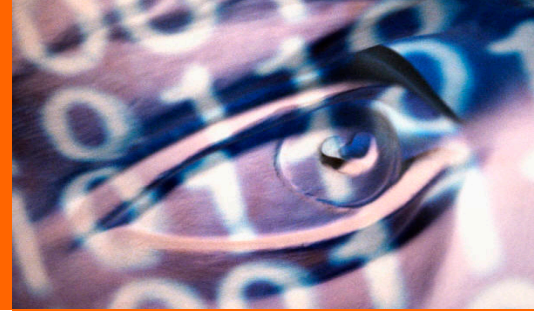


AIT100HS



APOLLO IMAGING TECHNOLOGIES

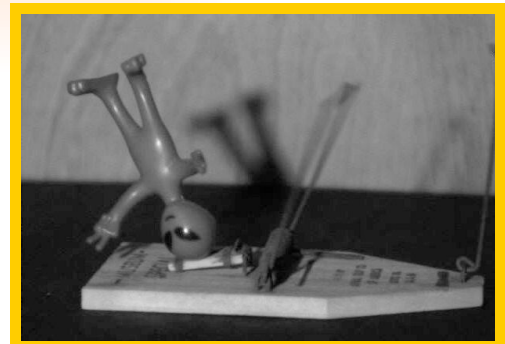
AIT100HS High Speed Intelligent Vision Platform

The Apollo AIT100HS is an economical, stand alone camera for use in high speed video acquisition. With 256MB on board high speed memory, the AIT100HS can acquire 3 seconds of video at 250 fps for VGA and up to 5000 fps at 160 x 80. Longer record times can be achieved at reduced frame rates or resolutions. The Apollo AIT100HS couples the powerful industry leading TMS320DM642 Digital Media Processor with an advanced VGA 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 Camera control inputs and outputs. The AIT100HS is both an open development platform

and a stand-alone vision processing system that is ready for your high-speed application, analytics or off-the-shelf compression algorithms. An SDK with a complete Board Support Package, including a JPEG encoder and a



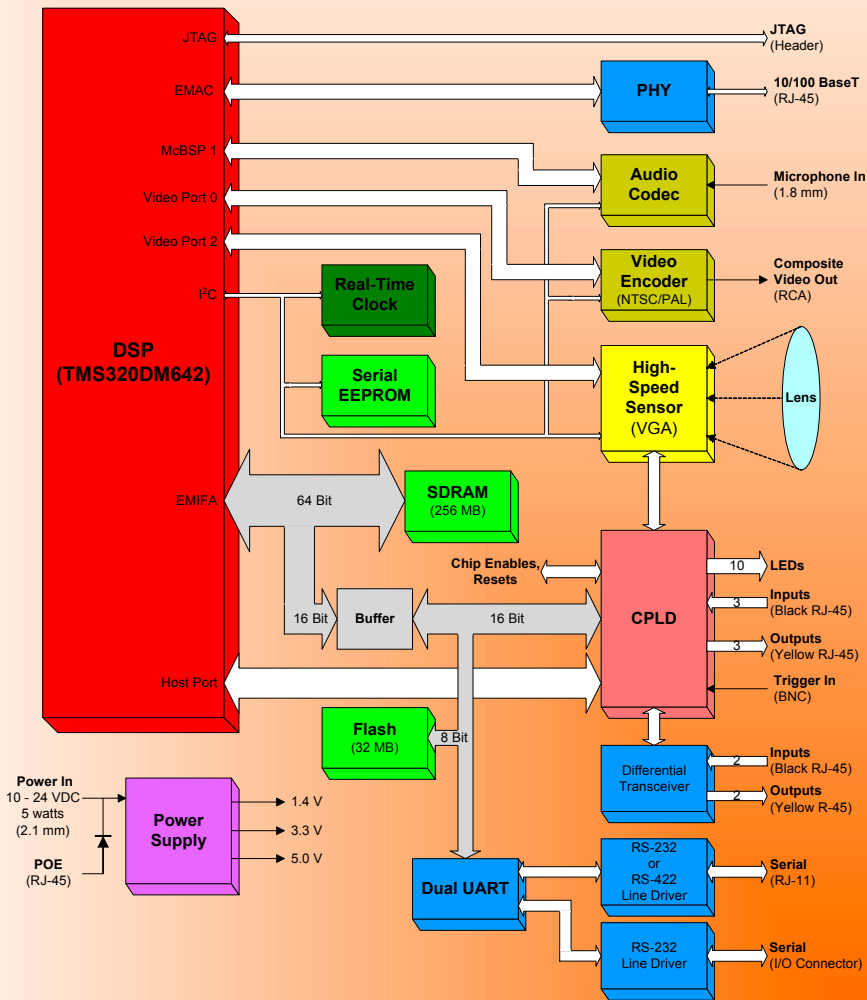
Windows client, is available to speed development. For production, you can use the package as is, or Apollo Imaging will design a custom version to your specifications.



