

JPEG Encoder/Decoder

High quality, high speed, low power consumption

Powered by original computing algorithm "DMNA" based on mathematical methods

1 Abstract

- Techno Mathematical has developed a software encoder/decoder that complies with the JPEG standard (ISO/IEC 10918-1 Baseline).
- By incorporating the proprietary computer algorithm "DMNA" it achieves faster processing with lower power consumption than the free software libjpeg-turbo.
- Efficient parallel processing allows the encoder to deliver consistent throughput in environments requiring real-time playback.
- It can be used in a wide range of applications, including digital cameras, surveillance cameras, mobile devices, and cloud environments.
- Efficient compression technology **delivers clear image quality, fast processing performance, and low power consumption.**

JPEG
DMNA

2 Features

• Equipped with proprietary computer algorithm "DMNA"

It significantly reduces the computational load, achieving both high-speed processing and low power consumption.

• High-speed processing and high image quality

Encoding is approximately 20% faster and decoding is approximately 30% faster than before, while maintaining high image quality.

• Multi-threading supported (encoder only)

The encoding process has excellent parallel processing performance and delivers high throughput, making it ideal for real-time applications (decoder support is planned for the future).

• Extensive support functions

The encoder allows for flexible image quality settings with quality factor, compression size, and any custom quantization table, and the decoder can decode thumbnail images within the file.

• Flexible implementation

Both encoding and decoding can be embedded using a simple proprietary C API, and the encoder supports GStreamer plugins (decoder support is planned for the future).

3 Specification

Supported standards	JPEG standard (ISO/IEC 10918-1 Baseline) compliant
Profile	Baseline
Image format	<ul style="list-style-type: none"> Encoder and decoder: YCbCr 420/422 Encoder only: RGB input supported Decoder only: YCbCr 444/400 output supported

CONTACT

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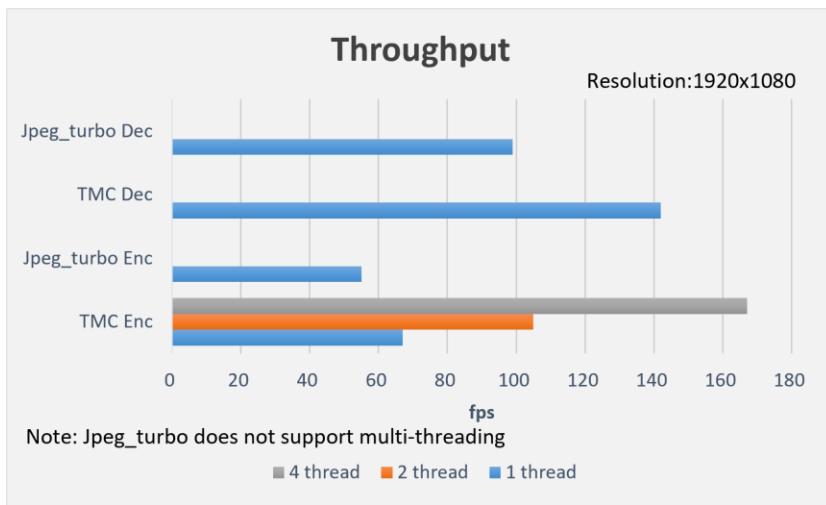
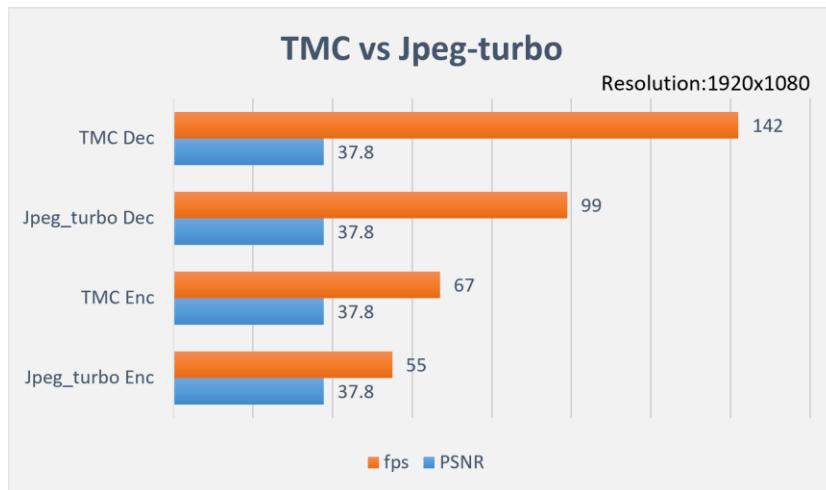
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Stream format	JPEG Byte Stream
Resolution	Up to 1920x1088
Supported CPU	ARM Cortex-A (32/64 bit)
Number of threads	1 to number of CPU cores
OS	Linux
API format	C API (proprietary), GStreamer plugin (encoder only)

4 Performance



- Encoder is **about 20% faster than Jpeg-turbo.**
- Decoder is **about 30% faster than Jpeg-turbo.**
- The encoder has excellent parallel processing performance and **delivers high throughput.**

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