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APPLICATION NOTE 449

REP006: Linear RF Power Amplifier Matched for High Efficiency at Low Power

Nov 01, 2000

Abstract: Rapid Engineering Prototype (REP) #006 offers the MAX2269 linear power amplifier (PA) custom-tuned for Japanese cellular CDMA application. This PA offers 17% PAE at +16dBm in low-power mode. Contact the factory for a detailed report with the application circuit and measurement data.

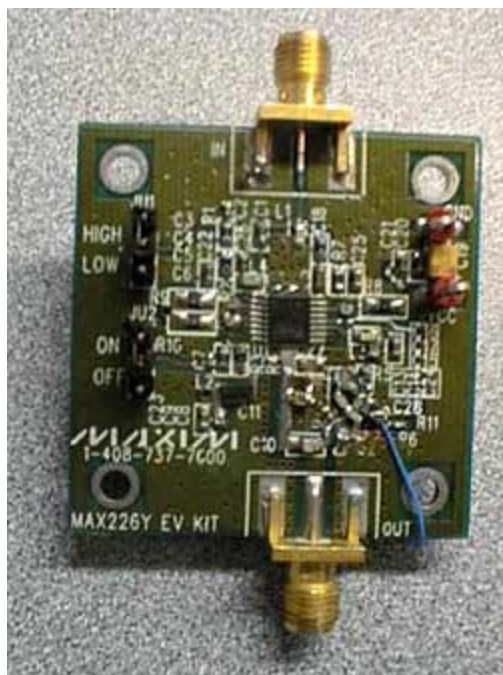
Rapid Engineering Prototypes are real circuits that Maxim application engineers have built and measured in our labs. They can provide a starting point for new RF designs. They are not available as Evaluation Kits.

Additional Information:

- [Wireless Product Line Page](#)
- [Quick View Data Sheet for the MAX2267/MAX2268/MAX2269](#)
- [Applications Technical Support](#)



[Click here for an overview of the wireless components used in a typical radio transceiver.](#)



Objective: To develop and measure an external switch for maximizing power-added efficiency (PAE) with this Japanese dual-path cellular-band PA.

By using an external (off-chip) high/low power-amplifier switch, the MAX2269 dual-path power amplifier can be set up for highest PAE. Because a discrete external path switch can be made by means of a semiconductor process whose characteristics are optimized for switching, an on-chip switch would typically have slightly higher loss and poorer isolation (but the subsequent circuit costs less and is smaller). Here, the MAX2269 was tuned for efficiency using its low-power path, resulting in longest battery life. This is because use in metropolitan areas results in transmit power on an average of between -20dBm and -16dBm, and the high-powered amplifier path is required infrequently.

The MAX2269 linear RF power amplifier is designed for Japanese cellular-band CDMA, PDC, and IS-136-based TDMA modulation formats. For best low-power PAE, the MAX2269 offers a switched dual-path amplifier arrangement. Statistically, CDMA handsets operate most of the time in a low-powered path (around +16dBm output), which is where PAE needs to be optimized. Using an external FET switch or pin diode, the MAX2269 offers the industry's highest (17% typical) PAE in low-power mode.

[Schematic of the MAX2269 Evaluation Kit \(PDF, 47K\)](#)

Related Parts

MAX2269	+2.7V, Single-Supply, Cellular-Band Linear Power Amplifiers
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More Information

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Other Questions and Comments: <http://www.maximintegrated.com/contact>

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