

REP015: Dual-Path CDMA PA Tuned for High Linearity

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 MAX2264/MAX2265](#)
[Applications Technical Support](#)



Objective: To develop a cellular CDMA PA application circuit with very high linearity and moderately good power-added efficiency (PAE).

The MAX2264 high-power amplifier path was characterized and tuned to meet the following performance at narrowband CDMA: at a P_{out} of +28dBm, obtained 26.8dB gain, 28% efficiency, ACPR1 = -48.5dBc, and ACPR2 = -59.0dBc. This performance is fairly deep into linear mode, as the lowered PAE of 28% reflects. Typically, the part would be tuned for better than 33% efficiency and at least -44dBc ACPR1. The EV board was used for these tests.

The MAX2264 linear RF power amplifier is designed for U.S. cellular-band IS-98-based CDMA, PDC, and IS-136-based TDMA modulation formats. For best low-power PAE, the MAX2264 offers a switched dual-path amplifier arrangement with an on-chip switch. Statistically, CDMA handsets operate most of the time in a low-powered path (around +16dBm output), which is where PAE needs to be optimized. The MAX2264 offers typically 12% PAE at low power.

[Block Diagram of the Transmit-Path Application](#)
[Schematic of the MAX2264 Evaluation Kit](#) (PDF, 24K)
[Measurement Test Setup](#)

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MORE INFORMATION

MAX2264: [QuickView](#) -- [Full \(PDF\) Data Sheet \(232k\)](#) -- [Free Sample](#)