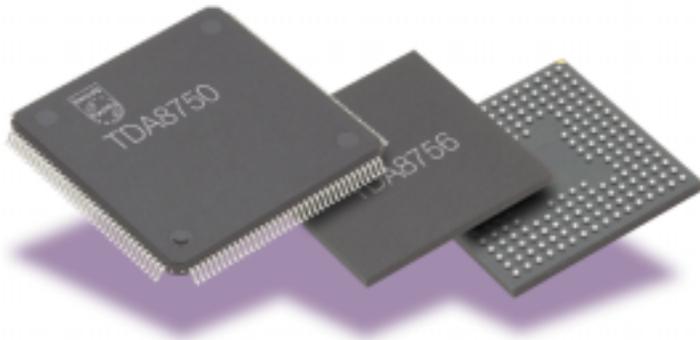


# TDA8750/TDA8751/TDA8754/ TDA8756/TDA8759

Universal data converter interface products for flat panel applications

Philips Standard Analog's portfolio has recently expanded its Data Converter product range with several Analog-to-Digital Interface products to support the technology evolution of Video and Graphic receiver equipment such as Monitors, Projectors, LCD and plasma TV... from Analog only to Dual-mode (Analog-RGB/YUV and Digital-DVI) input interface.



## Features

- Wide speed range (from 81 Msp/s to 270 Msp/s)
- Sync separator/extractor to comply with all analog Video formats
- Multiple signal inputs (Analog RGB or YUV, and DVI)
- Internal static switch allows to select between input sources
- PLL programmable via I<sup>2</sup>C
- Low PLL jitter for high accuracy sampling and picture quality
- Flexible configurations via I<sup>2</sup>C
- Compliance with DVI standard
- Embedded HDCP<sup>[2]</sup> function with software encryption for secure loading of the keys
- 3.3 V/1.8 V dual power supplies

## Applications

- LCD Monitors
- Video Projectors
- TV (LCD, Projection, Rear Projection, Plasma, 100 Hz/Feature CRT)
- Video digitizing and processing (High-end recording and digital recording, Studio equipment)



## Description

Philips Standard Analog's portfolio of Video Data Converters provides the best-in-class solutions for applications requiring to convert Video or Graphic signals coming from Analog or Digital (DVI)<sup>[1]</sup> sources into triple 8 or 10-Bit parallel data stream which are digitally processed for addressing various display technologies.

The TDA8756 is optimized for Monitor and projector applications using RGB based processors or scalers. It converts RGB or YUV analog signals under 8-bit up to 270 Msp/s, into one or two demultiplexed 24-bit RGB or YUV banks of data. Its DVI receiver can be configured into two single-link interfaces or one Dual-Link interface allowing QXGA resolution under DVI. The device is packaged in a compact LPGA208 with a body size of 17 mm x 17 mm reaching the smallest PCB area available on the market for these functions. It is available in 110, 140, 170, 210, 250 and 270 Msp/s versions. TDA8754 is the Analog only interface version packaged in LQFP144 and LPGA208.

The TDA8750 is optimized for TV applications using YUV based processors either in CCIR656 or CCIR601 formats. It combines as well an Analog path with a triple 8-Bit ADC up to 110 Msp/s and a digital path with two single link DVI receivers. Both signal paths are processed through a highly flexible digital formatter having a RGB to YUV—and reverse—matrix, leading to RGB or YUV 4:4:4, YUV 4:2:2 (CCIR601 or 656) outputs whatever the inputs are, RGB, YUV or DVI. Moreover like the TDA8756, TDA8750 includes a robust and highly configurable sync separator avoiding the use of an external device, thanks to compliance with all standard analog video sources from VCR to HDTV thru DVD and Set Top Box. TDA8750 is packaged in a HLQFP176 device. TDA8751 is the higher performance device with 10-bit resolution TDA8759 is 8-bit analog interface only.

	TDA8754	TDA8759	TDA8756	TDA8750	TDA8751
Analog inputs, only	Yes	Yes	No	No	No
Analog and DVI inputs	No	No	Yes	Yes	Yes
Digital YUV output formatting	No	Yes	No	Yes	Yes

[1] DVI specification published by Digital Working Group (DDWG) promoters and may have related patents and/or patent applications.

