MAX2170, MAX2171

Direct-Conversion to Low-IF Tuners for Digital Audio Broadcast

Highest Performance, Most Integrated Triple-Band Receivers for T-DMB/DAB/FM Digital Radios

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

Status

Active: Data sheet on request only

Data Sheet

Request Full Data Sheet

Description

The MAX2170/MAX2171 direct-conversion to low-IF tuners are designed for Digital Audio Broadcast (DAB) and Terrestrial Digital Multimedia Broadcast (T-DMB) applications, covering an input frequency range of 168MHz to 240MHz (VHF-III), 1452MHz to 1492MHz (L-Band), and also 87MHz to 108MHz (FM). The MAX2170/MAX2171 achieve a high level of component integration, allowing low-power, tuner-on-board designs. The direct-conversion to low-IF architecture eliminates the need for an IF-SAW filter while providing a balanced 2.048MHz center frequency baseband output to the demodulator.

The MAX2170 provides a buffered reference clock at the crystal frequency, while the MAX2171 outputs a reference at 1/3rd of the crystal frequency. A sigma-delta fractional-N synthesizer is incorporated to optimize both close-in and wideband phase noise performances for OFDM applications where sensitivity to both 1kHz phase noise and wideband phase noise related to strong adjacents can be a problem.

The MAX2170/MAX2171 are available in a 40-pin thin QFN package (6mm x 6mm) with an exposed paddle. Electrical performance is guaranteed over the extended -40°C to +85°C temperature range.

An evaluation kit is available: MAX2170EVKIT

Key Features

- +2.7V to +3.5V Supply Voltage Range
- Low-IF Output Eliminates IF-SAW Filter
- Integrated Low-IF Bandpass Filter
- Sigma-Delta Fractional-N Synthesizer
- +45dB Digital ACPR
- 3.5dB Typical Noise Figure for VHF-III (Includes On-Chip Tracking Filter)
- 3.1dB Typical Noise Figure for L-Band
- VHF-III Sensitivity of -100dBm
- L-Band Sensitivity of -99dBm
- Baseband Overload Detector Controls RF AGC

Applications/Uses

- Fixed and Mobile Digital Audio Broadcast (DAB)
- Terrestrial Digital Multimedia Broadcast (T-DMB)

Key Specifications:

Digital Radio Receivers

Part Number	Ref. Clock Freq. (MHz)	IF f_{OUT} (MHz)	Noise Figure (dB) typ	V_{SUPPLY} (V)	I_{SUPPLY} (mA)	Applications	Solutions	Band/ Freq. (MHz)	Features	Footprint (mm x mm)	Package/Pins	Smallest Available Pckg. (mm^2) max w/pins	Industry Qualified	Budgetary Price See Notes
MAX2170	24.576	2.048	2.9	2.7 to 3.5	62	DAB and T-DMB Home and Automotive Radios	Automotive Consumer	168 to 240 and 1452 to 1492	3.1dB NF in L-band 45dB ACPR On-Chip VHF Tracking Filter	6.0 x 6.0	TQFN/40	37.2	Automotive - AECQ100 Automotive - General	$3.21 @1k
MAX2171			3					87 to 108, 168 to 240 and 1452 to 1492			TQFN/40		Automotive - General	$3.21 @1k

See All Digital Radio Receivers (5)

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.

Application Notes

Application Note 3908	MAX2170/MAX2171 DAB/T-DMB Digital Radio Tuner
Reference Design 4154	MAX2170/MAX2171 DAB/T-DMB Reference Design
Application Note 4271	Automotive Infotainment Goes Mainstream: High-Integration Solutions Enable Value-Added Features
Tutorial 5100	General Layout Guidelines for RF and Mixed-Signal PCBs

Product Guides

Wireless (PDF)

