

# 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"> <li>• Encoder and decoder: YCbCr 420/422</li> <li>• Encoder only: RGB input supported</li> <li>• Decoder only: YCbCr 444/400 output supported</li> </ul>

#### CONTACT

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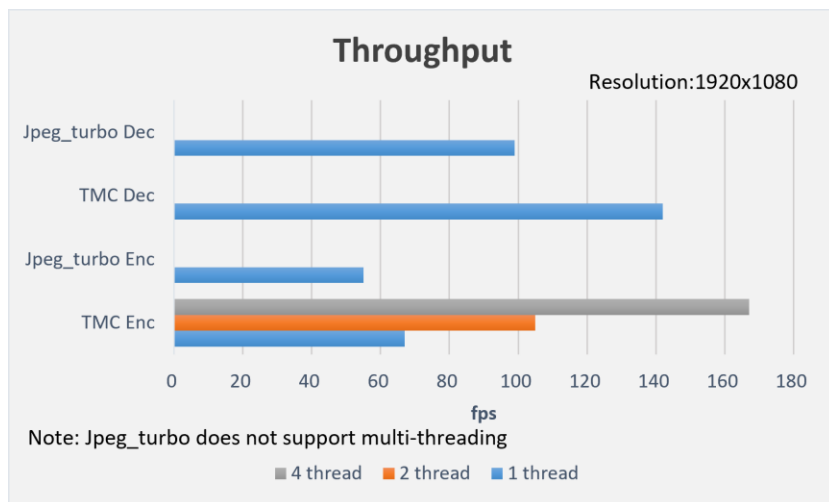
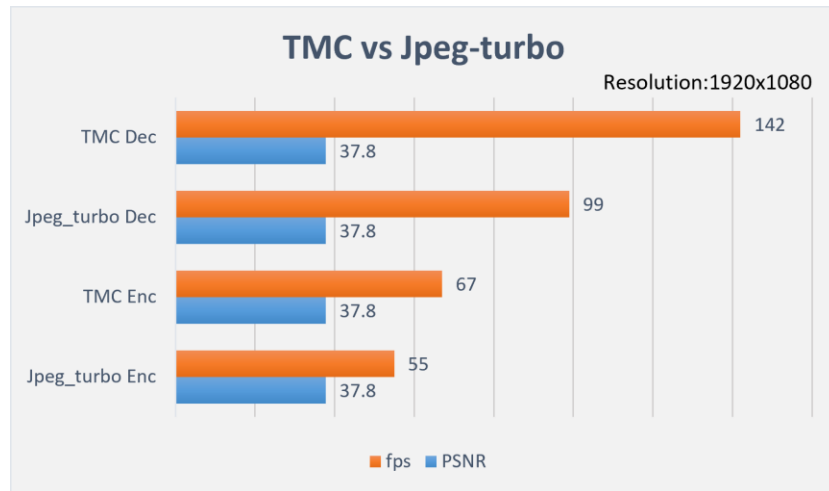
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Stream format	JPEG Byte Stream
Resolution	Up to 1920x1088
Supported CPU	ARM Cortex-A (32/64 bit)
Number of threads	1 to number of CPU cores
OS	Linux
API format	C API (proprietary), GStreamer plugin (encoder only)

## 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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