OV7950 product brief

ultra-compact, high-performance security CameraChip sensor

The OV7950 CameraChip™ sensor is developed specifically for NTSC CCTV/video monitoring security and surveillance applications. It is a highly integrated video camera that packs a high level of functionality. At only 1/4 inch format and using a 3.3V DC power supply, the OV7950 color image sensor is ideal for applications requiring a small footprint, low light, low power consumption, and high performance.
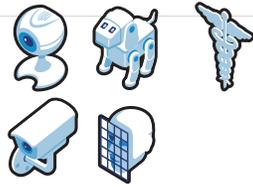
The OV7950 supports NTSC composite video output and can directly interface with a TV monitor or another device with a 75 Ohm composite video loading. The OV7950 excels in low light conditions and can operate within a temperature range from -20°C to 70°C.

Key features of the OV7950 include a new windowing feature which allows customers to adjust their camera setup by moving the sensitive area of the camera in either vertical or horizontal directions. The OV7950's Genlock function allows the synchronization of two or more video sources. This enables the development of very affordable closed-circuit security monitoring systems that are very easy to set up, making the OV7950 a very suitable product for consumer and small business solutions.
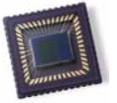
In addition, the new OV7950 image sensor features a dual dynamic overlay function, allowing for both dynamic and static visual aid layer (text or graphics) within the image. These are especially useful for text features in security camera systems to identify each camera and location individually.

OmniVision.

OV7950

applications

- security/surveillance cameras
- video conferencing
- video phones
- video e-mail
- toys
- fingerprint equipment
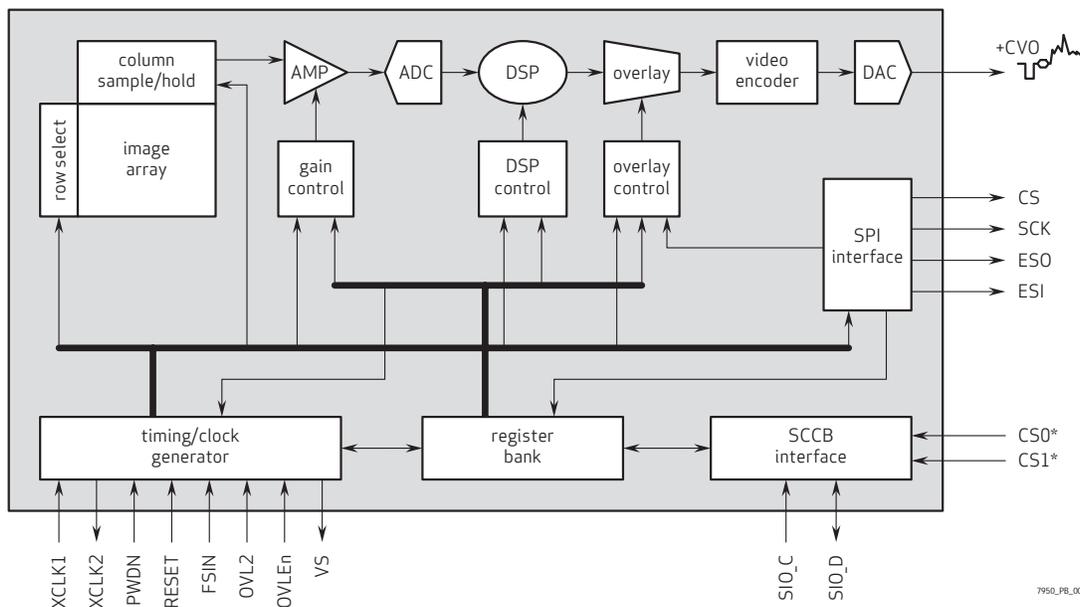- medical and dental equipment

product features

- OmniPixel2 ™ technology
- single chip 1/4" format video camera
- composite video (NTSC) output
- high sensitivity
- automatic exposure/gain with 16-zone control
- horizontal and vertical windowing capability
- auto white balance control
- aperture/gamma correction
- 50/60 Hz flicker cancellation
- external frame sync capability (Genlock)
- SPI/EEPROM used to control overlay and set other customer variables
- two sets of dynamic overlay controls
- master/slave compatible serial camera control bus (SCCB) control interface for register programming
- low power consumption
- extremely low dark current for high temperature applications
- defective pixel correction

product specifications

- array size:
  656 x 492
- power supply:
  analog/ADC/IO: 3.3 VDC ± 5%
  digital core: 1.8 VDC ± 5%
- power consumption:
  200 mW
- image area:
  4.080 mm x 4.276 mm
- exposure time range:
  OV7950: 1/60 s - 20 µs
  OV7451: 1/30 s - 20 µs
- optical format: 1/4"
- S/N ratio: 48 dB
- dynamic range: 60 dB
- pixel size: 6.0 µm x 6.0 µm
- dark current: 10 mW/s @60°C
- fixed pattern noise:
  0.22% of V PEAK TO PEAK
- package dimensions:
  14.22 mm x 14.22 mm
- temperature range:
  -20°C to +70°C

functional block diagram

7950_PB_001

OmniVision.

Version 2.6, September, 2007