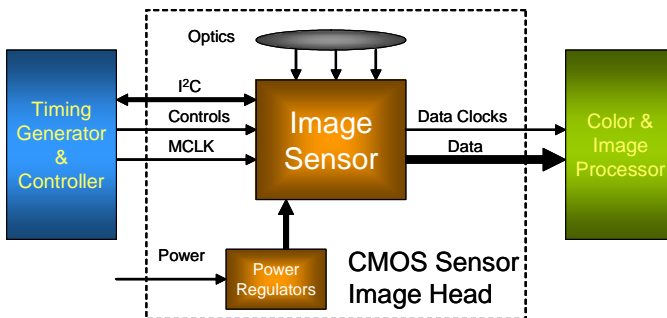


VisionMOS CMOS Sensor Image Heads

Overview

The VisionMOS CMOS Sensor Image Head line is designed to provide a variety of image sensors to other systems through a standardized interface. The image sensors vary from 1.6 to 9M pixels, and may also be customized to meet specific needs like digital video or higher resolutions. The image head boards provide all connections needed through a single connector.



The image heads offer a variety of optics to match to a specific sensor need. This variability extends to the optics mounts which are machined to various barrel sizes and back focal lengths.

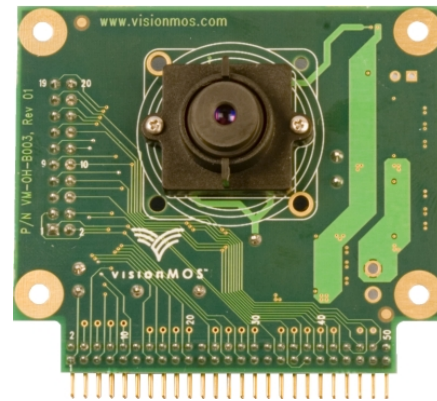
Electrical interface to the image heads includes I²C compliant controls, discrete GPIO control paths, power inputs and the high speed data output port (typically 8 to 12 bits + 3 timing lines). All image heads require support with external timing generators and image processor hardware.

VisionMOS offers a number of systems which are easily adapted to enable image capture, processing and analysis of images from the image head hardware (sold separately).

9M pixel CMOS Sensor

The VisionMOS VM-A007 image head is based on the Aptina MT9N001 image sensor. This sensor has an advanced 1.75um square pixel in a 1/2.3" optical format. It offers features including:

- Output stream windowing
- Analog gain and black level correction
- Frame size / rate, and exposure controls
- On chip PLL oscillator
- 12 bit RGB Bayer data output
- Small 2.2" x 2.6" board format
- Versatile 50 pin vertical header connector



The VM-A007 comes standard with an M12x0.5mm threaded fixed focus optic and mount. The optic can be manually varied and replaced, as it is not permanently bonded in place. Optical system specifications include:

- 51 field of view (diagonal, 4:3)
- < 2% distortion
- Integrated IR cutoff filter
- f/3.0 relative aperture
- all glass element construction

The VM-A007 has a extensive command set that can be accessed through its communication port. This has been extended to a driver that automates the process through several VisionMOS system platforms.

The VM-007 is available in production now.

3M pixel CMOS Sensor

The VisionMOS VM-A006 image head is based on the Aptina MT9T001 image sensor. This sensor has an advanced 3.2um square pixel in a 1/2" optical format. It offers features including:

- Output stream windowing & binning
- Analog color and global gain
- Frame size / rate, and exposure controls
- Low power consumption
- 10 bit RGB Bayer data output
- Small 2.2" x 2.6" board format
- Versatile 50 pin vertical header connector

The VM-A006 comes standard with an M12x0.5mm threaded fixed focus optic and mount. The optic can be manually varied and replaced, as it is not permanently bonded in place. Optical system specifications include:



- 51 field of view (diagonal, 4:3)
- < 2% distortion
- Integrated IR cutoff filter
- f/3.0 relative aperture
- all glass element construction

The VM-A006 has an extensive command set that can be accessed through its communication port. This has been extended to a driver that automates the process through several VisionMOS system platforms.

The VM-006 is available in production now.

Video Decoding Image Head

The VisionMOS VM-A011 image head is based on the Texas Instruments TI5150 Analog Composite Video Decoder. While not an optical image head, it does provide the same source and type of data, via a decoded analog input signal. The decoding and data stream are available in a variety of formats. The image head has features including:

- Variable frame rate and timing formats
- ITU CCIR.656 YUV (8 bit video) output
- Programmable filters & image formats
- On board timing and PLL sync generation
- Integrated video and audio connections
- Versatile 50 pin header connection
- Small 2.6" x 2.6" board format

The VM-A011 has integrated power conditioning to operate from a standard 3.3v input interface. The system has internal timing and sync generation, so that it generates a consistent stream of data from a video source with a minimum of management. A rich register set is available for device control through the I2C compliant 2-wire interface. VisionMOS also offers an automated software driver for the device through several available platforms (sold separately).

The VM-A011 is sampling now.

Optical Options

VisionMOS image heads are generally available with optical options that may vary the fundamental functions of the sensor. Optics may be changed to vary the field of view, f/#, and other key parameters. Many optics are interchangeable within the same mount format.



Optical mounts may also be varied on the image head systems. VisionMOS offers variations including M12 (miniature) and c-mount (CCTV) optics interfaces. Optics typically include integrated IR blocking filters, but other filter elements are also available.

VisionMOS optics are typically manually variable, as threaded systems that are not permanently fixed. Other optics variations including auto-focus and zoom modules are also available for custom applications. Likewise, peripherals to support specific applications including strobe and LED illumination systems are also available.

Applications

The VisionMOS image head line is designed to compliment prototype systems including VisionMOS imaging platforms. Uses include:

- Camera & video recorder prototypes
- Image and color processing development
- Optical and CMOS sensor test development

Ordering Information

The VisionMOS Image Heads are available at <http://www.VisionMOS.com>. For ordering, custom and/or upgraded features contact our sales team at 480-730-7800 or email Sales@visionmos.com.