

The CS6150 Motion JPEG (M-JPEG) Decoder is a highly integrated virtual component solution for leading edge image decompression applications. Its high performance is capable of sustaining data rates of over 125 mega-samples/sec. Fully compliant with the baseline JPEG standard, the CS6150 delivers the optimal performance and low cost that only an application specific virtual component (ASVC) can provide, making it the ideal solution for video conferencing and office automation equipment. When used in conjunction with the companion CS6100 JPEG encoder, the CS6150 provides the heart of a high performance video storage or broadcast system. The CS6150 is available in both ASIC and programmable logic versions that have been handcrafted by Amphion to deliver highperformance with low-power and minimal silicon area.

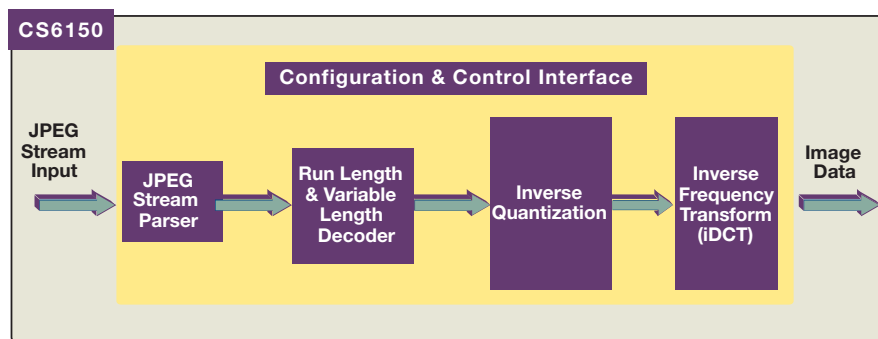


Figure 1: CS6150 Overview Diagram

DECODER FEATURES

- ◆ **High Performance**
 - Sustained 125 Msamples/second decoding capability
 - Single sample per clock cycle processing
- ◆ **Low Power**
 - Zero standby power
 - Fully synchronous operation
- ◆ **Fully Compliant with Baseline JPEG Standard ISO/IEC 10918-1/2**
 - Supports interleaved and non-interleaved scans
 - Supports image sizes to 64k by 64k
 - Support for 4 user-defined Huffman tables and 4 programmable quantization tables
- ◆ **Autonomous Operation**
 - Simple FIFO-like interface for JPEG decoding stream input
 - No microprocessor control or pre-processing required
 - Decodes quantization and Huffman tables and parameter information from JPEG bitstream

◆ Ease of Integration

- Tapeout-Ready™ firm-IP targeted netlist
- Simple core interface for easy integration into larger systems

KEY METRICS

- ◆ **Logic:** 72k gates
- ◆ **Memory:** 9.6 kbits RAM
- ◆ **Maximum Frequency:** 125 MHz

APPLICATIONS

- ◆ **Interactive Video**
 - Full duplex, high performance videoconferencing when used with companion CS6100 JPEG encoder
- ◆ **High performance, low cost document processing**
 - Photo printers
 - Digital copiers
 - Multifunction printers
- ◆ **Remote Video**
 - Surveillance system

CS6150 FUNCTIONAL DESCRIPTION

The CS6150 ASVC is a highly integrated JPEG decoder suitable for a wide range of imaging applications. Designed for continuous data flow – one image sample per clock cycle – the CS6150 can address the most demanding frame-based video decompression applications. In addition, fully synchronous operation and zero-power standby make it ideal for low power applications. The highly autonomous design extracts all relevant information (quantization and Huffman tables and parameter information) from the JPEG bitstream and requires no software overhead. The CS6150 is a powerful and flexible JPEG decoding solution.

