maxim integrated™

MAX2135A

ISDB-T/DVB-T Diversity Tuner

Industry's Only Diversity Tuner for Automotive TV Consumes Only 300mW

Request Full Data Sheet

Active: In Production. But some versions of the family are subject to Last Time Buy.

Description

The MAX2135A low-power, 6MHz ISDB-T and 6MHz/7MHz/8MHz DVB-T low-IF diversity tuner directly converts broadcast ISDB-T and DVB-T signals to a low-IF using a broadband I/Q downconverter. The operating frequency range covers the VHF and UHF broadcast TV bands from 90MHz to 862MHz.

The MAX2135A integrates LNAs, RF variable-gain amplifiers (VGAs), VHF and UHF tracking filters, I/Q downconverting mixers, baseband VGAs, and low-IF filters. The device also includes a fully monolithic VCO and tank circuit as well as a complete frequency synthesizer including an on-chip crystal oscillator and output buffer/divider.

The device incorporates a 2-wire (I^2C) serial control interface with multiple read and write addresses. A low-power standby mode is available whereupon the signal path is shut down while leaving the serial control interface and register circuits active. Additionally, the entire device can be shut down by an external pin.

The MAX2135A is available in a 56-pin thin QFN package (7mm x 7mm) with an exposed paddle. Electrical performance is guaranteed over the extended -40°C to +85°C temperature range.

Key Features

- Multiple Frequency Ranges
  - VHF-L: 90MHz to 108MHz
  - VHF-H: 170MHz to 230MHz
  - UHF: 470MHz to 862MHz
- Complete Diversity Solution
- Low UHF Noise Figure: 3.7dB (typ)
- High Dynamic Range: -99dBm to +10dBm
- Integrated VHF/UHF Tracking Filter
- Integrated VCO and Tank Circuits
- Low Phase Noise: -95dBc/Hz at 10kHz (typ)
- Integrated Channel Filters (6MHz, 7MHz, and 8MHz)
- Single +2.7V to +3.47V Supply Voltage Range
- Low Power: 396mW (typ)
- Shutdown and Standby Modes
- I²C Serial Interface

Applications/Uses

- Automotive TV Diversity Systems
- Laptop/Desktop TV Receivers
- Portable LCD TVs
- Portable Navigation Devices

Part Number	Ref. Clock Freq. (MHz)	Input Frequency (MHz)	IF Output Freq. (MHz)	Noise Figure (dB)	V_{SUPPLY} (V)	I_{SUPPLY} (mA)	Applications	Footprint (mm x mm)	Oper. Temp. (°C)	Package/Pins
				typ						
MAX2135A	16 to 18 32 to 36	93 to 105 173 to 227 473 to 859	4.5	UHF=3.7 VHF=4.8 to 5.5	2.7 to 3.47	70	DVB-T ISDB-T (13 segments)	7.0 x 7.0	-40 to +85	TQFN/56