MAX2141

Low-Power XM Satellite Radio Receiver

Complete XM Satellite Radio Tuner for Simultaneous Data and Audio Applications Uses Half the Power

Request Full Data Sheet Subscribe

Some versions may be No Longer Available or being discontinued and subject to Last Time Buy, after which new orders cannot be placed.

Please check latest availability status for a specific part variant.

OVERVIEW | DESIGN RESOURCES | QUALITY AND ENVIRONMENTAL | ORDER

Description

The MAX2141 complete low-power receiver is designed for XM satellite radio applications. To form a complete XM radio, the MAX2141 requires only an active antenna module, a crystal, and a SAW filter. The small number of external components needed makes the MAX2141 platform the lowest cost and the smallest wideband receiver solution available.

The receiver includes a self-contained RF AGC loop and IF AGC loop, effectively providing a total dynamic range in excess of 92dB. Channel selectivity is achieved by the SAW filter and by the on-chip lowpass filters. An integrated fractional-N synthesizer allows fine frequency step, making possible the implementation of a software AFC loop. Additionally, a reference buffer is provided for driving a baseband controller.

An I²C bus-compatible interface programs the MAX2141, providing features such as programmable gains, variable-bandwidth lowpass filter tuning, and various power-down modes.

The MAX2141 is Maxim's 2nd-generation device for XM satellite radio applications. It is a drop-in replacement for the 1st-generation MAX2140. While significantly reducing power dissipation, the MAX2141 adds an optional closed-loop IF power control, standby mode, enhanced reference buffer, and improved RF gain-control accuracy.

The MAX2141 is rated to operate over the -40°C to +85°C extended temperature range and is available in a 7mm x 7mm, 44-pin thin QFN package.

Key Features

- Pin Compatible with the MAX2140
- Self-Contained RF AGC Loop
- Self-Contained IF AGC Loop
- +2.85V to +3.6V Operating Voltage Range
- Complete Integrated Frequency Generation
- Overcurrent Protection for External LNA
- Low-Power Standby Mode
- Very Small 44-Pin TQFN Package
- 250mW Power Dissipation (at V_{CC} = +3.0V)

Applications/Uses

- XM Satellite Radio

Related Resources

RELATED PRODUCTS
RELATED PACKAGING
TECHNICAL DOCS