

ADVANCE INFORMATION

All information in this data sheet is preliminary and subject to change.

8/97



Mobile-Radio Analog Controller

MAX1007

General Description

The MAX1007 is a multifunctional integrated circuit designed for high-performance mobile radios. It includes one 8-bit analog-to-digital converter (ADC), two 7-bit and two 6-bit digital-to-analog converters (DACs) for functions including radio-frequency (RF) power sensing, and antenna-diversity selection.

The ADC provides for power sense, receive-signal strength intensity (RSSI) measurements, and system supervision. In the power-sense mode, the ADC converts the power-sensing circuitry signal (representing either the transmitted (Tx) or received (Rx) RF power) into a digital code, ensuring optimum Tx power setting and Rx signal analysis. An additional direct input to the ADC provides for system-supervision measurements, such as power-supply voltages, battery voltage, and temperature.

Four DAC blocks control DC levels in the radio. As part of the Maxim PWT1900 chip set, the two 7-bit DACs control the gain settings, and the two 6-bit DACs control the varactor diodes to tune a TCXO and bias a GaAs amplifier. Each DAC register and output can be updated independently, providing maximum flexibility.

For antenna diversity, a magnitude-comparison circuit captures and compares two peak signals. A latched logic-comparator output reveals which signal has the largest magnitude. The MAX1007 also includes an on-board voltage reference for the ADC and DACs.

The MAX1007 offers a high level of signal integrity with minimal power dissipation. Single-supply operation ranges from +2.85V to +5.5V. To further save power, there are two shutdown modes: standby and total shutdown. Standby is a partial shutdown that keeps the bandgap reference and the 2.4V reference generator active. Total shutdown disables all circuit blocks except the serial interface, reducing supply current to less than 1µA.

The MAX1007 is available in a 24-pin SSOP and is specified for the commercial and extended temperature ranges.

Applications

PWT1900 Wireless Communications:

Cellular Radios	PMR/SMR
PCS Radios	WLL

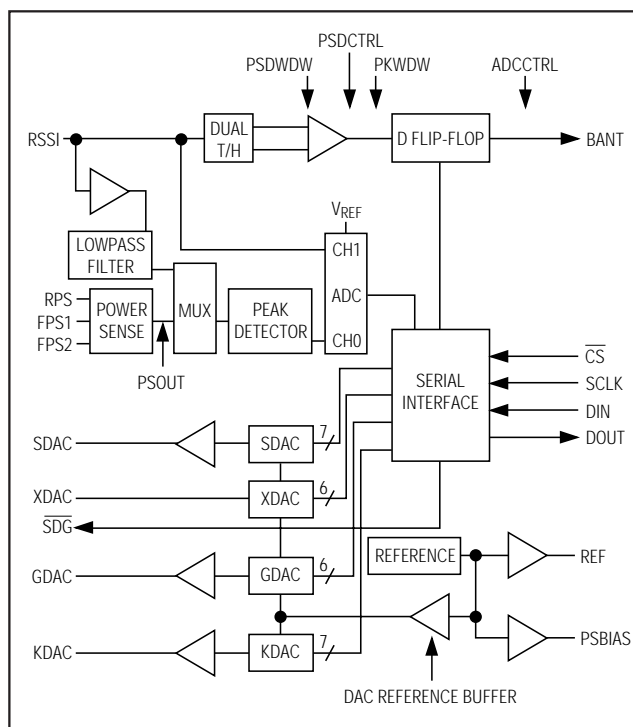
Features

- ♦ +2.85V to +5.5V Single-Supply Operation
- ♦ Multi-Input 8-Bit ADC
- ♦ Two 7-Bit DACs with Buffered Outputs
- ♦ Two 6-Bit DACs: Buffered/Unbuffered
- ♦ Power-Sense Conditioning Circuitry
- ♦ RSSI Measurement
- ♦ Antenna-Diversity Circuitry
- ♦ Internal Reference
- ♦ Serial Interface
- ♦ Two Shutdown Modes

Ordering Information

PART	TEMP. RANGE	PIN-PACKAGE
MAX1007CAG	0°C to +70°C	24 SSOP
MAX1007EAG	-40°C to +85°C	24 SSOP

Functional Diagram



Maxim Integrated Products 1

For free samples & the latest literature: <http://www.maxim-ic.com>, or phone 1-800-998-8800.
For small orders, phone 408-737-7600 ext. 3468.

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Pin Configuration

