

# MICB-1340

## Medical image compression board



The MICB-1340 is a high-performance PCI-e based compression board optimized for medical imaging applications. Installed on a server, it compresses images to stream them efficiently across a network within a client-server or remote computing environment.

By relieving the main CPU from the compression task, the MICB-1340 allows for compact, cost-effective yet high-performance image server systems.

The MICB-1340 performs both lossless and lossy image compression for a large number of simultaneous users. This allows for high-quality image streaming to wired or wireless clients in demanding healthcare environments.

**BARCO**

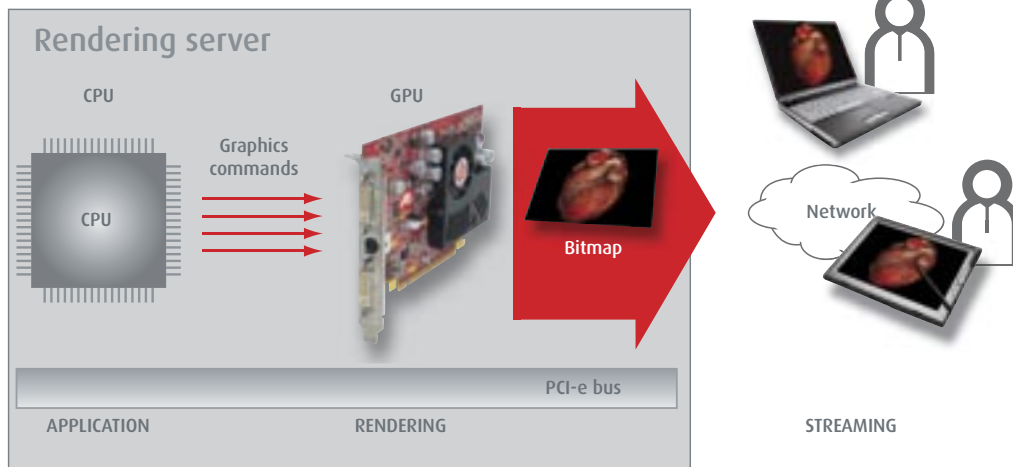
Visibly yours

# Compress your images Impress with performance

The quick adoption of MDCT, volumetric images and time-series studies has led to an exponential growth of image data sets in medical imaging. Simultaneously, the advent of networked EMR systems creates a pull for images from connected devices across the enterprise. This evolution puts a heavy burden on the hospital's network infrastructure and budget.

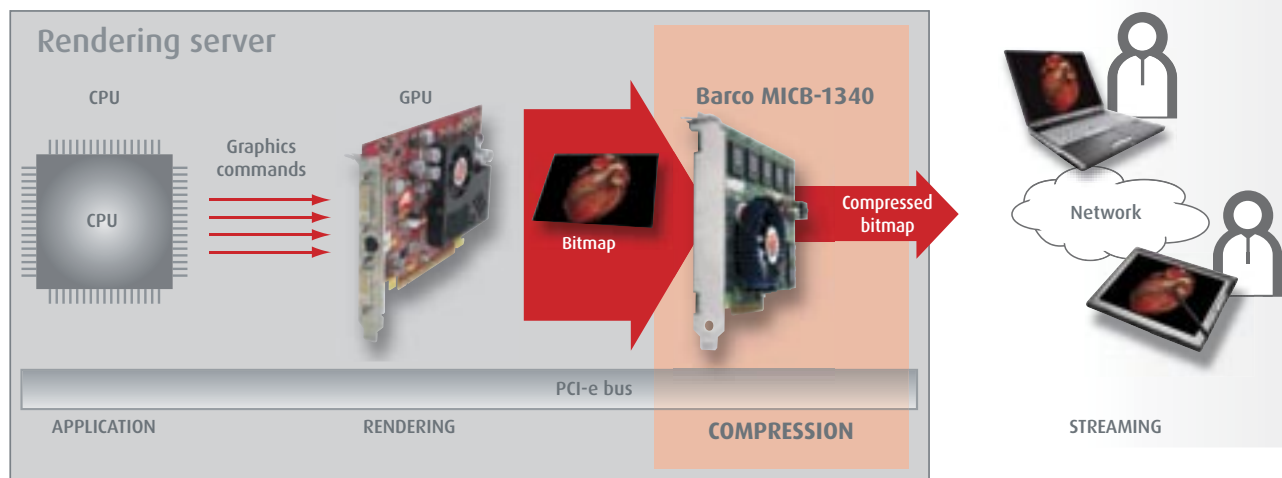
## Typical scenario: image streaming across a network

To overcome the problems associated with large data sets, more and more hospitals opt for a solution based on central rendering and image streaming over the network.



## New scenario: using Barco's MICB-1340 compression board

Plugged into the rendering server, Barco's MICB-1340 compression board takes over the compression task from the CPU. This allows for a compact, cost-effective yet high-performance image server system. The advanced MICB-1340 performs both lossless and lossy image compression for a large number of simultaneous users.



