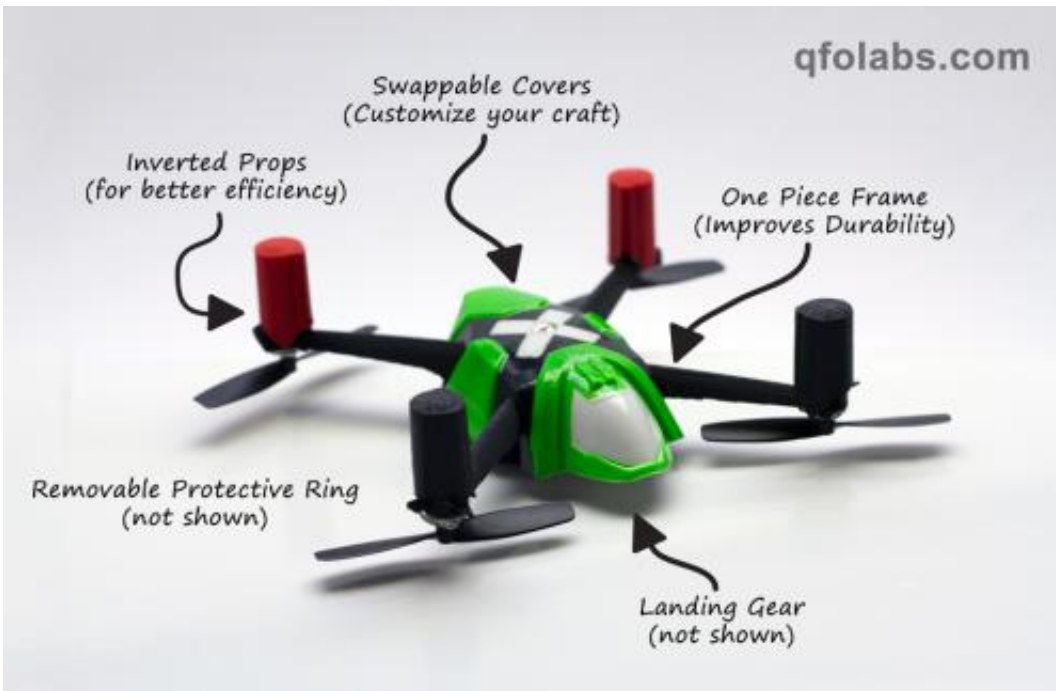


# QFO Labs wants to send palm-sized copters out to play

November 7 2012, by Nancy Owano



(Phys.org)—A Minnesota-based trio running a company called QFO Labs, with the focus on "high tech gaming concepts," will be the first to assure that their game idea can in no way be confused with the mall variety of remote-controlled toy helicopters. For the past five years they have been working on a game system called the NanoQ Copter with Mimix Tilt-to-Fly Controller. For those gaming enthusiasts who like the idea of answering a "rotor fight" challenge, this is what the product title

suggests: a palm, sized quad-rotor helicopter, flown wirelessly, with the use of a Mimix controller, which works with a simple one-handed wrist tilt.

The NanoQ weighs 35 grams, and it can remain flying for up to ten minutes on an integrated rechargeable battery. The NanoQ a single battery lasts between eight to ten minutes and can be easily swapped with a fresh one to keep on going. Batteries take roughly 30 minutes to charge. The included charger can charge two batteries simultaneously.

An electronic stabilization system keeps the craft upright automatically; it self-stabilizes with a three-axis [gyro](#) and [accelerometer](#). Commenting on the planning that went into the NanoQ, its creators said, "We took the traditional quad-rotor design and flipped it upside-down. This also means the props don't run into the ceiling and the motors don't hit the floor." Using high-speed stabilization, the craft is able to automatically adjust 400 times per second, reacting quickly to a player's commands. It is difficult not to refer to the user as "player," as the QFO Labs team, Jim Fairman, Brad Pedersen and John Condon, had multiplayer gaming in mind.



