

Features

- Configurable display controller supports different kinds of LCD, EL, Plasma display panels.
- Various display resolutions and color depth combinations can be supported.
- Touch input/resistive touch screens supported.
- Includes SDR/DDR memory controller for display buffer.
- Interfaces to CPU, Ethernet controller, SDRAM and Flash.
- Available with USB, Ethernet and WiFi interfaces. Other interfaces can be added on request.
- On-chip ADC input channels for touch sensing.
- Design secured with 128-bit AES encryption in Fusion devices.
- Low power design based on Flash FPGA architecture.

Applications

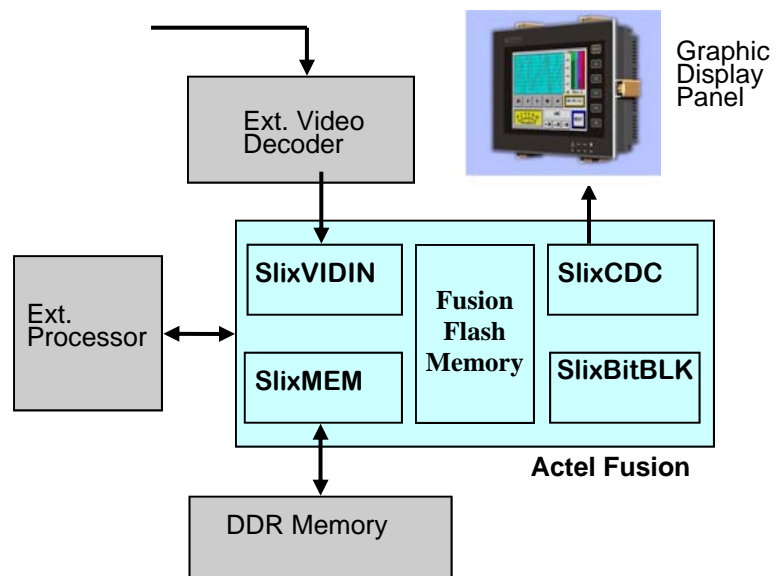
- Automated control (manufacturing and processing equipment)
- Building automation (security and surveillance)
- Consumer automation (kiosks, vending machines, ATMs)
- Advanced instrumentation (test and measurement, medical)
- Commercial transport (truck, marine, aviation)

Description

EmbeddedBlox versatile display control solution is available for implementation on Actel's Fusion, a Flash based FPGA architecture. This family of devices offer mixed signal capability with multiple Analog channels, on-chip clock generator and flash memory. These SOC features are effectively used in this application with a mix of IP cores from EmbeddedBlox. The analog circuitry required for touch input can be implemented in the Fusion FPGA as part of the SlixADDA core. The design is secured with exceptionally high security through it's 128-bit AES encryption on Fusion devices.

The display function can be enhanced by including the SlixBitBlk bitmap graphics acceleration core that works seamlessly with the SlixCVC and SlixMEM cores. The FPGA can be reconfigured with new functionality remotely over the network.

Intelligent Display Control with Video System



EmbeddedBlox System Blocks

SlixCDC	Compact Display Controller (supports STN, DSTN, TFT LCD, and other panel displays such as EL and Plasma)
SlixVIDIN	Multi-Channel Video Processing and Multiplexing
SlixBITBLK	Bitmap Graphics Accelerator
SlixMEM	DDR SDRAM Memory Controller
SlixCAN	CAN 2.0B Network Controller (optional)



The EmbeddedBlox IPMix™ Advantage

Current FPGA design tools and methodologies require skilled FPGA design engineers to use them, which makes the whole process time consuming and costly to maintain.

What is needed is a design tool to automatically create FPGA designs based on simple architectural block diagrams. EmbeddedBlox recognized this need and created Slix™Tool. By using Slix™Tool-ACT engineers can easily construct, customize and maintain FPGA based designs without needing to have in-depth knowledge of HDL languages or FPGA design experience. Slix™Tool-ACT allows the users to easily migrate their designs to multiple FPGA devices.

Solution Comparisons

There are several display and video control ASSP solutions available from silicon vendors, some of which are:

- Silicon Motion - SM501
- Genesis Microchip Inc. - GM1601
- Philips - SAA6713H
- SmartASIC - SD2000

The Silicon Motion SM501 and Genesis GM1601 are comparable to EmbeddedBlox's display and video control solution, with respect to the display technologies, features and the video input capability.

All of these ASSP solutions differ mainly in their video processing capability and some value-add features, such as DVI and specialized video processing for MPEG4 and H.264.

The other difference is in the support for specific video interfaces, although that can be worked around easily by adding a suitable external decoder chip.

The design on Fusion FPGA can be programmed either on-site or through remote programming methods. EmbeddedBlox's solution has the advantage in that it can be customized to the user's requirements and can be easily upgraded.

Advantages

- An integrated solution offering display control and multiple video stream overlay as one complete solution.
- An easily customizable solution that packages as many video input channels as the user requires (up to 8 maximum).
- An upgradeable solution that allows a design team to launch a basic solution initially and then enhance the display or video functionality as new standards are introduced.
- Using an FPGA-based solution helps the customer avoid obsolescence, so products can remain operational and upgradeable for a longer life. This can be particularly critical for industrial equipment or instrumentation, where life cycles can be a decade or more.
- Secure reprogrammable Fusion FPGA chip solution to ensure protection of design IP.
- Fusion parts consumes considerable low power compared to other programmable solutions. The FPGA can be put to sleep and the wakeup cycles can be controlled through on-chip clock features.
- Fusion is an ASIC like device, which is live at power-up. This FPGA consolidates several SOC blocks including on-chip flash memory for processor code and data storage.

About Actel

Actel Corporation is a supplier of innovative programmable logic solutions, including field-programmable gate arrays (FPGAs) based on antifuse and flash technologies, high-performance intellectual property (IP) cores, software development tools and design services targeted for the high-speed communications, application-specific integrated circuit (ASIC) replacement and radiation-tolerant markets. The company is traded on the NASDAQ National Market under the symbol ACTL and is headquartered at 2061 Stierlin Court, Mountain View, CA, 94043-4655. Telephone: 888-992-2835.

About EmbeddedBlox

EmbeddedBlox aspires to be the defacto supplier of FPGA based IP, firmware and chip solutions for display, video and vision processing, specifically targeted to embedded systems.

SlixTool is our flagship product that provides an easy-to-use graphical interface for design engineers to configure the IP cores and IP-Blox and rapidly create/customize FPGA designs (IPMix).

EmbeddedBlox solutions can be used by OEMs and system integrators in Industrial, Automotive, Transportation and Building automation segments.