



# STV83x8

## TV sound processor with analog broadcast demodulator for BTSC standards

Data Brief

### Features

- 24-bit Digital signal processor
- 48kHz processing
- Fully automatic multi-standard demodulation
  - M / N standards
  - FM mono
  - BTSC (US MTS) stereo and SAP standards
- 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
- Software compatible with STV83x7
- Hardware pin to pin compatible with STV83x7

## Description

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

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

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

Five (5) analog audio auxiliary inputs and three (3) auxiliary SCART compliant outputs are available and aimed at reducing the bill of material (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 (2) synchronous/asynchronous inter sound interface (I<sup>2</sup>S). One of the latter supports Dolby Digital 5.1 PCM audio, which emphasizes on product differentiation by driving directly analog and digital multichannel outputs. Thanks to this direct drive, TV manufacturers can fully take 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, which STMicroelectronics is the first to embed in an IC. Should the Dolby decoder provide only Left Total/ Right Total (Lt/Rt) signal, an embedded Dolby ProLogic 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-bands 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 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 (2) 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
STV83x8	LQFP80
STV83x8F	LQFP100

## Revision history

Table 2. Document revision history

Date	Revision	Changes
21-Dec-2006	1	Initial release.

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