

AIT130S

APOLLO IMAGING TECHNOLOGIES



AIT130S Intelligent Vision Platform with Smart Sensor

Much more than just an IP Camera, the Apollo AIT130S couples the powerful industry leading TMS320DM642 Digital Media Processor with an advanced 1.3 megapixel smart CMOS image sensor in a single compact 46 cubic inch metal package. Fully featured with 10/100 BaseT Ethernet, RS-232, Audio In/out, Composite Video out, and Relay controlled outputs. The AIT130S is both an open development platform and a stand-alone vision processing system that is ready for your smart application, analytics or off-the-shelf compression algorithms. An SDK with a complete Board Support Package, including a JPEG encoder and a Windows client, is available to speed development. For production, you can use the package as is, or Apollo Imaging will design a custom version to your specifications.

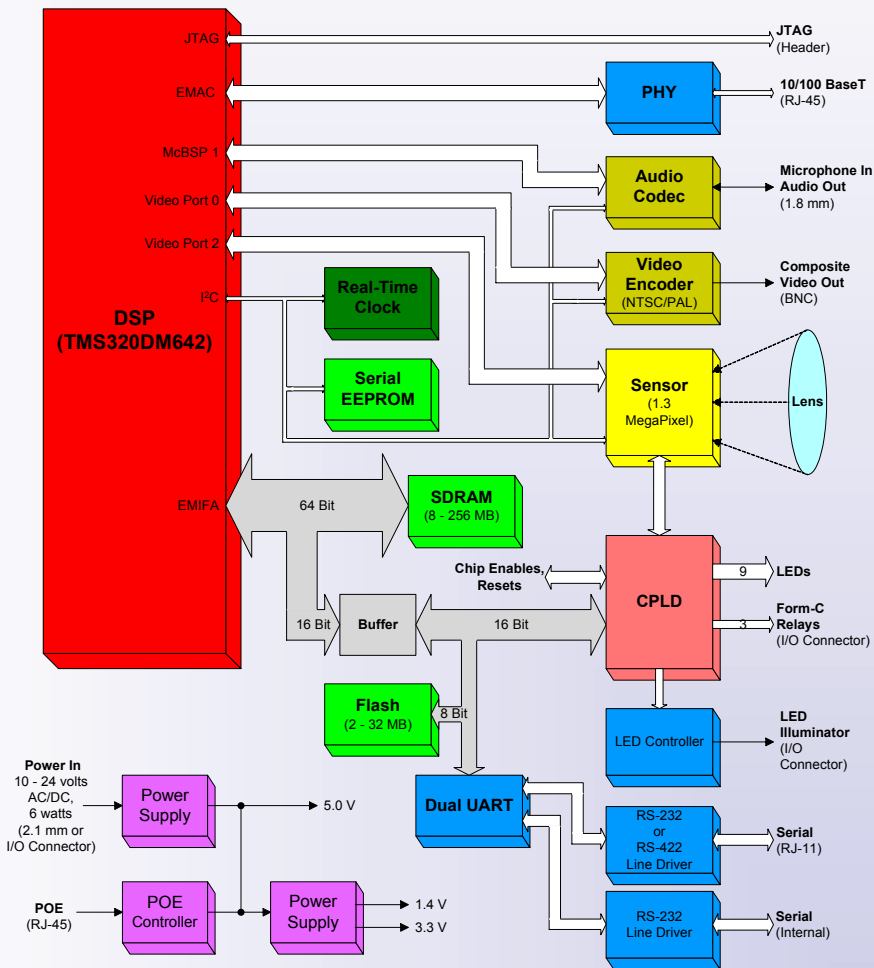


The AIT130S's smart sensor performs the Bayer interpolation and automatically handles exposure, white balance, and defect correction. This offloading of the image processing frees the Media Processor for more powerful applications.

