MxL135RF

Low-Power Digital Terrestrial Silicon Tuner

MxL135RF is a highly integrated low power silicon tuner targeting ISDB-T and SBTVD-T digital terrestrial broadcast standards. Based on MaxLinear's breakthrough implementation of a silicon tuner in pure digital CMOS technology, MxL135RF delivers exceptional performance, lowest power consumption, the smallest footprint and the lowest total solution cost.

Consuming three to five times less power than other tuner solutions, the MxL135RF is uniquely suited for power sensitive applications, space constrained solutions and multi-tuner designs. This power savings enables tremendous design freedom in dissipation of heat and allows for form factors previously considered impossible.

The cost advantages of standard digital CMOS enable MxL135RF to be the most competitive solution in any digital TV market. All broadband input signal filtering and channel selection filtering have been completely integrated, reducing the external bill of materials (BOM) to a small number of standard value discrete components. SAW filters or any other external filters are not required for any application. The RF input is a single-ended 75Ω interface requiring no external transformers.

The IF output frequency of MxL135RF is SW configurable which provides a seamless interface to all commonly available demodulators on the market today.

All RF gain control settings are fully integrated and are automatically controlled by the MxL135RF without any interaction from the demodulator. This ensures a highly simplified AGC implementation without the need for any complicated take-over-point adjustments.

MxL135RF utilizes an API based SW architecture, reducing the programming of the device to a few simple commands and eliminating the need for complicated register calls. Additionally, MxL135RF requires no complicated spur avoidance algorithms commonly needed by other solutions. This SW simplicity enables quick and easy implementation of the driver source code on any SW platform.

MxL135RF is available in a 5x5mm QFN 32 package. Complete reference designs are available for a variety of applications and standards from MaxLinear as well as from MaxLinear's partners.

Supporting information is available upon request, including reference schematics, 2 and 4 layer PCB layout with 0603 and 0402 component size options, detailed bill of materials (BOM), HW and SW design guides, source code and standard specific performance test reports.

Applications
- Set-Top Boxes
- PCTV Applications
- Digital Televisions
- Mobile / Portable Applications
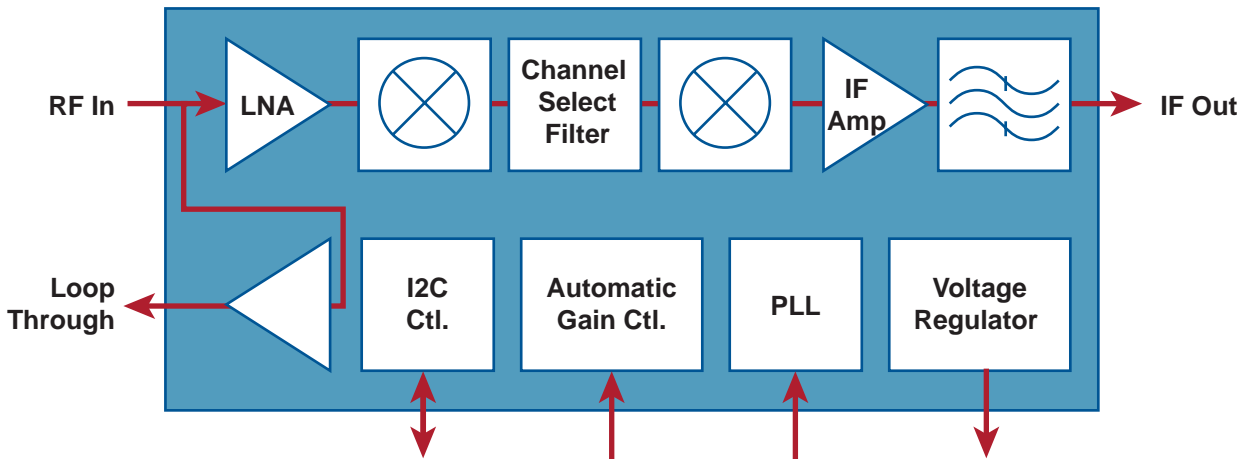- Tuner Modules

Features
- 44MHz to 885MHz tuning range
- Programmable IF output
- Programmable IF spectrum inversion
- Reference clock output for crystal sharing
- Integrated Loop-through
- I2C compatible interface
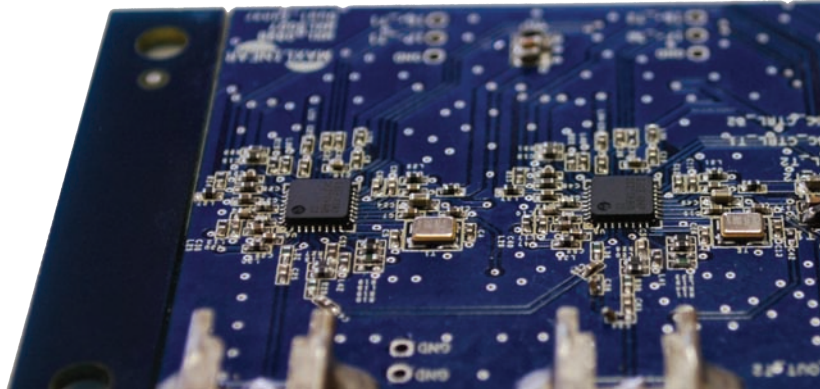- API based SW interface
- QFN 32 package, 5x5mm

Benefits
- Ultra low power – 300mW
- No external SAW filters
- Low BOM cost
- Reference clock output

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Block Diagram

RF In → LNA → ⊗ → Channel Select Filter → ⊗ → IF Amp → [filter] → IF Out

Loop Through ←

I2C Ctl. Automatic Gain Ctl. PLL Voltage Regulator

Evaluation Board

Ordering Information

Product	Part Number	Description
MxL135RF	MxL135RF	Low-Power Digital Terrestrial Silicon Tuner

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