

# JPEG & Motion JPEG

## Encoder and decoder



*This baseline implementation of JPEG and Motion JPEG standards is fully optimised for the Texas Instruments 'C5000 DSP family. Every JPEG parameter and bit stream feature is user-defined, making this algorithm very flexible*

### High Performance

*From a C5402 low cost implementation to a high end C5510 portable equipment, a large scalable offer is available to optimise the cost / performance ratio :*

- 'C5402-100 : real time QCIF video PAL decoding (YUV 4:2:0 - 25f/s)
- 'C5410-160 : real time QCIF video PAL encoding (YUV 4:2:0 - 25f/s)

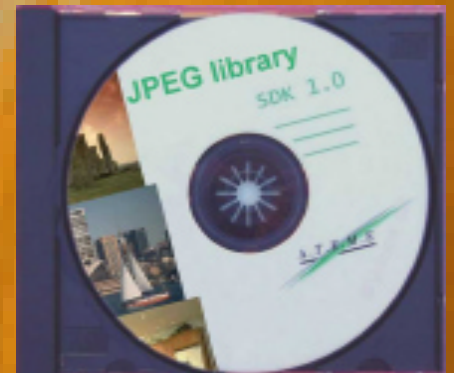
### Ease of integration

- Compatible with eXpressDSP standard
- Ease of use of the interface and quality of the documentation
- No external memory and no calls to DMA features required
- Allows any hardware architecture

### Flexibility

*As your technology partner, ATEME can help you to define the most appropriate hardware and software architecture to reach your performance, cost and time-frame targets.*

*Other JPEG functionalities such as lossless, progressive, hierarchical encoding are available on request.*



*Portable Equipments  
Observation Systems  
Video Security  
Medical  
Camera*

...

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*L'oasis des technologies*

eXpressDSP<sup>™</sup> Compliant



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# Features

## Target

DSP TMS320C5xxx Texas Instruments™

## Interface

eXpressDSP Software Technology™ compliant

## Input

YUV 4:2:2

YUV 4:2:0

Others on demand

## Quantization tables

user-definable (JPEG standard tables by default)

## Output

User-definable restart markers

Zero-insertion can be disabled

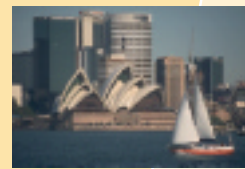
## Memory

The memory requirements for the library are given in words:

	Program	Const	Data
<b>Encode</b>	5200	525	650
<b>Decode</b>	4450	5300	135

# Performances

The measures shown bellow are the results of compression and decompression by the library of the following pictures, in pure JPEG standard, with no pixels ordering into the library.



In the following table, for each case, the first line indicates the number of frames processed per second, the second line shows the time in ms needed to process one frame.

The performances hereafter are measured for PAL standard.

Input	Format		C5402 - 100 MHz	
			Encode	Decode
YUV 4:2:0	Full 720 x 576	frames/sec	1	2
		ms/frame	920	640
	CIF 352 x 288	frames/sec	4	6
		ms/frame	230	160
	QCIF 176 x 144	frames/sec	17	25
		ms/frame	57	40
YUV 4:2:2	Full 720 x 576	frames/sec	1	1
		ms/frame	1140	800
	CIF 352 x 288	frames/sec	4	5
		ms/frame	285	200
	QCIF 176 x 144	frames/sec	14	20
		ms/frame	71	50

**ATEME products can be customized to your system requirements**