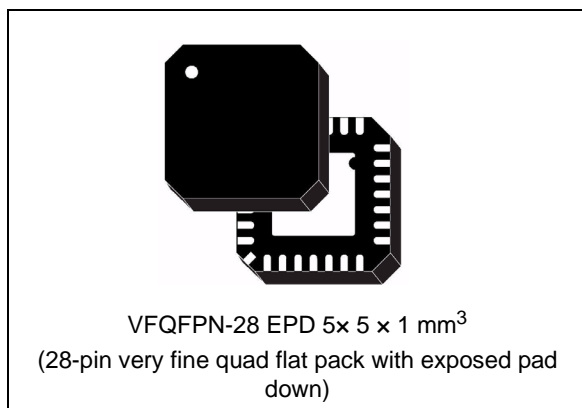


Audio/video buffer and 6-channel SD/PS/HD video filter

Data brief

Features

- I²C bus control
- Video section:
 - Selectable 7-MHz/15-MHz/30-MHz, low-pass filters, plus bypass, on three encoder video inputs
 - 7-MHz, low-pass filters on three encoder video inputs
 - DC-coupled inputs
 - Each output is capable of driving an AC- or DC-coupled, 150-Ω video load at 3 V pp and provides a 6-dB gain. One output can drive a dual, 75-Ω video load
 - Selective video output muting
- Audio section:
 - Stereo sound capability
 - Differential or single-ended audio inputs
 - Audio outputs drive 2-kΩ loads at 3 V RMS
 - Selectable audio gain of 0 to 28 dB
 - Audio output muting
 - 9 V to 12 V single supply operation
 - Click-noise suppression management
 - Pop-noise suppression management
- Low power mode
 - Audio/video standby function



Applications

- Set-top boxes (IP, cable, satellite, terrestrial)
- Integrated digital TV plug-in
- Blu-ray and DVD players

Description

The STV6440 is a fully integrated solution for filtering and buffering standard-definition, progressive-scan and high-definition signals, and buffering stereo audio signals from the MPEG decoder of a digital receiver, Blu-ray or DVD player, or iDTV plug-in.

The STV6440 embeds two triple buffers with low-pass filters, one for HD (selectable 7/15/30 MHz) and one for SD (7 MHz), and a dual audio amplifier that operates with either differential or single-ended inputs.

Table 1. Device summary

| Order code | Temperature range | Package | Packaging |
|------------|-------------------|--|---------------|
| STV6440AJ | 0 to 70 °C | VFQFPN-28 (5 × 5 mm ²) EPD | Tray |
| STV6440AJT | 0 to 70 °C | VFQFPN-28 (5 × 5 mm ²) EPD | Tape and reel |

1 Introduction

The STV6440 is an I²C-controlled integrated circuit for filtering and buffering audio and video signals in any consumer electronics application with HD component and SD analog outputs. It can be used in products such as HD set-top boxes or DVD/BD players and recorders.

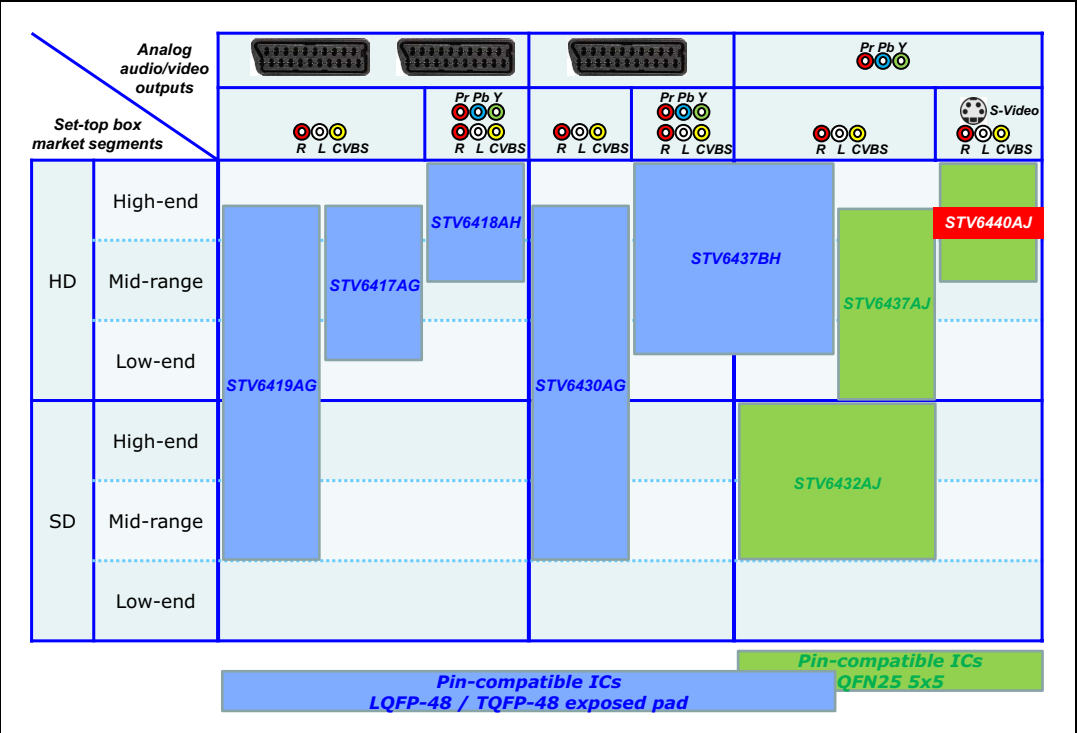
The STV6440 has a high level of integration and requires only the usual passive components for decoupling and termination. The tiny package VFQFPN-28 ensures a small footprint for the buffer circuits.

The STV6440 is one of the family of three, pin-compatible products (Figure 1) that complete the new generation of audio and video switches and buffers from STMicroelectronics. Together they cover, both technically and price-wise, the whole market spectrum from mid-range SD retail (zapper set-top boxes or basic recorders) up to DVR HD operators (set-top boxes or recorders with HD component output).

| Features | Benefits |
|--|--|
| DC-coupled video inputs. | Reduces component count. |
| AC- and DC-coupled high-drive capability video outputs (for 70-Ω (minimum) loads). | Connects to any type of display and drives several composite and RF modulator outputs without external active components. |
| Smart pop-noise manager. | Allows silent swap between active and standby modes. |
| Selective standby command for audio and each set of SD or HD video outputs. | As low as 4-mW standby consumption supporting compliance to 0.5-W standby requirements. |
| 8-step selectable audio gain up to +28 dB, supporting output of 3.1-V RMS (minimum). | Easy fine-tune of THD and SNR depending on requirements, whilst matching any specific audio output level, including China Cable, and saving external op-amps. |
| Pin-compatibility with two other products. | Combines single-device space-saving (up to 50%) benefits with commodity price/flexibility benefits to allow a single PCB design covering the entire market spectrum. |



Figure 1. Pin-compatible devices



2 Revision history

Table 2. Document revision history

| Date | Revision | Changes |
|-------------|----------|------------------|
| 12-Aug-2011 | 1 | Initial release. |

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