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SKYWORKS®

ADVANCE PRODUCT SUMMARY

SKY77163 AutoSmart™ PA Module for CDMA / AMPS (824–849 MHz)

Applications

- Digital cellular (CDMA)
- Analog cellular (AMPS)
- Wireless local loop (WLL)

Features

- Low voltage positive bias supply
  - 3.2 V to 4.2 V
- Low V_{REF}
  - 2.85 V, nominal
- Low I_{REF}
  - less than 2 mA
- Good linearity
- High efficiency
- Large dynamic range
- 8-pin package
  - 3 x 3 x 1.2 mm
- Power down control
- InGaP
- IS95/CDMA2000

Description

The SKY77163 AutoSmart™ Power Amplifier Module (PAM) is a fully matched, 8-pin surface mount module developed for Code Division Multiple Access (CDMA) / Advanced Mobile Phone Service (AMPS) and Wireless Local Loop (WLL) applications.

AutoSmart™ power amplifier technology internally adjusts the RF transistor bias level throughout the dynamic operating range to minimize battery current consumption and ensure sufficient linear performance to meet CDMA system requirements. The result is a significant savings in average battery current without the complications of a system-supplied mode function signal or analog bias control. AutoSmart™ response time is more than adequate for RF access probe and discontinuous transmission operation.

This small and efficient module packs full coverage of the 824–849 MHz bandwidth into a single compact package. The device meets the stringent IS95 CDMA linearity requirements up to and exceeding 28 dBm output power, and can be driven to levels beyond 31 dBm for high efficiency in FM mode operation. The single Gallium Arsenide (GaAs) Microwave Monolithic Integrated Circuit (MMIC) contains all active circuitry in the module. The MMIC contains on-board bias circuitry, as well as input and interstage matching circuits. Output match to a 50-ohm load is realized off-chip and within the module package to optimize efficiency and power performance.

The SKY77163 AutoSmart™ PAM is manufactured with Skyworks' GaAs Heterojunction Bipolar Transistor (HBT) process that provides for all positive voltage DC supply operation while maintaining high efficiency and good linearity. Primary bias to the SKY77163 is supplied directly from a three-cell Ni-Cd, a single-cell Li-Ion, or other suitable battery with an output in the 3.2 to 4.2 volt range. Power down is accomplished by setting the voltage on the low current reference pin to zero volts. No external supply side switch is needed as typical "off" leakage is a few microamperes with full primary voltage supplied from the battery.

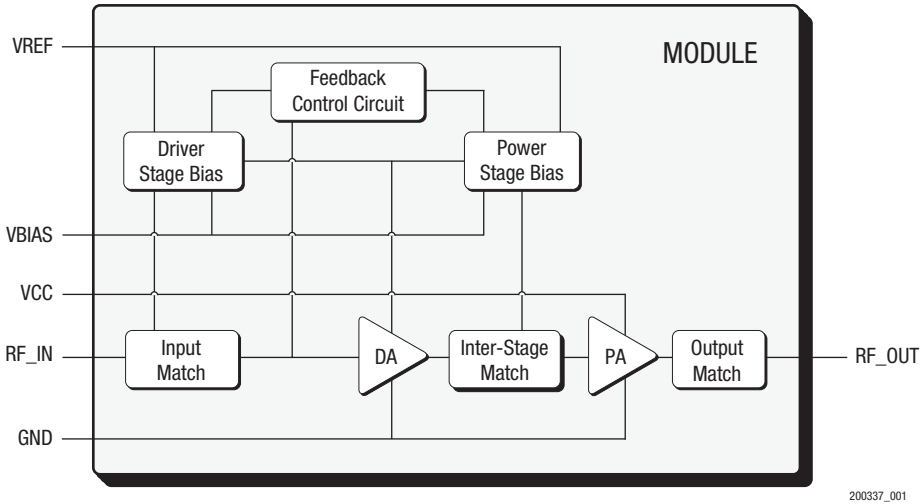

Figure 1. Functional Block Diagram

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