**PRODUCT SUMMARY**

# SKY77619-51 SkyHi™ Multimode Multiband Power Amplifier Module for Quad-Band GSM/EDGE / Penta-Band (I, II, III/IV, V, VIII) WCDMA / CDMA / 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
- WCDMA / CDMA / HSDPA / HSUPA / LTE-modulated handsets for Bands I, II, III/IV, V, VIII
- TD-SCDMA for Bands 34/39
- TDD LTE for Band 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
- Integrated coupler with coupled port for 3G/4G band operation
- CMOS-compatible four-line logic input plus HB / LB enable
- VCC stages for 2.5G / 3G can attach to battery or buck DC/DC
- 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
  - Two RF POUT control levels using digital logic 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 I, II, III/IV, V, VIII through an integrated select switch
  - Two RF POUT control levels using digital logic interface
  - Linear amplifiers with bias optimization and low/high mode gain switch for best efficiency/linearity tradeoff
- 4G features:
  - LTE supports output power in all bands

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.

## Description

The SKY77619-51 SkyHi™ Power Amplifier Module (PAM) is a hybrid, multimode multiband (MMMB) module that supports 2.5G and 3G/4G handsets and operates efficiently in GSM, EGPRS, EDGE, WCDMA, CDMA, and LTE modes. The PAM consists of: a GSM 800 / EGSM 900 PA block, a DCS1800 / PCS1900 PA block, separate WCDMA blocks operating in low and high 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 $\Omega$ 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 SKY77619-51 uses a new compact architecture supporting the GSM850, EGSM900, DCS1800 and PCS1900 bands. The PAM also supports 2.5G Class 12 Enhanced General Packet Radio Service (EGPRS) multi-slot operation and EDGE linear modulation.

**WCDMA**: The SKY77619-51 uses an enhanced architecture to support WCDMA / CDMA High-Speed Downlink Packet Access (HSDPA), High-Speed Uplink Packet Access (HSUPA), and LTE modulations; cover multiple bands for 3GPP, including bands I, II, III/IV, V, and VIII; and operate at different power modes. The module is fully controllable via four logic lines and band-enable interfaces.

**LTE:** The SKY77619-51 meets spectral linearity requirements of LTE modulation with QPSK/16QAM up to 20 MHz bandwidth, including various resource block allocations, with good power-added efficiency
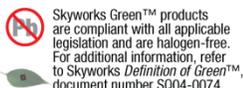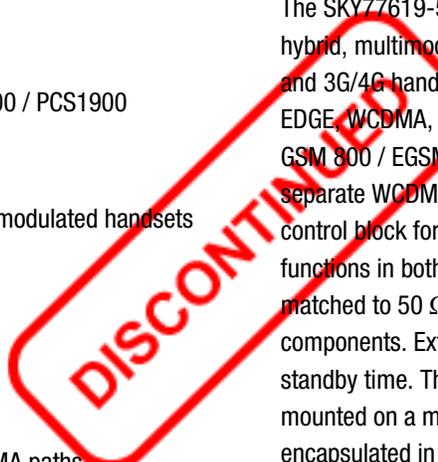
## Ordering Information

| Product Name | Order Number | Evaluation Board Part Number |
|---|---|---|
| SKY77619-51 SkyHi™ Multimode Multiband Power Amplifier Module | SKY77619-51 | EN21-D425-001 V1  REV A |