PRODUCT SUMMARY

SKY77601 Multi-Mode, Multi-Band Power Amplifier Module for Next Generation GGE and HSPA Handsets

APPLICATIONS

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

FEATURES

- Hybrid architecture: separate GSM and WCDMA paths
- Separate single-ended GSM and WCDMA inputs/outputs, all AC-coupled
- Multiplexed voltage detector for all modes/bands provided to transceiver
- Fully programmable serial bus interface
- Final VCC stage for 2.5G/3G can be attached to battery or buck DC/DC
- Driver stage for 3G can be attached to battery or buck DC/DC
- 2.5G features:
  - EGPRS Class 12 multi-slot operation
  - Log power detector
  - Linear PA with bias optimization for efficiency/linearity trade-off in 8-PSK mode
- 3G features:
  - WCDMA mode supports output power and bandwidth for bands I, II, V, and VIII
  - Linear detector
  - Linear balanced with bias optimization and low/high mode gain switch for best efficiency/linearity trade-off
- Small footprint, MCM (34-pin, 6 x 8 mm) Pb-free (MSL3, 260 °C per JEDEC J-STD-020) SMT package

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 SKY77601 is a hybrid multi-mode, multi-band Power Amplifier Module (PAM). The device is intended to support 2.5G and 3G handsets and operates efficiently in GSM, EGPRS, EDGE WCDMA modes.

For 2.5G, the SKY77601 supports the GSM850, EGSM900, DCS1800, and PCS1900 bands. The device also supports 2.5G Class 12 Enhanced General Packet Radio Service (EGPRS) multi-slot operation and EDGE linear modulation.

For 3G, the PAM uses Load Insensitive Power Amplifier (LIPA®) circuitry to support WCDMA, High-Speed Downlink Packet Access (HSDPA), and High-Speed Uplink Packet Access (HSUPA) modulation at a high antenna Voltage Standing-Wave Ratio (VSWR). This functionality covers multiple bands for 3GPP including bands I, II, V, and VIII.

RF input and output ports are internally matched to 50 Ω to reduce the number of external components. Extremely low leakage current maximizes handset standby time.

The InGaP die, the silicon die, and passive components are mounted on a multi-layer laminate substrate. The assembly is encapsulated with plastic overmold.

The device is mounted in a 34-pin, 6 x 8 mm MCM Surface-Mounted Technology (SMT) package, which allows for a highly manufacturable low-cost solution. A block diagram of the SKY77601 is shown in Figure 1. The device package and pinout for the 34-pin MCM are shown in Figure 2.

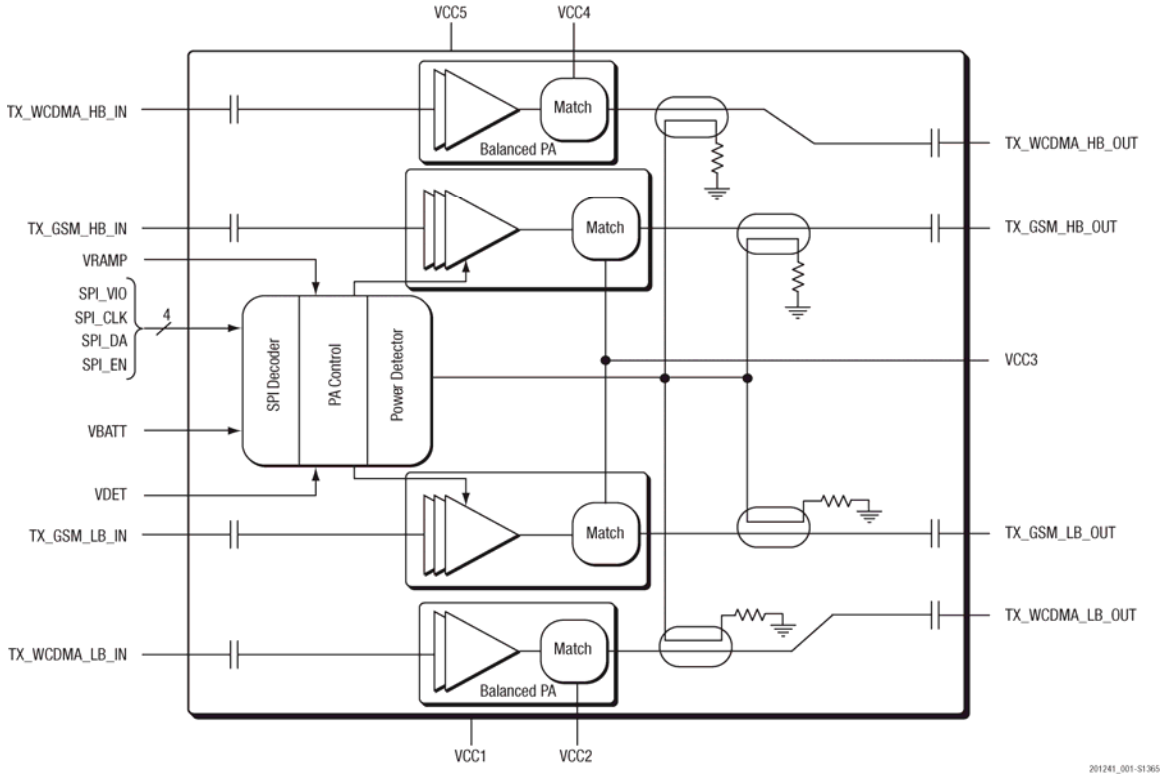

Figure 1. SKY77601 Functional Block Diagram

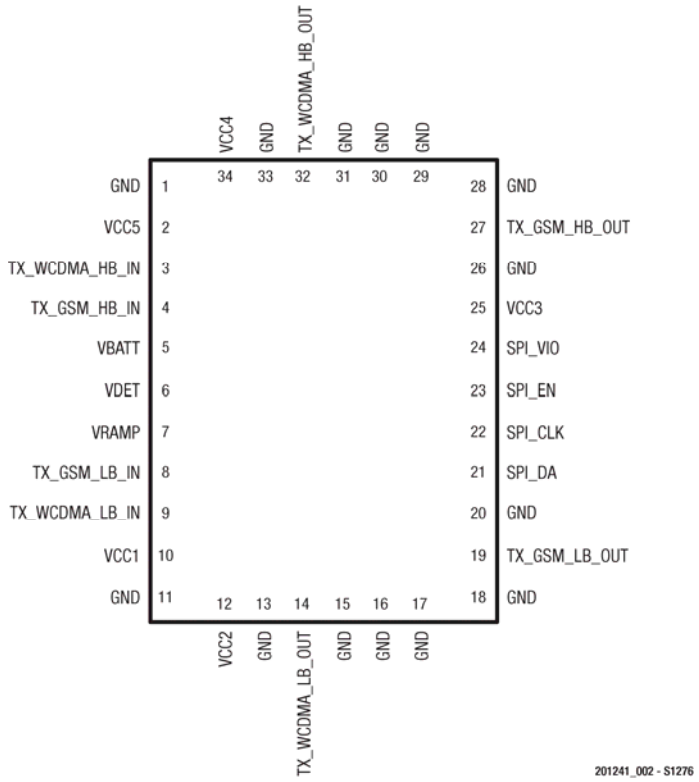

Figure 2. SKY77601 Pad Configuration – 34-Pin MCM (Top View)