TDA10046HT

Delivering a low cost system solution for DVB-T channel decoding, the TDA10046HT single chip channel decoder demonstrates Philips Semiconductors' continuing leadership in digital broadcast reception, offering advanced features such as adaptive echo cancellation, fast channel scanning and a unique 'Pulse Killer' algorithm that reduces impulsive noise disturbances.



Key features

- 2K and 8K COFDM demodulator, fully ETS 300-744 compliant
- TPS and Cell Identiie²I C-bus readable
- 2nd or 1st IF analog input
- On chip 10-bit ADC and PLL
- Single or dual AGC loop (with programmable takeover point)
- · Adjacent channel digital iltering (only one external SAW ilter is required)
- Automatic frequency offset detection (±1, 2 or 3 standard offsets)
- Dynamic FFT window positioning, and adaptive echo equalization
- · Consolidated algorithm for impulsive noise reduction
- DSP based synchronization enables on the ly irmware upgrades
- · No extra-host software required
- · Fast UHF/VHF band scanning
- Simultaneous tri-state parallel and serial Transport Stream interfaces
- 4 GPIO pins with $\Sigma\Delta$
- I2C-bus interface
- 5V tolerant I/O pins
- Low power consumption (450mW)
- TQFP64 package, CMOS 0.18 µm technology

Single-chip DVB-T channel

decoder



domains, and used to equalize the signal.

correction handles tuner phase noise.

The TDA10046HT performs all DVB-T channel decoding functions from IF input to transport stream output, using an internal DSP core for synchronization and control. Thanks to its sharp adjacent channel digital ilter, this single-chip receiver achieves excellent performance with low cost tuners (one SAW only). It requires only a low cost crystal oscillator (4 MHz) as a clock source, which can be shared with the tuner. After sampling of the 1st or 2nd IF by a 10-bit ADC, the signal is converted to baseband and passes through the FFT demodulator. Channel frequency response is then estimated and iltered in both time and frequency

The TDA10046HT implements a number of advanced features including a high-performance 'Pulse Killer' algorithm to reduce the disturbing effects of short and strong impulsive noise interference caused by electrical domestic devices and/or car trafic. For maximum ease of use, the TDA10046HT features fully automatic transmission parameters detection, ultra fast scan of the whole UHF/VHF band, and fast zapping facilities.

A common phase error

Evaluation boards are available with most commercial tuners. They are provided with all the necessary software including a tailored Graphical User Interface (GUI) that allows easy evaluation and development.

modulator Applications

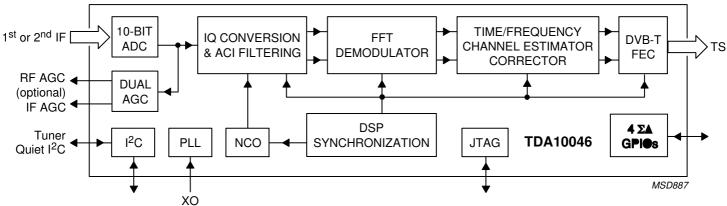
- Integrated Digital TV (iDTV)
- Set-Top-Boxes (STB)
- Personal Video Recorder (PVR) with DVB-T reception
- Digital TV PCI card for Personal Computers

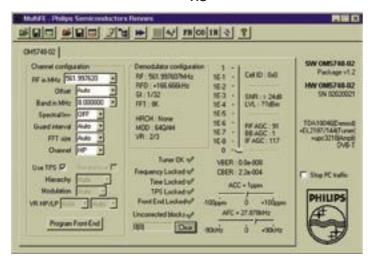


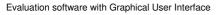
TDA10046HT

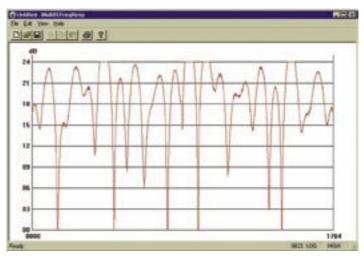
Single-chip DVB-T channel decoder











Channel frequency response

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TDA10046 DVB-T Channel Receiver

