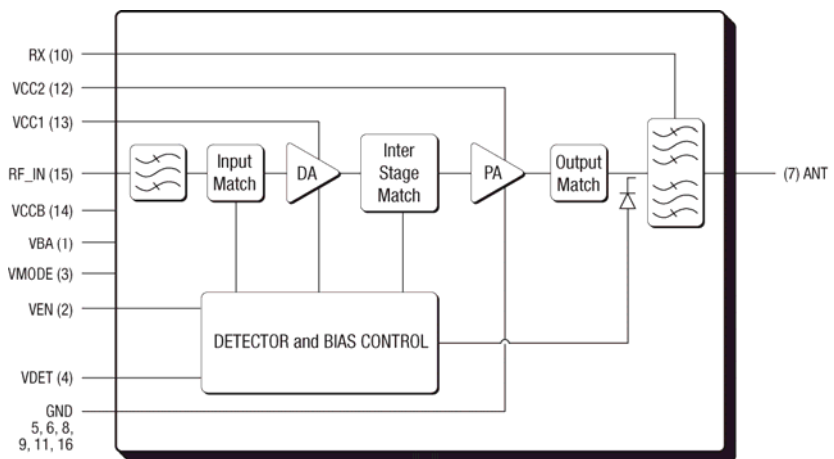


Figure 1. Functional Block Diagram

Ordering Information

Model Number	Manufacturing Part Number	Product Revision	Package	Operating Temperature
SKY77457	SKY77457		MCM 4 x 7 x 1.05 mm	-20 °C to 85 °C

© 2009, Skyworks Solutions, Inc. All Rights Reserved.

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

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as may be provided in Skyworks' Terms and Conditions of Sale for such products, Skyworks assumes no liability whatsoever.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF SKYWORKS® PRODUCTS INCLUDING WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, PERFORMANCE, QUALITY OR NON-INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. SKYWORKS FURTHER 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 SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS THAT MAY RESULT FROM THE USE OF THESE MATERIALS.

Skyworks® products are not intended for use in medical, lifesaving or life-sustaining applications. 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.

The following are trademarks of Skyworks Solutions, Inc.: Skyworks®, the Skyworks symbol, and "Breakthrough Simplicity"®. Product names or services listed in this publication are for identification purposes only, and may be trademarks of third parties. Third-party brands and names are the property of their respective owners.

Additional information, posted at www.skyworksinc.com, is incorporated by reference.