

CX92158 (DC1589) Color and Monochrome Laser and Inkjet MFP SoC

ImagingSmart™ Product Brief



Multi-Function Printer Controller

Product Overview

The CX92158 (DC1589) is a comprehensive controller solution for color and monochrome laser and inkjet MFPs. The device integrates many advanced features that improve the image processing speed along with 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 BOM costs.

The CX92158 features an ARM Cortex-A8 processor with an MMU, a VFP processor, and Neon™ technology to deliver the power required for high-speed imaging applications. Along with the ARM processor, the CX92158 contains dedicated hardware modules that support scanner inputs, laser printer control, and a dedicated second generation hardware image processing pipeline that improves the image processing speeds as well as the output image quality. The imaging processing pipeline enables fast RIP for PDLs, which improves complex text and graphic laser printing speeds.

The CX92158 integrates many I/O features, including a USB 2.0 high-speed device port, two USB 2.0 high-speed host ports (e.g., WiFi devices, PictBridge, and thumb drives), an Ethernet MAC, a memory card controller, an LCD controller, and serial peripheral buses (e.g., UART, SPI, and I²C).

The CX92158 supports Conexant's embedded firmware that enables BCI (e.g., Google Cloud Print™ and Apple AirPrint™) and ACI (e.g., Cloud Image Xfer and Cloud Document Print). Conexant's cloud imaging firmware and IP enables an SFP/MFP to print any document on any shared printer, on any devices (e.g., SFP/MFP, tablet, Smart phone, etc.) that range from consumer through enterprise products.

The CX92158 supports Conexant's serial v.34 high performance fax modems with SmartDAA technology.

Conexant offers a hardware EVK along with an SDK and MDK to simplify product development efforts, and allows designers to deliver product-to-market more quickly.

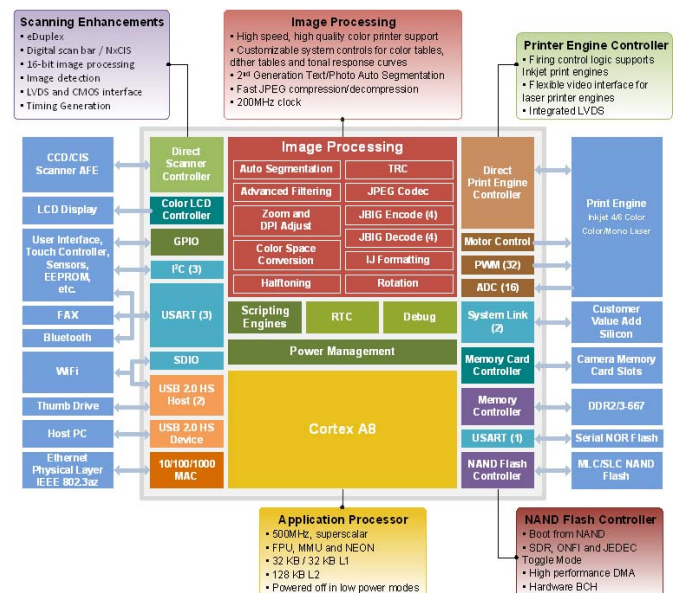
Applications

- High-end inkjet MFP
- Mid-range color laser MFP
- High-end monochrome laser MFP

Key Features

- ARM Cortex-A8 processor
 - 32K/32K instruction/data L1 caches
 - 128K L2 cache
 - Neon pipeline for executing advanced SIMD and VFP instruction sets
 - Boot from serial or NAND flash
- Hardware image processing accelerators:
 - Programmable image processing pipeline
 - Finite impulse response filter
 - Image scaler
 - Brightness and contrast adjustment
 - Six independent TRC tables
 - CSC
 - Half toning
 - Filtering unit
 - Auto-segmentation (second generation)
 - JBIG and JPEG hardware image compression and decompression
 - Hardware rotation block

System Block Diagram



Additional Features

- DDR3 memory subsystem—Up to 1GB support
- Integrated LCD controller with LVDS outputs
- Embedded memory card controller
- Real-time clock with battery backup
- Laser print engine controller:
 - Four video output channels
 - PWM function for each video channel
 - Direct laser engine control enhancements
 - Integrated LVDS outputs
- Inkjet print engine controller:
 - Simultaneous dual inkjet head printing with six-color borderless printing
 - Integrated LVDS outputs
 - Control all motors and timing signals
- Multi-channel 10-bit A/D
- Scanner support:
 - External AFE support
 - 12x CIS
 - CCD
 - Clock and control timing generation
 - eDuplex support
 - Integrated LVDS inputs
 - Motor control for scan and ADF
 - Customizable gamma and shading tables, defringing, linear recombination, and horizontal resolution reduction
- Fax support:
 - External V.34 fax chipset support
 - Color fax capability
 - Data transfer access and manipulation
- GPIO total: 171
- Networking:
 - Integrated 10/100/1000 Ethernet MAC
 - WiFi (802.11 b/g/n) support
- Standard interfaces:
 - USB 2.0 device—High speed
 - USB 2.0 host ports (2x)—High speed
 - I²C (3x), SDIO and SPI/UART (4x) support
- Supports Energy Star low power requirements
- 441-pin fpBGA package

Ordering Information

Ordering Part Number	Part Number	Description	Package
CX92158-99Z	CX92158	Color and Monochrome Laser and Inkjet MFP SoC	441-pin fpBGA Package

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