


**ProCamHD<sup>2</sup> 3372**


## ***Next-Generation CMOS Digital Imaging Sensor for High-Definition Video***

**1/3-inch, 2.1 Mpixel (1920 x 1080) at 72p**

*ProCamHD<sup>2</sup>™ is next-generation, 12-bit imaging System-on-Chip (iSoC) technology that offers the highest HDTV image quality at the maximum video rate, lowest power, and lowest random noise currently available.*

### **Key Applications**

- High-Definition Videoconference
- High-Resolution IP Network Solutions
- High-Definition Surveillance

### **Key Features**

- New, Breakthrough AltaChrome™ Technology for Superior Image Quality
- Windowing Support for Multiformat HD Video
- True 72-fps Frame Rate in Progressive Scan
- 14-bit iSoC for Optimum 12-Bit Imaging
- Compatible with Wide Dynamic BitsDReam™ Technology

### **AltaChrome: Next-Generation Technology from AltaSens**

Introduced on the ProCamHD<sup>2</sup> 3372, AltaSens' unique AltaChrome pixel technology delivers the lowest-noise iSoC architecture in existence. The result is the highest-quality resolution and the best signal-to-noise ratio (SNR), for the most lifelike HD images regardless of ambient conditions.

### **Optimum Video Resolution in Low Light**

The 1/3-inch optical size of the ProCamHD<sup>2</sup> 3372 image sensor allows uncompromised image quality at 1080p, thanks to its 2.7- $\mu$ m pixel pitch and AltaChrome technology.

### **Full 1080 Resolution at 72 fps**

The ProCamHD<sup>2</sup> 3372 scans progressively up to a true 72 fps to produce video that is devoid of artifacts. Programmable windowing enables multiple formats and proportionally higher frame rates. Sensor operations are compliant with the SMPTE 274 standard.

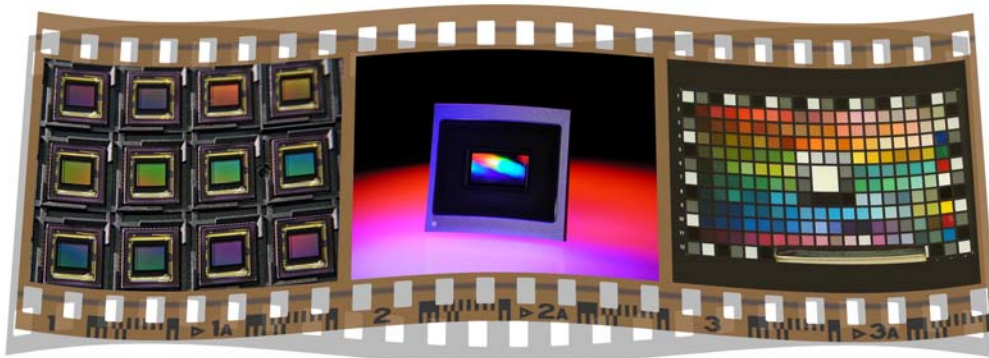
### **Superior On-Chip Reduction of Image Artifacts and Noise**

The ProCamHD<sup>2</sup> 3372 contains automatic on-chip correction strategies and algorithms to eliminate artifacts that are unavoidably introduced by the analog components on a sensor. These corrections represent the third generation of innovations in digital iSoC design that AltaSens has developed to enhance image quality without increasing the cost, power consumption, or complexity of its sensors. The industry's deepest internal signal processing delivers a true 12-bit data stream to express the full dynamic range of an image, with functions to extract maximum image quality and provide smooth image texture, including:

- Automatic Black Clamp for real-time calibration of black values in every frame
- Automatic Column Fixed Pattern Noise (FPN) Suppression to eliminate variation among individual columns
- Line Noise Suppression to remove instantaneous and systematic variation among pixel rows

| Pixel Array Characteristics   |                             |
|-------------------------------|-----------------------------|
| Pixel Size                    | 2.7 x 2.7 $\mu\text{m}^2$   |
| Dark Current (60°C)           | 50 e/pixel/sec              |
| Pixel Dynamic Range           | 65 dB                       |
| Green Sensitivity             | 17,000 e/lux/sec            |
| Minimum Low Light (60p)       | <1 lux                      |
| SNR (2000 lux, f4, 200%, 60p) | >55 dB                      |
| Color Filter                  | RGB Bayer Pattern           |
| 16:9 Array Format (pixels)    | 1920 (H) x 1080 (V)         |
| 16:9 Array Optical Format     | 1/3-inch<br>(6 mm diagonal) |
| Full Resolution (pixels)      | 1984 (H) x 1116 (V)         |
| 1080p Frame Rate              | 72 fps                      |

| Sensor Characteristics         |   |
|--------------------------------|---|
| Shutter Mode                   | <ul style="list-style-type: none"> <li>• Electronic Rolling Shutter (ERS)</li> <li>• Global Reset (GR)</li> </ul>                       |
| ADC Resolution                 | 12-bit  |
| Data Rate                      | <ul style="list-style-type: none"> <li>• Maximum: 180 Mp/s</li> <li>• Typical: 148.5 Mp/s</li> </ul>                                    |
| Power Consumption              | <650 mW (Typical)   |
| Analog Supply                  | 3.3 V $\pm$ 10%   |
| Digital Core Supply            | 1.8 V $\pm$ 10%   |
| Digital Input/Output Interface | <ul style="list-style-type: none"> <li>• Raw RGB Stream</li> <li>• Dual-Port Output: 2 x 12 bits</li> <li>• 2.5 V CMOS Level</li> </ul> |
| Packaging                      | Thermally Enhanced 48-pin CLCC  |
| Operating Temperature Range    | -20°C to 60°C   |



*ProCamHD<sup>2</sup> iSoC sensor features and specifications are subject to change without notice.*

*ProCamHD<sup>2</sup> iSoCs, like other integrated circuits, are susceptible to damage by electrostatic discharge (ESD), which may damage or degrade a sensor's overall performance.*

*AltaSens, ProCamHD<sup>2</sup>, AltaChrome, and BitsDReam are trademarks of AltaSens, Inc.*

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