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MAX2136A

Global Automotive TV Tuner

Global Automotive TV Tuner Optimized for Lower Power and High Performance, Especially at Maximum Signal Levels

Overview	Technical Documents	Ordering Info	Related Products	User Comments (0)	All
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Status

Active: In Production.

Data Sheet

[Request Full Data Sheet](#)
NDA Required

Description

The MAX2136A is a low-power global automotive TV tuner. It directly converts a variety of broadcast signals including 3-13 segment ISDB-T, 6/7/8MHz DVB-T/T2, T-DMB/DAB, CTTB, CMMB, and ATSC/ATSC-MH to a low-IF using a broadband I/Q downconverter. The operating frequency range covers the VHF and UHF broadcast TV bands from 44MHz to 891MHz.

The MAX2136A integrates LNAs, RF variable-gain amplifiers (VGAs), VHF and UHF tracking filters, I/Q downconverting mixers, baseband VGAs, and baseband filters. The VGAs typically provide in excess of 120dB of control range. The device also includes fully monolithic VCOs and tank circuits, as well as a complete frequency synthesizer with an on-chip crystal oscillator and output buffer/divider.

The device incorporates a 2-wire (I²C) 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 crystal oscillator circuits active. For further power savings, the crystal oscillator can be displayed by placing the device in shutdown mode using the external shutdown pin.

The MAX2136A is available in a 32-pin TQFN package (5mm x 5mm) with an exposed pad. Electrical performance is guaranteed over the extended -40°C to +85°C temperature range.

Key Features

- Multiple Frequency Ranges
 - VHF-L: 44MHz to 108MHz
 - VHF-H: 167MHz to 254MHz
 - UHF: 469MHz to 891MHz
- Low Noise Figure: 3.7dB (typ)
- High Dynamic Range: -100dBm to +10dBm
- Integrated VHF/UHF Tracking Filter
- Integrated VCO and Tank Circuits
- Low Phase Noise: -95dBc/Hz at 10kHz (typ)
- Integrated Variable Bandwidth Channel Filters
- Single +3.3V Supply Voltage
- Low Power: 231mW (typ)
- Shutdown and Standby Modes
- I²C Serial Interface

Applications/Uses

- Automotive TV Systems
- Laptop/Desktop TV Receivers
- Personal Multimedia Players
- Portable LCD TVs
- Portable Navigation Devices
- Tablets

Key Specifications:

TV Tuners											
Part Number	Ref. Clock Freq. (MHz)	Noise Figure (dB)	V _{SUPPLY} (V)	I _{SUPPLY} (mA)	Applications	f _{IN}	Features	Footprint (mm x mm)	Package/Pins	Smallest Available Pckg. (mm ²)	Industry Qualified
		typ								max w/pins	
							-100 to				

MAX2136A	16 to 36	$\frac{\text{UHF}=3.7}{\text{VHF}=4.8}$ to 5.5	2.7 to 3.47	70	ATSC/ATSC-M/H CMMB DAB DTMB/GB20600 DVB-T/DVB-T2 ISDB-T (13 segments)	44 to 108, 167 to 254, 469 to 891	+10dBm dynamic range -95dBc/Hz phase noise @ 10kHz Fractional N synthesizer I2C command interface Integrated RF Tracking Filters Shutdown and Standby Modes Single 3.3V Supply Operation specified from -40 to +85C variable LPF	5.0 x 5.0	TQFN/32	26	Automotive - General
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See All TV Tuners (16)

Pricing Notes:

This pricing is BUDGETARY, for comparing similar parts. Prices are in U.S. dollars and subject to change. Quantity pricing may vary substantially and international prices may differ due to local duties, taxes, fees, and exchange rates. For volume-specific prices and delivery, please see the [price and availability](#) page or contact an authorized distributor.

Technical Documents

Product Guide 5166 [Automotive](#)
Tutorial 5100 [General Layout Guidelines for RF and Mixed-Signal PCBs](#)

Product Guides

[Automotive](#) (PDF)

Reliability Reports

Show FIT data for: MAX2136A

Request Reliability Report for: MAX2136A

Software/Models

none

Ordering Information

Filters: Part Number:		Package:	Any	Temperature:	Any	Tape and Reel	Sample
Part Number	Free Sample	Buy	Status	Package: TYPE PINS FOOTPRINT DRAWING CODE/VAR *	Temp	RoHS/Lead-Free? Materials Analysis	
MAX2136AETJ+			Active	TQFN;32 pin;26 mm² Outline Drawing: 21-0140 (PDF) Land Pattern: 90-0013 (PDF) Use pkgcode/variation: T3255+5*	-40°C to +85°C	RoHS/Lead-Free: Lead Free Materials Analysis	
MAX2136AETJ+T			Active	QFN; Land Pattern: Not Available	-40°C to +85°C	See data sheet	

		Land Pattern: 90-0013 (PDF) Use pkgcode/variation: T3255+5*		Materials Analysis
MAX2136AETJ/V+T	Active	TQFN;32 pin;26 mm² Outline Drawing: 21-0140 (PDF) Land Pattern: 90-0013 (PDF) Use pkgcode/variation: T3255+5*	-40°C to +85°C	RoHS/Lead-Free: Lead Free Materials Analysis
MAX2136AEVKIT#	Active	KIT; Land Pattern: Not Available		See data sheet

- Notes:
1. Other options and links for purchasing parts are listed at: <http://www.maximintegrated.com/sales>.
 2. [Didn't Find What You Need?](#) Ask our applications engineers. Expert assistance in finding parts, usually within one business day.
 3. Part number suffixes: T or T&R = tape and reel; + = RoHS/lead-free; # = RoHS/lead-exempt; -D = drypack; -U/+U on DS parts = cut tape. More: See [Full Data Sheet](#) or [Maxim Product Naming Conventions](#).
 4. * Some packages have variations, listed on the drawing. "PkgCode/Variation" tells which variation the product uses. Note that "+", "#", "-" in the part number suffix describes RoHS status. Package drawings may show a different suffix character.

Similar Products by Function

See All [TV Tuners](#) (22 Products)

Products with Similar Part Numbers

[MAX2136](#) ISDB-T/DVB-T Low-IF Tuner

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