## Problem 1:

Medical images take up a lot of network bandwidth.

This results in bad or unstable image quality.

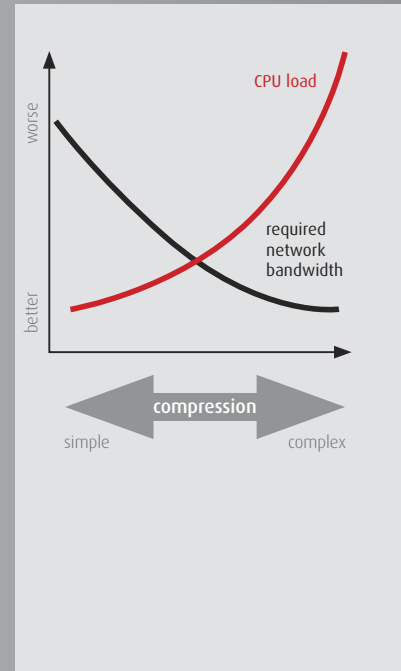
## Problem 2:

Good compression kills CPU performance.

While the CPU is occupied with compression tasks, it does a bad job handling medical applications such as rendering, segmentation, reconstruction, ...

### Disadvantages of compression in software (CPU):

- Very high processor load
- No real-time compression possible
- Compromise between good compression or low CPU load
- High power consumption per client



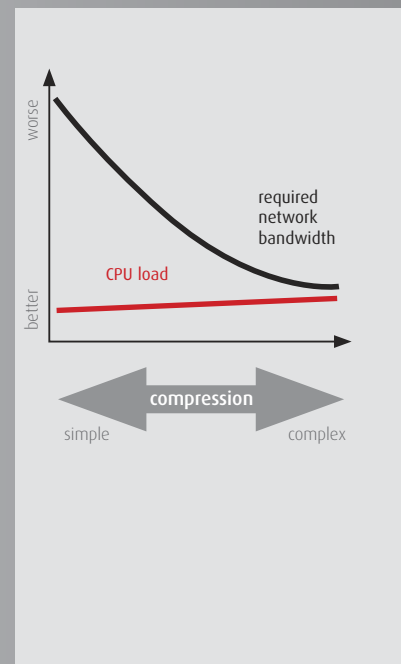
## Benefit 1:

High-performance imaging on any network.

## Benefit 2:

CPU load remains low.

MICB-1340 benefits	
Feature	Benefit
• PCI-e x8 board	• Industry standard
• DMA memory access	• Easy integration into server
• Automatically detects image changes	• Easy to program • Unaffected CPU performance
• Compression in hardware	• High performance
• Lossy and lossless compression	• High performance on any network • Medical relevance
• Low power consumption (Max. 20 Watt)	• Energy-efficiency
• High performance (1200 Mbyte/sec)	• Simultaneous support of many clients at high resolution • Fewer servers needed



# Technical specifications

**Format:** standard PCI-e x8 board  
**Codec:** lossless: based on JPEG-LS (ISO/IEC 14495/1)  
 lossy: based on JPEG

**Performance:** maximum throughput of 1200 MB/s

**Power consumption:** 20 W at full power

**Typical setup that 1 board can handle:**

- 15 simultaneous users at 1600 x 1200 x 24 bit/pixel
- frame rate: 25 Hz
- 75% of image updated
- 75% of users active

**Deliverables:**

- PCI-e board
- Linux driver (kernel 2.6.x)
- Linux application library
- Windows® driver (XP 32/64, Vista)
- Windows® application library
- Sample application incl. source

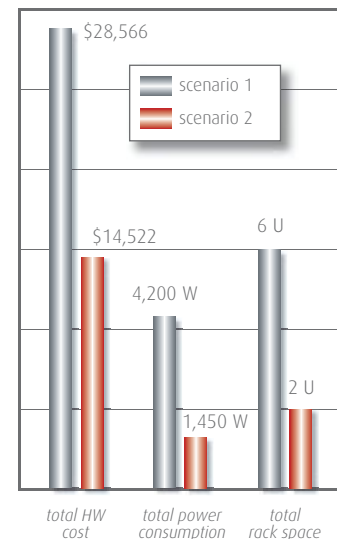
## A practical example

A server is running a medical 3D application, sending bitmaps to 18 remote clients across the enterprise. To allow for optimum network performance, the bitmaps are being compressed.

- **Scenario 1:** compression is performed by the CPU
- **Scenario 2:** compression is performed by the MICB-1340 board

### What are the concrete benefits of the MICB-1340 compression board in a setup with 18 remote clients?

	Scenario 1: CPU	Scenario 2: MICB-1340	Benefit
Number of servers needed for 18 clients	6	2	49% cost reduction
Total hardware cost	\$28.566	\$14.522	
Total power consumption	4200 W	1450 W	65% less power consumption
Total rack space	6	2	67% less rack space



### Request more information

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