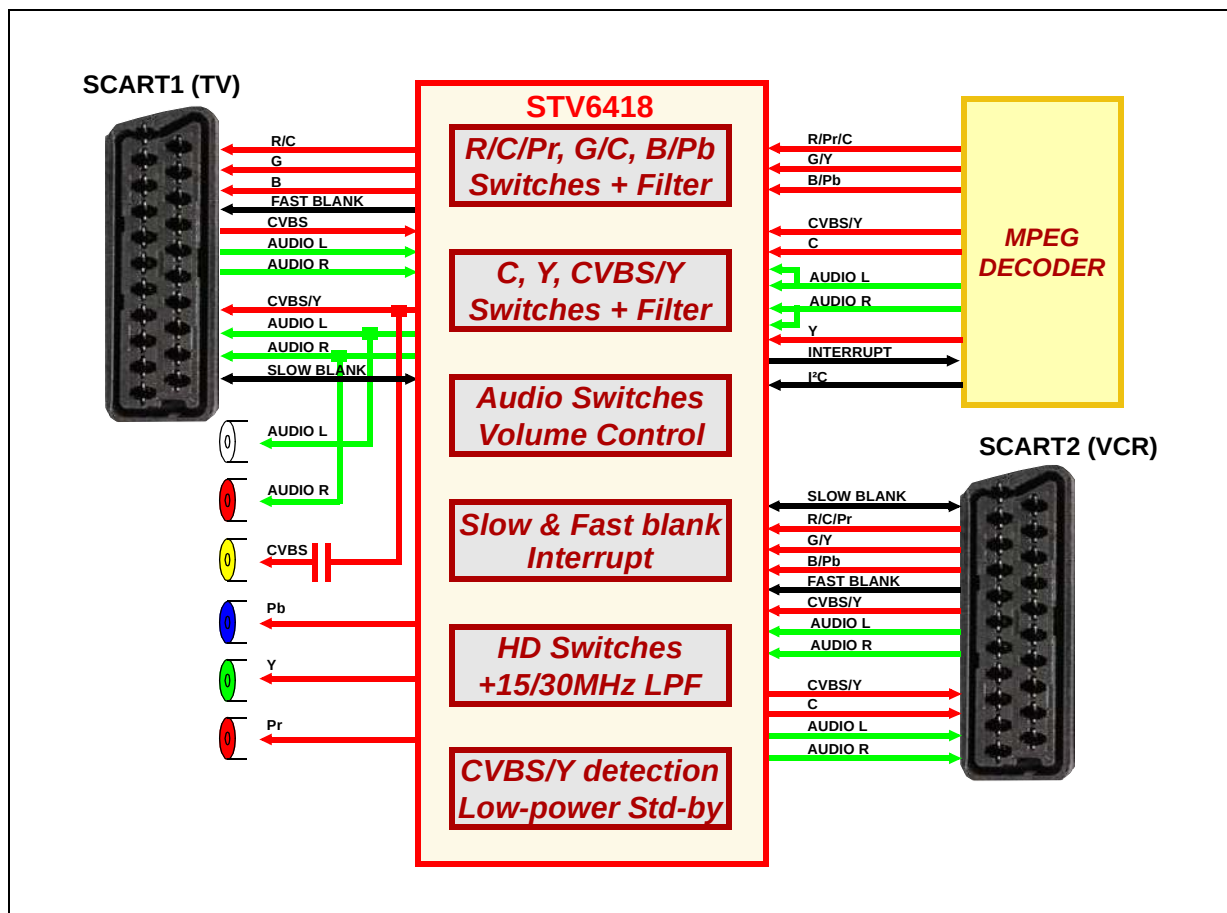


Audio/video switch and 6-channel SD/PS/HD video filter

Data Brief

Features

- I²C bus control
- Interrupt or auto-startup mode: low power consumption
- Video section
 - 3 CVBS inputs, 2 CVBS outputs
 - 3 Y/C inputs, 3 Y/C outputs
 - Integrated 150 Ω buffers
 - 2 RGB/1 FB inputs, one high impedance RGB/FB output with 6 dB adjustable gain (from +3 dB to +9 dB)
 - 2 YPrPb inputs, 1 YPrPb/RGB HD output
 - AC- or DC-coupled video outputs
- Audio section
 - 3 stereo inputs, 2 stereo outputs
 - Stereo-to-mono sound capability
 - Differential or single-ended audio encoder input
 - Selectable gain on one stereo input
 - Full-range volume control with soft control
 - Audio muting on all outputs



1 Description

The STV6418 is an I²C-controlled integrated circuit designed to switch both audio and video in any dual full-SCART application such as set-top boxes or DVD recorders for European markets.