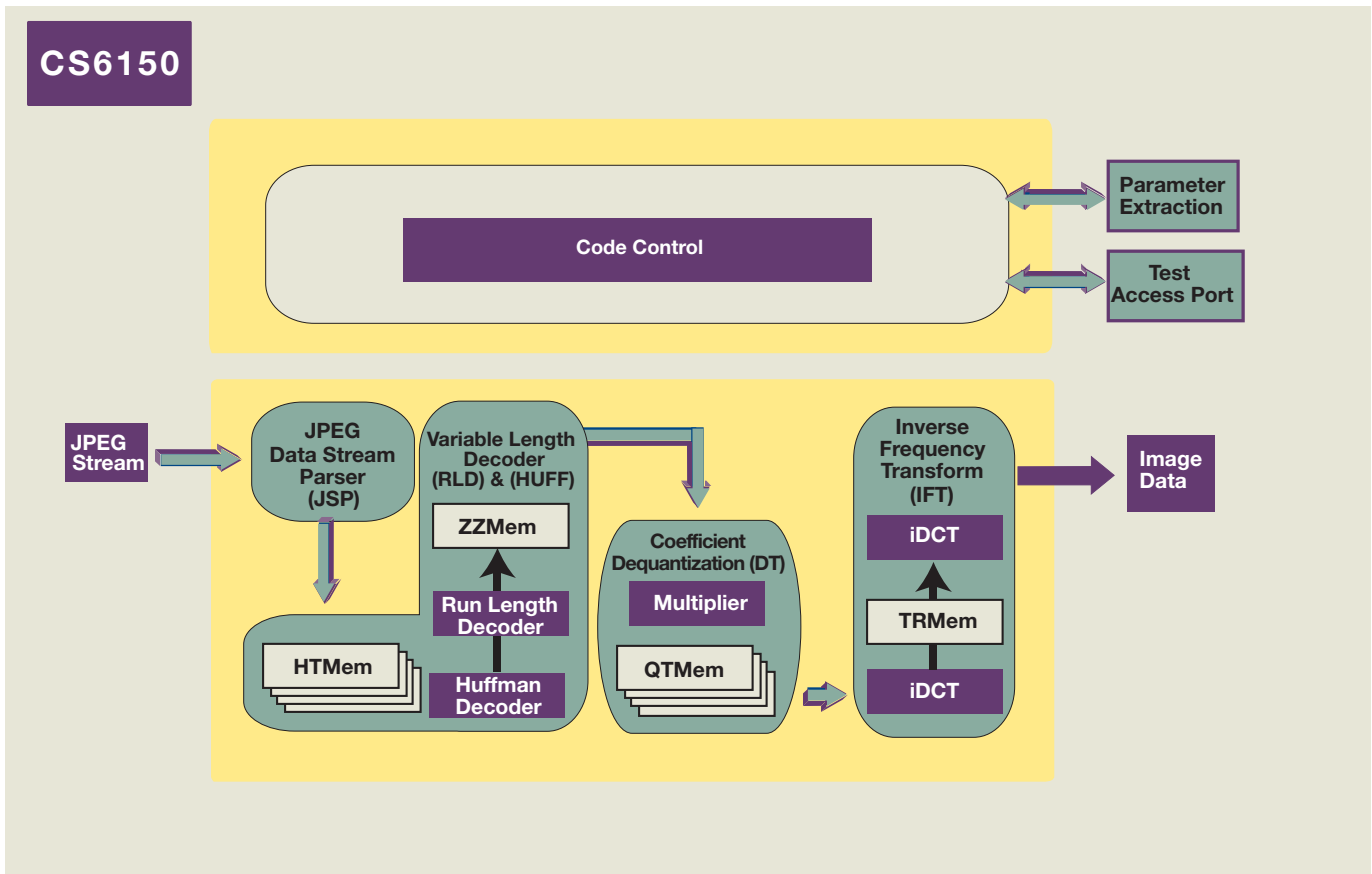


Figure 2: CS6150 JPEG Decoder Block Diagram

AVAILABILITY AND IMPLEMENTATION INFORMATION

DELIVERABLES

- Targeted optimized netlist for chosen technology (SoC or FPGA)
- Bit-accurate C-model
- Simulation model for system integration
- Technical support
- Test Suite (standalone self-checking test-bench which incorporates control software via PLI with reference test data)
- Synthesis scripts
- Documentation (Integration, Simulation, Application and Function databooks)

ABOUT AMPHION

Amphion is the leading supplier of silicon-proven semiconductor intellectual-property (IP) for digital video and imaging System-on-a-Chip (SoC), ASIC and programmable logic (FPGA) designs, delivering high performance solutions for video and image compression with a comprehensive range of silicon-optimized products. Amphion develops and licenses semiconductor IP cores that are close to optimal in terms of power, cycles, and area. Amphion cores operate standalone, or by in conjunction with industry-standard RISC processors, and can be easily migrated through successive generations of fabrication technology.

HEADQUARTERS

Amphion Semiconductor Ltd
Suite 7, Linden House
Beechill Business Park
Beechill Road
Belfast BT8 7QN
Northern Ireland, UK

Tel: +44 28 95 609 600

Web: www.amphionsemi.com

Email: info@amphionsemi.com

SALES AGENTS

SPINNAKER SYSTEMS INC.

Shin-Yokohama
Fujika Bldg. 8F
2-5-9 Shin Yokohama

Kouhoku-Ku
Yokohama 222-0033 Japan

Tel: +81.3.3551.2275

Fax: +81.3.3551.2614

Email: info@spinnaker.co.jp

<http://www.spinnaker.co.jp/>

AVANT TECHNOLOGY INC.

16F-7, No. 27, Guanxin Rd
Hsinchu 30072

Taiwan

Tel: +886 3 668 6603

and

Room 2003, 20F, Liuhe Building

No.158, Liuhe Road

Shanghai 200001

China

Tel: +86 21 5308 5993

Email: sales@avant-tek.com

www.avant-tek.com