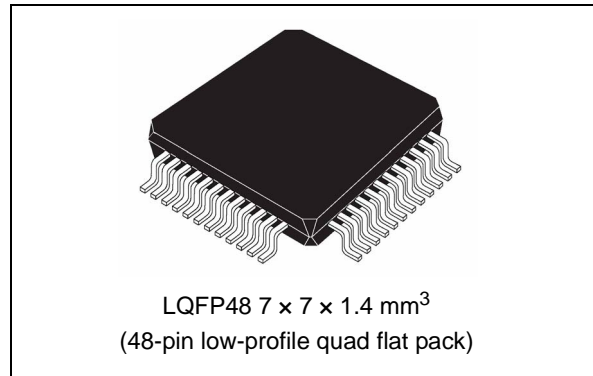


Low-cost audio/video switch and 4-channel SD video filter

Data brief

Features

- I²C bus control
- Interrupt signal output
- Video section:
 - Three CVBS inputs; two CVBS outputs
 - Two RGB or YPrPb or chroma / one FB input; one RGB or YPrPb or chroma / one FB output
 - 7-MHz low-pass filters on four encoder inputs
 - Gain of 6 dB on all RGB and CVBS outputs
 - Integrated 150-Ω buffers
 - Capabilities of integrated output buffers:
 - CVBS_TV can drive two standard 150-Ω video loads
 - CVBS_VCR can drive one standard 150-Ω video load and one 600-Ω modulator load
 - RGB can drive a standard 150-Ω video load
 - AC- or DC-coupled video outputs
 - Two slow blanking inputs/outputs
 - Bottom clamp on all CVBS and bottom/average/synchronized clamp on RGB inputs
 - AC-coupled inputs for all video signal
 - Crosstalk: 50 dB minimum
- Audio section:
 - Three inputs; two outputs
 - Stereo sound capability
 - One mono sound output
 - Differential or single-ended audio encoder input



- Selectable gain on one stereo input
- Audio muting on the output
- Audio outputs drive 3.1 V RMS into 2 kΩ
- Full-range volume control with soft control
- Audio B SkyB compatible

Applications

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

Description

The STV6419 is a highly integrated I²C bus-controlled audio and video switch matrix, optimized for use in digital set-top box or DVD recorder applications. It provides the audio and video routings (CVBS and RGB) required in a non-full two SCART set-top box design.

The STV6419 is a fully integrated solution for filtering and buffering SD signals.

Table 1. Device summary

Order code	Temperature range	Package	Packaging
STV6419AG	0 to 70 °C	LQFP48 (7 × 7 mm ²)	Tray
STV6419AGT	0 to 70 °C	LQFP48 (7 × 7 mm ²)	Tape and reel

1 Introduction

The STV6419 is an I²C-controlled integrated circuit for switching, filtering and buffering audio and video signals in any dual, non-full SCART application. It can be used in products such as SD and HD set-top boxes or DVD/BD players and recorders for European markets.

It can be connected to four video DAC outputs of an MPEG decoder, allowing simultaneous switching and driving of the composite and RGB signals, or the S-video signal only, to the TV SCART output, as well as the composite signal to the VCR SCART output. Further, the device provides the switching of the composite and RGB signals, or the S-video signals only, from the VCR SCART to the TV SCART.

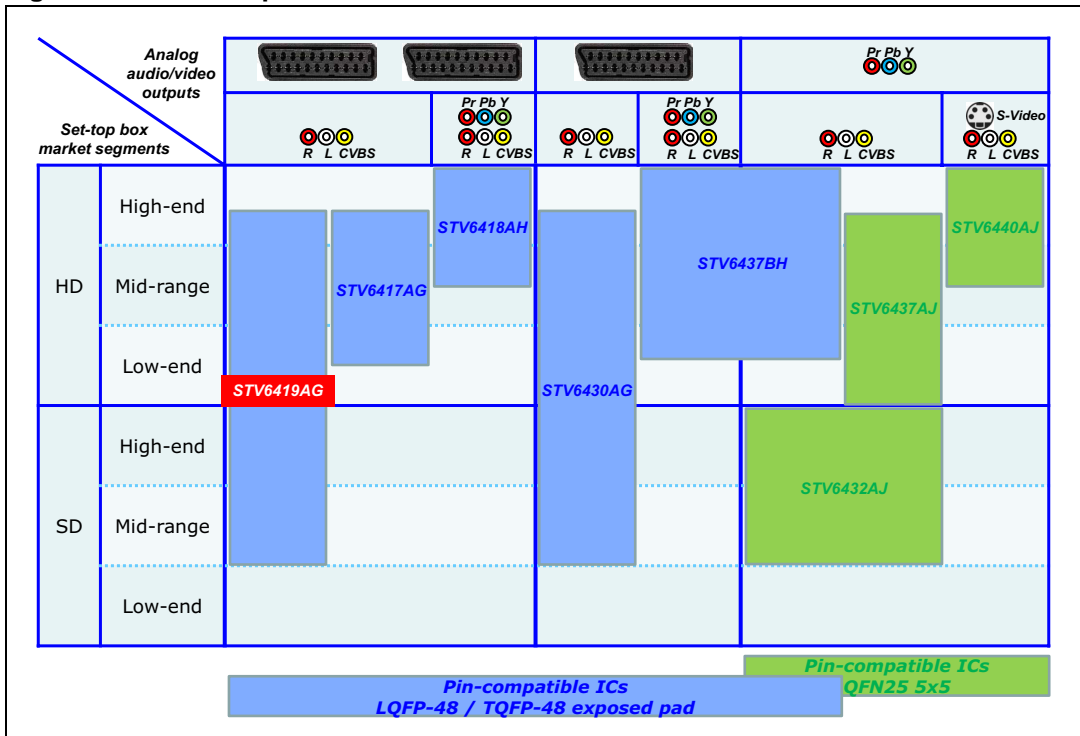
The STV6419 manages the slow blanking and fast blanking signalling through the I²C bus.

The STV6419 provides the minimum required set of features to support the dual-SCART connector with significant cost reduction over existing solutions (such as STV6417 or competition) and in line with a price-sensitive, soon-to-be-phased-out legacy topology, for which set-top box manufacturers are no longer willing to pay a premium.

The STV6419 is one of the family of five, 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 SD 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.
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 four 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.
Pin-compatibility with STV6417AH.	Provides dual-source solution at no cost premium in case of market shortage or sudden rise in demand.
Pin-compatibility with STV6418AH.	Provides dual-source solution at no cost premium in case of market shortage or sudden rise in demand.

Figure 1. Pin-compatible devices



2 Revision history

Table 2. Document revision history

Date	Revision	Changes
06-Oct-2011	1	Initial release.

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