SKYWORKS®

PRODUCT SUMMARY

SKY77605 Multiband Multimode Power Amplifier Module for Quad-Band GSM / EDGE and Broadband (Bands I, II, V, VIII) WCDMA / HSDPA / HSUPA / HSPA+ Handsets

Applications

- Quad-band cellular handsets:
  - Class 4 GSM850 / EGSM900
  - Class 1 DCS1800 / PCS1900
  - Class E2 GSM850 / EGSM900 / DCS1800 / PCS1900
  - Class 12 multi-slot EGPRS
  - Multi-band 3G handsets
  - Broadband WCDMA/HSDPA/HSUPA-modulated handsets – Bands I, II, V, VIII

Features

- Hybrid module architecture, w/ separate GSM, WCDMA paths
- 50 Ω I/O impedances, integrated DC blocking all ports
- Separate single-ended I/O for GSM and WCDMA
- Integrated coupler w/ coupled and isolated ports for 3G band operation
- CMOS-compatible three-line logic input, HB enable / LB enable
- Both 3G VCC stages can attach to battery or buck DC/DC
- Ultra-compact low profile package
  - 5 mm x 7 mm x 0.9 mm
  - 24-pad configuration
- 2.5G Features
  - GPRS Class 12 multi-slot operation
  - Three level RF Pout control using digital logic interface.
  - Linear PA with bias optimization for efficiency/linearity tradeoff in 8PSK mode
- 3G Features
  - WCDMA mode supports output power, bandwidth for bands I, II, V, VIII
  - Two level P_{OUT} RF P_{OUT} control using digital logic interface
  - Linear balanced with bias optimization, low/high mode gain switch for best efficiency / linearity trade-off

NEW Skyworks Green™ products are RoHS (Restriction of Hazardous Substances)-compliant, conform to the EIA/EICTA/JEITA Joint Industry Guide (JIG) Level A guidelines, are halogen free according to IEC-61249-2-21, and contain < 1,000 ppm antimony trioxide in polymeric materials.

Description

Skyworks SKY77605 is a hybrid multimode, multiband Power Amplifier Module (PAM) that supports 2.5G and 3G handsets, and operates efficiently in GSM, EGPRS, EDGE and WCDMA modes.

The PAM consists of a GSM800/EGSM900 PA block, a DCS1800/PCS1900 PA block, separate blocks for WCDMA operating in low / high bands, RF I/O ports internally matched to 50 Ω to reduce the number of external components, a logic control block for multiple power control levels and band enable functions in both cellular and UMTS. Extremely low leakage current maximizes handset standby time.

GSM/EDGE: The SKY77605 uses a new compact architecture to support 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 SKY77605 uses Load Insensitive Power Amplifier (LIPA) circuitry to support WCDMA, High-Speed Downlink Packet Access (HSDPA), and High-Speed Uplink Packet Access (HSUPA) modulations at moderate antenna Voltage Standing-Wave Ratio (VSWR). This functionality covers multiple bands for 3GPP, including bands I, II, V, VIII, and operates at different power modes.

The module is fully controllable via three line logic and band enable interfaces. The InGaP/GaAs die and passive components are mounted on a multi-layer laminate substrate and the assembly encapsulated with plastic overmold. The SKY77605 Surface-Mounted Technology (SMT) package offers for a highly manufacturable, low-cost solution.

Figure 1 shows a functional block diagram and Figure 2 shows the pad locations.

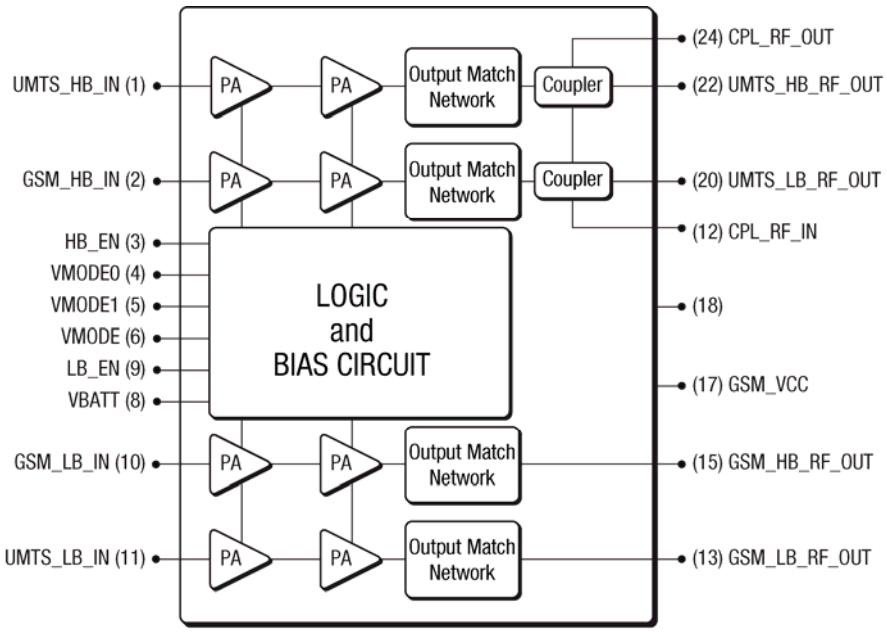

Figure 1. SKY77605 Functional Block Diagram

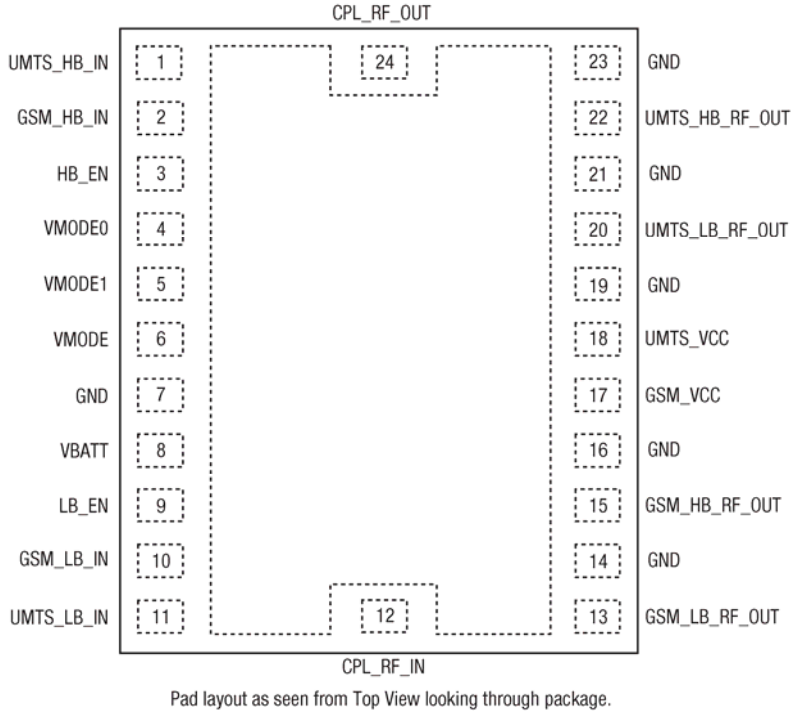

Figure 2. SKY77605 Pad Configuration

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