



# Color Laser Printer/MFP SoC

## STDC3000

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

### A complete controller solution for color laser printers and MFPs

Conexant's portfolio of communication peripheral devices and system-on-chip (SoC) solutions is the most complete product line of highly integrated imaging solutions in the industry. The STDC3000 Color Laser Printer/MFP SoC is part of Conexant's SigmaTel® product line, which offers complete SoC solutions for the multi-function printer (MFP) market.

Conexant's SigmaTel MFP solutions offer the highest level of integration for the lowest bill of materials (BOM) cost, while providing photographic image quality for printing and copying. Our SoCs — comprised of powerful hardware image processing accelerators and codecs, high-bandwidth system I/O interfaces and a 32-bit microprocessor core — combine with richly featured software development kits (SDKs) to enable a high performance imaging solution with a fast time to market. The STDC3000 controller is a comprehensive solution for color laser printers and MFPs.

### Benefits

- Highly integrated SoC design for lowest BOM cost
- Faster performance than comparable DSP and CPU-based solutions
- Provides high-quality imaging capabilities
- Save development costs and time by designing one controller platform for your family of color laser printers and MFPs



### Distinguishing Features

- Tandem color laser printer engine interface
- Powerful hardware image processing accelerators ensure minimal reliance on CPU
- Simplified image quality tuning by using programmable imaging tables
- High bandwidth connectivity including USB 2.0, 10/100 Ethernet and PCI 66
- SDK provides Conexant's SigmaTel firmware architecture for MFP
- Available host software solutions for color laser printers and MFPs

**Part Number** STDC3000

**Description** Color Laser Printer/MFP SoC



## Features

### Printer Support

- 40 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

- 25 scans per minute (spm) color scanning at 600 dpi
- Flatbed and automatic direction finder (ADF) scanners supported, including timing and motor control
- Integrated charge-coupled device/contact image sensor (CCD/CIS) analog front end (AFE) enables direct input of analog RGB signals
- Scan pre-processing supports gamma, shading, white-level and black-level corrections

### Copier Support

- 20 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
- Capable of direct memory accessing (DMAing) RGB pixels to external remove (CD) and lowercase counterfeit detection ASIC

### Fax Support

- Fax controller with complete protocol stack for leading V.34 and V.17 modems

- Optional embedded fax for lowest cost V.17 solution

### External Memory Support

- DDR333 supported: 500 MBps bandwidth and up to 1 GB of system memory
- Field upgradeable using 32-bit DIMM

### Connectivity/Interfaces

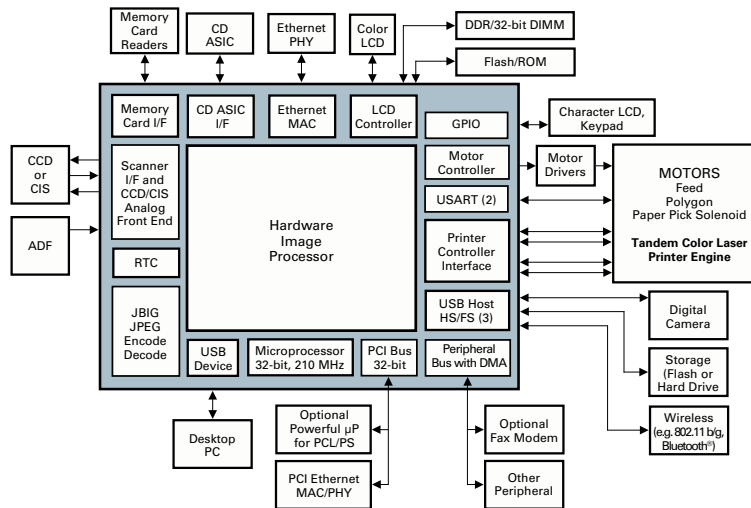
- USB 2.0 high-speed device and hosts
- PCI bus — 32-bit, 33/66 MHz, bus master/target capable, bus arbiter capable
- Peripheral bus with DMA support
- UARTs
- Parallel Port/1284
- Thin Film Transistor (TFT) or Super-twisted Nematic Display (STN) graphical LCD controller
- Counterfeit detection chip interface

### Processor/CPU

- 32-bit, 210 MHz RISC microprocessor with Memory Management Unit (MMU)
- Compact 16-/32-bit instruction set, offering reduced code size and higher performance

### Development Environment

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



**STDC3000 Block Diagram**

## Conexant Product Portfolio

The company's broad portfolio of semiconductor products also includes client-side DSL, cable, and dial-up modem solutions; fiber optic system-on-chips; broadcast video encoders and decoders; digital set-top box components and systems solutions; and IEEE 802.11a/b/g/n-compliant WLAN chipsets. Additional products include a complete line of asymmetric and symmetric DSL central office solutions, which are used by service providers worldwide to deliver broadband data, voice, and video over copper telephone lines.

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