Typical Applications

- **High Speed Events** – The AIT 100HS can be used for analysis of Food & Beverage Packaging Equipment, Semiconductor Pick and Place, Assembly and Manufacturing Machinery, Biomechanics, Material Testing, Racing, Sports, Vehicle Crash Studies, or Golf Swing Analysis.
- **Machine vision** – Using high-speed image captures and custom image processing, the camera can automatically monitor fast action sequences and make pass/fail decisions and trigger external machinery.

System Block Diagram



Rear Panel

- 2.1 mm Coaxial:** Power, + 10 to 24 VDC, 5 watts
RCA: Composite video out (NTSC/PAL)
1.8mm Phono: Microphone input with full featured CODEC
RJ-45: 10/100 BaseT Ethernet and IEEE 802.3af compliant Power over Ethernet (POE).
RJ-11: RS-232 Serial Port
LEDs: Two dual-color, one tri-color, all programmable
Rocker Switch: Two position programmable
Push Switch: Programmable
BNC: Trigger Input
Black RJ-45: Trigger Input, Sync Input, three digital inputs
Yellow RJ-45: Trigger Output, Sync Output, three digital outputs (optional up to two Relay outputs)

Processor / System

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

Sensor

- ◆ High Speed VGA resolution (640 x 480) CMOS image sensor
- ◆ 1/2 inch optical format, 9.9µm x 9.9µm pixel size
- ◆ Monochrome or Color RGB Bayer Pattern versions available.
- ◆ Responsivity: 3200V.m²/W.s (17 V/lux.s)
- ◆ Dynamic range: 61dB
- ◆ Electronic global snapshot shutter
- ◆ 10-bit analog-to-digital converter with maximum data rate of 80 megapixels per second (master clock, 80 MHz)

Control

- ◆ Trigger Source: Positive or negative edge trigger TTL level input, switch closure input, software, sound, video
- ◆ Trigger Control: 0 to 100% pre-trigger frames
- ◆ Strobe Output: TTL level (Optional)
- ◆ Frame Rates and Captured Frames vs. Resolution:

Size	Supported Frame Rate (fps)	Frames
640 x 480	30, 60, 125, 250	819
640 x 240	30, 60, 125, 250, 500	1638
312 x 234	30, 60, 125, 250, 500, 1000	3446
208 x 132	30, 60, 125, 250, 500, 1000, 2500	9165
160 x 80	30, 60, 125, 250, 500, 1000, 2500, 5000	19660
- ◆ Exposure Minimum: Approximately 10 microseconds (resolution dependent)
 Exposure Maximum: Limited by frame rate setting

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, 5 watts
- ◆ IEEE 802.3af compliant Power over Ethernet (POE).

The AIT100HS can optionally be configured with multiple camera synchronization. The cameras can be then connected in a daisy chain with one camera acting as the master.

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