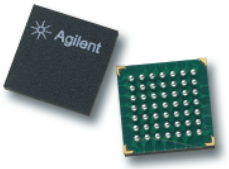
Agilent Image Processing Chip HDCP-2010 (YUV/JPEG Output)

Product Brief

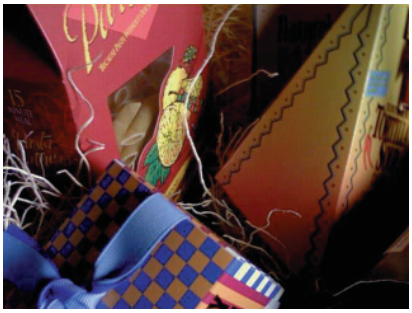


Description

The HDCP-2010 provides a complete image-processing pipeline for the Agilent family of CMOS Image Sensors (HDCS-xxxx). This part transforms the raw output data from the CMOS sensor into final images using a high performance image processor. Complete sensor control is performed by the HDCP-2010, including auto-exposure, illuminate compensation and auto white balance.

The HDCP-2010 enables imaging in many different types of devices such as handheld computers, cellular phones, and notebook computers. The chip-set combination of the HDCP-2010 and a HDCS CMOS image sensor delivers to another device a complete image in JPEG format, ready for storage or transmission. By producing a high-quality finished picture, the host system is relieved of all image-processing, thus allowing for the incorporation of imaging technology in a wide range of products.

For standalone imaging, the HDCP-2010 can be coupled with a low-cost micro-controller to provide a complete camera solution. The HDCP-2010 contains the entire image processing system, while the micro-controller controls the image storage, user interface and power management. The simple system designs enabled by the HDCP-2010 will bring imaging to new product types and markets.



Features

- **High quality Image Processor– Sophisticated imaging algorithms**
- **Compatible with Agilent CMOS Image Sensors: HDCS-1020/2020**
- **Excellent performance– Greater than 30 fps CIF, 15 fps VGA**
- **Pixel processing rate of 12 million pixels/second**
- **Impressive image quality– JPEG based compression with programmable quantization tables**
- **Fully programmable Gamma Correction and Color Balance matrices**
- **Auto-exposure and Auto White Balance functions for wide range of lighting environments**
- **Small package: 49-pin micro BGA**
- **Low power consumption: <100 mW**
- **Reference design and evaluation kits are available**

Typical Applications

- **Embedded cameras for cellular phones, handheld computers, notebook computers**
- **Low cost digital still cameras**
- **Video phones**

All images on this product sheet were produced by Agilent Technologies' HDCS-2020 image sensor and HDCP-2000 image processor.

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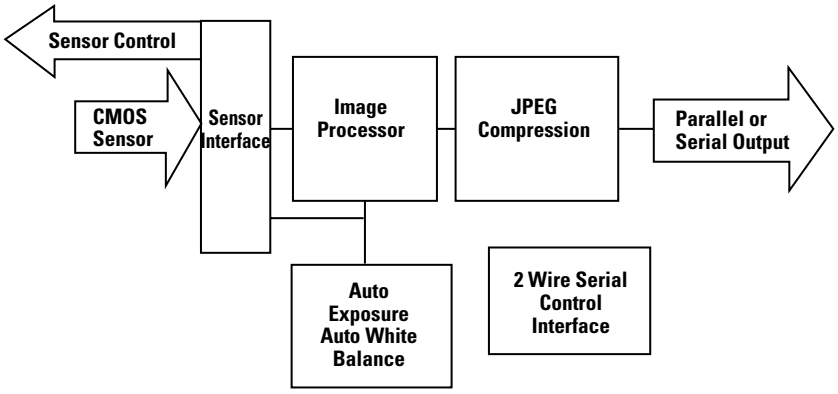
Electrical Specifications

Input format	Raw Bayer Pixel Data
Output format	8-bit parallel or 1-bit serial
YUV formats	4:4:4 YUV and 4:2:2 Y_1UY_2V 8-bit output
Voltage requirements	1.8V and 3.3V
Power consumption	<80 mW Typical 40 mW Low Power Mode
Gamma correction	33 value programmable, 1024 interpolated value table
Sensor interface	10-bit data input, 2 wire asynchronous control, 24/30 MHz clock driver
Compression	JPEG based
Video synchronization	YUV end-of-line and end-of-frame, JPEG beginning and end frame
Frame rates	VGA (640 x 480): >30 frames/sec CIF (352 x 288): >30 frames/sec
Operating temperature range	-25° to +65°C
Storage temperature range	-35° to +85°C
Package type	49 pin micro BGA, 7.00 x 7.00 mm
Crystal	16 MHz



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February 9, 2001
5988-1049EN

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