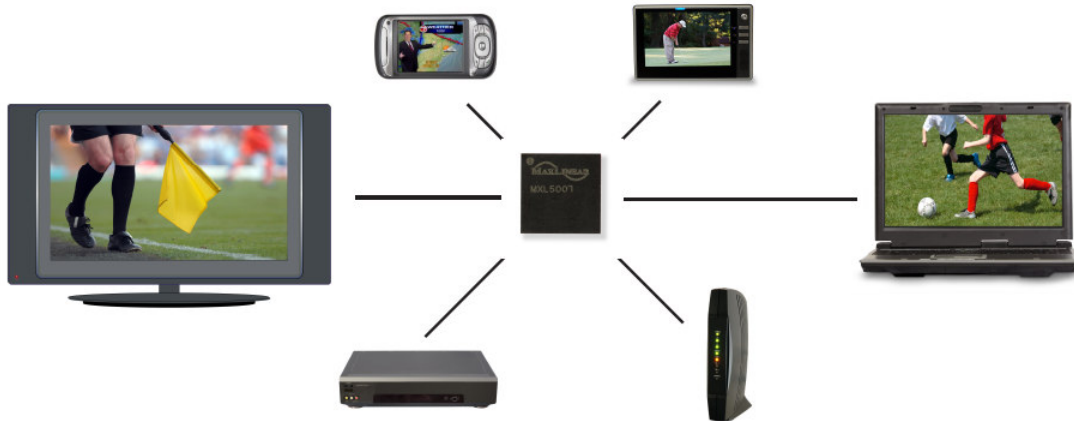


## MXL5007 GLOBAL STANDARDS SILICON IC TUNER

The first CMOS silicon tuner *without an external LNA or tracking filters* to surpass the performance of can tuners.



Continuing MaxLinear's all digital CMOS heritage, the 5007 is the ultimate tuner solution for *all* analog and digital cable and terrestrial television applications.

### Standards Supported

ATSC, DVB-T, DMB-T(H) for China, ISDB-T 13-segment, DVB-C, 64/256 QAM for US Cable applications, Analog Cable, DVB-H, DOCSIS 2.0 & 3.0, NTSC, PAL and SECAM.

### Solution Advantages

- NO SAW filters
- NO external tracking filters
- NO external LNA
- NO external loop filters
- NO calibration or adjustments
- Fully A/74 compliant
- Smallest board footprint
- 300mW of power consumption
- The lowest solution cost

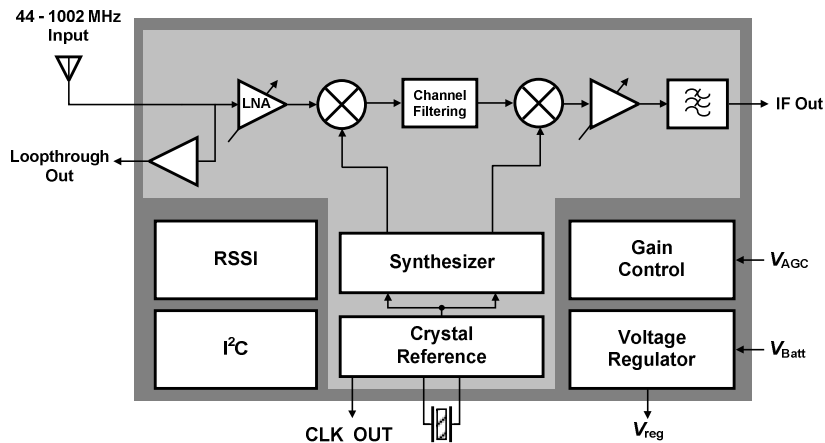
### Applications

- Terrestrial and cable TVs
- Terrestrial and cable set top boxes
- DOCSIS cable modems
- Portable applications such as laptops, portable DVD players, portable media players and automotive applications
- Tuner or tuner+demod modules
- Handheld applications such as cellular phones and PDAs

### Features

- Continuous tuning range from 44 to 1002 MHz
- Clock output available to drive demodulator to save crystal components
- On-chip regulator enables single supply of 1.8V or 3.3V
- On chip RF loop-through
- Software programmable channel bandwidths of 4, 6, 7, and 8MHz
- On-chip 100 dB AGC with on chip RSSI
- Programmable IF from low to high IF to support a variety of demodulators
- Two IF outputs and two AGC control inputs for support of two demodulators in one design (e.g. one digital demodulator and one analog demodulator)
- Programmable IF spectrum inversion
- I<sup>2</sup>C-compatible digital interface
- Very small 5 x 5 mm<sup>2</sup> 32-pin QFN package

## IC/System Block Diagram



## Functional Description

The MxL5007 can be configured through I2C interface to change modes for receiving different standards. It takes an input from a 75 $\Omega$  antenna or cable and produces a programmable channel-selected IF output up to 44 MHz (both IF outputs not shown on this diagram). Gain control, LO generation, channel selectivity functions, and RF loop-through are completely integrated on the chip, which simplifies board-level design. With the on chip voltage regulator, the IC can be powered from a 1.8V or 3.3V power supply.

## Performance Highlights

Frequency Range	44 – 1002MHz	
Power Dissipation	300mW	
	<b>Digital</b>	<b>Analog</b>
Input Return Loss	10dB	10dB
Noise Figure	4.5dB	4.5dB
Max Input Level	+4dBm	110dB $\mu$ V
Phase Noise (10kHz Offset)	-95dBc/Hz	-85dBc/Hz
Analog Adj Ch Rejection	60dB	
	<b>Loop-through</b>	
Output Return Loss	10dB	10dB
Gain	0dB	0dB
Noise Figure	6dB	6dB
CTB (for cable mode)	63dB	63dB

### Contact Information:

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[Sales@MaxLinear.com](mailto:Sales@MaxLinear.com)

### Ordering Information:

Part number: MxL5007  
Package type: QFN32  
Description: 32-Pin QFN  
(leadless) 5 x 5 x 0.9 mm  
Exposed backside paddle