

IMAGE PROCESSORS

Quad Input/Output De-interlace/Scaler for 4K

Product Description

The IP00C734A has 4 independent image processing channels with 4 input ports and 4 output ports at 166MHz each. A single IP00C734A can drive a 4K60Hz format. Also, the IP00C734A incorporates 4 independent de-interlacers along with scaler and image quality control such as gamma correction and uniformity correction in order to meet the requirements for higher image quality. With its LVDS output, the IP00C734A is an ideal single-chip solution for a 4K monitor.

Features

Input (4-port)

- 30-bit RGB/YUV4:4:4, 20-bit YUV4:2:2, 10-bit YUV4:2:2/YUV4:2:0 @166MHz LVCOMS
- Dual (EVEN/ODD) Input/DDR Input

Output (4-port)

- 30-bit RGB/YUV4:4:4, 20-bit YUV4:2:2, 10-bit YUV4:2:2 @83MHz LVDS x 2
- Dual (EVEN/ODD) Output

Input & Output Image size(Max)

- Horizontal sync signal 16,384 pixels
- Horizontal image active area 2,176 pixels

External Memory

- DDR2-SDRAM 64bit PC800(2G/1G/512Mbit×16)×4

External/Internal Sync

- Output sync signal corresponds to External/Internal Sync
- 4-ch Independent sync mode is available to select.

Input/Output Sync/Asynchronous Behavior

- Frame rate conversion/Tearing protection
- External force synchronization

De-interlacer

- Motion adaptive de-interlacer
- High performance motion detection filter (Y)
- YUV4:2:2
- Multi-cadence
- 2:3/2:2 pull-down

Scaler

- Zoom/Shrink 6 symbol FIR filter(10bit/pixel)
- Coefficient ROM (64sets)
- Independent vertical/horizontal magnification & panoramic view
- Horizontal zoom/shrink & Vertical zoom/shrink cannot operate at the same time
- 4-ch input image at zoom available add overlap

Image Manipulation

- Mirror/flip
- 90-degree rotation
- 4-ch overlay, Alpha blending
- Chroma key blending

Image Quality Control

- 3×3 color conversion matrix
- Uniformity correction (by region & per pixel)
- Bias/Gain/Gamma correction
- Horizontal edge enhancement (9 symbols)
- Error diffusion (14→12, 12→10, 10→8)

xvYCC/BT.2020

- Fully supported

Noise Reduction

- Temporal NR

Bitmap OSD

- 256 colors
- Embedded font engine(65536 words)
- Blinking & Semi-transparent (4-colors OSD)
- 90-degree rotation
- OSD scroll
- Independent for each 4-ch output port
- Bitmap transfer from Serial flash

