

ADVANCE PRODUCT SUMMARY

SKY77178 AutoSmart™ PA Module for WCDMA / HSDPA (1850–1910 MHz)

Applications

- WCDMA handsets
- HSDPA handsets

Features

- Low voltage positive bias supply
 - 3.2 V to 4.2 V
- Low VREF
 - 2.85 V, nominal
- Low IREF
 - less than 2 mA
- Good linearity
- High efficiency
- Large dynamic range
- 8-pad package
 - 3 x 3 x 1.2 mm
- Power down control
- InGaP
- 3GPP

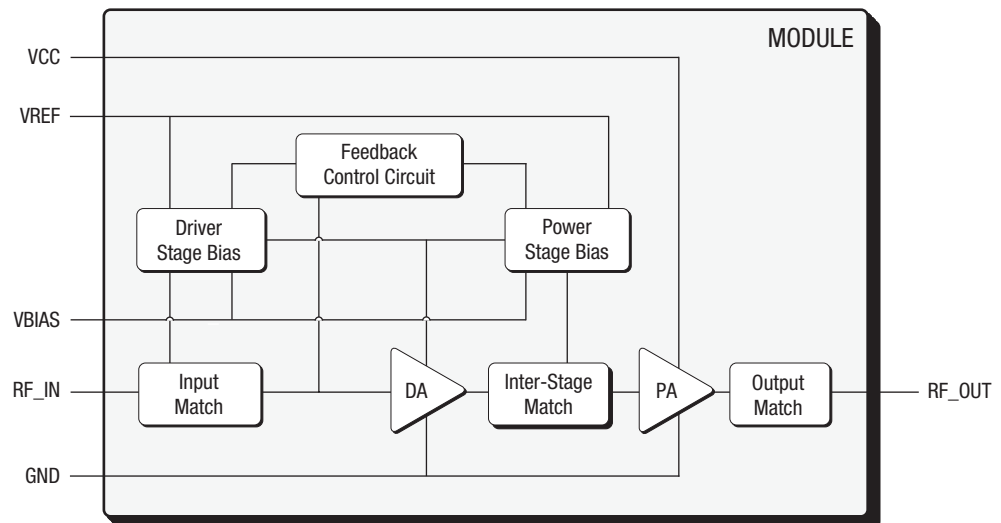
The SKY77178 AutoSmart™ Power Amplifier Module (PAM) is a fully matched, 8-pin surface mount module developed for Wideband Code Division Multiple Access (WCDMA) / High Speed Downlink Packet Access (HSDPA) applications.

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 WCDMA 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 1850–1910 MHz bandwidth into a single compact package. The device meets the stringent 3GPP linearity requirements up to and exceeding 28 dBm output power. 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 SKY77178 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 SKY77178 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.

NEW Skyworks offers lead (Pb)-free "environmentally friendly" packaging that is RoHS compliant (European Parliament for the Restriction of Hazardous Substances).



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Figure 1. Functional Block Diagram

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