

Product Description

The IP00C251 is a 4K 3-channel Cross Point Switch LSI with built-in high-speed serial interfaces of V-by-One®HS/LVDS Tx and V-by-One®HS/LVDS Rx in one chip.

It can be used to connect high-speed image signals between multiple chips, including FPGAs, such as conversion between V-by-One®HS and LVDS and split/select image signals.

In addition, the built-in line buffer makes it possible to exchange images among three synchronized input images. Furthermore, it is also possible to perform overlay/chroma key processing on synchronized 3-channel input images and synthesize them into 1 channel.

Features

Input (4K60Hz x3)

- 30-bit RGB/YUV4:4:4/ YUV4:2:0, 20-bit YUV4:2:2
@V-by-One 4Gbps, 8-lane 2-port
@LVDS 160MHz x 4, FPD-Link, 1-port
- 4K60Hz input up to 3-port

Output (4K60Hz x3)

- 30-bit RGB/YUV4:4:4/ YUV4:2:0, 20-bit YUV4:2:2
@V-by-One 4Gbps, 8-lane 2-port
@LVDS 160MHz x 4, FPD-Link, 1-port
- 4K60Hz output up to 3-port
- 3×3 Cross Point Switch for 4K60Hz

Input/Output Image size

- Horizontal synchronization signal interval: 16,384 pixels
- Effective horizontal image area: 2,176 pixels

Genlock function

- Available for synchronization.

Resolution Conversion

- Horizontal Scaling down: 6-symbol LUT
- Coefficient ROM(64-set)
- 333Mpix/sec 4ch, support 4k60x2 images processing

Image Correction

- Flip function
- Overlay function
- Alpha Blending
- Chroma Key

CPU I/F

4-wire SPI

Power supply

3.3V/2.5V/1.1V

Package

385-pin, BGA (0.8mm pitch), 19mmx19mm

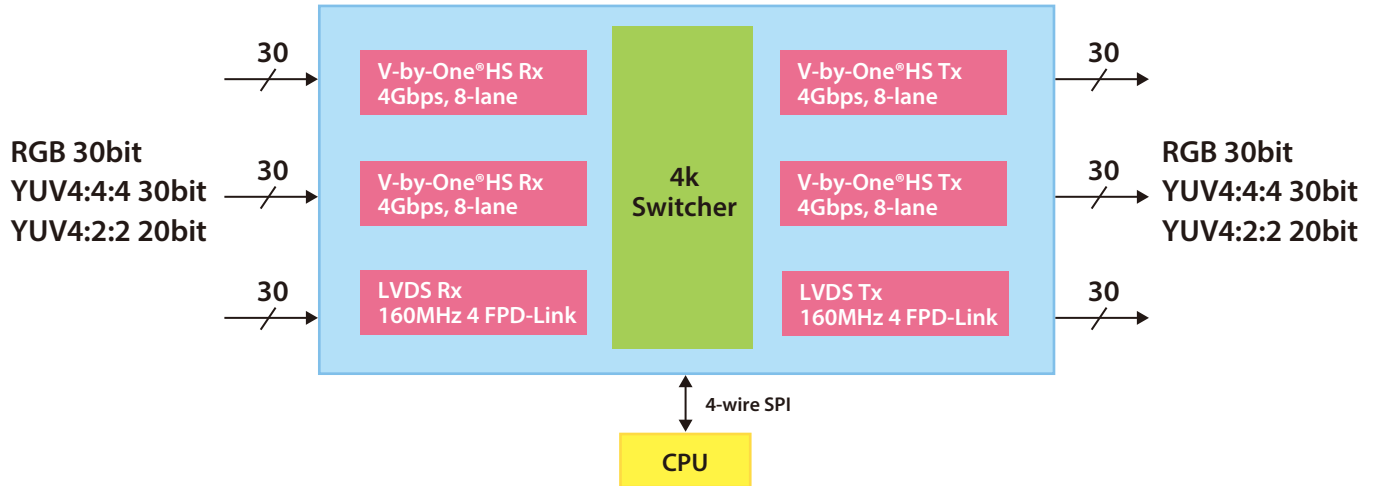


IP00C251 3 × 3 Cross Point Switch LSI for 4K60Hz

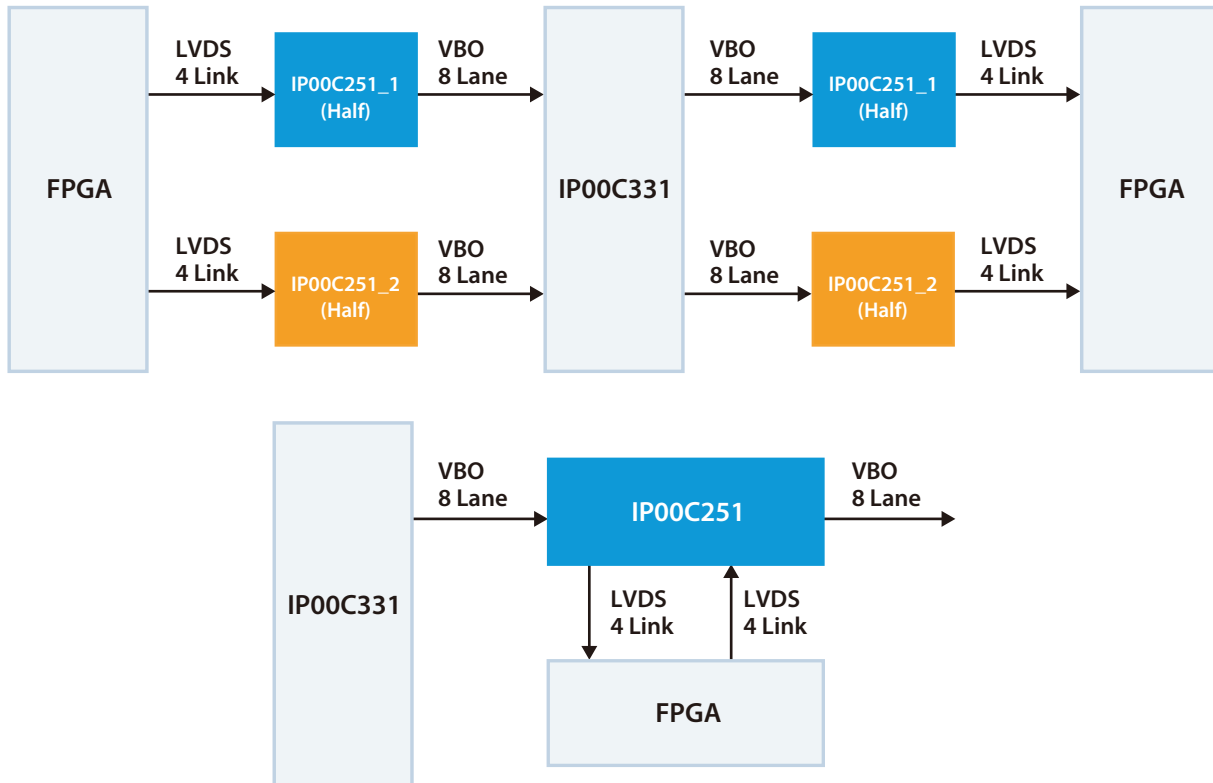
Block Diagram

Input(3-port)

Output(3-port)



Application Samples [IP00C331 and FPGA I/F]



※ "V-by-One®HS" is trademark of THine Electronics, Inc.

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