Typical Applications

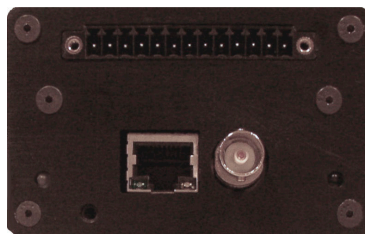
- **Image Recognition** – Using an in-camera database and analytics, applications can be completely self-contained while still providing external notification and remote database updates. With an internal web server, command, control and firmware updates are simplified.
- **Intelligent Security** – With compression algorithms executing in the camera reducing data rates and storage requirements, high-resolution video with high frame rates are achievable. Based upon the current video content or other factors, the compression and sample rate can be adjusted on the fly. It is even possible to automatically change from a temporal type (motion) algorithm to a static type to create evidentiary high quality still images. In addition to your specific text or graphics, the time and date can be superimposed on top of the video using the built-in battery backed real time clock.
- **Motion Analysis** – With an in-camera motion detection algorithm, active image areas can be determined, captured, and then focused on for more in-depth analysis. The AIT130S can even send you an email to alert you of activity.
- **Machine vision** – Using high-resolution images and custom image processing, the camera can make pass/fail decisions and trigger external machinery.

System Block Diagram



Rear Panel

- I/O Connector:** Power, 10 to 24 volts AC/DC, 6 watts
Three Form C-Relay Outputs
LED Illuminator (1.5 watts)
- Button:** Reset switch (recessed)
- LEDs:** Two dual-color, programmable
- BNC:** Composite video out (NTSC/PAL)
- 1.8mm Phono:** Audio input and output with full featured CODEC
- RJ-45:** 10/100 BaseT Ethernet and IEEE 802.3af compliant Power over Ethernet (POE).



Processor / System

- ◆ TMS320DM642 Digital Media Processor (500Mhz/4000MIPS, 600Mhz/4800MIPS, or 720Mhz/5760MIPS)
- ◆ 128 MBytes SDRAM standard (32MBytes to 256MBytes)
- ◆ 2 MBytes Flash standard (2MBytes to 32MBytes)
- ◆ Battery backed Real Time Clock
- ◆ Serial EEPROM
- ◆ Xilinx CPLD

Sensor

- ◆ 1.3 megapixel resolution (1280 x 1024) CMOS image sensor
- ◆ 1/3 inch optical format, 3.6µm x 3.6µm pixel size
- ◆ Responsivity: 1.0 V/lux-sec (550nm), Dynamic Range: >71dB, Signal-to-Noise Ratio: 44dB (Maximum)
- ◆ Ultra low-power, progressive scan, Electronic rolling shutter (ERS)
- ◆ Dual 10-bit analog-to-digital converters with maximum data rate of 27 megapixels per second (master clock, 54 MHz)
- ◆ DigitalClarity™ CMOS imaging technology
- ◆ 15 frames per second (fps) at full resolution, 30 fps at VGA resolution
- ◆ Superior low-light performance
- ◆ On-chip image flow processor that performs color recovery and correction, sharpening, gamma correction, lens shading correction, and on-the-fly defect correction
- ◆ Image decimation to any size with fluid zoom and pan
- ◆ Automatic exposure, white balance, black level offset correction, flicker detection and avoidance, color saturation control, defect identification and correction, and aperture correction
- ◆ Multiple parameter contexts for fast, easy mode switching
- ◆ Camera control sequencer that automates video clips and snapshots
- ◆ ITU_R BT.656 (YCbCr), 565RGB, 555RGB, and 444RGB raw and processed output data formats

Mechanical

- ◆ CS mount lens compatible, C mount with adapter
- ◆ Metal Enclosure 7.25" x 3.18" x 2" (not including lens or connectors)
- ◆ Mounting Plate (Optional)
- ◆ Infrared Cut Filter (Optional)

Power Requirements

- ◆ 10 to 24 volts AC/DC, 6 watts
- ◆ IEEE 802.3af compliant Power over Ethernet (POE).

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