OV10620 HDR product brief

color high dynamic range CameraChip™ sensor for high-performance security camera applications

lead free

available in
a lead-free
package

The OV10620 is a color High Dynamic Range (HDR) CMOS CameraChip™ image sensor optimized for high-performance applications in the security and surveillance, communications and consumer electronics markets.

OmniVision's proprietary HDR technology enables the OV10620 to handle extreme variations of bright and dark conditions within the same scene, allowing it to function like the human eye under quickly changing lighting conditions. The single-chip OV10620 camera sensor boasts a near-infrared spectral light sensitivity of up to 1000 nm and is capable of performing at a dynamic range of up to 100 dB in color and black and white, challenging the performance of existing HDR sensors on the market.

Its 6 x 6 micron pixel size enables the OV10620 to simultaneously capture and process image data ranging from bright sunlight to dark shadowed regions. The OV10620 uses a 768 x 492 (WVGA) or 640 x 480 (VGA) image array capable of operating at up to 30 frames per second (fps). In 320 x 240 (QVGA) resolution, the image array is capable of operating at 60 fps.

OmniVision's technology utilizes patented algorithms to cancel Fixed Pattern Noise (FPN), eliminate smearing and drastically reduce blooming. All required camera functions such as exposure control, gain, white balance, windowing, and more, are programmable through the Serial Camera Control Bus (SCCB) interface.

OmniVision.

applications

- security and surveillance
- video conferencing
- camera/video phones

OV10620

ordering information

- OV10620-C00A
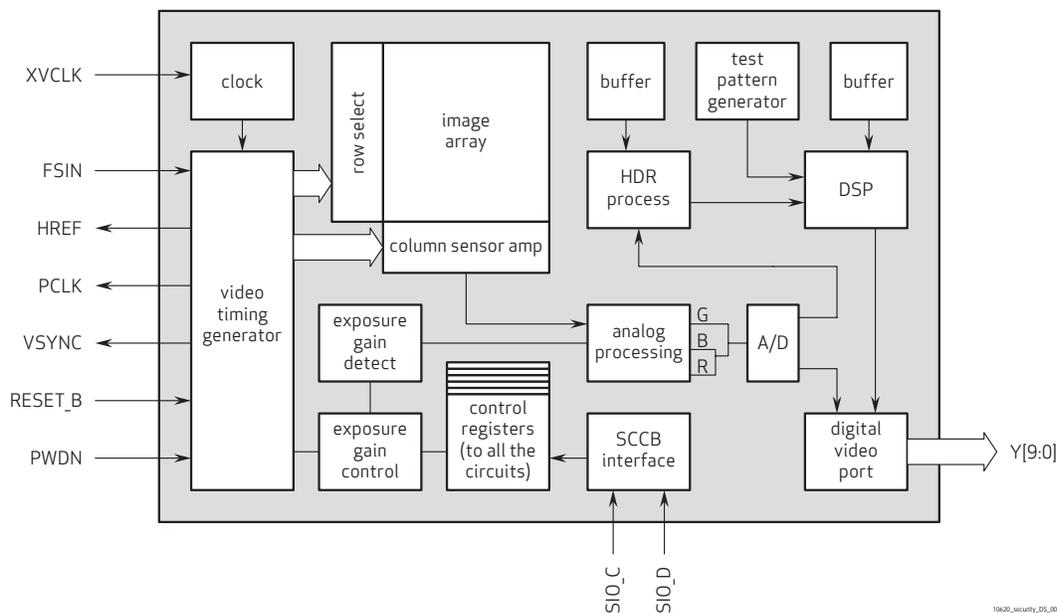 (color, CLCC-48 pin)
- OV10121-C00A
  (b&w, CLCC-48 pin)

product features

- single chip, 1/4" VGA format, video camera
- high sensitivity for low-light operation
- horizontal mirroring and vertical flipping
- white balance, exposure time, gain control, etc.
- external frame sync capability (Genlock)

- low fixed pattern noise, anti-blooming
- progressive scan
- supports parallel output
- high dynamic range (up to 100 dB)
- SCCB control interface for register programming
- low power consumption
- raw RGB, YUV/YCbCr 4:2:2, GRB 4:2:2, RGB565/555

product specifications

- **array size:**
  768 x 506
- **lens size:**
  VGA: 1/4"
  WVGA: 1/3.3"
- **power supply:**
  digital core: 1.8 VDC $\pm$ 10%
  analog: 3.3 VDC $\pm$ 5%
  I/O: 3.3 VDC $\pm$ 10%
- **maximum image transfer rate:**
  VGA (HDR mode): 30 fps
  QVGA (non-HDR mode): 60 fps
- **pixel size:**
  6.0 µm x 6.0 µm

- **image area:**
  4.752 mm x 3.036 mm
- **dark current:**
  20 mV/sec @ 60°C
- **package dimensions:**
  14.22 mm x 14.22 mm

functional block diagram

10620_security_DS_001

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