

PRODUCT SUMMARY

Quad-Band Integrated Subsystem for GSM, GPRS, and EDGE Handset Applications

Applications

- GSM850, EGSM900, DCS1800, and PCS1900 handsets
- GPRS handsets and modules
- EDGE receive handsets and modules

Features

- Direct down-conversion transceiver eliminates the external image reject/IF filters
- High performance, quad-band PA with current sensing power control
- Integrated PA and switch functions
- High efficiency
- Closed loop iPAC™ or open loop operation with external PA controller
- High linearity transmit/receive switches
- Integrated LDO voltage regulators for direct connection to battery
- Gain selectable in 2 dB steps
- Integrated receive baseband filtering with programmable bandwidth
- Single integrated, fully programmable fractional-N synthesizer suitable for multi-slot EGPRS operation
- Low power standby mode
- Separate enable lines for transmit, receive, and synthesizer
- Four, fully programmable GPOs to control any antenna switch module
- Low external component count

NEW



Skyworks offers lead (Pb)-free “environmentally friendly” packaging that is RoHS compliant (European Parliament for the Restriction of Hazardous Substances).

Description

Skyworks quad-band integrated subsystem combines a direct conversion transceiver (SKY74117) with an integrated Power Amplifier Control (iPAC™) front-end module (SKY77500). Together, these devices provide a complete, integrated solution with an extremely compact footprint (<250 mm²). The quad-band RF subsystem supports GSM850, EGSM900, DCS1800, and PCS1900 cellular data service applications.

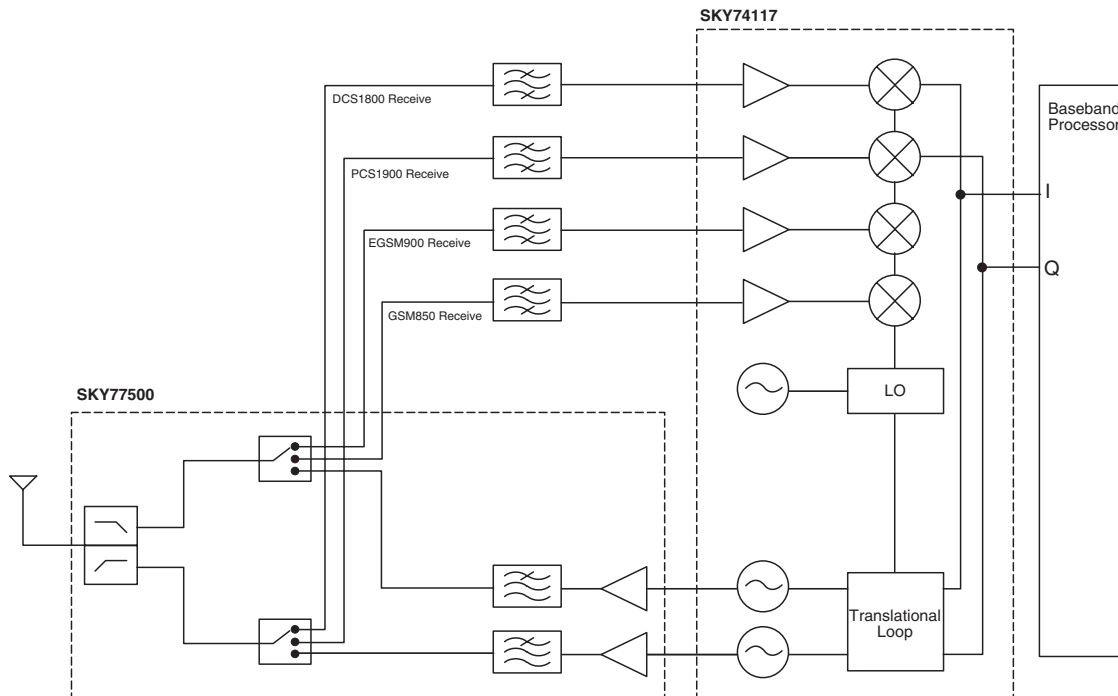
The SKY74117 is based on Skyworks industry-leading, single-chip DCRT™ technology. This device consists of a direct conversion transceiver, a transmitter with an integrated Voltage Controlled Oscillator (VCO), and a fully integrated fractional-N synthesizer. The SKY74117 is packaged in a Pb-free 40-pin, 6 x 6 mm RF Land Grid Array (RFLGA™) package.

The SKY77500 incorporates separate GSM850/900 and DCS1800/PCS1900 PA blocks that share a common power supply input for current distribution. Impedance-matching circuitry for 50 Ω input/output and a PA bias control block are also incorporated. Internal decoder circuitry controls the RF switches and provides a low current external control interface. The SKY77500 is packaged in a 32-pin, 8 x 10 mm Multi-Chip Module (MCM) package.

The quad-band RF subsystem can be combined with virtually any standard GSM, GPRS, or EDGE baseband without requiring any special processing interfaces.

The subsystem uses a translation loop transmit architecture to perform frequency up-conversion with high output spectral purity. The sigma-delta, fractional-N synthesizer reference frequency is supplied by an integrated Voltage Controlled Crystal Oscillator (VCXO) circuit that enables the use of a low cost crystal. The subsystem also supports Class 12 EGPRS multi-slot operation.

A block diagram of the quad-band RF subsystem is shown in Figure 1.



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Figure 1. Quad-Band RF Subsystem Functional Block Diagram

Ordering Information

Model Name	Manufacturing Part Number	Product Revision
Quad-Band GSM RF Subsystem: SKY74117 RF Transceiver SKY77500 iPAC™ PA Front-End Module	SKY74117-xx (Pb-free package) SKY77500-xx	

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