



NXP hybrid LCD TV solution TV543

Experience MPEG-4/H.264 HD content on your LCD TV

As the world moves from analog to digital, TV setmakers face a major challenge to support legacy analog broadcasts, ATSC and DVB digital broadcasts and also implement differing feature sets for each region and market. Adding to this challenge, many countries are now planning or even starting to offer high definition H.264 services. NXP Semiconductors TV543 provides a single chip hybrid LCD TV solution that enables decoding of high definition streams via broadcast or internet reception.

Key benefits

- ▶ Best picture performance for both analog and digital reception
- ▶ True single chip solution addressing both ATSC and DVB markets
- ▶ Highly reliable hardware and software, field proven in TV52x based systems
- ▶ Best price/performance with scalable pin-compatible solutions for low- to high-end TV solutions
- ▶ Reference designs and System Design-in Toolkit for fast time-to-market

Key features

- ▶ MPEG-4/H.264 decoding
- ▶ Integrated CI+ support
- ▶ 2 integrated HDMI (V.1.3a with x.v.Color and Deep Color) ports
- ▶ Dolby Digital Plus/HE-AAC decoding and transcoding to Dolby Digital
- ▶ WUXGA (1920x1200) PC input
- ▶ Pin compatible version for MPEG-2 only available

The TV543 is the first single chip LCD TV solution to offer an integrated MPEG-4/H.264 decoder enabling the reception and decoding of MPEG-2 and MPEG-4/H.264 SD and HD content. It enables consumers to access more video content directly on their TVs (IP, internet, VOD) while maintaining the best possible picture quality.

The first DTV platform to integrate CI+ conditional access, it assures the best possible protection of content against unauthorized copying. This has the additional benefit for consumers that set-top boxes or PCs are no longer required in the living room.

Meeting all industry standards for worldwide LCD TV reception, it supports inputs from analog to digital, SD to HD, broadcast to networked (IPTV, internet, VOD). In addition, its innovative software architecture allows the use of third party software components for advanced functionality like DVR or DLNA, giving TV setmakers great flexibility and allowing them to bring new solutions quickly to market.

PNX8543x

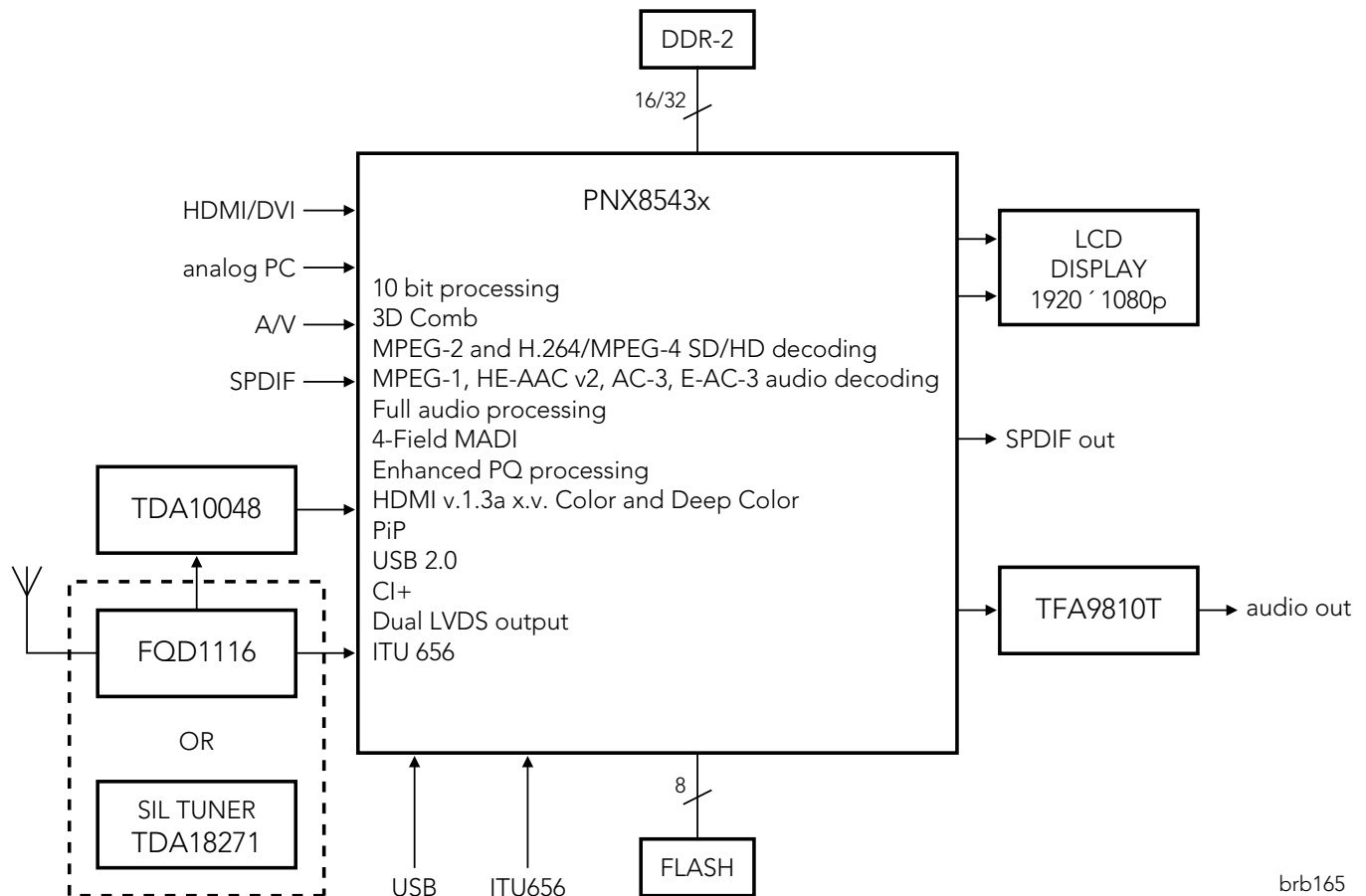
The TV543 is based around our Nexperia PNX8543x Home Entertainment Engine which features a MIPS 4KEc and a Trimedia AV DSP, both running at 300 MHz. In addition to the integrated MPEG-2/MPEG-4/H.264 video decoder this IC supports MPEG1, HE-AAC v2 and/or Dolby Digital (Plus) audio decoding. Input is via two integrated HDMI ports. An integrated USB 2.0 host controller is available for media browsing from flash memory or external hard drives. The chips feature integrated dual LVDS outputs.

The reference design also features a choice of ATSC or DVB front-ends based on our proven can or silicon tuners and single-chip channel decoders. And for high-end TV designs, our PNX5120 companion chip provides additional picture quality improvements to assure the best possible picture quality.

TV543 software

The TV543 comes complete with a set of drivers that offers a low level abstraction of the underlying hardware allowing setmakers to port their own middleware and applications. The drivers allow OEMs to define view modes, picture styles, sound styles, tuning algorithms and more.

System level block diagram



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