PRODUCT SUMMARY

SKY77646 Multimode Multiband Power Amplifier Module for Quad-Band GSM/EDGE – Bands (1, 25, 3, 4, 26, 8, 13, 12, 20, 28, 34, and 39) WCDMA / HSDPA / HSUPA / 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
- CDMA/ WCDMA/ HSDPA/ HSUPA/ TD-SCDMA/ LTE modulated handsets for Bands 1, 25, 3, 4, 26, 8, 13, 12, 20, 28, 34, 39

Features

- Hybrid architecture: separate GSM, WCDMA paths
- 50 ohm input and output impedances, integrated DC blocking on all ports
- Separate single-ended GSM and WCDMA inputs and outputs
- CMOS-compatible, two-wire MIPI logic inputs (SCLK, SDATA)
- VCC stages for 2.5G can attach to battery or buck DC/DC
- Low capacitance VCC interface for 3G/4G supports Envelope Tracking compatibility
- Optimized Low Power Mode for ultra-low quiescent current
- Small, low profile package:
  - 7 mm x 5 mm x 0.9 mm
  - 42-pad configuration

2.5G FEATURES:

- EGPRS Class 12 multi-slot operation
- Four RF POUT control levels using RFFE interface
- Linear PA with bias optimization for efficiency/linearity trade-off in 8-PSK mode

3G FEATURES:

- WCDMA mode supports output power, bandwidth for bands 1, 25, 4, 34/39, 26, 8 (and sub-bands 9, 10, 25, 26) through an integrated band-select switch
- Digital bias optimization through RFFE interface for best efficiency/linearity tradeoff
- Optimized for envelope tracking system

4G FEATURES:

- Optimized for Envelope Tracking system
- LTE supports output power bandwidth bands 1, 25, 3, 4, 39, 26, 8, 20, 12, 17 (and sub-bands 9, 10, 18, 19)
- B4/12 and B3/8 carrier aggregation
- Flexible LB input configuration: any LB input for any band

Description

The SKY77646 hybrid, multimode multiband (MMMB) Power Amplifier Module (PAM) supports 2.5G and 3G/4G handsets and operates efficiently in GSM, EDGE (EGPRS), CDMA, WCDMA, TD-SCDMA, and LTE modes. The PAM consists of a GSM800/EGSM 900 PA block, a DCS1800/PCS1900 PA block, separate WCDMA/LTE blocks operating in low and mid 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 new compact architecture of the SKY77646 supports the GSM850, EGSM900, DCS1800, and PCS1900 bands, 2.5G Class 12 Enhanced General Packet Radio Service (EGPRS) multi-slot operation, and EDGE linear modulation.

WCDMA: The enhanced SKY77646 architecture supports WCDMA, High-Speed Downlink Packet Access (HSDPA), High-Speed Uplink Packet Access (HSUPA), and LTE modulations. It also covers multiple bands for 3GPP including bands 1, 25, 4, 26, and 8; operates at different power modes. The module is fully controllable via MIPI interface.

TD-SCDMA/TDD-LTE: The enhanced SKY77646 architecture supports TD-SCDMA bands 34/39 and TDD-LTE band 39 through ET or APT modes.

LTE: The SKY77646 meets the spectral linearity requirements of LTE modulation with QPSK/16QAM up to 20 MHz bandwidth, including various resource block allocations, with good power-added efficiency

Skyworks Green™ products are compliant with all applicable legislation and are halogen-free. For additional information, refer to Skyworks *Definition of Green*™, document number SQ04-0074.

Ordering Information

Product Name	Order Number	Evaluation Board Part Number
SKY77646 Multimode Multiband Power Amplifier Module	SKY77646	EN40-D695-002

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