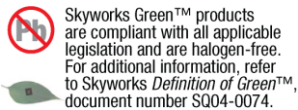# SKY77351-13 Power Amplifier Module for Quad-Band GSM / GPRS / EDGE

Applications

- Quad-band cellular handsets
- GMSK Modulation
  - Class 4 GSM850/900
  - Class 1 DCS1800/ PCS1900
  - Class 12 GPRS multi-slot operation
- EDGE modulation
  - Class E2 GSM850/900
  - Class E2 DCS1800/ PCS1900

Features

- High efficiency: GSM LB
  - 55% at High Power
  - 33% at Medium Power
  - 17% at Low power
  - 9% at Ultra-low Power
  GSM HB
  - 55% at High Power
  - 32% at Medium Power
  - 22% at Low power
  - 10% at Ultra-low Power
- Small, low profile package
  - 5 x 5 mm x 1.0 mm Max.
  - 13-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

SKY77351-13 Power Amplifier Module (PAM) is designed in a compact form factor for quad-band cellular handsets comprising GSM850/900, DCS1800 and PCS1900, supporting fixed gain Gaussian Minimum-Shift Keying (GMSK) and linear Enhanced Data for GSM Evolution (EDGE) modulation. Class 12 General Packet Radio Service (GPRS) multi-slot operation is also supported.

The module consists of GSM850/900 PA and DCS1800/PCS1900 PA blocks, impedance matching circuitry for 50 Ω input and output impedances, and a Multi-function Power Amplifier Control (MFC) block. A custom BiCMOS IC provides the internal MFC function and interface circuitry.

Two separate Heterojunction Bipolar Transistor (HBT) PA blocks are fabricated onto a single InGaP die; one supports the GSM850/900 bands, the other the DCS1800/PCS1900 bands. Both PA blocks share common power supply pads to distribute current. The InGaP and silicon dies and the passive components are mounted on a multi-layer laminate substrate. The entire assembly is encapsulated with plastic overmold.

RF input and output ports of the SKY77351-13 are internally matched to a 50 Ω load to reduce the number of external components. Extremely low leakage current (15 µA, typical) of the PAM module maximizes handset standby time.

The SKY77351-13 also contains switching circuitry to select GSM or DCS/PCS bands and select high or low power modes. See Figure 1 shown below.
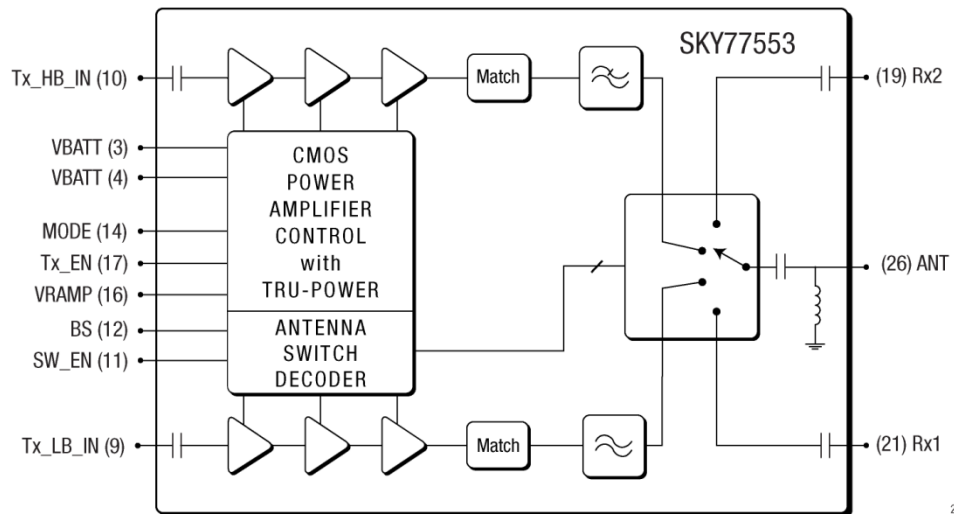

Figure 1. SKY77351-13 Functional Block Diagram

Ordering Information

Order Number	Manufacturing Part Number	Evaluation Board Part Number
SKY77351	SKY77351-13	