

## Want to catch an U.F.O.?

Hunting for U.F.O.s dates to 19<sup>th</sup> century, when the first sightings were noticed. From that time on, the humanity is desperately trying to take a photo of an alien or its spacecraft. Without any doubt we can say that seeing, witnessing, recording and understanding is becoming more and more important not only in everyday life, but in science as well, e.g.: recording of materials defects, parts or particles of human body, planets, space, wanted or unwanted objects, uncovering of hidden, etc. Well, the world's innovators could be described in the similar way. They are all running and competing, in fact. They are all trying to be the first, the fastest, the best, and most innovative in their field of business. Those facts are moving the technology ahead and that it is all about. Everyone wants to make a difference. And everyone can recognize significant development achieved in last decade, especially when it comes to high-speed, intelligent cameras with real-time processing. The technology of machine vision has exploded and offers new products in daily basis almost.

All those who want to track U.F.O. or other fast objects and events should ask about a few key points when deciding to use a high-speed intelligent camera:

- When is it Intelligent?

Thinking machines and artificial beings appear in Greek Myths. The leading-edge definition of artificial intelligence research is changing over time. What this has to do with camera, one will ask. Well, a lot if you use a camera based on the FPGA and dual DDR3 memory. The most important question would be is it doing actions that a human can't?

- Is it high-speed?

High-speed photography is a science of taking pictures of very fast phenomena. It is defined as any set of photographs captured by a camera capable of 128 frames per second or greater, and of at least three consecutive frames. How many frames per second your camera can capture: 128 only or greater? Is that good enough to serve you best?

- Does it really make real-time processing?

Real-time processing is data processing that appears to take place, or actually take place instantaneously upon data entry or receipt of a command. Data has to be processed in a small stipulated time period (real time) otherwise it will create problems for the system. Does your camera do data processing in real-time?

After collecting the very same questions from our best teachers - our costumers', we made an in-depth analysis and thanks to the today's technology and in-house know-how we achieved to develop a brand new camera to answer all those questions and to serve the costumers' needs the most.

We proudly present our latest innovation: **Brand new Camera Family VELOCIRAPTOR**. **Velociraptor** is the **ultimate** FPGA camera with **very large** FPGA and **high speed imaging sensor**. **It is developed to fill-in the Market gap between standard industrial cameras and high-speed cameras**. It is based on the largest Xilinx Spartan-6 FPGA, and incorporates **dual DDR3** memory and **Gigabit Ethernet**.

The flexibility of FPGAs also offers **integration of other systems in the same chip**, eliminating the need for costly and power hungry PCs. The Camera has small and ruggedized waterproof aluminum housing design (90x52x40 mm) with innovative mounting system (ball-joint). **It is Ethernet powered (IEEE 802.3at PoE)** with a power consumption up to 5W. Imaging sensors were carefully selected and were picked the best ones market has to offer: turbocharged **CMOSIS imaging sensors CMV2000 (2048x1088 pixels, 2/3" size) or CMV4000 (2048x2048 pixels, 1" size)**.

**The Sensors include** all features the modern Machine Vision Sensor should have: **Global Shutter, several High Dynamic Range modes and Overlapping Trigger Mode**. As already mentioned **the Sensor** is very fast and outputs up to 768 million pixels per second **resulting in 340 FPS (CMV2000) and 180 FPS (CMV4000)**. **At reduced frame size the Frame rate can go up to 5000 frames per second**.

**For GigE Vision communication ultimate-performance system-on-chip (SoC) technology is implemented. JPEG compression core operating at maximum frame rate is offered with the Camera. This core was developed especially for this camera, since on the market there was no JPEG core with sufficient performance available.** The compression core enables long recording of high-speed video and direct storage on the PC. Other real-time image processing cores are available on demand.



OptoMotive's cameras are suitable for **demanding applications where extremely high-speed and high-frame-rates, high processing power and/or extremely short reaction time, together with real-time image processing are needed.** Velociraptor more than any other camera available offers excellent image quality, incredible frame rates, real-time JPEG compression core, versatile additional IP cores and it's targeted especially to metrology and industrial use. It suits almost every application.

So, we can say **new OptoMotive's Camera is a real beast** – as fast catching as Velociraptor. Can catch and record anything you can think of. Even U.F.O.!  
**But who needs an U.F.O. when Velociraptor is there!**

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