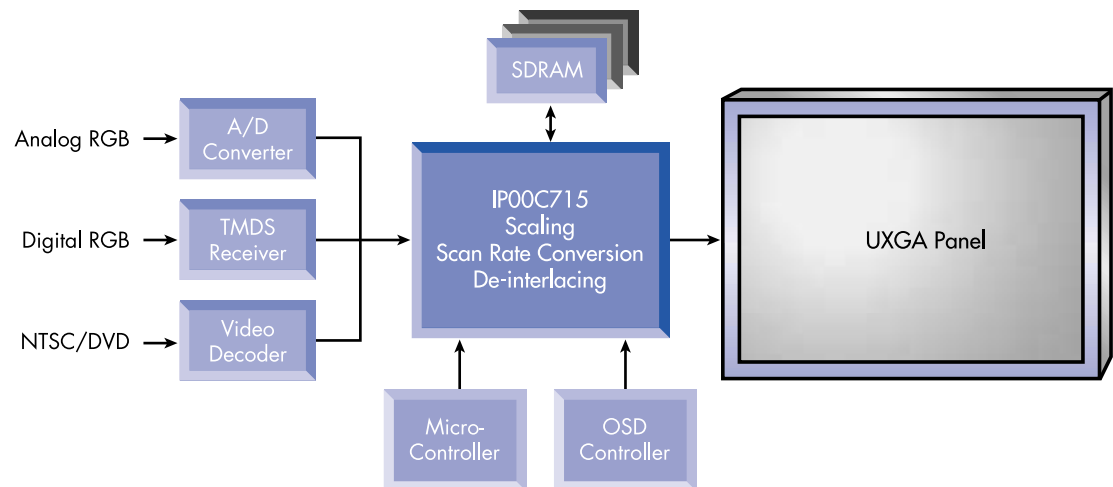# IP00C715

Image Scaling Device up to UXGA

General Description

The IP00C715 can perform image scaling and frame rate conversion at very high data rates up to 230 Mpixels/sec. for resolutions such as UXGA, HDTV and Wide-SXGA. The IP00C715 has a number of new features not available on previous devices, such as two independent input image ports, support for 30-bit RGB data and auto-adjustment of the image position and clock phase.
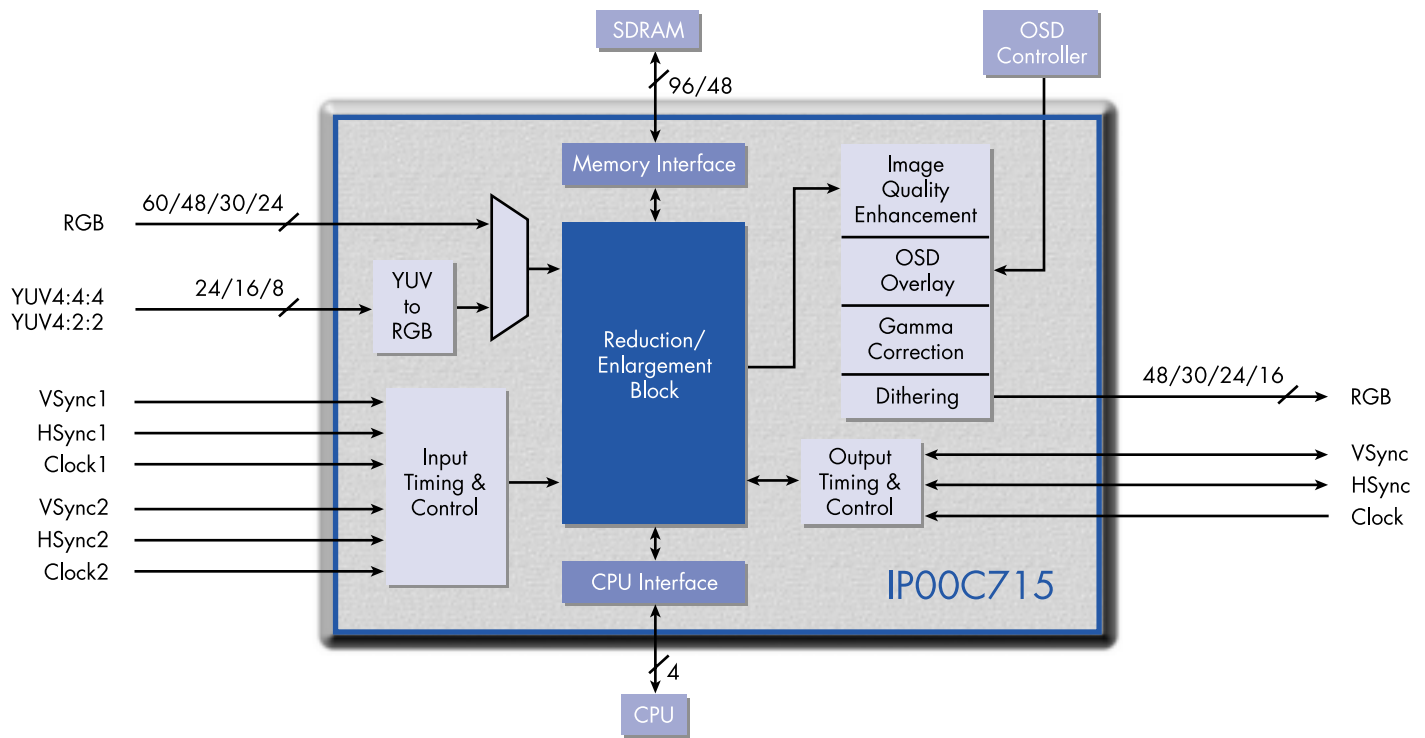

