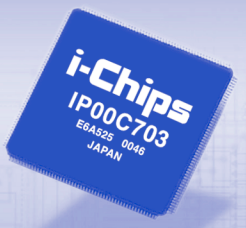
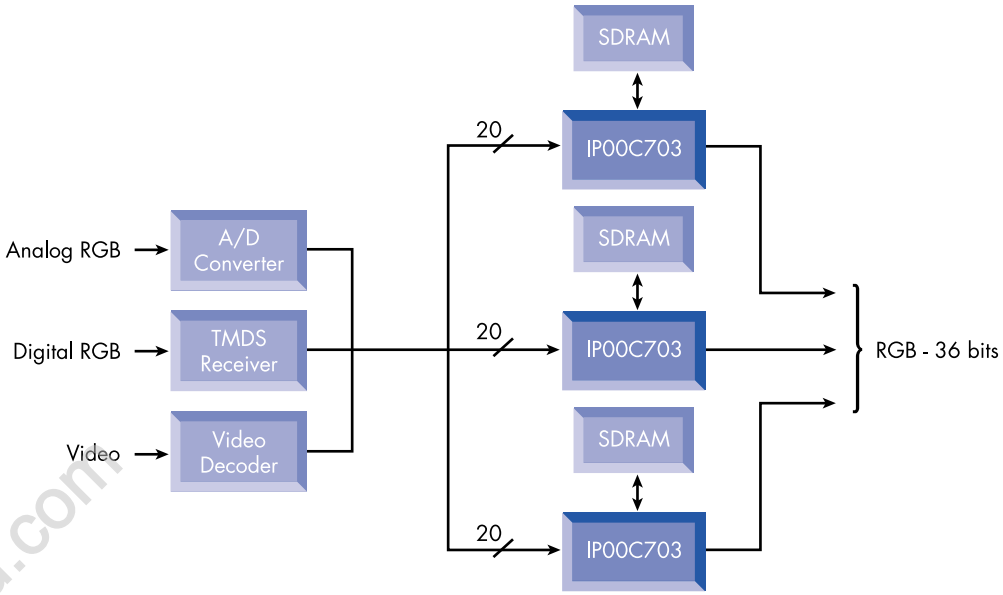


