

Features

- MPEG-4 Part 2 Simple Profile Level 5 (Standard Definition)
- User-defined maximum frame size
- Directional squared motion estimation with early stop
- Half-pixel motion estimation
- 4:2:0: YUV processing
- Single external frame buffer; predicted frame processing
- Variable length coding in hardware
- Host interface for rate control algorithm
- Support for full MPEG-4 header

Applications

Applications for the MPEG-4 Simple Profile Encoder core are:

- **Automotive** – Global Positioning Systems (GPS), collision avoidance systems, and video compression technology.
- **Medical Imaging** – Medical imaging, processing, and archival for both still and video images in non-clinical application setting.
- **Industrial and Security** – Video sequencing from multiple locations to a central processing location.
- **Broadcasting** – Transmitting information in a highly compressed format to deliver high-quality video both inside and outside studios, as in HDTV.
- **Military** – Video surveillance from military aircraft over wireless communication channels.
- **Video Conferencing** – Transmitting high-quality video to multiple sites in real time.
- **Streaming Video** – Internet communications technology.
- **Video Messaging** – Cellular telephones, including video and small-screen applications.

LogiCORE™ Facts				
Core Specifics				
Supported Device Family	Virtex™-4, Virtex-II Pro, Virtex-II, Spartan™-3			
Resources Used	Slices	LUTs	FFs	Block RAMs
QCIF	8,303	12,630	6,093	16
CIF	9,019	12,778	6,335	23
4CIF	9,353	13,260	6,598	36
QCIF with Mem Controller	9,138	13,036	6,575	20
CIF with Mem Controller	9,251	13,085	6,650	27
4CIF with Memory Controller	9,639	13,592	6,944	40
Constraints File	UCF			
Verification	VHDL Testbench			
Instantiation Template	VHDL Wrapper			
Provided with Core				
Documentation	Product Specification User Guide			
Design File Formats	VHDL, EDIF			
Constraints File	.ucf (user constraints file)			
Verification	VHDL Test Bench			
Instantiation Template	VHDL Wrapper			
Reference Designs /Application Notes	None			
Design Tool Requirements				
Xilinx Implementation Tools	Xilinx XST 7.1i with SP 4			
Verification	<ul style="list-style-type: none"> • ModelSim 5.8c SE • MicroSoft Studio v6.0 • ActivePerl 5.8.3 • Annapolis Micro Systems Wildcard-II platform API 2.6 Driver 3.3 Firmware 1.6 			
Simulation	ModelSim 5.8c SE			
Synthesis	Synplicity Synplify 7.5.1			

General Description

The Xilinx MPEG-4 Part 2 Simple Profile Encoder (MPEG-4 Encoder) core is a fully functional VHDL design implemented on a Xilinx FPGA. The MPEG-4 Encoder core accepts uncompressed video and generates compressed bitstreams based on the "Information Technology–Generic Coding of Audio Visual Objects-Part 2 Visual" section of the ISO/IEC 144962-2 standard.

Support and Ordering Information

The MPEG-4 Simple Profile Encoder product, sold as netlist, is provided under the [LogiCORE Core Site License Agreement](#). A free evaluation version is available from Xilinx DSP marketing or from your local Xilinx [sales representative](#).

For part number information, go to the MPEG-4 Simple Profile product page on the Xilinx [IP Center](#). To purchase the core, contact your local Xilinx sales representative.

Revision History

Date	Version	Revision
10/20/05	1.0	Initial Xilinx release.