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CONEXANT

Color Laser and Inkjet Photo MFP SoC (DC2350)
CX92235

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

A complete controller solution for laser and inkjet photo printers and MFPs

Conexant's product line of highly integrated imaging solutions and system-on-chips (SoCs) is one of the most complete in the industry. The CX92235 (DC2350) is a comprehensive controller solution for color and monochrome laser and inkjet multi-function printers (MFPs) and digital photo printers. The device integrates many advanced technical features that improve the pixel processing speed as well as the output image quality. The modular design of the firmware allows manufacturers to develop multiple products with a single imaging SoC, which reduces engineering development and bill-of-material (BOM) costs.

The CX92235 features very high-speed hardware image processing accelerators, system I/O and a powerful ARM 926EJ-S core with a memory management unit and a vector floating point processor to deliver the power required for high-speed imaging applications. The high-performance imaging processor along with additional imaging hardware blocks enables fast raster image processing (RIP) for page description languages (PDLs), which improves complex text and graphics laser-printing speeds. The CX92335 has market-leading color copying speeds of up to 30 pages per minute.

Other key features include support for tandem color laser printers and a dual-image-pipeline architecture that automatically segments texts from photos, and optimally processes the images without degrading system performance. A complete hardware and software development kit is offered to simplify product-development efforts and allows designers to deliver product to market more quickly.

The CX92235 integrates many advanced features such as an Ethernet MAC, a memory card controller, a LCD controller, and contains an enhanced image processing pipeline that improves the pixel processing speed as well as the output image quality. Two USB 2.0 high-speed ports and a peripheral bus support connections to cameras, memory cards and USB peripherals, including Bluetooth$^®$ and WiFi$^®$ 802.11 b/g/n devices, and V.34 fax modems.

Benefits
- Highly integrated SoC design for lowest BOM cost
- Provides high-quality imaging capabilities
- Supports tandem color laser printer engine
- Allows fast RIP for network printing and PC-less PDF printing
- Save development costs and time by designing one controller platform for your family of laser and inkjet printers, photo printers and MFPs

Distinguishing Features
- Very high performance image processing, up to 30 copies per minute
- Embedded vector floating point processor allows fast raster image processing for supporting various PDLs
- Advanced image processing hardware includes text/photo auto-segmentation with dual image pipeline
- High-image-quality color tandem laser printer support
- Integrated camera card and LCD display controllers
- Integrated 10/100 Ethernet MAC
- Integrated USB 2.0 high-speed ports and a synchronous serial peripheral bus
  – Supports cameras and flash drives
  – Supports Bluetooth and WiFi 802.11 b/g/n
  – Supports V.34 fax modems
- Software development kit to enable customers to develop products quickly

Part Number	CX92235
Description	Color Laser and Inkjet Photo MFP SoC

Features

Printer Support

- Up to 120 pages per minute (ppm) tandem color laser printing of 4-bit contone data
- USB 2.0 high-speed and 10/100 Ethernet printing supported
- Scalable support for both graphics device interface (GDI) and page description language (PDL)-based printing

Scanner Support

- Up to 30 images per minute (ipm) color scanning at 600 dpi
- Flatbed and automatic document feeder (ADF) scanners supported, including timing and motor control
- Charge-coupled device/contact image sensor (CCD/CIS) control
- Scan pre-processing supports gamma, shading, white-level and black-level corrections, 3xCIS data arrangement support

Copier Support

- Up to 30 copies per minute (cpm) ADF multi-page color copying at 600 dpi scan and print
- Tunable photo/text segmentation logic ensures best copy quality of mixed images
- Independent finite impulse response (FIR) filters, color space conversion tables and dither tables for photo and text

Fax Support

- Fax controller with complete protocol stack for leading Conexant fax modems

External Memory Support

- DDR2-533 supported: Up to 1 GB of system memory
- Field upgradeable using DIMM
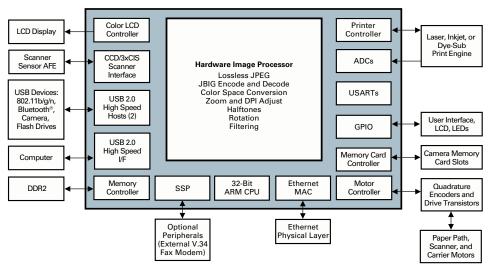
Connectivity/Interfaces

- USB 2.0 high-speed device and hosts
- Synchronous serial bus configurable for: 1-bit, 4-bit or 8-bit high-speed MMC/SD/SDIO; 4-bit or 8-bit CE-ATA mode; SPI; 1-bit MS; TI SSI
- I^2C
- UARTs
- Thin Film Transitor (TFT) or Super-twisted Nematic Display (STN) graphical LCD controller

Processor/CPU

- 32-bit, RISC microprocessor with Memory Management Unit (MMU) and vector floating point processor
- Compact 16-/32-bit instruction set, offering reduced code size and higher performance

Development Environment

- Conexant's Integrated Development Environment (IDE)
- C/C++ Compiler/Assembler/Linker
- PC Command Line Debugger/Profiler
- JTAG Emulator/ICE and Debugger

CX92235 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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