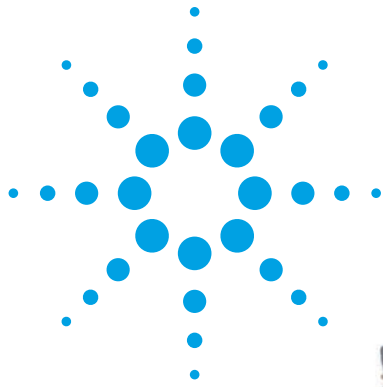


Agilent CMOS Image Sensors HDCS-1020 (CIF) and HDCS-2020 (VGA) Product Brief

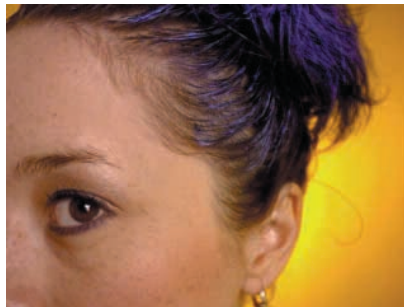


Description

The HDCS-1020 and HDCS-2020 CMOS Image Sensors capture high quality images while consuming very low power. These parts integrate a highly sensitive active pixel photodiode array with timing control and onboard A/D conversion. Available in either VGA (640x480) or CIF (352x288) resolution image arrays, the devices are ideally suited for a wide variety of applications.

The HDCS-2020 and HDCS-1020, when coupled with Agilent's HDCP family of image-processors, provide a complete imaging system to enable rapid end-product development. Designed for low-cost consumer electronic applications, the HDCS-2020 and HDCS-1020 sensors deliver unparalleled performance for mainstream imaging applications.

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



Features

- High quality, low cost CMOS Image Sensors
- VGA resolution (640H x 480V) – HDCS-2020
- CIF resolution (352H x 288V) – HDCS-1020
- High frame rates for digital video
VGA: 15 frames/second
CIF: 30 frames/second
- High sensitivity, low noise design – Ideal for capturing high-quality images in a wide variety of lighting conditions
- Integrated Analog-to-Digital Converters
VGA (HDCS-2020): 10 bit, programmable
CIF (HDCS-1020): 8 bit, fixed
- Parallel and serial output
- Synchronous serial or UART interface
- Automated, dark response compensation
- Still image capability
- Programmable window size
- Programmable panning capability

Typical Applications

- Digital still cameras
- PC cameras
- Toys
- Cellular phones
- PDAs



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Electrical Specifications

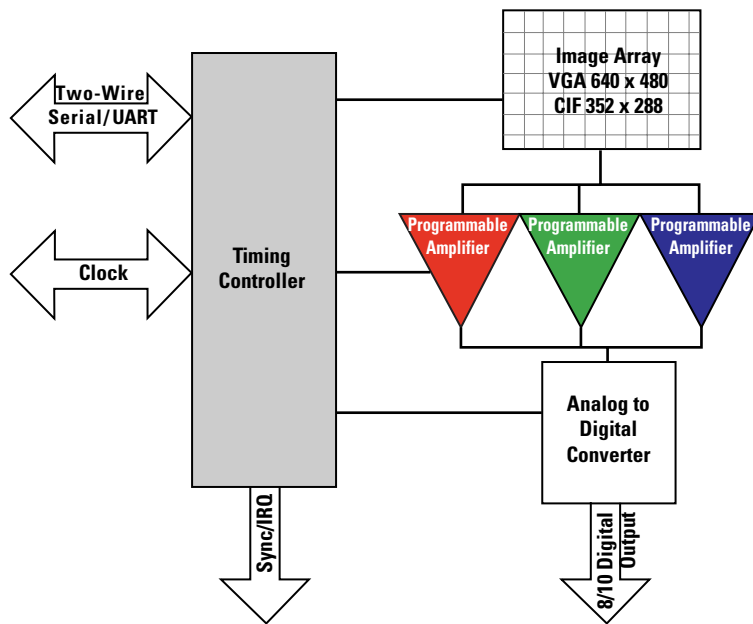
Part Number	HDCS-2020 (VGA)	HDCS-1020 (CIF)
Active Pixel Array Resolution	640 x 480	352 x 288
Pixel size	7.4 x 7.4 μm	7.4 x 7.4 μm
Imaging Area	4.74 x 3.55 mm	2.60 x 2.13 mm
Maximum Frame Rate	15 fps	30 fps
Maximum Clock Rate	25 MHz	32 MHz
Sensitivity ^[1]	1.1 V/Lux-sec	1.1 V/Lux-sec
Dark Signal ^[2]	240 e ⁻ /sec	240 e ⁻ /sec
ADC Resolution	10 bit	8 bit
Effective Sensor Noise Floor	43e ⁻	66e ⁻
Dynamic Range	65 dB	61 dB
Color Filter Array	Color Bayer Pattern	Color Bayer Pattern
Power Consumption (typical)	150 mW 150 μW standby	90 mW 150 μW standby
Exposure Control	0.5 μs minimum, 0.5 μs increments	0.5 μs minimum, 0.5 μs increments
Optical Format	1/3"	1/4"
Package Type	32-pin J-Lead Optical	32-pin J-Lead Optical
Operating Temperature Range	-5° to +65°C	-5° to +65°C
Supply Voltage	3.3V	3.3V

Notes:

1. At unity PGA gain.
2. Measured at 23°C.

Compatible IP Processors

- Sunplus (SPCA500A, SPCA508)
- MXIC (MX88L60)
- Winbond (W99682CF)
- Divio
- Soundvision



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Data subject to change.

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Obsoletes 5988-1894EN

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