



Interactive Display and Image Processor

CX92735

Conexant's portfolio includes a comprehensive suite of semiconductor solutions for communications and consumer applications.

Conexant delivers a new level of imaging and multimedia performance with the introduction of the CX92735. The CX92735 is an integrated, customizable Processor with features that enable advanced multimedia for digital photo frames, multimedia/connected devices, and interactive display appliances. The device delivers best-in-class image processing, quick time-to-market, and a low cost Bill of Materials (BOM).

The CX92735 features a flexible LCD interface, hardware JPEG codec, and Conexant's image processing pipeline, which handles concurrent processing of high resolution JPEG images and enhancing images for LCD display. A high-resolution LCD controller supports up to HD LCD resolutions, and can interface to LVDS or HDMI devices for display flexibility. A programmable video output module is included that connects to a variety of LCD modules with no additional circuitry. Streaming audio and video, and audio MP3 playback with slideshow are supported, as well as Bluetooth®, WiFi®, and integrated Ethernet MAC connectivity. The camera memory card controller provides support for Secure Digital, CompactFlash®, MultiMediaCard, Memory Stick®, Memory stickPRO, SmartMedia, NandFlash, and xD-Picture Card.

A high-performance 32-bit ARM9 RISC processor supports a robust embedded operating system and a flexible user interface design. The CX92735 contains two USB 2.0 host controllers that enable bidirectional data transfers at both high speed and full speed. Enhanced multimedia and graphics processing is supported with the ARM9's Vector Floating Point Unit (VFP), large internal caches, and high speed DDR2 memory.

Conexant's industry-standard development environment, Software Development Kit (SDK), and turnkey hardware and firmware enable manufacturers to quickly design cost-effective digital imaging products.

Benefits

- Integrated Multimedia SoC solution to support advanced Digital Photo Frame (DPF) and Interactive Display Appliance designs
- Dedicated hardware image processing to provide high-performance JPEG image processing and photo rendering
- ARM9 RISC processor, with Vector Floating Point Unit, and expanded on-chip caches for complex computational and system tasks
- USB 2.0 host and device support for fast image transfer, connection to USB peripherals
- Robust memory card interface, including SDIO, supporting all major card types and expansion options
- Integrated Ethernet MAC to support Connected Device options
- Firmware support for unique Display Appliance functions and User Interface flexibility, including WiFi and Network Drivers



Distinguishing Features

- ARM9 microprocessor with Vector Floating Point Unit
- High-performance image processor and JPEG codec
- High speed DDR2 memory
- USB 2.0 high-speed device and two host ports
- Integrated Ethernet MAC
- Direct Memory Card Controller
- LCD Controller supporting up to HD resolution
- MPEG4/H.264 video decode support with hardware post processor
- I²C interface, I²S, SPI, SDIO/UART interfaces
- Direct Touchscreen support via integrated ADCs and GP control
- ThreadX and Linux Operating System support

Part Number CX92735

Description Interactive Display and Image Processor



Features

Processor

- ARM9 microprocessor with Vector FPU
- Memory Management Unit (MMU)
- 32KB Data Cache, 16KB Instruction Cache

External Memory Support

- DDR2 Memory
- Serial Flash / NAND Flash
- Flash Memory Cards (SD/SDHC/MMC, MS, MSPro, xD, CF)
- SDIO expansion port

Connectivity/Interfaces

- Integrated 10/100Mbit Ethernet MAC
- USB 2.0 host ports (2), USB 2.0 device port
 - WiFi, Bluetooth, and other USB peripheral support
- Multiple UARTs / SPI / I²C
- I²S audio interface
- Direct Touchscreen / Sensor support through Integrated ADC's

Image Processor

Hardware JPEG codec and Image Processor

- Adjustable Color Tables, Tonal Response Curve (TRC), filters to enable unique DPF features

- Hardware scaler to adjust images for aspect ratio
- Video Post Processor to accelerate Multimedia Processing

Hardware rotation

Display Support

- TFT LCD (Digital RGB) & CCIR656 support, up to HD resolutions
- Reference Designs for LVDS connections
- Complete DPF and Interactive Display Appliance Solution
 - ThreadX and Linux Operating System Support

Digital Camera Support

- Mass storage class
- Picture transfer protocol (PTP)

Timers

- Real-time clock with battery backup

A/D and PWM Control

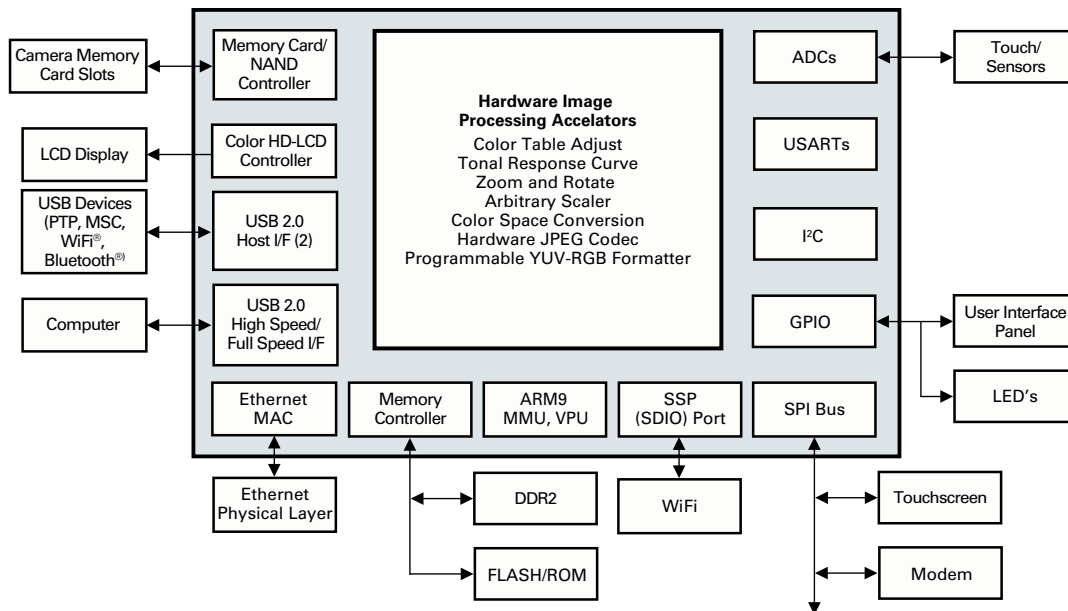
- Multi-channel 10-bit A/D
- Four pulse width modulators (PWMs) with firmware control

Package

- 289-pin ball grid array (BGA) fpBGA package - RoHS compliant

Development Environment

- C/C++ Compiler/Assembler/Linker
- JTAG In-Circuit Emulator
- PC Command Line Debugger/Profiler



CX92735 Block Diagram

Conexant Product Portfolio

Conexant's comprehensive product portfolio includes solutions for imaging, audio, and video applications, and analog modems that enable cost-effective Internet access. The company's broadband access products include end-to-end solutions for xDSL networks, and PON solutions for fiber optic applications.

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www.conexant.com
General Information:
 U.S. and Canada: (888) 855-4562
 International: 1+ (949) 483-3000
 Headquarters
 4000 MacArthur Blvd.
 Newport Beach, CA 92660
 Doc# PBR-202182