IP00C703 10-bit Image Scaler

General Description

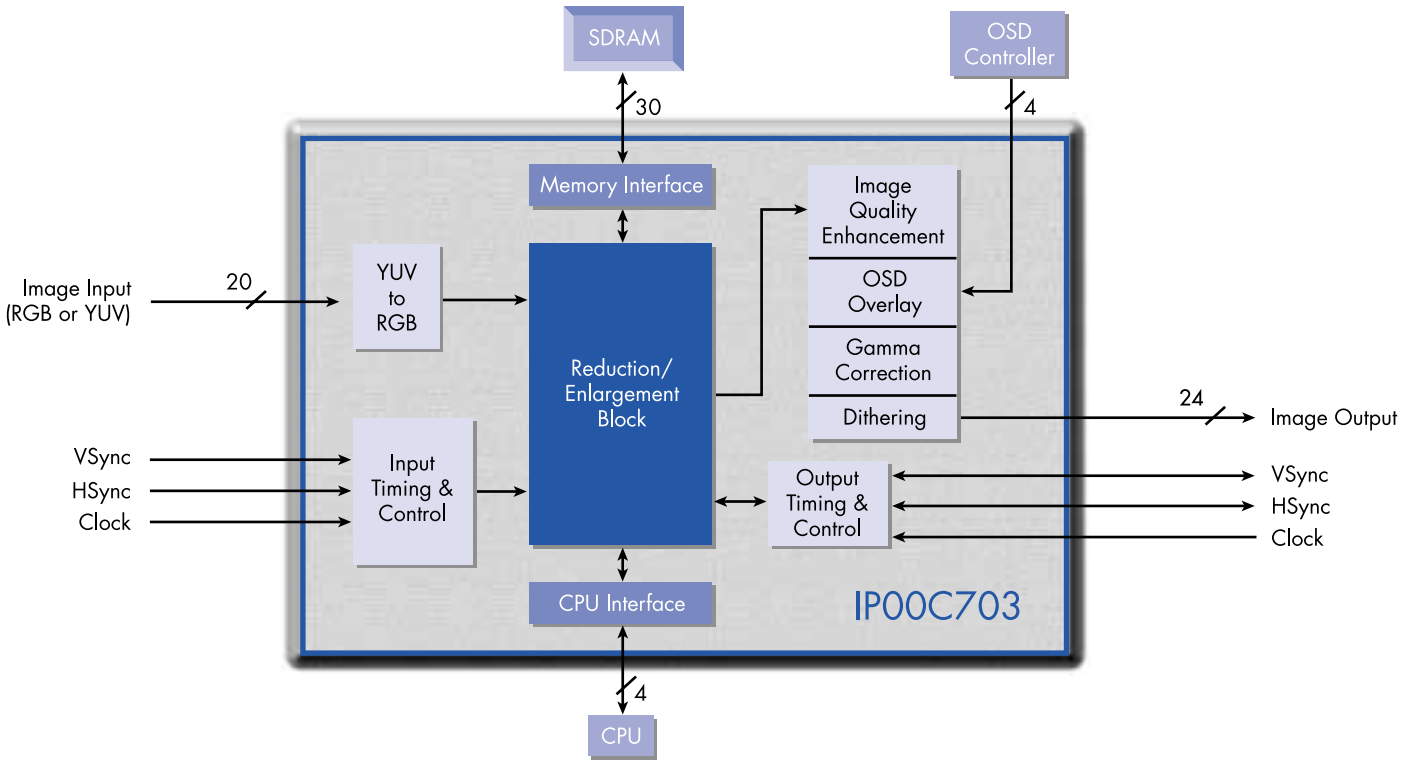
The IP00C703 is a dedicated device for real-time image resizing and frame rate conversion at high resolution and high speed. It features a 4x4 pixels interpolation core for image size reduction or enlargement. Its 20-bit wide image input port supports 2 x10-bit pixels or a single YUV4:2:2 pixel (10 bits Y; 10 bits U/V) at up to 230 Mpixels/sec. The output port is 12-bit wide with a maximum speed of 170 mpixels/sec, and can be driven by an internal or external pixel clock. Frame rate conversion is supported simultaneously with the image scaling thanks to independent clock and synchronization signals on the input and output ports. The IP00C703 has an embedded image memory controller for direct interface to an external SDRAM. With internal line buffers of 4000 pixels on the input and output, the IP00C703 supports active image sizes of up to 2048 horizontal pixels for QXGA resolution.

The IP00C703 is ideally suited for applications such as high-resolution displays, plasma display panels and high-end projectors.



Support Tools

- Evaluation Board
- Technical support by highly qualified engineers



IP00C703 Features

Input Image Formats

- RGB 20-bits (10 bits/pixel, 2 pixels in parallel) up to 230 Mpixels/sec.
- YUV4:2:2 20-bits (Y:10bits, U/V:10bits) up to 115 Mpixels/sec..
- Image size up to 4000 pixels horizontally with 2048 pixels of active image area
- External sync. (H Sync., V Sync., Clock)
- Interlaced and progressive scan supported

Output Image Formats

- RGB 24-bits (12 bits/pixel, 2 pixels in parallel) up to 170 Mpixels/sec.
- Image size up to 4000 pixels horizontally with 2048 pixels of active image area.
- External or internal synchronization modes

Scaling

- 4x4 pixels programmable interpolation
- Independent H and V scaling ratios
- Aspect ratio conversion (non-linear scaling)

Frame Rate Conversion

- Independent sync. signals for the input and output image ports
- Frame synchronization function to avoid frame tearing

External Memory

- SDRAM (SGRAM) with 30-bit memory bus interface
- Supported configurations: 16 Mbit (x32), 64Mbit (x32), 2x16Mbit(x16), 2x64Mbit(x16)
- 120 MHz maximum memory clock

Other Features

- 3:2 Pull-down removal function (image sequence must be detected externally)
- YUV4:2:2 conversion with 6 coefficients
- 16-color OSD (palette of 1024 colors)
- 12:10, 10:8, 10:7 bits conversion
- Auto-detection of Input Image Format
- Gamma Correction LUT (10-bit in, 12-bit out)
- 4-line serial CPU interface
- Brightness and Contrast Adjustments
- Keystone correction

Power Supply Voltage

- Two sources: 3.3V and 2.5V

Package

- 208-pin QFP

i-Chips Technology Inc.

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