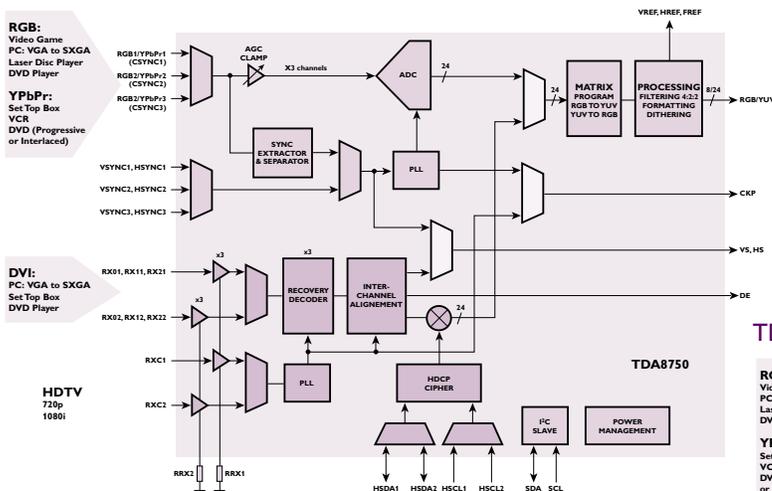
[2] HDCP is software designed by Intel/Silicon Image. All trademark rights belong to the respective producers.

# TDA8750/TDA8751/TDA8754/TDA8756/TDA8759

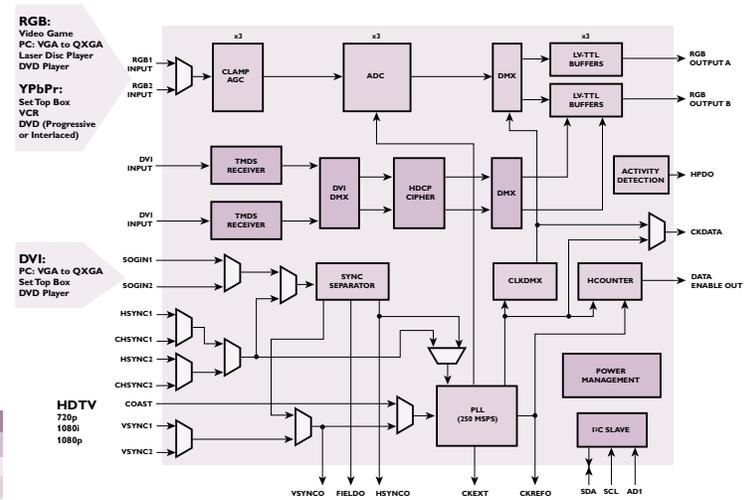
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## TDA8750: 8-Bit 81/110 Msps video converter interface + DVI



## TDA8756: 8-Bit 110/270 Msps video converter interface + DVI



Summary table of data converter interface products and features for displays systems

Features	TDA8756	TDA8754	TDA8751	TDA8750	TDA8759
<b>Analog Path</b>					
Resolution	8-Bit	8-Bit	10-Bit	8-Bit	8-Bit
Analog Supply	3.3V/1.8V	3.3V	3.3V/1.8V	3.3V/1.8V	3.3V
Speed (Msps)	110, 140, 170, 205, 250, 270	110, 140, 170, 205, 250, 270	81	81, 110	81, 110
<b>Analog Input</b>					
PGA	Yes	Yes	Yes	Yes	Yes
AGC	No	No	Yes	Yes	Yes
Sync-on Green	Yes	Yes	Yes	Yes	Yes
Sync Separator	Yes	Yes	Yes	Yes	Yes
RGB <-> YUV Matrix	No	No	Yes	Yes	Yes
YUV output formatting	No	No	Yes	Yes	Yes
Frame/field detection	Yes	Yes	Yes	Yes	Yes
Input activity detection	Yes	Yes	Yes	Yes	Yes
<b>DVI Path</b>					
Two Link	Yes	N/A	Yes	Yes	N/A
Dual link	Yes	N/A	No	No	N/A
Speed per link (Msps)	165	N/A	110	110	N/A
HDCP	Yes	N/A	Yes	Yes	N/A
<b>Package</b>	LBGA208	LQFP144/LBGA208	LQFP176	LQFP176	LQFP176

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