

PRODUCT SUMMARY

SKY77527-21 Tx Front-End Module for Quad-Band GSM / EDGE

Applications

- Quad-band cellular handsets:
- GMSK Modulation:
 - Class 4 GSM850/900
 - Class 1 DCS1800/PCS1900
 - Class 12 GPRS multi-slot operation
- EDGE modulation:
 - Class E2 GSM850/900
 - Class E2 DCS1800/PCS1900

Features

- High efficiency:
 - GSM850
38% @ 32.7 dBm
 - GSM900
38% @ 32.7 dBm
 - DCS1800
33% @ 30.9 dBm
 - PCS1900
31% @ 30.9 dBm
- Low loss PHEMT RF antenna switch
- Detector output: linear V/V
- Small outline: 8 x 6 mm
- Low profile: 1.12 mm Max.
- Low V_{RAMP} current

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 SKY77527-21 Tx Front End Module (FEM) is designed in a compact form factor for quad-band cellular handsets comprising GSM850/900, DCS1800, PCS1900, supporting GMSK and linear EDGE modulation. Class 12 General Packet Radio Service (GPRS) multi-slot operation is also supported.

The module consists of a GSM850/900 PA block and a DCS1800/PCS1900 PA block, impedance-matching circuitry for 50 Ω input and output impedances, a multifunction power amplifier control (MFC) block, low pass harmonic rejection filters, and an SP6T Antenna T/R switch.

Two separate Heterojunction Bipolar Transistor (HBT) PA blocks are fabricated onto an InGaP die; one supports the GSM850/900 bands, the other supports the DCS1800/PCS1900 bands. The InGaP PA die, the silicon MFC die, PHEMT switch die, and the passive components are mounted on a multi-layer laminate substrate. The assembly is encapsulated with plastic overmold.

Band select (BS1 and BS2) circuitry is used to select the desired Tx and Rx frequency bands; MODE circuitry selects GMSK modulation (logic 0) or EDGE modulation (logic 1); VRAMP controls the output power for GMSK modulation; and VBIAS provides bias optimization for EDGE and GMSK modulation depending on the state of MODE control.

The Multi-function Control (MFC) provides “pinout” for interoperation with an external power control loop. The external circuit uses the Linear Detector output to provide closed loop power control in both EDGE and GMSK modes of operation. The power control loop together with the MFC will reduce sensitivity to antenna load, input drive, temperature, power supply, and process variation. The combined circuit configures the PA for fixed gain in 8PSK mode while providing the ability to optimize the PA bias at different power levels to maximize efficiency.

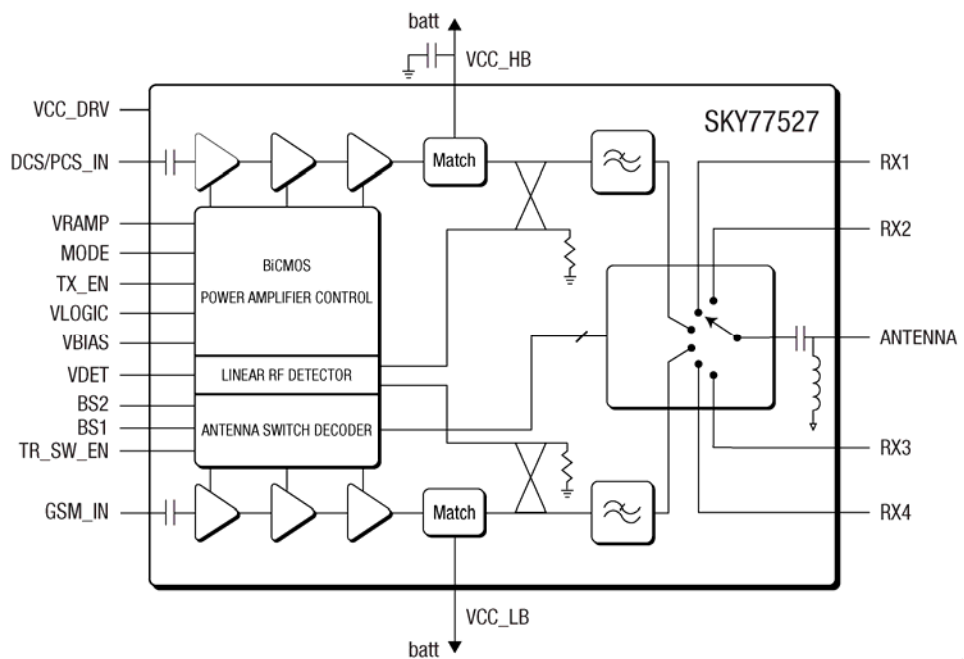


Figure 1. SKY77527-21 Functional Block Diagram

Ordering Information

Model Number	Manufacturing Part Number	Product Revision	Package	Operating Temperature
SKY77527-21	SKY77527-21	-21	MCM 8 x 6 x 1.12 mm Max.	-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 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.