NXP video back-end processor PNX5100

See the big picture more clearly

LCD TV manufacturers can now take advantage of the latest 1080p at 120 Hz resolution panels with wide color gamut. Our video back-end processor PNX5100 with Automatic Picture Control (APC) lets you get the most out of these panels, resulting in higher resolutions and higher speed for lower cost. With much better performance against significantly lower prices, we help you give consumers a good looking flat TV showing great pictures that could be unsurpassed for years to come.

Key benefits

- Superior motion sharpness technology
- Full motion compensated up-conversion to 1920x1080p @ 120 Hz
- HD halo reduced movie judder compensation
- Vivid color management including wide color gamut
- Easily accessible tooling for adjusting picture quality settings
- Flexible architecture simplifies upgrades and future extensions (e.g. for 2D dimming RGB backlight)

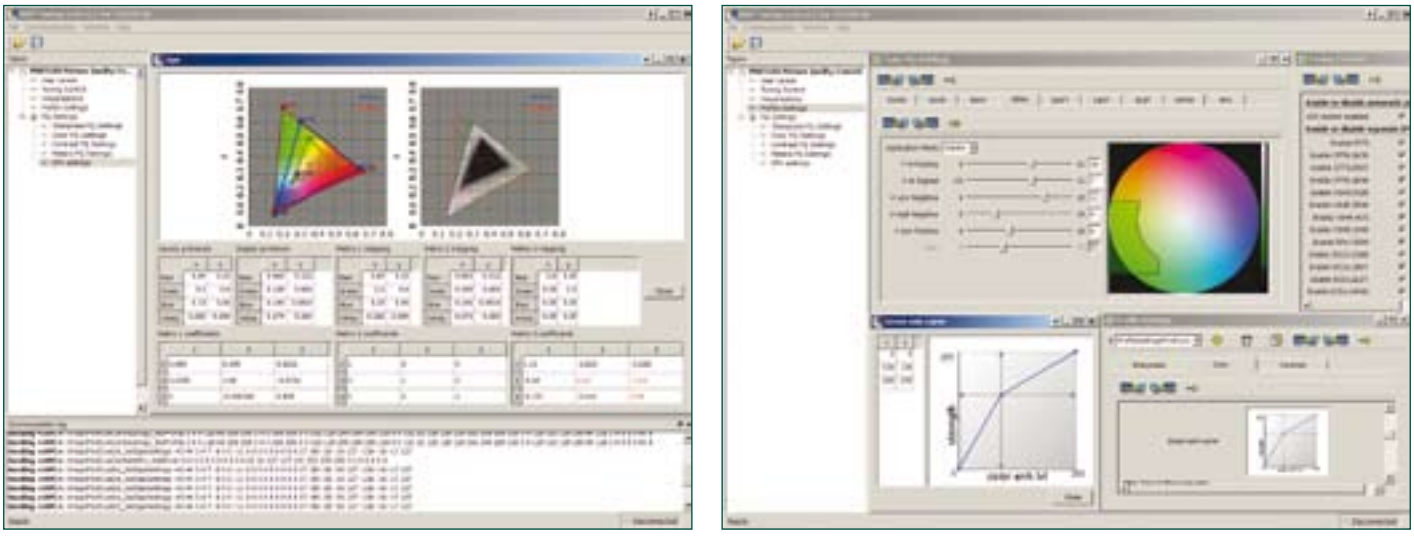
Key features

- Video output composition pipe (CPIPE), with contrast, color and sharpness enhancement functions
- Three TM3271 media-processing cores
- Integrated 32-bit wide DDR2 SDRAM controller
- Dual LVDS input and quad LVDS output
- Digital audio input and output
- Single 27 MHz crystal clock input for all internal clock generation
- PCI / XIO interface for flash memory and graphics insertion
- IIC, UART, GPIO and PWM control interfaces

Key applications

- Integrated digital / hybrid TV (LCD and plasma)
- Wide color gamut displays
- Media processing

NXP founded by Philips



Screen shot of the APC tool

Our PNX5100 is an advanced video picture improvement IC and the world's first solution to combine movie judder cancellation *and* motion sharpness *and* vivid color management, in a single device. Aimed primarily at digital and hybrid flat panel televisions in the mid/high-end European, Asian and U.S. consumer markets, it complies with all relevant major industry standards.

LCD TVs represent a huge and growing market. And the PNX5100 offers manufacturers a unique combination of richer color, dynamic motion, sensational sharpness, deep contrast and full HD resolution. Moreover, you can easily tailor that balance via the Automatic Picture Control tool to meet your own image quality requirements.

