CONEXANT®
EXPERIENCE SMART™

Multi-Function Printer Controller

Product Overview

The CX92121 (DC1215) is a comprehensive controller solution for color and monochrome laser and thermal printers. 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 CX92121 features an ARM926EJ-S processor with an MMU and a VFP processor to deliver the power required for high-speed imaging applications. Along with the ARM processor, the CX92121 contains dedicated hardware modules that support both laser and thermal printer control, and a dedicated hardware image processing pipeline that improves the image processing speeds as well as the output image quality.

The CX92121 integrates many I/O features, including a USB 2.0 high-speed device port, a USB 2.0 high-speed host port (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 I^{2}C).

The CX92121 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.

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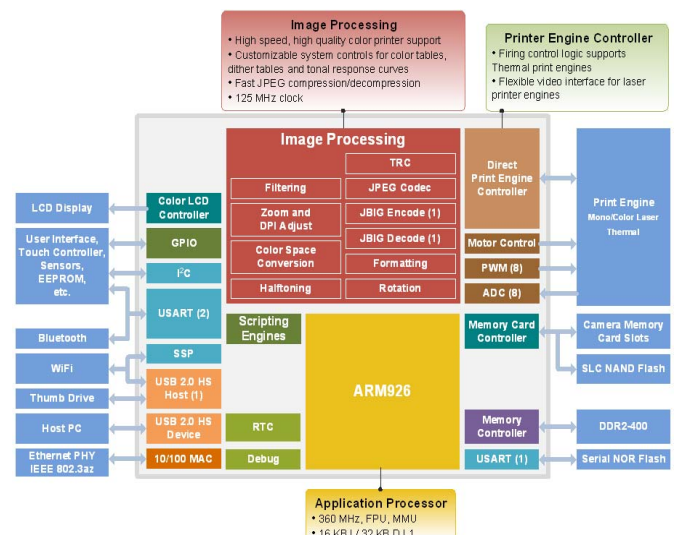
Applications

- Color laser SFP
- Monochrome laser SFP
- Thermal printer
- POS terminal

Key Features

- ARM926EJ-S processor
    - 16K/32K instruction/data L1 caches
    - MMU
    - VFP
    - Boot from serial flash
- DDR2 memory subsystem—Up to 128MB support
- 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
    - JBIG and JPEG hardware image compression and decompression
    - Hardware rotation block
- Integrated LCD controller
- Embedded memory card controller
- Real-time clock with battery backup

System Block Diagram

Additional Features

- Laser print engine controller:
    - Four video output channels
    - PWM function for each video channel
- Thermal print engine controller:
    - Converts contone data to an on/off bit stream
    - Formats the data order in hardware for thermal head alignment
    - Control all motors and timing signals

- Multi-channel 10-bit A/D
- Networking:
    - Integrated 10/100 Ethernet MAC
    - 802.11 b/g/n support
- Standard interfaces:
    - USB 2.0 device—High speed
    - USB 2.0 host port—High speed
    - I^2C (1x), SDIO and SPI/UART (3x) support

- Supports Energy Star low power requirements
- GPIO total: 118
- 289-pin fpBGA package

Ordering Information

Ordering Part Number	Part Number	Description	Package
CX92121-51Z	CX92121	Color and Monochrome Laser and Thermal Printer SoC	289-pin fpBGA Package

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