

DesignWare Video Analog Front-End IP Solutions

Portfolio

- ▶ HDTV Analog Front-End
- ▶ PC-Graphics Analog Front-End

Foundries and Processes

- ▶ Available in a wide range of process nodes from 180-nm to 65-nm for leading foundries

Key Applications

- ▶ Set-top boxes
- ▶ Digital/HDTV/SDTV
- ▶ Flat Panel Displays
- ▶ DVD-A /DV/HD-DVD/Blue-Ray players/recorders
- ▶ Video acquisition systems (e.g., PC-cards)
- ▶ Camcorders
- ▶ Surveillance systems
- ▶ Infotainment
- ▶ Personal computing
- ▶ Automotive/Car entertainment

Today's rapidly growing home entertainment consumer market is driven by superior video quality. Video analog front-ends (AFEs) play a pivotal role in this arena by providing a low power high resolution analog interface between video devices. Synopsys DesignWare[®] Video AFE IP delivers high-quality video resolution (1080p/WUXGA) at minimal power and silicon area.

With more than 13 years of experience in developing AFE IP for video applications, Synopsys offers a comprehensive portfolio of silicon proven DesignWare IP Video AFE IP solutions designed to meet the requirements of specific analog video applications such as High Definition TV (HDTV) and PC-Graphics.

The DesignWare Video AFE IP solutions support a wide range of process technologies from 180-nm to 65-nm. By providing designers with a broad portfolio of high-quality video AFE Synopsys enables designers to quickly integrate the IP into their SoC with significantly less risk and improved time-to-market.

Technology Highlights

- ▶ The #1 provider of video AFE IP
- ▶ More than 13 years of delivering proven AFE IP for video applications
- ▶ Wide range of video products addressing different HDTV and PC-Graphics markets' requirements
- ▶ Full 1080p and WUXGA @ 60 Hz video AFE
- ▶ Robust synchronism processing included for high quality video image
- ▶ Very high performance at very low power: 10-bit resolution at up to 205 MSPS with less than 350 mW power consumption

Application	IP type	Video functions	Video resolution
Flat panel PC-Graphics up to wide panel WUXG	PC-Graphics AFE	<ul style="list-style-type: none"> • 8/10-bit up to 235 MSPS A-to-D conversion • Regulated bottom/mid-scale clamping • 7-bit offset adjustment for RGB and YPbPr inputs • 8-bit gain adjustment for all video inputs • Sync slicing and H-sync and V-sync processing and pixel clock generation • Sync-on-green separation 	SXGA UXGA WUXGA
Digital TV up to 1080p (60 Hz)	HDTV AFE	<ul style="list-style-type: none"> • 10-bit up to 205 MSPS A-to-D conversion • 3-bit Programmable 2nd-order anti-aliasing low-pass filtering (6 MHz-125.5 MHz) • Multimode clamping (7-bit calibrated, sync-tip, etc.) • External/extracted from V-sync coast • Robust full sync processing for composite sync and sync-on-green • SCART support and content protection compliant • And more... 	1080i 1080p

About DesignWare IP

Synopsys is a leading provider of highquality, silicon-proven IP solutions for SoC designs. The broad DesignWare IP portfolio includes complete interface IP solutions consisting of controllers, PHY and verification IP for widely used protocols, analog IP, embedded memories, logic libraries and configurable processor cores. To support software development and hardware-software integration of the IP,

Synopsys offers drivers, transactionlevel models, and prototypes for many of its IP products. Synopsys' HAPS® FPGA-Based Prototyping Solution enables validation of the IP and the SoC in the system context. Synopsys' Virtualizer™ virtual prototyping tool set allows developers to start the development of software for the IP or the entire SoC significantly earlier than following traditional methods. With a robust IP development methodology, extensive

investment in quality, comprehensive technical support, software development and IP prototyping support, Synopsys enables designers to accelerate time-to-market and reduce integration risk.

For more information on DesignWare IP, visit: <http://www.synopsys.com/designware>. Follow us on Twitter at http://twitter.com/designware_ip.



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