



NXP Silicon tuner TDA18291HN

Ultra low power silicon tuner for portable TV

Optimized for digital TV reception on handheld and portable appliances, our new generation terrestrial silicon tuner covers both DVB-T and DVB-H standards. It's an ultra low-power solution delivering superior performance while requiring fewer external components, shrinking board size and reducing overall cost.

Key benefits

- ▶ Improved reception and image quality
- ▶ Low power dissipation increases time of use and reduces battery cost
- ▶ Reduced external passive component count for smaller board size and lower overall cost
- ▶ Easy multi-tuner configuration (antenna diversity)

Key features

- ▶ DVB-T and DVB-H applications
- ▶ MBRAI and Nordig Unified 2.0 compliant
- ▶ Optimized for UHF and VHF Band III, single RF input
- ▶ Supports 5/6/7/8 MHz channel bandwidths
- ▶ Zero-IF architecture
- ▶ Less than 4 dB noise figure
- ▶ Ultra-low power 150 mW (continuous mode)
- ▶ Compliant with 19.2, 26 and 38.4 MHz reference frequencies from TCXO
- ▶ Low supply voltage 2.8 V analog / 1.8 V digital
- ▶ Small form factor package 32-pin HVQFN, 5 mm x 5 mm

Key applications

- ▶ Portable LCD TVs
- ▶ Portable multimedia / DVD players
- ▶ PC Notebooks and USB sticks
- ▶ Personal navigation devices
- ▶ PDAs
- ▶ Handheld games



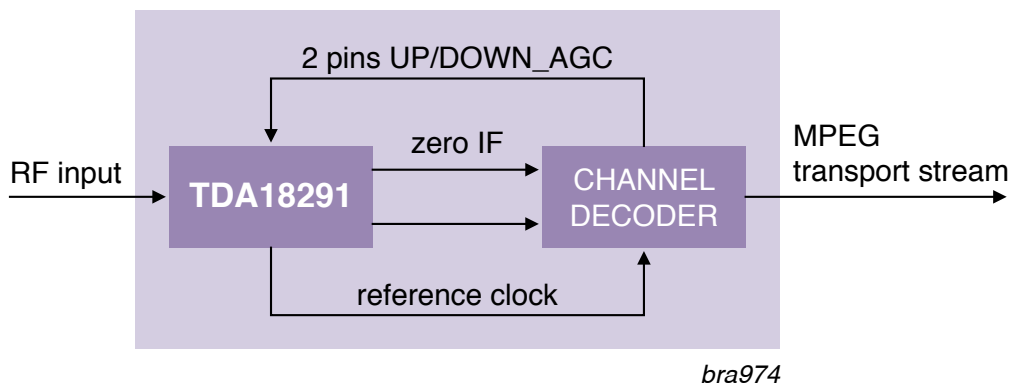
The TDA18291 is an ultra low power and compact silicon tuner solution, perfect for digital TV reception on portable appliances. It incorporates all the tuning functions needed for a complete receiver chain, from RF inputs to channel decoder IQ outputs including balanced low noise amplifier (LNA), quadrature mixers, channel filters, 60 dB range stepped AGC and a complete RF PLL with fully integrated VCO.

The tuner consumes only 150 mW in continuous mode, while a dedicated turn on / off pin allows further power reduction for time sliced applications. It supports serial programming and can be interfaced to any standard Zero-IF channel decoder ICs. Gain is programmable by 0.5 dB steps using two dedicated up and down pins.

Requiring fewer than 55 components to build a complete tuner solution, it reduces overall bill of materials. And including balun, switches and filters for multi-band applications, it takes up less than 3 cm² of board space making it ideal for handheld devices.

A system evaluation board (OM5768D) is available for the NXP Silicon tuner TDA18291, containing:

- ▶ TDA18291 specification
- ▶ Evaluation software
- ▶ Daughterboard with TDA18291
- ▶ Motherboard with NXP test chip channel decoder for system test purpose
- ▶ Quick start guide including measurement results
- ▶ Schematics and bill of materials



System level block diagram