

Description

The Si2138 integrates a PAL/SECAM/NTSC analog TV demodulator with a universal TV tuner supporting all worldwide analog TV standards. The Si2138 requires no external balun and offers the lowest-cost BOM for an analog TV tuner with analog demodulator. By combining Silicon Labs' proven digital low-IF architecture with a 4th-generation RF front-end, the Si2138 maintains the highest performance that exceeds MOPLL-based tuners.

Compared with competing silicon TV tuners, the Si2138 delivers an unprecedented level of front-end integration, resulting in the lowest number of external BOM components. No external tracking filters, wire-wound inductors, LNAs, SAW filters or inductive power supply filtering components are needed. The Si2138 offers low power consumption as well as an option for single or dual power supply operation. Also included is an internal power-on reset circuit, eliminating the need for external brownout protection components or additional pins in module applications. A software-selectable cable mode is also included which offers high return-loss performance.

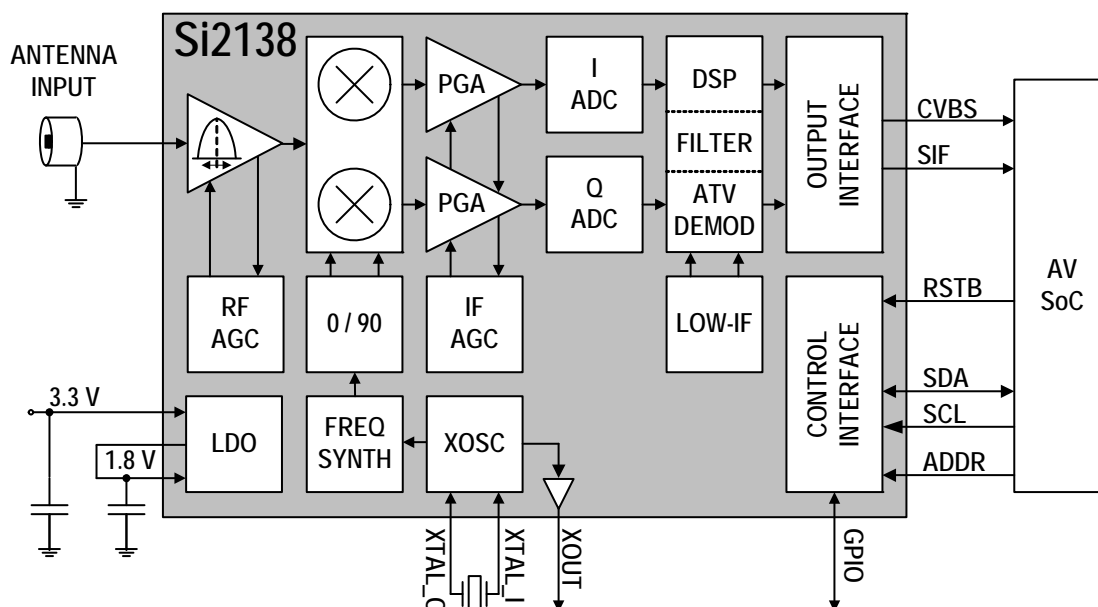
As with prior-generation Silicon Labs TV tuners, the Si2138 delivers superior picture quality and a higher number of received stations when compared to other silicon tuners and discrete MOPLL-based tuners. Both the tuner and analog demodulator incorporate worldwide field testing experience from three previous generations in high-volume production to deliver the highest tolerance to real-world field reception conditions. The Si2138 also incorporates a harmonic-rejection mixer that delivers excellent immunity to Wi-Fi and LTE interference across the full RF input frequency range, with no need for external filtering components.