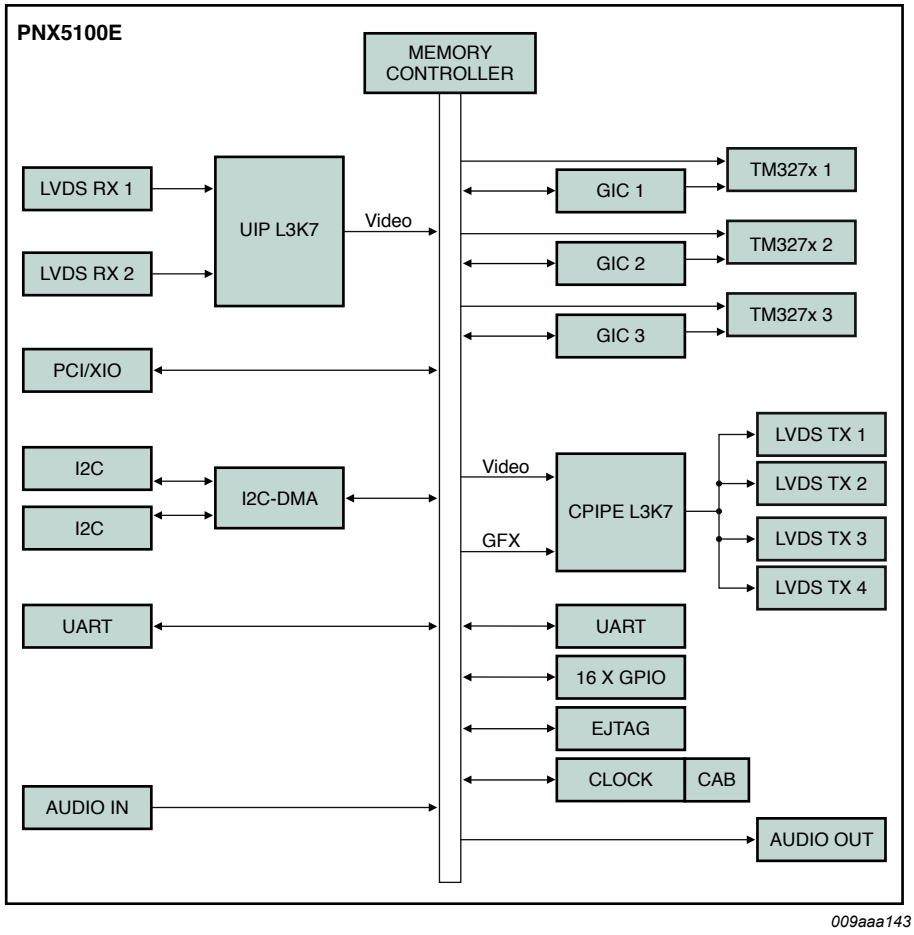
When combined with a main TV processor, the PNX5100 allows features such as halo reduced movie judder cancellation and motion blur reduction to be performed as a feature enhancement. This advanced postprocessor also provides PiP (Picture-in-Picture) and OSD graphics insertion capabilities. Moreover, it supports high-end flat panel screen resolutions and refresh rates with formats including 1366 × 768 @ 120p and 1920 × 1080 @ 120p.

High integration, faster development

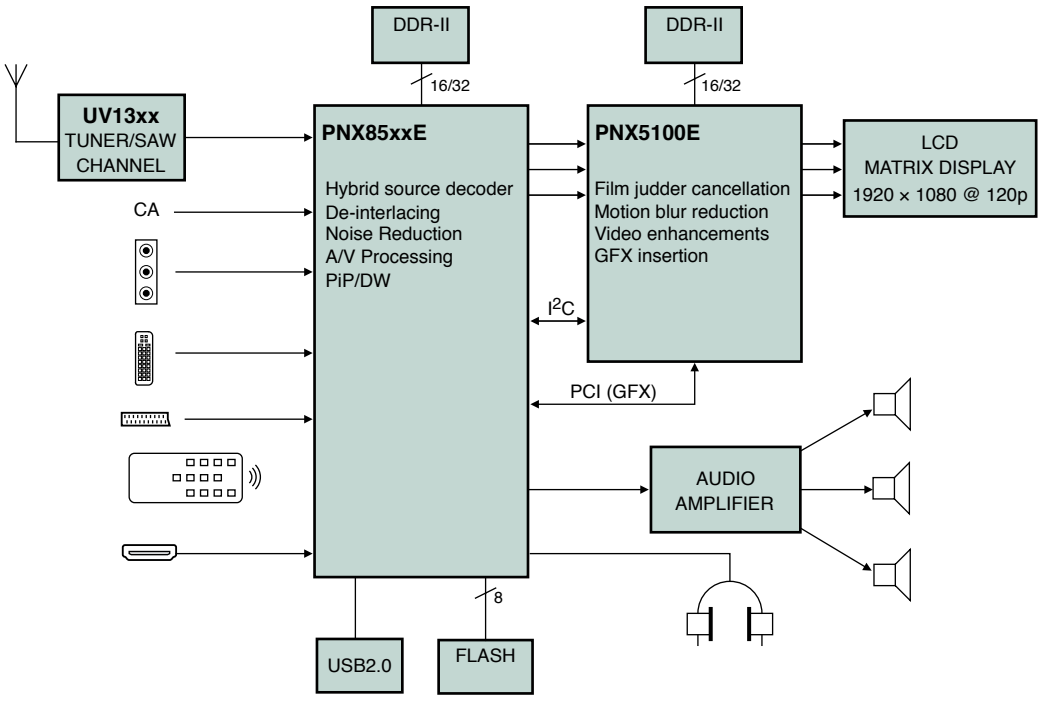
Three integrated TM3271 processor cores provide a powerful video processing platform. Software routines for motion estimation and up-conversion are partitioned across these three processor cores. The computing platform is extended with hardware pre- and post-video processing functions including dual-channel LVDS receiver, universal input processor (UIP), video composition pipe (CPIPE) and two dual-channel LVDS transmitters.

The PNX5100 offers an unbeatable price / performance ratio, letting you deliver the ultimate in large-screen picture quality at a price consumers won't be able to resist. In addition, a reference design system design-in toolkit helps you cut time-to-market and development risks.

The PNX5100 can be used as a stand-alone video-postprocessor or as a companion IC for the PNX854xx in our digital TV system solutions.



Application example



Block diagram

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