MAX2102, MAX2105

Direct-Conversion Tuner ICs for Digital DBS Applications

Status

All versions are No Longer Available. See Ordering Information for recommended replacements.

Data Sheet

No Longer Available

Description

The MAX2102/MAX2105* are low-cost direct-conversion tuner ICs designed for use in digital direct-broadcast satellite (DBS) television set-top box units. The direct-conversion architecture reduces system cost compared to devices with IF-based architectures.

The MAX2102/MAX2105 directly tune L-band signals to baseband using a broadband I/Q downconverter. Operating frequency range spans from at least 950MHz to 2150MHz.

The ICs include a low-noise amplifier (LNA) with automatic gain control (AGC), two downconverter mixers, an oscillator buffer with 90° quadrature generator and prescaler, and baseband amplifiers.

The MAX2102 features an AGC range of 50dB, allowing input power levels as low as -69dBm. The MAX2105 has a reduced AGC range of 41dB and accepts input power levels down to -60dBm. The reduced AGC range of the MAX2105 allows the use of a high-gain external LNA to achieve a lower system noise figure (NF).

Key Features

- Low-Cost Bipolar Design, Lowest Cost Architecture
- Operate from a Single +5V Supply
- 950MHz to 2150MHz Input Frequency Range*
- On-Chip Quadrature Generator, Dual-Modulus Prescaler (/64, /65)
- Input Levels
  - 69dBm to -19dBm per Carrier (MAX2102)
  - -60dBm to -19dBm per Carrier (MAX2105)
- Over 50dB AGC Control Range (MAX2102)
- Noise Figure = 13.2dB (MAX2102); IP3 = 6.5dBm (at 1450MHz)
- Automatic Baseband Offset Correction
- Easy Interface to MAX1002/MAX1003 Dual ADC and Popular Baseband ICs

Applications/Uses

- Broadband Systems
- Cell Phone Base Stations
- DBS Tuners
- DVB-Compliant DBS Tuners
- LMDS
- Wireless Local Loop (WLL)

Technical Documents

Product Guide 5158 Wireless
Tutorial 686 QPSK Modulation Demystified
Tutorial 2875 Three Methods of Noise Figure Measurement

Product Guides

Wireless (PDF)

Reliability Reports

Show FIT data for: MAX2102 ▼ Go

Request Reliability Report for: MAX2102 ▼ Go

Software/Models

none

Ordering Information

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

Part Number	Free Sample	Buy	Status	Recommended Replacement	Package: TYPE PINS FOOTPRINT DRAWING CODE/VAR *	Temp	RoHS/Lead-Free? Materials Analysis
MAX2102CWI		N/A	No Longer Available	MAX2120CTI+	SOIC(W);28 pin;192.8 mm² Outline Drawing:21-0042 (PDF) Land Pattern: 90-0109 (PDF) Use pkgcode/variation: W28-1*	0°C to +70°C	RoHS/Lead-Free: No Materials Analysis
MAX2102CWI+		N/A	No Longer Available	MAX2120CTI+	SOIC(W);28 pin;192.8 mm² Outline Drawing:21-0042 (PDF) Land Pattern: 90-0109 (PDF) Use pkgcode/variation: W28+1*	0°C to +70°C	RoHS/Lead-Free: Lead Free Materials Analysis
MAX2102CWI+T		N/A	No Longer Available	MAX2120CTI+	SOIC(W);28 pin;192.8 mm² Outline Drawing:21-0042 (PDF) Land Pattern: 90-0109 (PDF) Use pkgcode/variation: W28+1*	0°C to +70°C	RoHS/Lead-Free: Lead Free Materials Analysis
MAX2102CWI-T		N/A	No Longer Available	MAX2120CTI+	W.SO;28 pin Land Pattern: Not Available	0°C to +70°C	See data sheet
MAX2105CWI		N/A	No Longer Available	MAX2112 MAX2120	SOIC(W);28 pin;192.8 mm² Outline Drawing:21-0042 (PDF) Land Pattern: 90-0109 (PDF) Use pkgcode/variation: W28-1*	0°C to +70°C	RoHS/Lead-Free: No Materials Analysis
MAX2105CWI+		N/A	No Longer Available		SOIC(W);28 pin;192.8 mm² Outline Drawing:21-0042 (PDF) Land Pattern: 90-0109 (PDF) Use pkgcode/variation: W28+1*	0°C to +70°C	RoHS/Lead-Free: Lead Free Materials Analysis
MAX2105CWI+T		N/A	No Longer Available		W.SO;28 pin Land Pattern: Not Available	0°C to +70°C	See data sheet
MAX2105CWI-T		N/A	No Longer Available	MAX2112 MAX2120	W.SO; Land Pattern: Not Available	0°C to +70°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 = 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.

Notes and Comments

Direct-downconversion tuner IC, tunes L-band directly to baseband I and Q outputs (MAX2102)
-60dBm to -19dBm per carrier (MAX2105)

Didn't Find What You Need?

Next Day Product Selection Assistance from Applications Engineers
Parametric Search
Applications Help

Information Index

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