Applications

- Flat-Panel Displays
- Plasma Display Panels
- LCD/TV Monitors
- Projectors

Support Tools

- IP00C715 Data Sheet and Application Notes
- EVB715AD Evaluation Board
- Example register settings for typical operating modes
- Technical Support by highly qualified engineers

i-Chips

Block diagram labels: SDRAM, OSD Controller, Memory Interface, 96/48, Image Quality Enhancement, OSD Overlay, Gamma Correction, Dithering, Reduction/Enlargement Block, YUV to RGB, Input Timing & Control, Output Timing & Control, CPU Interface, IP00C715, CPU, 4

RGB 60/48/30/24, YUV4:4:4 YUV4:2:2 24/16/8, VSync1, HSync1, Clock1, VSync2, HSync2, Clock2

48/30/24/16 RGB, VSync, HSync, Clock

IP00C715 Features

Input Image Formats

- Two independent image input ports:
  1. RGB 24/30 bits (single pixel) at 115 MHz or RGB 48/60 bits (double pixel) at 115 MHz (230 Mpixels/sec.)
  2. YUV4:2:2 8/16 bits or YUV4:4:4 24 bits at 83 MHz
- Image size up to 2400 pixels horizontally with 1920 pixels of active image area
- Interlaced or non-interlaced
- External synchronization (PIHS, PIVS, PICLK)

Output Image Formats

- RGB 24/30 bits (single pixel) at 83 MHz or RGB 48 bits (double pixel) at 83 MHz (166 Mpixels/sec.)
- Image size up to 4000 pixels (horizontally) with 2000 pixels of active image area
- External or internal synchronization modes
- Color dithering for 24/18-bit panels

Scaling

- Independent H and V scaling ratios
- 4-adjacent pixels interpolation plus 5-pixel H filter
- Interlaced zoom output
- Edge enhancement
- Non-linear scaling

Frame Rate Conversion

- SDRAM or SGRAM external frame memory
- 96-bit wide memory bus (48-bit supported)
- Independent clocks for the input and output image ports

Other Features

- 16-color OSD support
- Auto-detection of input image format
- Auto-adjustment of image position and clock phase
- Gamma correction
- Brightness and contrast adjustments
- YUV to RGB color conversion
- Keystone correction

CPU Interface

- 4-wire serial bus

Power Supply Voltage

- 3.3V/2.5V

Package

- 492-pin plastic BGA