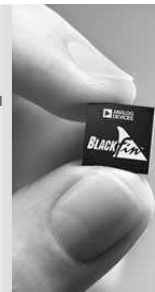


BlackEyes

CoDec Video JPEG & M-PEG for DSPs BlackFin BF53x processors
by ARBOS Engineering



The CoDec Video M-JPEG BlackEyes developed by Arbos Engineering allows the integration, on BlackFin BF53x Analog Devices processors, of solutions requiring the use of a standard video M-JPEG type.

This module authorizes the JPEG (Joint Photographic Experts Group) - the compression of still image of high definition to a ratio of compression of 30:1.

The JPEG algorithm implemented in BlackEyes is based on Discrete Cosine Transform (DCT) with standardization

ISO/IEC 10918-1. In that way, it allows the compression and decompression of still images (Still JPEG) or of a video flow, by concatenation, of still images (JPEG Motion).

In order to respect the economic and technical constraints of low cost solutions, the code has been written in assembler and optimised for the BF531 processor architecture. The delivered software sequence consists of 2 modules libraries (Encoder / decoder) with interfaces of API type (Application Programming Interface). Consequently the final application can be developed in C language

BlackEyes Module characteristics

Supported processors :

- ADSP-BF535, BF533, BF532 & BF531.

Codings tables

- Quantization et Huffman
- separated for luma (Y) and chroma (Cr, Cb)

Supported Modes

- JPEG
- M-JPEG

Supported formats

- QCIF, CIF, VGA
- RGB, YcrCb, 4:4:4 4:4:2 4:2:0 4:0:0

Filterings

- Pre-filtering
- Post-filtering : Deblocking

Performances

Encodeur

- Size 3K5
- Ressources SRAM (internal) : 3K
- Ressources SDRAM (external) : 100K
- Cycle by pixel (QCIF) : 157
- 25 fps in QCIF

Decoder

- Size 3K1
- Ressources SRAM (internal) : 3K
- Ressources SDRAM (external) : 50K
- Cycle by pixel (QCIF) : 141
- 25 fps in QCIF

Delivered with

- User and integration manual
- Design of reference
- List of typical materiel (BOM)
- Kit of resources dimensioning (using a ADDS-BF533-EZKit board)
- User interface source code
- Library Object Code
- Utility for diagnosis
- Test plan