Smart Converters

MegaChips

STDP4028 LVDS/RGB to DisplayPort Converter

■ GENERAL DESCRIPTION

The STDP4028 is a LVDS or RGB (LVTTL) to DisplayPort converter targeted for embedded and external display applications in mobile PC, LCD monitor, projector etc. This device has a LVDS or LVTTL configurable input port offering higher flexibility for designs that requires interfacing with FPGAs or display controller SoCs.
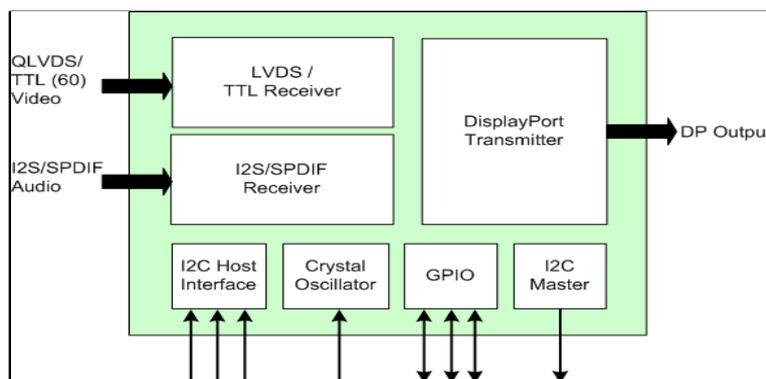
STDP4028 features a dual mode receiver that receives either quad LVDS input signal with a maximum pixel rate of 400MHz or a 60-bit LVTTL signal with a maximum pixel rate of 330MHz. The DisplayPort output interface has 4 main lanes, AUX CH and HPD with a total link bandwidth of 10.8Gbps. Besides the standard HBR an RBR link rate, it supports turbo link rate (3.24Gbps) for video resolutions up to 1080P 120Hz 3D timings with expanded horizontal blanking. It provides seamless video color space conversion between RGB and YCbCr color formats supporting up to 10-bit per color. This device has four I2S and a single wire SPDIF audio input port handling up to 8Ch LPCM or any compressed audio formats.

The STDP4028 provides HDCP 1.3 content protection on the DisplayPort output interface and functions as HDCP repeater functionality for secure transmission of protected AV content. It also supports the eDP authentication option ASSR (Alternative Scrambler Seed Reset) for embedded applications. This device is available in 164 LFBGA 12mm x 12mm package.

■ FEATURES

- Quad LVDS or 60 wide LVTTL input
- Enhanced DisplayPort transmitter with turbo mode support (3.24Gbps/lane)
- Supports video resolutions 1080p120Hz, 2560x1600, 2560x2048 60Hz
- I2C to AUX bridge for EDID, MCCS pass through
- HDCP1.3 repeater with embedded keys

- I2S and SPDIF audio input
- ASSR- eDP display authentication
- Spread spectrum on DisplayPort, LVDS, and TTL interfaces for EMI reduction
- Color space conversion between RGB and YCbCr color formats
- Pacakge: 164 LFBGA 12mm x 12mm) package

■ BLOCK DIAGRAM

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