Digital Signage Media Player Reference Platform

Overview

Freescale Semiconductor offers the low-power MPC8536E embedded media player reference design to help OEMs/ODMs jump start their time to market. This reference design outlines the comprehensive hardware and robust software applications which enable the quick addition of differentiating features prior to production. The end result—a rich multimedia digital signage media player in less time than if designed in house. Unlike media players based on other embedded platforms, the MPC8536E offers robust full-HD (1080p) accelerated video playback, as well as support for popular nonlinear content formats including Adobe® Flash®, remote Web sites (URLs), streaming video and HTML templates.

Digital Signage Media Player Features

Hardware

- MPC8536E: energy-efficient, gigahertz+ embedded processor built on Power Architecture® technology

  - Reliable, fanless, low-power embedded design

  - Hardware acceleration for secure network encryption (DES, AES, others)

- S3 Graphics Chrome 4300E low-power, high-performance 3-D graphics processor

  - Multi-window video decode

  - ChromotionHD™ high-definition video engine

  - Programmable OpenGL 3.0/Unified Shader Model 4.1 graphics core

- Based on the modular COM Express form factor

  - Fast prototype carrier board

  - Rugged industrial design

Application Features

- WireSpring's FireCast® media player application software
- Linux® operating system
- Customizable, multi-zone layouts
- Hardware video decode/playback
- Simultaneous playback of two videos at once
- Scrolling text/graphical ticker via RSS feed, text feed, etc.
- Remote management of content and device settings

Supported Audio/Video Formats

- MPEG-1, MPEG-2, MPEG-4
- H.264/AVC
- WMA/WMV9
- Flash/FLV
- HTML
- GIF, JPG, PNG
- MP3, AAC, WAV, AC3

Display Formats Supported

- Display resolution up to 2560x1600
- Video decode up to 1080p (1920x1080)

Expansion/Interfaces

- Gigabit networking
- Dual DVI
- Dual analog (VGA)
- Stereo audio out
- Dual UART
- Dual USB 2.0
- SD/MMC cards
- 54 mm PCI Express® card for Wi-Fi® technology

Digital Media Player Reference Design Technical Support

- Design files and user documentation
- System characterization data

Typical Digital Signage Applications

- Advertising
- Merchandising
- Employee communications
- Public safety communications
- Transportation schedules with real-time status
- Trade show displays
- Government communications

Cogent Computing

Time to market is critical for the successful introduction and evolution of media player products into the digital signage market. Cogent Computing developed the MPC8536E media player reference platform specifically to minimize development time and project risk of bringing flexible and low-power embedded devices to market.

Cogent provides:

- Development platform sales
- Technical support
- Custom firmware development
- Industrial and mechanical design custom engineering

Visit **www.cogcomp.com** for more information.

S3 Graphics Co., Ltd.

As a leading supplier in the 3-D enabled embedded graphics market, S3 Graphics provides energy-efficient, high-performance, commercial-grade 3-D graphics subsystems to embedded equipment manufacturers. S3 Graphics offers cutting-edge 2-D, 3-D and video processing capabilities enabling developers access to advanced technology generally found only in personal computing applications.

Chrome 4300E product highlights:

- OpenGL 3.0 graphics core
- ChromotionHD video engine

- HDMI, LVDS, DVI, CRT and DVO interfaces
- Advanced power management
- Scalable power savings and performance
- Long-term supply and support

Visit **www.S3graphics.com** for more information.

