NXP HDMI 1.4a transmitter/ upscaler TDA9984

Upscale to higher definition with an HDMI 1.4a transmitter

Keep pace with the rapidly evolving TV market by using the HDMI 1.4a upscaler TDA9984, which converts standard-definition media boxes, STBs, and gaming consoles to the full HD 1080p required by the latest flat-panel TVs.

Key features
▶ Embedded deinterlacer and upscaler for full HD 1080p output from SD inputs
▶ 3D frame packing, side-by-side, top-bottom, up to 1080p
▶ HDCP 1.4
▶ RGB, YCbCr, DDR, and ITU656 support
▶ Flexible settings for video input port
▶ Four I²S audio input channels, one S/PDIF channel, eight DSD channels
▶ Audio data rate up to 192 kHz per input for both standards
▶ HBR including Dolby-True HD and DTS-HD support
▶ 80-pin HTQFP package (12 x 12 x 1 mm)

Key benefits
▶ Full HD upscaling
▶ Enable HDMI with minimal impact on existing design
▶ Optimized BoM
▶ Fast time-to-market
▶ Easy layout, using two-layer PCB with full 24-bit RGB interface
▶ Compatible with CEC processor TDA9950

Applications
▶ Media boxes
▶ Set-top boxes (STBs)
▶ Gaming consoles
▶ DVD/BluRay players and recorders

The TDA9984 is a quick, convenient solution for upgrading systems to the latest HDMI specification, version 1.4a. The device gives legacy solutions the ability to upscale from standard to high definition, and from deinterleave to progressive operation, while minimizing the impact on the existing design.

Already in mass production at major consumer brands, the TDA9984 is an HDMI and HDCP compliant solution that delivers a low bill of materials, fast delivery, and an easy layout. The 80-pin HTQFP80 can be used in a two-layer PCB layout with a full 24-bit RGB interface, and the device can be completed with the NXP CEC processor TDA9950.
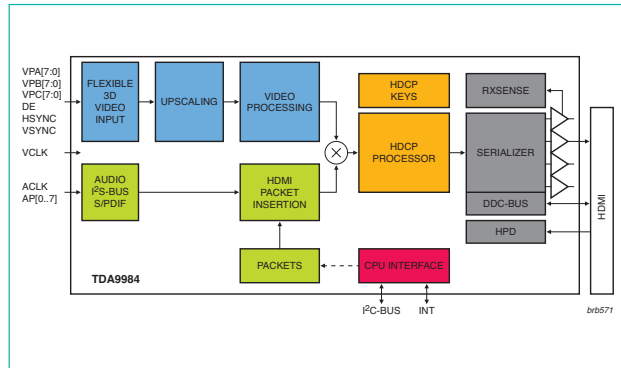
Design tools

To reduce time-to-market, the TDA9984 is available with a complete development kit that includes user-friendly Android drivers along with standard drivers with or without an RTOS.

Authorized Test Center (ATC)

NXP's ATC laboratory, located in Caen, France, qualifies and verifies devices for HDMI, HDCP, and CEC certification.

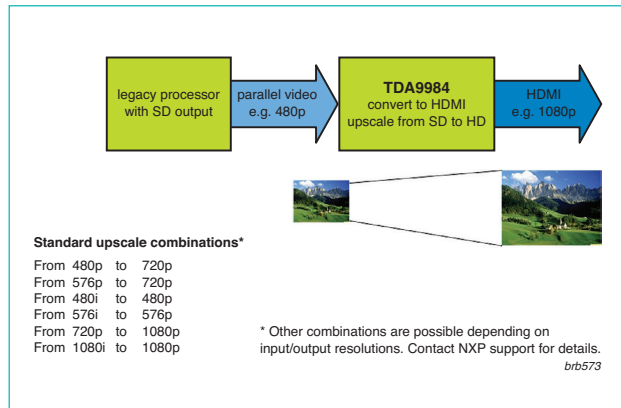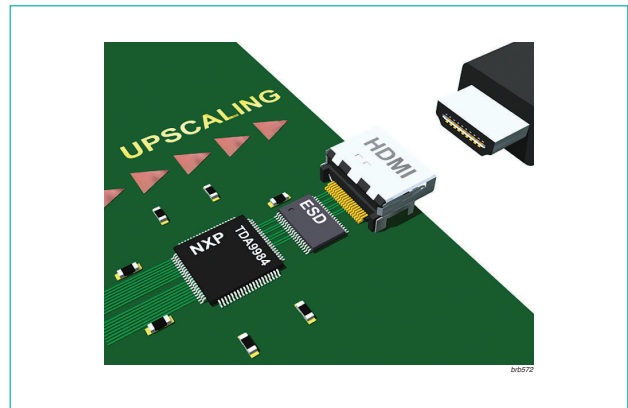## TDA9984 block diagram

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Use cases for HDMI upscaler (gaming consoles, media boxes, BluRay players)

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Upgrade legacy solutions from SD to HD, deinterleave to progressive

Standard upscale combinations*

From	480p	to	720p
From	576p	to	720p
From	480i	to	480p
From	576i	to	576p
From	720p	to	1080p
From	1080i	to	1080p

* Other combinations are possible depending on input/output resolutions. Contact NXP support for details.

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The evaluation tool includes an evaluation board, a standard schematic and layout, plus Android and standard drivers with example applications

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HDMI