MAX2173

RF to Bits Tuner for Digital Audio Broadcast

RF to Bits DAB/FM Front-End Helps Reduce the DSP MIPS with Internal Digital Filtering

NDA Required. Request Full Data Sheet

Description

The MAX2173 is a highly integrated direct-conversion tuner for digital audio broadcast (DAB) and terrestrial digital multimedia broadcast (T-DMB) applications in the 168MHz to 240MHz (VHF band-III) and 1452MHz to 1492MHz (L-band) frequency bands. For FM and DRM+ reception, a low-IF conversion is used, covering a frequency range of 76MHz to 108MHz (FM band). The design integrates lowpass filters, enabling low-power tuner-on-board designs. The mixer and lowpass filtering are followed by a dual ADC and digital filtering. The digital filtering reduces the output data rate and eases the processing load on the DSP. The resulting bit stream is driven off-chip via an I²S format bus.

An integrated digitally controlled crystal oscillator provides more than ±50ppm control range, eliminating the need for a VCXO. The MAX2173 also provides a buffered-reference clock output at the crystal frequency (f_{REF}) or $f_{REF}/3$.

Two LDOs are integrated into the MAX2173. The 1.6V LDO can be used to power the internal 1.6V circuitry. External circuits can be powered using the 1.2V LDO, eliminating the need for a stand-alone 1.2V regulator.

The MAX2173 is available in a 40-pin TQFN package (6mm x 6mm) with an exposed pad. Electrical performance is guaranteed over the extended -40°C to +85°C temperature range.

Key Features

- RF to Bits® Solution with I²S Format Output
- Integrated DCXO Provides ±50ppm Control
- Integrated Digital Filtering
- RSSI Output Through I²C or I²S
- Integrated FM/VHF Band-III RF Bandpass Filter
- Fully Integrated AGC Control Loops
- Integrated 1.2V and 1.6V LDOs
- Small Package (6mm x 6mm TQFN)

Applications/Uses

- Automotive DAB Products
- Fixed and Mobile DAB/FM Products
- T-DMB/FM Products

Part Number	Ref. Clock Freq. (MHz)	Noise Figure (dB) typ	V_{SUPPLY} (V)	I_{SUPPLY} (mA)	Applications	Solutions	Band/ Freq. (MHz)	Footprint (mm x mm)	Package/Pins
MAX2173	24.576	2.7	3.1 to 3.5	135	DAB FM T-DMB	Automotive Consumer	76 to 90 87 to 108 168 to 240 1452 to 1492	6.0 x 6.0	TQFN/40