

## Advanced Laser Systems switched to Reach to keep production rolling smoothly

### Background

Advanced Laser Systems was the first dental laser company to develop a lightweight, portable, and affordable diode laser. To improve their products and stay on the leading edge, Advanced Laser Systems decided to add a color touch control surface to their line of products.

The design team did some research and asked, "Do we start from scratch or use something that already exists?" To keep development costs low, reduce risk, and speed time-to-market, they purchased a serial LCD kit from a Reach competitor.

### Critical Issues

According to the lead project engineer, "That's when problems started. The vendor couldn't deliver. Their production was behind or slow. They would promise something and not deliver. It was an ugly situation."

At first, Advanced Laser Systems helped source the LCD displays themselves to alleviate the problem, but then had more problems. "The vendor couldn't get displays, so we were buying displays from anywhere we could find them around the world," stated the lead engineer.

Display supply began to impact Advanced Laser Systems' production. They went from having product on hand to being backordered. "After they missed a third shipment we looked for an alternate vendor," said the lead engineer.

### Solution

Advanced Laser Systems worked closely with Reach to standardize on a display form factor and controller board, both with long term supply

availability. Together they selected the 5.7" Prime View which has a multi-sourced form factor, and is available from both Reach and other vendors. The display is powered by the Reach SLCD6 controller which Reach continuously keeps in stock. It took just one week of one engineer's concentrated effort to swap out the old unit and replace it with the Reach board. "The Reach controller board was easy to implement and technical support was very helpful during the migration. In fact, Reach fixed some issues the same day they came up," said the lead engineer.

### Results

Reach's sophisticated MRP system schedules product builds to match customer demand, and has an excellent on-time delivery record. In addition, since Reach aggregates demand over many customers, there is often extra stock to meet unforeseen upside production requirements. Partnering with Reach has insulated Advanced Laser Systems from changes in LCD availability, technology and format. Since making the switch to Reach in December 2007, Advanced Laser Systems has a history of reliable supply.



*Advanced Laser Systems powers 5.7" Prime View displays with the Reach SLCD6 controller board.*

## The LCD business is very different from others

The LCD business is not like the traditional passive and IC components business that most embedded designers are familiar with. First, the lead times can be very long — up to 14 weeks — depending on many unpredictable factors. Second, due to the cost of running an LCD production line, most low-cost LCD displays start out as custom designs for a single high volume customer. Think of the Palm Pilot, a portable DVD player, the Garmin GPS, and so forth. This customer dictates every detail — the screen size, interface connector type, pinout, and location, mounting holes, and so forth.

The LCD company might then decide to try to market this panel to other customers to get more business. At this stage, a datasheet is created and sent out.

At some point, the original LCD customer makes a design change and stops ordering the original display. The LCD manufacturer, having lost its bread-and-butter customer, will generally stop making that specific LCD, even if there are existing customers, because the run rate is too low. Unfortunately, the panel end-of-life notification is not always forthcoming or timely.

If you've already designed this LCD into your product, you have a problem: You can't get them anymore. You likely face the prospect of having to make changes in your system. You have to change the LCD display, the touch control, the cabling, the mechanical mounting, and perhaps other aspects of your system. This is a very expensive proposition, but it happens all the time, because of the nature of the LCD industry. Even when a panel doesn't go obsolete, if its original buyer has a surge in demand, your lead time can go from a few weeks to several months. How can you protect your business from this unpredictable supply issue?

One possibility: Use an LCD specifically designed for the embedded market. These are long-lifetime designs from NEC, Kyocera and others, and are priced accordingly. The other possibility is to use

a display module supplier such as Reach that supplies the total solution and understands the LCD module business.

### Protection against product changes

When you buy your LCD products from Reach Technology, supply problems are greatly reduced. Here's why: When Reach develops an LCD controller/display module, it uses LCD form factors that are "de-facto" standards. Reach has direct, long term relationships with LCD suppliers, so it is the first to know about end-of-life or specification change issues. If an LCD becomes obsolete, a substitute is offered that has the same mechanical mounting to avoid packaging redesign. There are no changes or adjustments you need to make. Reach also aggregates LCD demand for low-volume customers so they won't be stuck with sales-killing lead time increases.

When you get started, you happen to choose an LCD panel that might not have interoperability options, we'll let you know in advance, so you don't inadvertently choose components that will adversely affect product availability and flexibility.

We've been guiding customers through changes such as these for 20 years. With your cooperation, we will help you ensure a steady and uninterrupted supply for your customers.

### LCD maintenance issues

LCD maintenance issues arise because of changes in the supply. When you use Reach products, any adjustments that are called for will be made before you receive the equipment. Therefore, you have no maintenance issues.

### Support for LCD systems/knowledge-sharing

Reach Technology has combined experience in LCD technology and associated markets of some 20 years. Our embedded engineers are always willing to discuss your concerns and to share their LCD experience with you.