The STV6418 is one of the four brand new products that complete the new generation of audio and video switches from STMicroelectronics, which cover both technically and price-wise the whole market spectrum from low-cost SD retail (zapper set-top box or basic recorder) up to DVR HD operator (set-top boxes or recorders with component outputs).

Its complete set of features makes it particularly adapted for all HD set-top boxes.

Figure 1. STMicroelectronics new generation of audio and video switches

	Retail				Operator	
	FTA SD Zapper	FTA SD CI/CAS	SD DVR	HD	SD	HD
STV6418						
STV6417						
STV6419						
STV6416						

Small footprint

The first key differentiator of the STV6418 is its size. It is supplied in a TQFP-48 7 x 7 exposed pad package, compared with older generation devices that used LQFP-64 10 x 10 and LQFP-64 14 x 14 packages.

Reduced bill-of-material

A second key differentiator is the STV6418's ability to reduce the bill-of-material. The STV6418 can interact directly with an MPEG decoder audio output, whether it is voltage- or current-driven. In the latter case, an integrated programmable gain allows designers to reduce the bill-of-material by removing the need for external operational amplifier circuitry.

The STV6418 video inputs can be driven either in AC- or DC-coupled mode from the MPEG decoder video DAC outputs, again decreasing the need for external components.

The STV6418 can drive AC- or DC-coupled output loads, saving the need for additional external buffer circuitry or coupling capacitors.

The STV6418 integrates 6 dB video buffers in series with each of the six switchable standard definition (SD), enhanced definition (ED) and high definition (HD) 1080i-capable low-pass filters. It can connect to six video DAC outputs of the MPEG decoder, allowing it to switch and drive at the same time the composite and RGB signals on the TV SCART outputs, as well as the S-video signal on the VCR SCART output. But the best practice for the STV6418 is to divert, buffer and filter the component outputs from the MPEG decoder to

the YPbPr set-top box cinch output to drive an HD display, at the same time keeping the composite and S-video signals available for the dual SCART. The STV6418's VCR SCART RGB inputs are also YPbPr-compatible and can therefore be adapted for other niche applications (bi-directional RGB on VCR SCART).

Optimized power consumption in stand-by

The third key differentiator of the STV6418 is its power consumption, especially in stand-by. It embeds a brand new function that allows an automatic VCR-to-TV or TV-to-VCR SCART loop-through as soon as a composite or a luminance signal is active on one of the SCART inputs. This function allows an instantaneous loop-through while saving power consumption in stand-by. The STV6418 can achieve a market-lowest 50 mW stand-by consumption, demanding less than 10% of the power budget that shall soon be required by legislation or according to the average existing rules of conduct.

Platform scalability

Finally, the fourth key differentiator of the STV6418 and its associated products is their ability to cover all the dual SCART market spectrum, offering cost savings not only on device and bill-of-materials, but also on engineering and scalability cost. For example, the STV6418 shares the same footprint as the STV6417AG or STV6419AG, allowing respectively two steps for downgrades for one single HD platform in order to serve different customer connectivity requirements (support for S-video on VCR SCART output, support for Canal+ analog, component output allowed or not for HD content copyright protection), optimizing platform cost without re-engineering.

Figure 2. Platform scalability

		TV SCART out No RGB Loop-through No YPbPr out	TV SCART out RGB Loop-through No YPbPr out	TV SCART in/out RGB Loop-through No YPbPr out	TV SCART in/out RGB Loop-through YPbPr out
		VFQFPN-28 5×5	LQFP-48 7×7	LQFP-48 7×7	TQFP-48 7×7 EP
High-End STB	HD		STV6419AG	STV6417AG	STV6418AH
DVR	SD		STV6419AG	STV6417AG	
Retail FTA CA/CI			STV6419AG	STV6417AG	
Retail FTA Zapper		STV6416AJ	STV6419AG		

2 Application

Typical applications for the STV6418 are:

- Full dual-SCART standard definition (SD) set-top boxes (free-to-air or operator)
- Full dual-SCART high definition (HD) set-top boxes (free-to-air or operator)
- DVD recorders

2.1 Ordering information

Table 1. Ordering information

Part number	Packaging
STV6418AH	TQFP-48 7 × 7 exposed pad

3 Revision history

Table 2. Document revision history

Date	Revision	Changes
27Jun-2008	1	Initial release.

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