

## Smarter and More Nimble

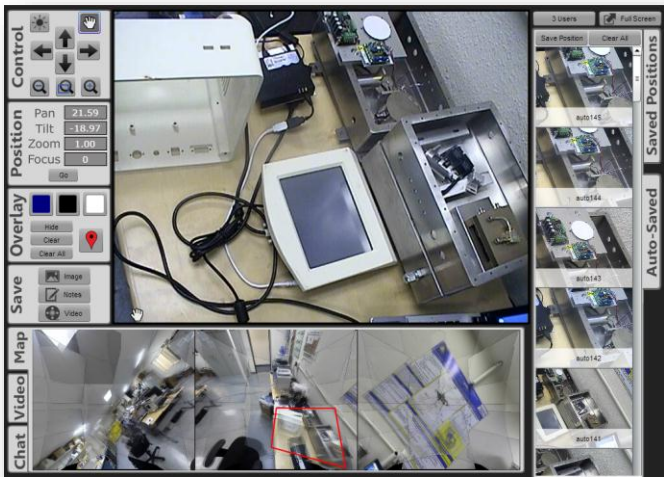
As a startup Active Spectrum doesn't have the large budget and extensive resources of its larger competitors. Instead Active Spectrum strives to be smarter and more nimble by embracing new technologies like Collaborate i/o that can leverage their strengths while reducing costs.

When one of Active Spectrum's top mechanical engineers, David Huang, decided to relocate from California to the East Coast they were faced with a challenge: How do they leverage David's technical expertise to drive first article inspection, knowledge transfer, and engineering design changes from thousands of miles away? The challenge was particularly acute because they were finalizing the design of a new Micro-ESR product for release to manufacturing. They chose to utilize Collaborate i/o to achieve their goals and keep their project on time and under budget.

## First Article and Initial Assembly

Using Collaborate i/o Active Spectrum was able to remotely perform first article and initial assembly of the next generation design. When the first set of parts arrived the project engineer Colin Elliott set up a Collaborate i/o system at Active Spectrum's labs in California. Mr. Huang joined the collaboration session from his office in New York and was able to remotely work through first article and initial assembly.

Performing first article requires the capability to see fine details and defects such as surface finishes, delamination, and flash. Collaborate i/o excelled in this role. "I was quite impressed by quality of camera," Mr. Elliott noted and "the zoom capability was pretty amazing."



## Knowledge Transfer

Training is a critical part of product development however, knowledge transfer over hundreds or thousands of miles is daunting. Using Collaborate i/o "definitely generated conversation at a level of detail you can't capture in an email," said Mr. Huang. For Mr. Elliott, "it was really useful having a camera that David could move around remotely and see things so he could walk me step-by-step through the entire assembly process. Using the system was seamless and after a short while it blends into the background and you forget you are using it."

## Design Changes

By utilizing Collaborate i/o, Active Spectrum was able to remotely verify their design and also identified some key parts that needed revision. Catching mistakes and implementing design changes early is important because it reduces scrap and rework costs. "Luckily we were able to catch design changes at a point where the mold is still reworkable" noted Mr. Huang. "If we hadn't caught the mistakes now we would have had to make a new mold later at a cost of \$30,000 to \$40,000!"

## An Ideal Solution

Engineers at Active Spectrum found Collaborate i/o to be an ideal solution when compared to alternatives. Travel can be cost prohibitive: in addition to the flight, there are expenses associated with lodging, meals and ground transportation. But, the largest cost is the time wasted in transit—14+ hours round trip. "There are a lot of times where it just doesn't make sense to have someone travel for a few hours of work," said Mr. Elliott. "As a result you

end taking half-measures that haunt you later or delaying trips until a weeks' worth of work has piled up."

Email and phone are part of our everyday communication but aren't effective for complex technical problems where visual information is often key. "A picture is worth a thousand words," said Mr. Huang, "seeing it in real time with great image clarity is even better and saves a lot of time. Especially with email, people want to type things out but some people aren't as articulate or clear as others." Traditional videoconferencing is great for office work, but it doesn't meet the needs of technical work. With Collaborate i/o "the 18X optical zoom and being able to control it remotely makes it very powerful," said Mr. Elliott. "It adds a lot of capability beyond what you can do with a webcam."

## It Just Works

Collaborate i/o has been designed to be easy to use right out of the box. "I'd rate the easy of use as very high" commented Mr. Elliott. "The user interface was very intuitive and it was a snap to setup and takedown. It just works!" Mr. Huang concurred, noting that "no explanation was needed—everything was pretty intuitive and the on-screen markup was really easy to use."

## Gets the Job Done

At the end of the day, what distinguishes Collaborate i/o is it gets the job done. "We achieved exactly what we needed to achieve in just a few hours," said Mr. Elliott. "Doing the same thing over email or phone would have stretched on for days or weeks." Mr. Huang also praised Collaborate i/o: "It's a fabulous product and a really useful tool. It worked great and it let me see what I needed to see to get the job done."

## Cost Savings Estimate

Round-Trip Flight	\$450
Lost Productivity	\$1,750
(Travel Time: 7 hours each way 14 man hours @ \$125/hr)	
Hotel (2 nights @ \$150 /night)	\$300
Per Diem (3 days @ \$40/day)	\$120
Rental Car (3 days @ \$50/day)	\$100
<b>Total</b>	<b>\$2,720</b>