CPU Interface

- 8-bit parallel/4-wire serial

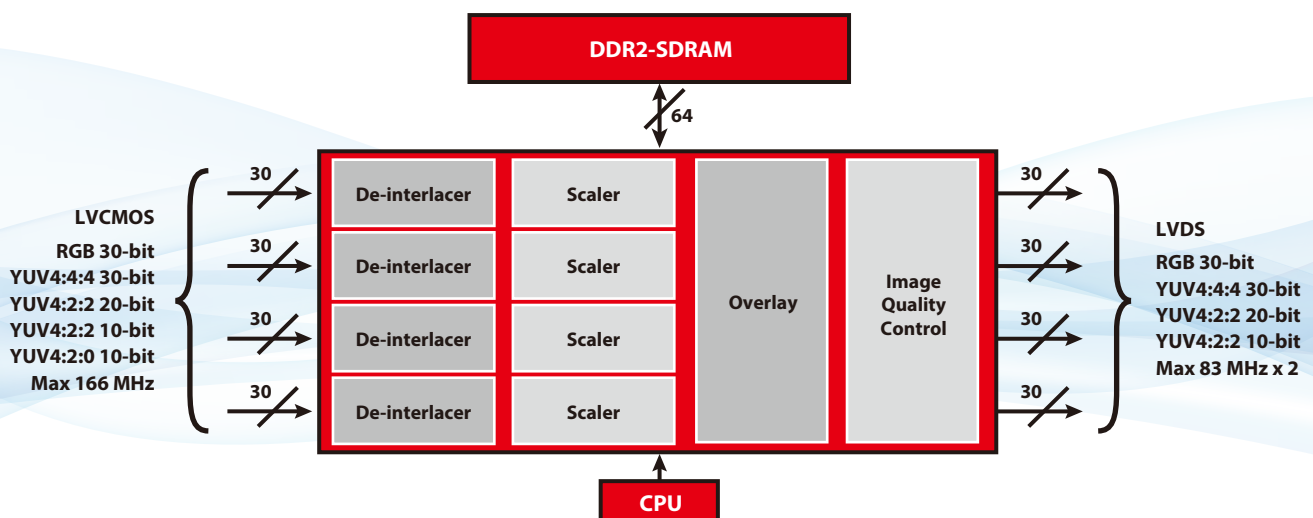
Power Supply

- 3.3V/1.8V/1.2V

Package

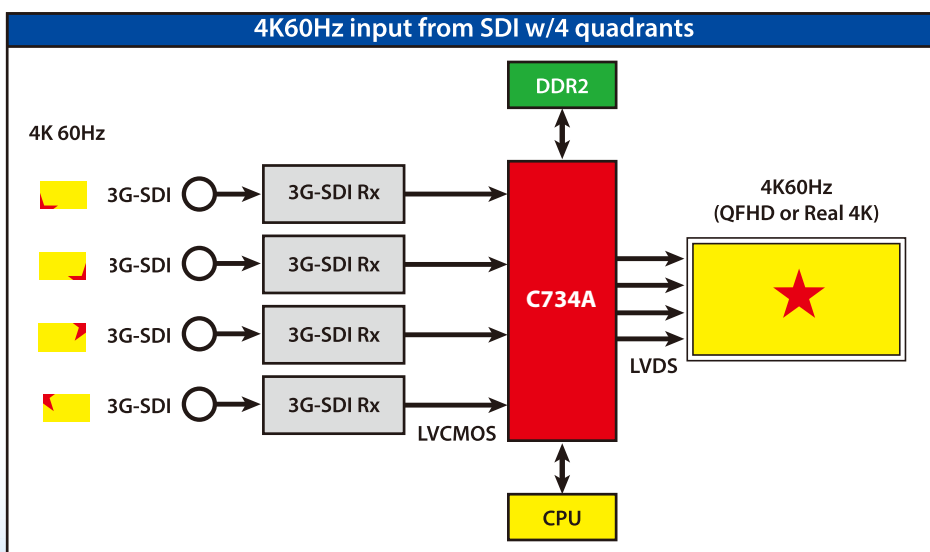
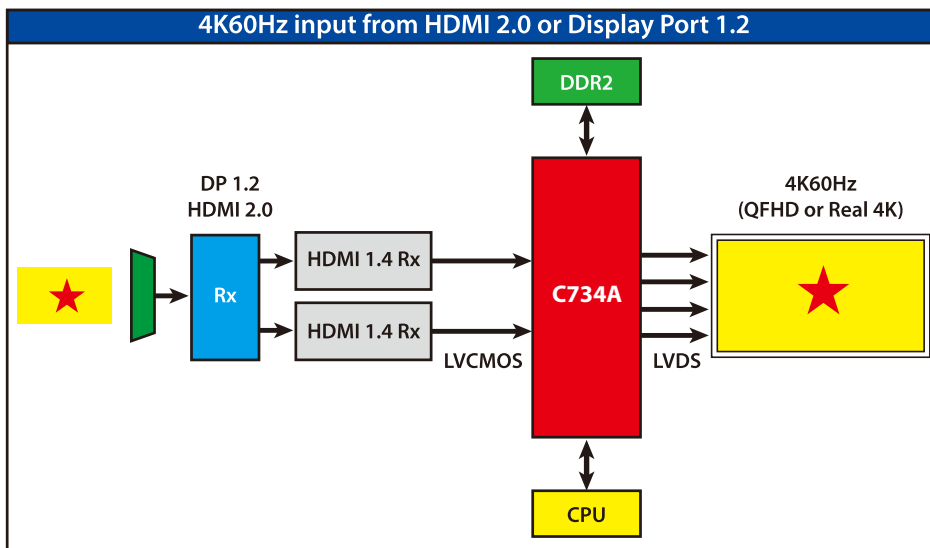
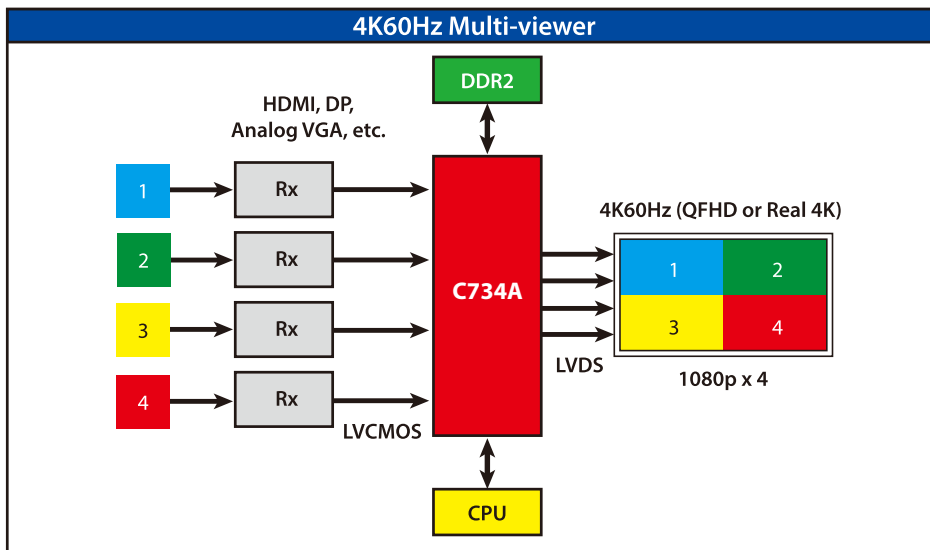
- 544-pin BGA (1.0mm pitch), 27mm×27mm

IP00C734A Block Diagram



IP00C734A Quad Input/Output De-interlace/Scaler for 4K

Application Diagrams



For more information please visit:
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