iENSO

Better Camera Gives Drone Racers an Edge.

The popularity of high-performance consumer drones continues to grow as cost points come down. One application feeds the need for speed, safely, for competitive thrill-seekers—professional First Person View (FPV) drone racing. In this sport, technical performance is key and every advantage matters. One pioneering manufacturer partnered with iENSO to create the perfect camera module for a better racing drone.

OVERVIEW

FPV drone racing delivers the thrilling virtual experience of flying an obstacle course at high speed. Since the drone camera serves as the pilot's eyes, video streaming to the pilot's headset must be high quality.

But high-quality imaging cannot come at the expense of racing performance. iENSO's challenge was to create a camera module – image sensor plus lens – that could output quality video while staying within tight constraints for size, weight and power consumption. To make things that much more interesting, the client needed this embedded imaging system fast to meet anticipated seasonal retail demand.
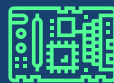
APPLICATION
Racing Drone Camera

CHALLENGES
Extreme size, weight, and power consumption constraints

A specialized camera module acts as a drone racing pilot's eyes, streaming high-quality video to their headset.

Turnkey Embedded Vision System	Size & Weight Constraints	Fast Wireless Data Transmission
Higher Quality Video	Heat Dissipation	Power Optimization

SOLUTION

A turnkey solution within six weeks

iENSO drew on its 15+ years of embedded imaging expertise to meet the challenge. Using rapid iterative modeling of alternative camera module designs, the iENSO team was able to design, source the best components and produce a turnkey, optimized camera module in an amazing six weeks.

Heat dissipation

In addition to size, weight and power consumption, heat dissipation is another important design consideration. While the customer didn't provide a specific heat dissipation requirement, iENSO's engineers took great care to ensure that the heat generated by the module would not compromise image quality.

Successful market launch

Using Sony's 12MP IMX377 image sensor and a precision lens from Sunex, iENSO's camera module worked flawlessly on the first engineering "spin" and helped establish the drone maker as a North American leader in specialty drones, including those used for military reconnaissance.