Reliability Reports

Reliability Report: MAX2170.pdf
Show FIT data for: MAX2170 Go

Request Reliability Report for: MAX2171 Go

Software/Models

none

Ordering Information

Filters: Part Number: Package: Any Temperature: Any Tape and Reel Sample Go

Part Number	Free Sample	Buy	Status	Package: TYPE PINS FOOTPRINT DRAWING CODE/VAR *	Temp	RoHS/Lead-Free? Materials Analysis
MAX2170E/WGB1		Buy	Active: Data sheet on request only	WAFER; Land Pattern: Not Available	-40°C to +85°C	See data sheet
MAX2170ETL+	Sample	Buy	Active: Data sheet on request only	TQFN,40 pin,37.2 mm² Outline Drawing:21-0141 (PDF) Land Pattern: 90-0053 (PDF) Use pkgcode/variation: T4066+2*	-40°C to +85°C	RoHS/Lead-Free: Lead Free Materials Analysis
MAX2170ETL+B4B		Buy	Active: Data sheet on request only	TQFN,40 pin,37.2 mm² Outline Drawing:21-0141 (PDF) Land Pattern: 90-0053 (PDF) Use pkgcode/variation: T4066+2*	-40°C to +85°C	RoHS/Lead-Free: Lead Free Materials Analysis
MAX2170ETL+T		Buy	Active: Data sheet on request only	TQFN,40 pin,37.2 mm² Outline Drawing:21-0141 (PDF) Land Pattern: 90-0053 (PDF) Use pkgcode/variation: T4066+2*	-40°C to +85°C	RoHS/Lead-Free: Lead Free Materials Analysis
MAX2170ETL/V+	Sample	Buy	Active: Data sheet on request only	TQFN,40 pin,37.2 mm² Outline Drawing:21-0141 (PDF) Land Pattern: 90-0053 (PDF) Use pkgcode/variation: T4066+2*	-40°C to +85°C	RoHS/Lead-Free: Lead Free Materials Analysis
MAX2170ETL/V+T		Buy	Active: Data sheet on request only	TQFN,40 pin,37.2 mm² Outline Drawing:21-0141 (PDF) Land Pattern: 90-0053 (PDF) Use pkgcode/variation: T4066+2*	-40°C to +85°C	RoHS/Lead-Free: Lead Free Materials Analysis
MAX2171ETL+	Sample	Buy	Active: Data sheet on request only	TQFN,40 pin,37.2 mm² Outline Drawing:21-0141 (PDF) Land Pattern: 90-0053 (PDF) Use pkgcode/variation: T4066+2*	-40°C to +85°C	RoHS/Lead-Free: Lead Free Materials Analysis
MAX2171ETL+T		Buy	Active: Data sheet on request only	TQFN,40 pin,37.2 mm² Outline Drawing:21-0141 (PDF) Land Pattern: 90-0053 (PDF) Use pkgcode/variation: T4066+2*	-40°C to +85°C	RoHS/Lead-Free: Lead Free Materials Analysis
MAX2171ETL/V+		Buy	Active: Data sheet on request only	TQFN,40 pin,37.2 mm² Outline Drawing:21-0141 (PDF) Land Pattern: 90-0053 (PDF) Use pkgcode/variation: T4066+2*	-40°C to +85°C	RoHS/Lead-Free: Lead Free Materials Analysis
MAX2171ETL/V+T		Buy	Active: Data sheet on request only	QFN; Land Pattern: Not Available	-40°C to +85°C	See data sheet

Notes:
1. Other options and links for purchasing parts are listed at: http://www.maxim-ic.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 = dry pack; -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 Digital Radio Receivers (5 Products)

Similar Products by Application

Automotive: Head Unit > Digital Audio Broadcast (DAB)
Automotive: TV-Tuner Systems > Tuner
Broadcast TV and Radio > Digital Terrestrial Radio
Broadcast TV and Radio > Mobile TV
Broadcast TV and Radio > Receive System ICs

Evaluation Kits

MAX2170EVKIT MAX2170 Evaluation Kit

Products with Similar Part Numbers

MAX2170EVKIT MAX2170 Evaluation Kit

More Information

New Product Press Release [2008-06-04] [2007-05-10]

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Didn't Find What You Need?

Next Day Product Selection Assistance from Applications Engineers
Parametric Search
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Information Index

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