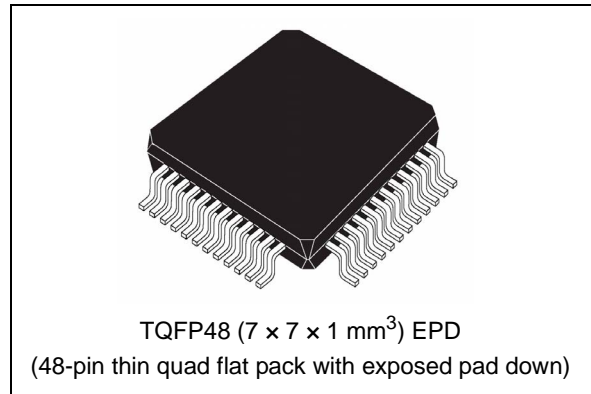


## Audio/video switch and 6-channel SD/PS/HD video filter

Data brief

### Features

- I<sup>2</sup>C bus control
- Auto startup mode: low power consumption
- Video section:
  - Three CVBS inputs, two CVBS outputs
  - Three Y/C inputs, three Y/C outputs
  - Switchable 8 MHz, 15 MHz or 30 MHz low-pass filters (LPF) on six inputs for standard definition, progressive scan and interleaved high definition, plus bypass (60 MHz) for progressive high definition
  - Gain of 6 dB on all CVBS/Y and C outputs
  - Integrated 150-Ω buffers
  - Two RGB/one FB inputs, one high impedance RGB/FB output with 6-dB adjustable gain (from +3 dB to +9 dB)
  - Two YPrPb inputs, one YPrPb/RGB HD output
  - AC or DC-coupled video outputs
  - Two slow blanking inputs/outputs
  - Bottom clamp on all CVBS/Y and RGB inputs, average clamp on C inputs, synchronized clamp on PrPb inputs
  - Bi-directional control for VCR R/C output and for TV B output
  - AC-coupled inputs and AC- or DC-coupled inputs for video signal from encoder with internal clamp and bias
  - Video detection block in low power auto startup mode
  - Video muting on all outputs
- Audio section:
  - Three stereo inputs, two stereo outputs



- Stereo-to-mono sound capability
- Differential or single-ended audio input
- Selectable gain of 0, 6 or 9 dB on one stereo input
- Full-range volume control with soft control
- Audio muting on all outputs

### Applications

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

### Description

The STV6418 is a highly integrated I<sup>2</sup>C bus-controlled audio and video switch matrix, optimized for use in digital set-top box applications. It provides all the audio and video routings required in a full two-SCART set-top box design.

The STV6418 provides fully integrated solutions for filtering and buffering both SD and HD signals.

**Table 1. Device summary**

Order code	Temperature range	Package	Packaging
STV6418AH	0 to 70 °C	TQFP48 EPD	Tray
STV6418AHT	0 to 70 °C	TQFP48 EPD	Tape and reel

# 1 Introduction

The STV6418 is an I<sup>2</sup>C-controlled integrated circuit for switching, filtering and buffering audio and video signals in any dual, full-SCART application with HD component output. It can be used in products such as HD set-top boxes or DVD/BD players and recorders for European markets.

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

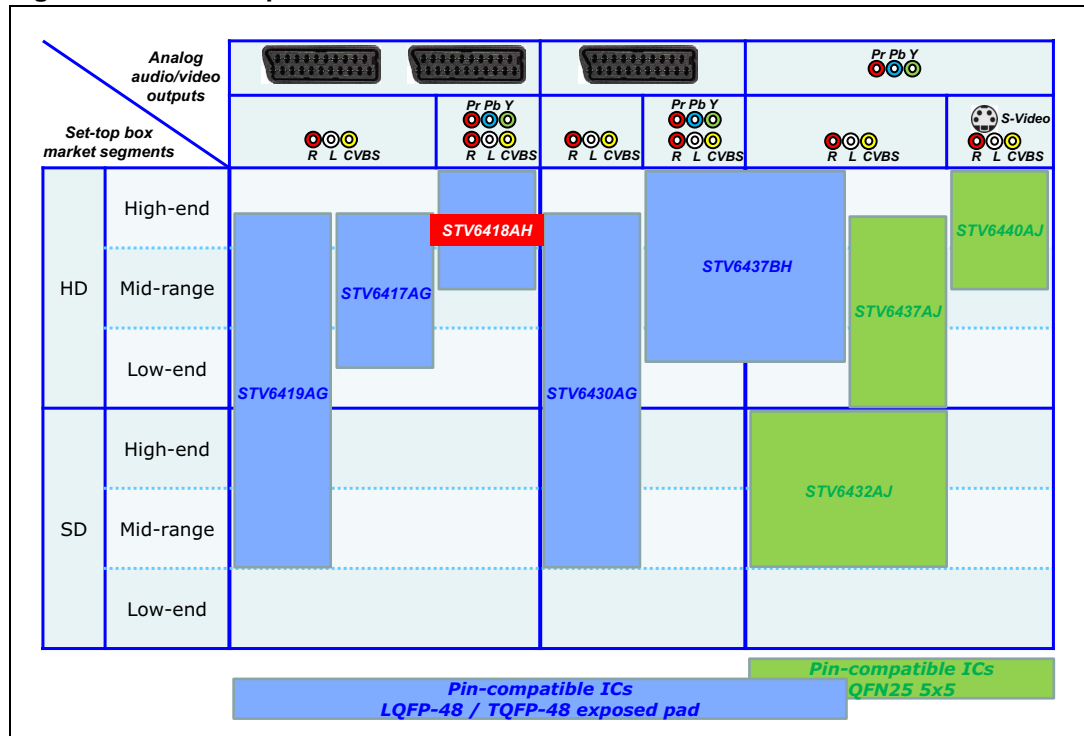
The STV6418 manages the slow blanking and fast blanking signalling through the I<sup>2</sup>C bus.

The complete set of features of the STV6418 makes it particularly adapted for all middle- to high-end European HD set-top boxes offering an HD component output as an HD back-up solution to HDMI potential interoperability issues between source and sink.

The STV6418 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 HD component output).

Features	Benefits
Integrated switch from RGB/Composite SCART to S-video SCART.	Avoids video DAC change of output configuration.
AC- and DC-coupled video inputs.	Connects to any core chips on the market or reduces component count when using positive signals.
AC- and DC-coupled video outputs.	Connects to any type of display.
Audio gain up to +15dB.	Allows optimization of THD and SNR, 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.
Three selectable SD/HD filters and six independently-mutable RGB and component output buffers.	Allows suppression of either SD/HD component output or SD SCART output when both are connected to the TV.
Auto startup mode.	Implementing instantaneous SCART loop-through only when required while the STB is in standby, for significant power savings.

Figure 1. Pin-compatible devices



## 2 Revision history

Table 2. Document revision history

Date	Revision	Changes
27-Jun-2008	1	Initial release.
23-Sep-2011	2	Updated with new presentation.

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