

ADVANCE INFORMATION

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

8/97



900MHz Image-Reject Transceivers

General Description

The MAX2420/MAX2421/MAX2422/MAX2460/MAX2463 are highly integrated front-end ICs that provide the lowest-cost solutions for cordless and ISM-band radios operating in the 900MHz band. All devices incorporate transmit and receive image-reject mixers to reduce filter cost. They operate from a +2.7V to +4.8V single supply, allowing direct connection to a 3-cell battery stack.

The receive path incorporates an adjustable-gain LNA and an image-reject downconverter with 35dB image suppression. These features yield excellent combined downconverter noise figure (4dB) and high linearity with an input third-order intercept point (IIP3) of up to 2dBm.

The transmitter consists of a variable-gain IF amplifier with more than 35dB control range, an image-reject upconverter with 35dB image rejection, and a power amplifier (PA) predriver that produces up to 2dBm (in some applications serving as the final power stage).

These devices include an on-chip local oscillator (LO), requiring only an external varactor-tuned LC tank for operation. The MAX2420/MAX2421/MAX2422 are optimized for IF frequencies of 10.7MHz, 46MHz, and 70MHz, respectively, and these parts use high-side LO injection ($f_{LO} > f_{RF}$). The MAX2460/MAX2463 are optimized for IF frequencies of 10.7MHz and 110MHz, respectively, with low-side LO injection ($f_{LO} < f_{RF}$).

The integrated divide-by-64/65 dual-modulus prescaler can also be set to a direct mode in which it acts as an LO buffer amplifier. Four separate power-down inputs can be used for advanced system power management, including a 0.5µA shutdown mode. These parts are compatible with commonly used modulation schemes such as FSK, BPSK, and QPSK, as well as frequency-hopping and direct-sequence spread-spectrum systems. For applications requiring direct BPSK modulation as well as receive image rejection, please consult the MAX2426 data sheet. The MAX2420/MAX2421/MAX2422/MAX2460/MAX2463 come in 28-pin SSOP packages.

Applications

Cordless Phones
Wireless Telemetry
Wireless Networks
Spread-Spectrum Communications
Two-Way Paging

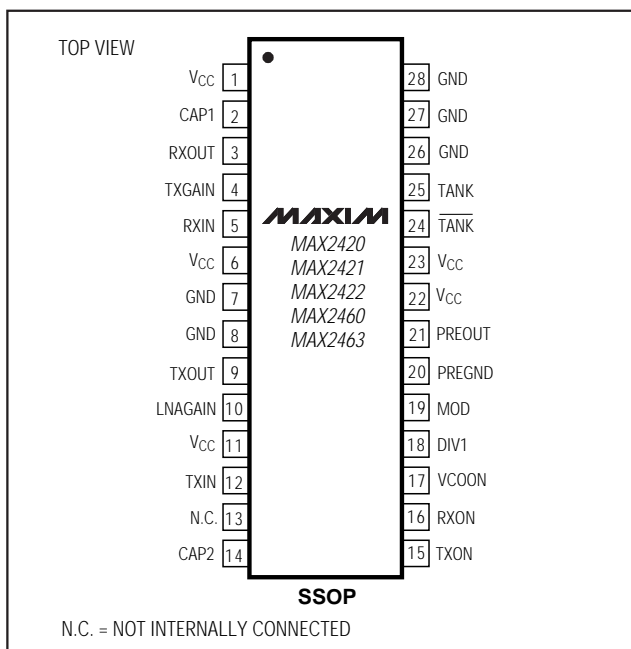
Features

- ◆ Receive/Transmit Mixers with 35dB Image Suppression
- ◆ Adjustable-Gain LNA
- ◆ Up to +2dBm Combined Receiver Input IP3
- ◆ 4dB Combined Receive Noise Figure
- ◆ > 35dB of Transmit Power Control Range
- ◆ Up to 2dBm PA Predriver
- ◆ Low Current Consumption: 23mA Receive
26mA Transmit
9.5mA Oscillator
- ◆ 0.5µA Shutdown Mode
- ◆ Operate from a Single +2.7V to +4.8V Supply

Ordering Information

PART	TEMP. RANGE	PIN-PACKAGE
MAX2420EAI	-40°C to +85°C	28 SSOP
MAX2421EAI	-40°C to +85°C	28 SSOP
MAX2422EAI	-40°C to +85°C	28 SSOP
MAX2460EAI	-40°C to +85°C	28 SSOP
MAX2463EAI	-40°C to +85°C	28 SSOP

Pin Configuration



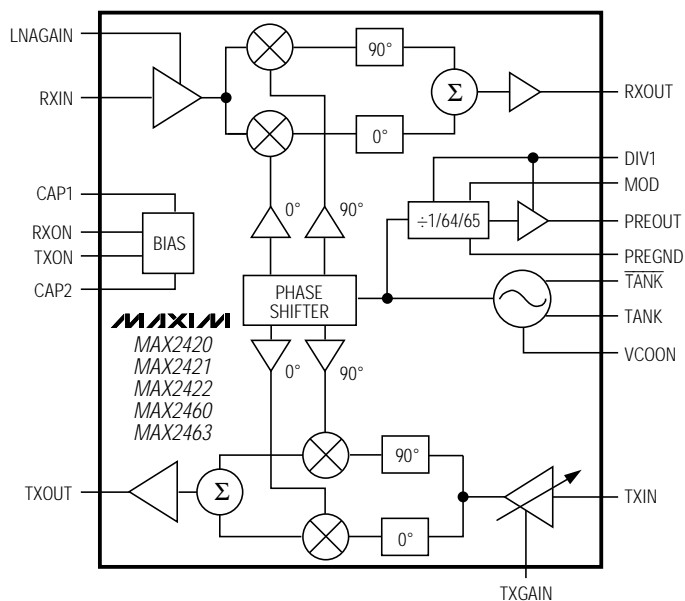
Maxim Integrated Products 1

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For small orders, phone 408-737-7600 ext. 3468.

MAX2420/MAX2421/MAX2422/MAX2460/MAX2463

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Functional Diagram



*THE MAX2460/MAX2463 USE SWAPPED
LO PHASE-SHIFTER CONNECTIONS,
RESULTING IN LOW-SIDE INJECTION ($f_{RF} > f_{LO}$)