Features

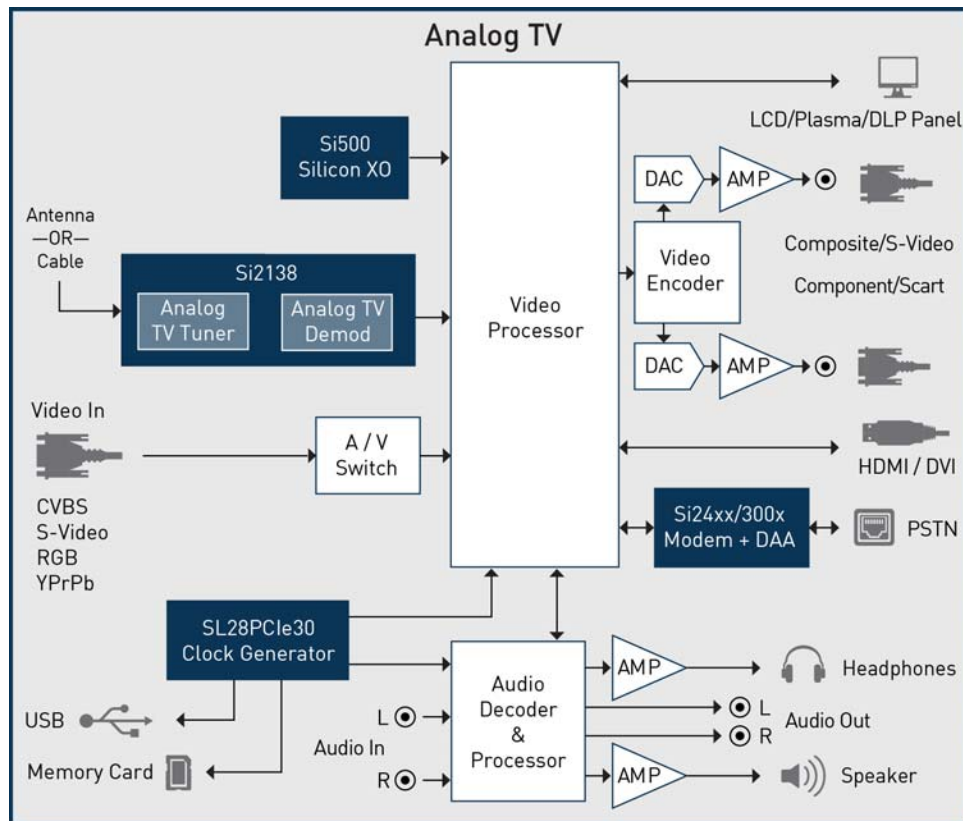
- Worldwide analog TV tuner
 - NTSC, PAL/SECAM
 - 42–1002 MHz frequency range
- Analog TV demodulator
 - Superior video SNR performance
 - Overmodulation and ICPM tolerant
- Industry-leading margin to EN55020, OpenCable™ specifications
- Lowest BOM for a silicon hybrid TV tuner
 - No balun at RF input
 - No external SAW filters or wire-wound inductors
 - Integrated LNAs and complete tracking filters
- Best-in-class real-world reception
 - Exceeds discrete MOPLL-based tuners
 - Industry-leading phase noise performance
 - High immunity to Wi-Fi and LTE interference
- Low power consumption
 - 3.3 V and 1.8 V power supplies
 - Single-supply option for 3.3 V-only operation
- Integrated power-on reset circuit
- CVBS + SIF output to audio/video processor or SoC
- Standard CMOS process technology
- 4x4 mm, 28-pin QFN package
- RoHS compliant

Applications

- Analog tuner module
- TV with on-board analog front-end
- Analog portable TV and portable DVD player
- PC-TV accessories



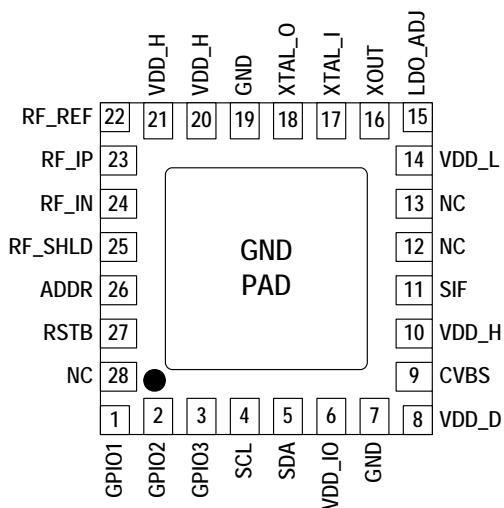
Application Example: Analog TV



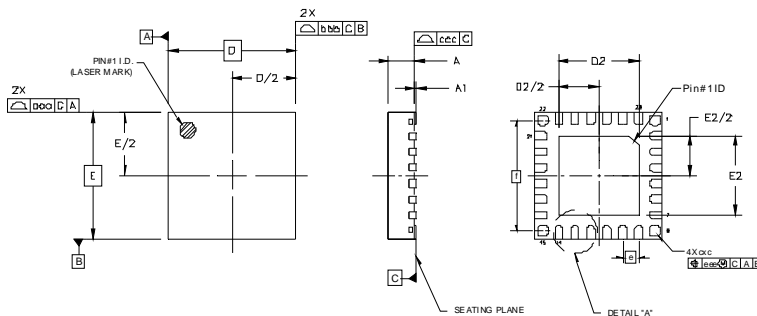
Selection Guide

Part #	Description
Si2138	Worldwide for NTSC, PAL/SECAM

Pin Assignments



4x4 mm QFN-28 Package Information



Symbol	Min	Nom	Max	Unit
A	0.80	0.85	0.90	mm
D, E	4.00 BSC			mm
e	0.50 BSC			mm
f	3.50 BSC			mm