



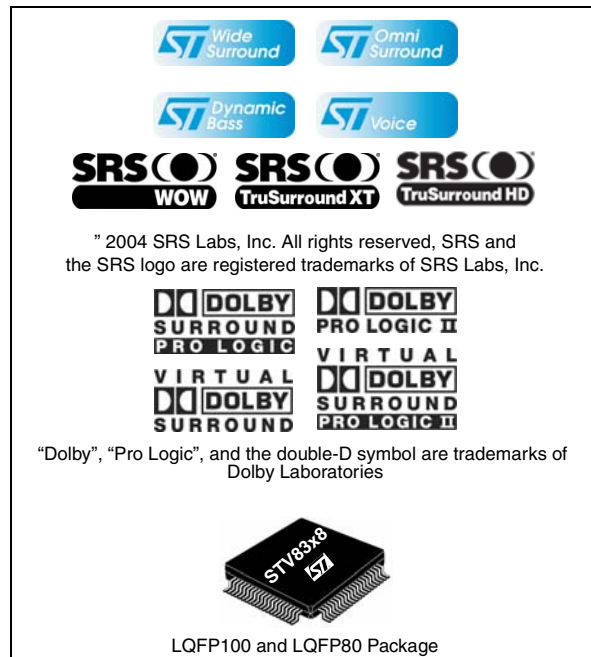
# STV83x7

## TV sound processor with analog broadcast demodulator for A2 and NICAM standards

Data Brief

### Features

- 24-bit digital signal processor
- 48kHz processing
- Fully automatic multi-standard demodulation:
  - B / G / I / L / M / N / D / K standards
  - AM and FM mono
  - FM 2-Carrier (German and Korean Zweiton) and QPSK / NICAM
- Audio delay
  - 100ms embedded
  - external delay support (through I<sup>2</sup>S) with or without the internal delay activated
  - independent delay on headphone and loudspeaker channels
- Digital interfaces
  - 1 x I<sup>2</sup>S asynchronous interface for stereo or downmix with sample rate converter up to 48kHz
  - 1 x I<sup>2</sup>S synchronous interface which supports from stereo up to multichannel 5.1 and downmix inputs
  - 1 x I<sup>2</sup>S output support from stereo up to 5.1 speakers
  - SPDIF output and pass-thru with integrated switch
- Analog interfaces
  - 5 stereo inputs
  - 1 mono input
  - 3 independent stereo outputs driving up to 5.1 multichannel
  - 2 V<sub>RMS</sub> capability for SCART standard compliance
  - pass-through mode
- Acoustical compensation
  - 3-band parametric equalizer with frequency, gain and Q control
  - 5-band equalizer
  - ST DynamicBass
  - bass management
- Dolby Prologic®I and II



- Sound processing
  - anti-clipping
  - independent volume / balance for loudspeakers and headphone
  - Smart Volume Control (SVC)
  - 5-band equalizer
  - loudness
  - headphone: Smart Volume Control (SVC), bass-treble with anti-clipping, loudness, ST Dynamic Bass and SRS® TruBass™
  - beeper: 72 tones, 3 natural sounds
- ST royalty-free processing:
  - ST OmniSurround ( Virtual Dolby® Surround and Virtual Dolby® Digital compliant)
  - ST Dynamic Bass
  - ST Voice
- SRS®
  - SRS WOW™
  - SRS® TruSurround XT™ & XT 5.1 digital™
  - SRS® TruSurround HD & HD 5.1 digital™
- Software compatible with STV83x8
- Hardware pin to pin compatible with STV83x8

## Description

The STV83xy family is the latest TV-dedicated sound processor from STMicroelectronics. Based on the STV82xy family success, the new STV83x8(US) and STV83x7 (EU/Asia/Middle East/Africa) are specifically intended for the mainstream flat TV market, paving the way to an enhanced sound experience at the end customer level.

One of the new STV83xy family key functions is to ensure the proper demodulation of analog broadcasts thanks to its "Autostandard" functionality, a digital automatic standard search engine.

The demodulation functionality based on the field proven STV82xy family, is highly robust in all concerned areas, even where overmodulation is dominant.

Five analog audio auxiliary inputs and three auxiliary SCART compliant outputs are available and aimed at reducing the bill of materials (BOM) by removing audio switches and buffers.

STV83xy products are designed to fulfill all new digital or hybrid TV digital connectivity needs thanks to a SPDIF input (bypass only) and two synchronous/asynchronous inter sound interfaces (I<sup>2</sup>S). One of the latter supports Dolby Digital 5.1 PCM audio, which emphasizes on product differentiation by directly driving analog and digital multichannel outputs. Thanks to this direct drive, TV manufacturers can take full advantage of sound virtualizers such as TruSurround XT (with TruSurround XT 5.1 Digital differentiated logo) and ST Omnisurround, or be the first to feature the brand new SRS TruSurround HD (TruSurround HD 5.1 Digital differentiated logo), which STMicroelectronics is the first to embed in a mainstream sound processor IC. Should the Dolby decoder only provide a Left Total/ Right Total (Lt/Rt) signal, an embedded Dolby ProLogic II decoder is aimed to provide the same output quality as with 5.1 inputs.

New consumer application emergences, in particular the flat screen TV market, bring new audio challenges to overcome and require more specific dedicated audio compensation tools such as Smart Volume Control (SVC) compressor/expander on headphone and loudspeakers, anticlipping, 3-band parametric and 5-band graphic equalizer for a better acoustic compensation.

In addition to the STV83xy family, a complete digital audio (demodulation, sound processor, audio amplifier) solution for TV can be used thanks to the ST digital class D amplifier STA333 family, with additional equalization capability if required.

STMicroelectronics provides a C reference code for the TV controller to facilitate the integration in the application software.

STV83x7 and STV83x8 are fully hardware and software compatible to answer platform uniformization strategy.

To support our customers with an efficient evaluation stage, STMicroelectronics provides an evaluation bundle with board and software, a comprehensive documentation and application note.

STV83xy products are available in two packages, **LQFP100** and **LQFP80 14x14**. Both are pin to pin compatible with the previous product generation.

## Applications

Typical applications of the STV83xy TV sound processor family are as follows:

- analog flat panel TV
- digital ready flat panel TV
- integrated digital flat TV
- integrated digital flat TV with integrated hard drive (PVR).

## Ordering information

Table 1. Order codes

Part number	Package
STV8317 STV8337 STV8357 STV8357D STV8357SX STV8357DSX STV8387DSX	LQFP80
STV8317F STV8337F STV8357F STV8357FD STV8357FSX STV8357FDSX STV8387FDSX	LQFP100

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