

MAX2175

RF to Bits Automotive Radio Tuner

General Description

The MAX2175 IC is an advanced analog/digital RF to Bits® front-end designed for remote tuner and software-defined radio solutions in automotive reception environments. This highly integrated tuner uses direct-conversion for digital audio broadcast (DAB) and digital multimedia broadcast (DMB) applications, covering both VHF Band-III and L-Band. Reception of FM, DRM+, FM-HD, and Weather-Band is supported using a low-IF and digital conversion to baseband. AM (long, medium, and short wave) and DRM reception is supported using direct sampling and digital conversion to baseband.

The device provides a buffered differential output of the reference frequency to support multi-tuner systems. The design integrates all key blocks, enabling low-power, tuner-on-board designs with advanced baseband solutions. The tuner includes digital filtering to minimize the MIPS required in the baseband processor to demodulate the desired channel. The resulting I-channel and Q-channel data words are transferred to the baseband through an industry standard I²S digital interface.

The MAX2175 IC is available in a 48-pin TQFN package (7mm x 7mm) with an exposed pad. Electrical performance is guaranteed over the extended -40°C to +85°C temperature range.

Applications

- Automotive Infotainment Systems
- Remote Radios
- Smart Antennas

Benefits and Features

- RF to Bits Architecture with I²S Output
- Single Supply Voltage of +3.3V
- Integrated VHF Band-III Loop-Through
- All-Band Reception of AM Medium-Wave Band
- All-Digital Gain Control
- Flexible Data Structure
- Programmable Word Length
- Dual or Single Data-Line Modes
- Small Package (7mm x 7mm, 48-Pin TQFN)

Ordering Information appears at end of data sheet.

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ABRIDGED DATA SHEET

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Typical Application Circuits

Typical Application Diagram*

