



## MAX2170

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

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



[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.

### **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)

















Please check latest availability status for a specific part variant.

OVERVIEW	KEY SPECS	DESIGN RESOURCES	QUALITY AND ENVIRONMENTAL	ORDER
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Key:  Material Analysis  Non Cancellable Non Reschedulable **NLA**=No longer available

Symbols in part number: **+** Lead-free, RoHS compliant **-** Not qualified as lead-free RoHS **#** RoHS compliant, lead exemption

\*PRICE/UNIT shows budgetary pricing for 1K units. Some parts do not have standard pricing and require a quote.

Part Number	Price /Unit*	Status	Carrier Type	Package
MAX2170ETL+		Active	Tube	TQFN; 0Pin; 0mm <sup>2</sup> ;   See <a href="#">Material Analysis for RoHS info</a> Temp: -40°C to +85°C
MAX2170ETL+CDQ		NLA	Tube	TQFN; 0Pin; 0mm <sup>2</sup> ;    See <a href="#">Material Analysis for RoHS info</a> Temp: -40°C to +85°C
		<a href="#">CHECK ROCHESTER &gt;</a>		
MAX2170ETL+T		Active	Reel	TQFN; 0Pin; 0mm <sup>2</sup> ;   See <a href="#">Material Analysis for RoHS info</a> Temp: -40°C to +85°C
MAX2170ETL+TCDQ		NLA	Reel	TQFN; 0Pin; 0mm <sup>2</sup> ;    See <a href="#">Material Analysis for RoHS info</a> Temp: -40°C to +85°C
		<a href="#">CHECK ROCHESTER &gt;</a>		
MAX2170ETL/V+		Active	Tube	TQFN; 0Pin; 0mm <sup>2</sup> ;    See <a href="#">Material Analysis for RoHS info</a> Temp: -40°C to +85°C
MAX2170ETL/V+T		Active	Reel	TQFN; 0Pin; 0mm <sup>2</sup> ;    See <a href="#">Material Analysis for RoHS info</a> Temp: -40°C to +85°C

## KEY SPECS

Part Number	Ref. Clock Freq. (MHz)	IF Output Freq. (MHz)	Noise Figure (dB) typ	V <sub>SUPPLY</sub> (V)	I <sub>SUPPLY</sub> (mA)	Applications	Solutions	Band/Freq. (MHz)	Footprint (mm x mm)	Package/Pins
<b>MAX2170</b>	24.576	2.048	2.9	2.7 to 3.5	62	DAB T-DMB	Automotive Consumer	168 to 240 1452 to 1492	6.0 x 6.0	TQFN/40
<b>MAX2171</b>			3					87 to 108 168 to 240 1452 to 1492		TQFN/40