WireSpring Technologies

The market-established WireSpring FireCast software can be licensed from WireSpring to run on the MPC8536E reference design to quickly deploy a rich and robust digital signage network.
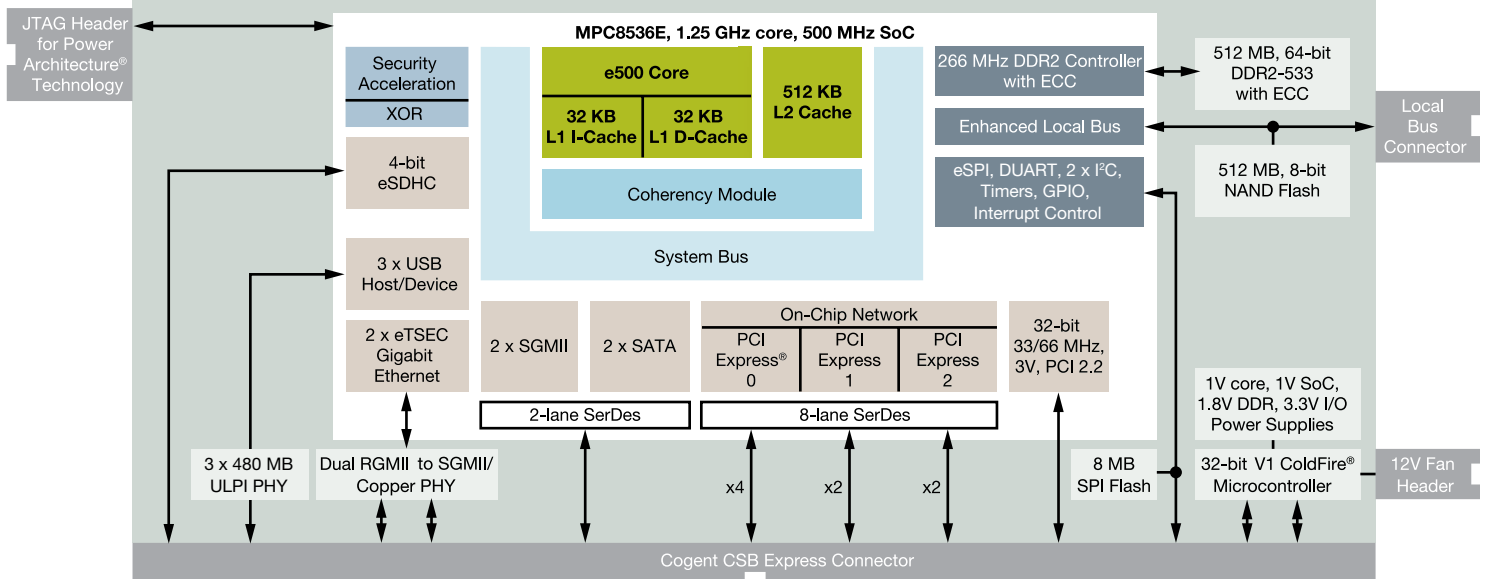
WireSpring software products:

- FireCast OS: Create digital signs, touch screen kiosks and other devices
- FireCast ClientCenter: Manage your kiosks and digital signs from your Web browser or desktop utility
- Custom design services
- FireCast EasyStart: Provides local management capability for small networks and those without Internet access
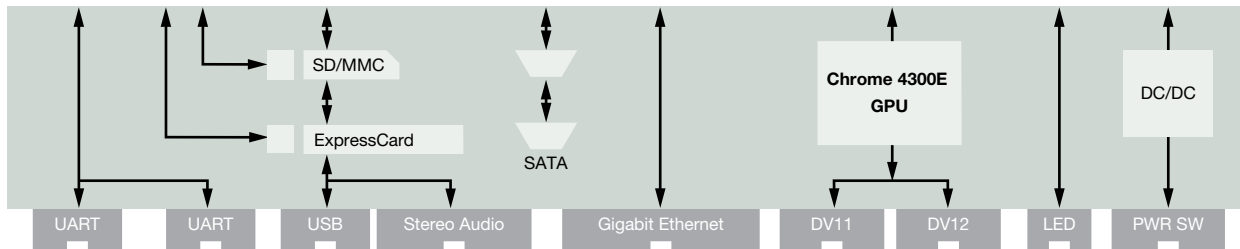
Visit **www.wirespring.com** for more information.

MPC8536RDK Block Diagram

CSB1880-MPC8536E CSB Based on the Computer on Module (COM) Express Form Factor

MPC8536E, 1.25 GHz core, 500 MHz SoC

- JTAG Header for Power Architecture® Technology
- Security Acceleration
- XOR
- 4-bit eSDHC
- 3 x USB Host/Device
- 2 x eTSEC Gigabit Ethernet
- e500 Core
- 32 KB L1 I-Cache
- 32 KB L1 D-Cache
- 512 KB L2 Cache
- Coherency Module
- System Bus
- 2 x SGMII
- 2 x SATA
- On-Chip Network
- PCI Express® 0
- PCI Express 1
- PCI Express 2
- 32-bit 33/66 MHz, 3V, PCI 2.2
- 266 MHz DDR2 Controller with ECC
- Enhanced Local Bus
- eSPI, DUART, 2 x I²C, Timers, GPIO, Interrupt Control
- 512 MB, 64-bit DDR2-533 with ECC
- 512 MB, 8-bit NAND Flash
- Local Bus Connector
- 2-lane SerDes
- 8-lane SerDes
- 3 x 480 MB ULPI PHY
- Dual RGMII to SGMII/Copper PHY
- x4
- x2
- x2
- 8 MB SPI Flash
- 1V core, 1V SoC, 1.8V DDR, 3.3V I/O Power Supplies
- 32-bit V1 ColdFire® Microcontroller
- 12V Fan Header
- Cogent CSB Express Connector

MPC8536E Digital Signage Media Player Reference Platform

- SD/MMC
- ExpressCard
- SATA
- Chrome 4300E GPU
- DC/DC
- UART
- UART
- USB
- Stereo Audio
- Gigabit Ethernet
- DV11
- DV12
- LED
- PWR SW

Legend: Core | Accelerators | I/O | Connector or Slot

Learn More: For current information about Freescale products and documentation, please visit **www.freescale.com**.

BUILT ON Power

freescale semiconductor