



DISPLAY MANUFACTURING

Mobile & Automotive Display Cutting

To address the global demand for display technology while maintaining high quality, a large display manufacturer turned to Aerotech.

THEIR GOAL: Increase throughput and yield while meeting ever-changing customer requirements.



CHALLENGE

To maintain single-digit micrometer tracking error at top speeds, the customer needed a laser system that met the following requirements:

- ◆ Cut millions of displays per month
- ◆ Maintain high production yield with rigid end customer quality standards to meet mobile device & automotive market global display demand
- ◆ Optimize equipment footprint to maximize production floor space & minimize capital expenses to meet production targets

SOLUTION

Aerotech's solution addressed these challenges with:

- ◆ Unified control system that seamlessly controls scan head, servo motion & laser triggering for shortened development time & reduced floor space.
- ◆ Integrated advanced control algorithms coordinating laser scan head & servo stage motion to enable using smaller laser spot size over larger part area, increasing part quality & decreasing overall part cycle time.
- ◆ Novel, proprietary laser-triggering mechanism built into control hardware to fire laser based on spot position rather than timing, increasing quality & process yield.
- ◆ Two-axis laser scan head designed for high-dynamic contouring motion enabled high-speed production of any display size or shape.



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The Automation1 motion control platform makes precision control user-friendly.

One Controller for All Motion and Laser Control

Automation1 controls laser scan heads as “just another axis,” simplifying system integration and configuration while enabling tightly coordinated synchronized motions and laser triggering within a common platform. Automation1 delivers advanced control functions like Infinite Field of View (IFOV), harnessing the laser scan head’s dynamic advantages and correcting for servo stage error motion.



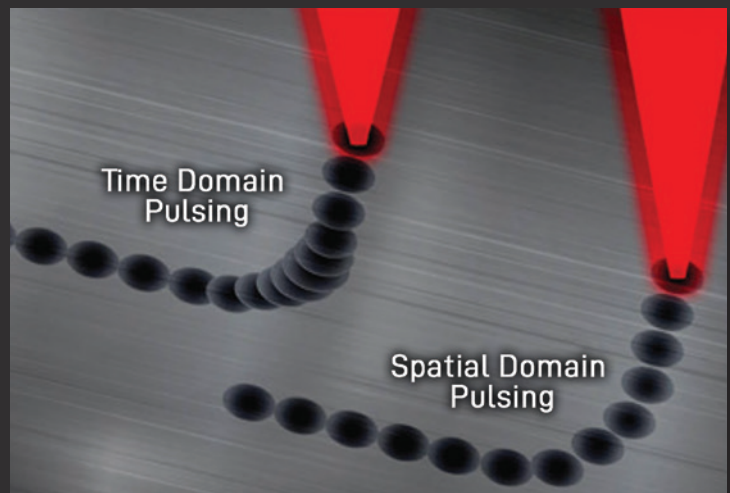
Dynamics and Precision

The AGV-XPO two-axis laser scan head is ideal for display cutting. Its low-inertia design enable high acceleration, and its extremely high resolution feedback minimizes dither. Because it can work twice the focal length and speed of competitors’ scan heads, the AGV-XPO delivers high quality, high throughput and production cost savings.

The AGV-XPO high-accuracy laser scan head provides higher quality, higher throughput and lower total cost.

Advanced Motion Control for Laser Systems

Automation1 includes advanced controller features for position-based laser triggering. **Position Synchronized Output (PSO)** enables precise laser triggering no matter the display size. **Infinite Field of View (IFOV)** enables coordinated laser scan head and servo motion, so the smallest laser spot size can be used on large parts with no need for stitching scan fields. Combined, these features increase throughput and maintain cut quality for the most demanding display manufacturing processes.



Position Synchronized Output (PSO)