

ZR36419
Product Brief

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Benefits Overview

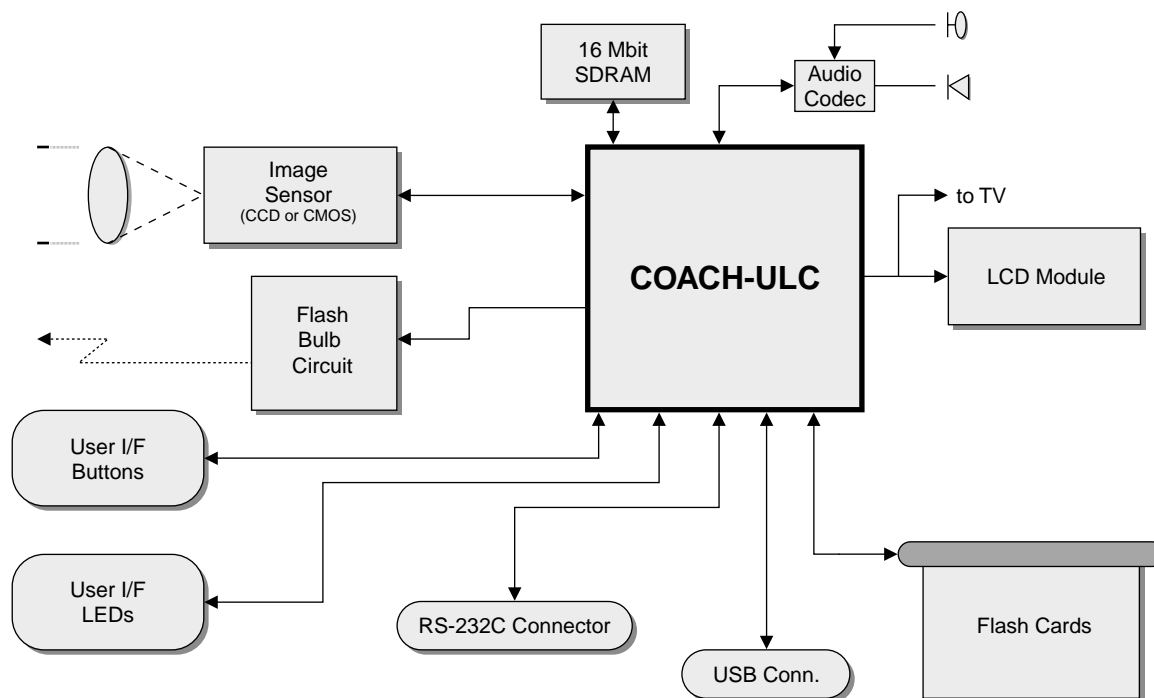
Zoran®'s COACH-ULC (ZR36419) is the third generation Camera-On-A-Chip (COACH) digital camera processor, along with the COACH-LC. COACH-ULC is the complete solution for digital cameras with image resolutions up to **1.3M Pixels**.

The COACH-ULC includes all required hardware and microcode to support progressive sensors, CMOS sensors, View-LCD display, Eye-LCD display, TV output, Flash Memory, USB interface, RS232 interface, and stereo audio recording/playback.

COACH-ULC is a cost effective, highly powerful digital camera processor. Its architecture is flexible enough to support a wide range of camera designs, from low-cost, low-resolution cameras to 1.3M pixels with real-time image processing. User Interface software can be implemented within the COACH-ULC, reducing the overall camera cost, or via an external microcontroller.

The COACH-ULC comes with a complete development package that includes a set of software tools, PC drivers, and a reference design platform.

Camera System Block Diagram



COACH™-ULC DIGITAL CAMERA PROCESSOR

ZR36419



Features

- Direct glueless interface to industry standard progressive scan
- CCD and CMOS sensors
- Supports image resolutions of VGA and XGA sensors (progressive scan), and the Zoran PixelCam™ 1.3MP CMOS sensors
- Advanced CCD signal processing:
 - Quantization noise shaping
 - Color demosaic with aliasing reduction
 - Color space conversion
 - Image scaler
 - Automatic White Balance (AWB)
 - Automatic Exposure (AE)
 - CCD noise suppression
 - Contrast enhancement
 - Edge enhancement
- Supports flash strobe light control, including red-eye reduction
- Direct interface to resident flash memory and/or removable flash memory cards: CompactFlash (CF) and SmartMedia (SSFDC) and others
- Supports 16-Mbit SDRAM frame buffers (depending on the sensor resolutions)
- Serial Communication Port for RS-232 and IrDA interface
- USB interface, including on-chip USB line drivers
- Real-time JPEG compression with advanced bit-rate control ensures superior visual quality for the required number of stored images
- Captures a sequence of still images at a fast rate of up to 15 images per second
- Movie (AVI) capture and playback to the Flash card
- Video Capture Mode - capture CIF at 30 frames per second or VGA at 15 frames per second real-time video (MJPEG compressed) to a PC via USB
- Audio codec supports high quality compression for audio playback and audio annotation of pictures
- User interface implemented within the COACH-ULC, no need for an additional microcontroller
- Analog and digital LCD, direct interface to Eye-LCD
- NTSC/PAL encoder provides direct analog output to a TV monitor
- DCF compliant, DPOF support, EXIF 2.1 image and audio file format
- Font-based and graphics-based On Screen Display (OSD) engines for displaying user-interface messages, menus, and icons on the LCD/TV
- Image enhancement and processing algorithms, e.g., image sharpening, image smoothing, and superposition of images for improved viewing and printing quality
- Programmable DSP engine ensures seamless upgrades through downloadable firmware
- Advanced power management
- 280-pin uBGA packages

Evaluation and Development Tools

- Data Book - complete specifications and description of the COACH
- COACHWare™ high level API - for host software implementation of the user-interface
- FontMapMaker - for font map and icon creation
- CAM-ON™ II - DSC reference design - complete camera system hardware
- USB PC drivers development kits (Win98) - for image transfer and real-time video capture
- The DVB-SPI interface compatibility is suited for professional and broadcast environments. In conjunction with Zoran's Vaddis™ DVD decoder, it delivers a perfectly tuned and synchronized recording/playback system

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