PRODUCT SUMMARY

SKY77621-31 Multimode Multiband Power Amplifier Module

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/LTE handsets
- WCDMA Bands: I, II, III, IV, V, VIII, IX
- TD-SCDMA Bands: 34, 39
- LTE Bands: 1, 2, 3, 4, 5, 8, 9, 13, 17, 20, 28
- TDD-LTE Band 39

Features

- Hybrid PA architecture
- Two 2G/2.5G outputs
- Eight 3G/4G outputs
- Industry-leading PAE for 2G/3G/4G
- Optimized for APT DCDC operation
- Supports Envelope Tracking (ET) application
- Fully programmable Mobile Industry Processor Interface (MIPI) control
- MIPI programmable bias modes optimize best efficiency/linearity trade-off for 3G and 4G; minimizes DG09 for 3G.
- Analog VRAMP for 2G/2.5G controls GMSK power output and sets EDGE bias
- Small, low profile package:
  - 5 mm x 7 mm x 0.9 mm
  - 42-pad configuration

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

Skyworks SKY77621-31 is a hybrid multimode multiband (MMMB) Power Amplifier Module (PAM) that supports 2.5G/3G/4G handsets, and operates efficiently in GSM, EGPRS, EDGE, WCDMA, TD-SCDMA, and LTE modes. The module is fully programmable through a Mobile Industry Processor Interface (MIPI).

The PAM consists of a GSM850/EGSM900 PA block, a DCS1800/PCS1900 PA block, a WCDMA/LTE block for low and high bands, and a Multi-Function Control (MFC) block, RF input/output ports internally matched to 50 Ω to reduce the number of external components. A CMOS integrated circuit, using standard MIPI control, provides the internal MFC interface and operation. Extremely low leakage current maximizes handset standby time.

The InGaP die and the silicon die and passive components are mounted on a multi-layer laminate substrate. The assembly is encapsulated in a 5 x 7 x 0.9 mm, 42-pad MCM, SMT package which allows for a highly manufacturable, low cost solution.

2.5G The SKY77621-31 supports the GSM850, EGSM900, DCS1800, and PCS1900 bands as well as 2.5G Class12 Enhanced General Packet Radio Service (EGPRS) multi-slot operation and EDGE linear modulation.

In GMSK mode, adjusting VRAMP controls power output. In EDGE mode, PIN controls power output and VRAMP sets the bias.

3G The SKY77621-31 supports WCDMA, High-Speed Downlink Packet Access (HSDPA), High Speed Uplink Packet Access (HSUPA), High Speed Packet Access (HSPA+), and TD-SCDMA modulations. Varying the input power level provides output power control. V_{CC} is adjusted using a DCDC converter or Envelope Tracking (ET) modulator to maximize efficiency for each power level and modulation type.

4G The SKY77621-31 supports 1.4, 3, 5, 10, 15, 20 MHz channel bandwidths. Similar to 3G operation, output power is controlled by varying the input power and V_y is adjusted using a DCDC converter or ET modulator to maximize efficiency for each power level.

3G/4G Modulation scheme includes:

- WCDMA Voice Release 99
- HSDPA categories
- HSUPA
- HSPA+
- TD-SCDMA
- LTE 1.4, 3, 5, 10, 15, 20 MHz Channel BW
- TDD-LTE

Ordering Information

Product Name	Order Number	Evaluation Board Part Number
SKY77621-31 Multimode Multiband Power Amplifier Module	SKY77621-31	EN40-D486-004