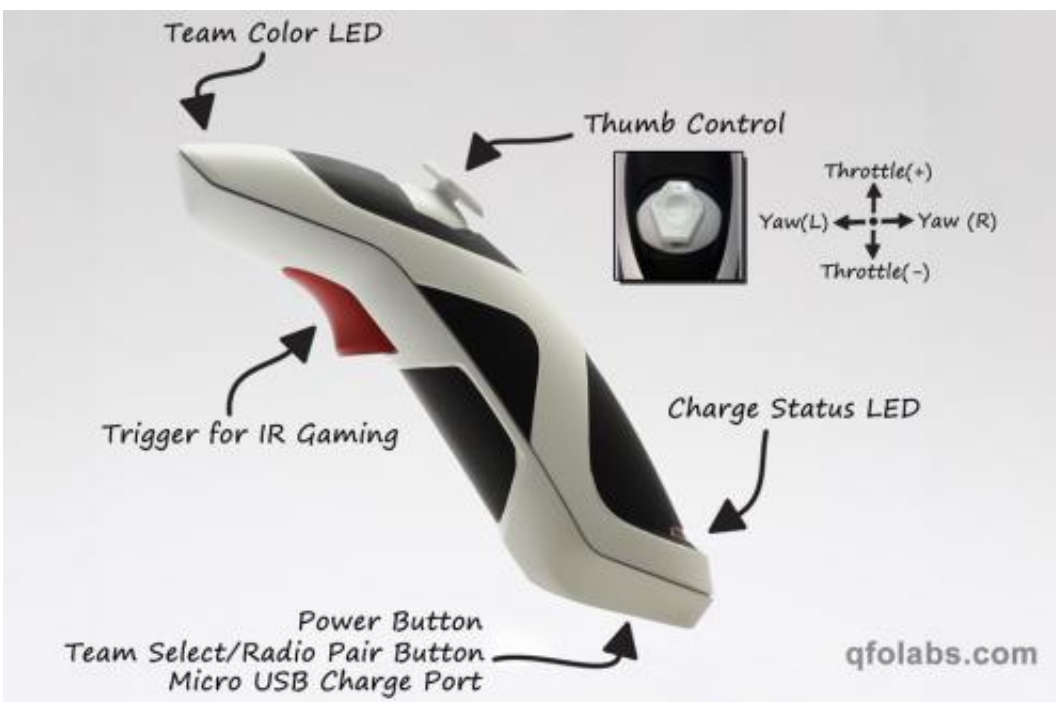
The copters can talk to each other via infrared transmitters and receivers. Team colors are automatically displayed with changing LED colors on both the craft and the controllers. The QFO Labs mission has been to take the gaming experience off a "flat [video screen](#) and into the physical world."

Welcome to the Sunday afternoon air battle. Each NanoQ is equipped with an IR photon cannon and an IR sensor pod. By pulling the trigger on the Mimix controller, a user can unleash photon "lasers" to try to hit the sensor pad on the opponent's NanoQ enough times to force it down.

The Mimix controller was ergonomically designed for the hand, based on US Air Force Human Factors data for aircraft controls. The control movement is a wrist tilt, which can easily make the user "feel" where to fly the quad.

The Mimix controller has its own [rechargeable battery](#) built in. It is charged through the USB port. The battery takes about 30 minutes to charge and lasts between three to four hours.

The NanoQ system presently is up on Kickstarter, with a \$99 offer that brings the payer the quadrotor, Mimix Tilt-to-Fly controller, charger, and two batteries. Shipping is planned for March 2013.



For serious tinkerers, the system's open communications protocol means being able to connect a computer up to the Mimix through the USB port to communicate wirelessly with the NanoQ to do things such as tweak control parameters, send control commands from a laptop, send customized signals out of the IR transmitter, or even connect an Arduino or camera to the auxiliary serial port on the NanoQ.

The team has presented this five-year effort as a Kickstarter, as they are ready and willing to take the wraps off and start production in earnest. With only days left until their November 13 deadline, they have a goal of raising \$230,000, for actions they need to complete in order to take the products to market— production tooling, quantity component orders and government certifications are needed, they said, to get to full production levels. At the time of this writing, they raised \$66,082.

**More information:** [qfolabs.com/press](http://qfolabs.com/press)

via [IEEE](#)

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