It's Here: The ILDA Projector Standard

Newly Adopted Standard Gives Users & Producers of Laser Displays Common Ground for Moving Ahead

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When the history of the laser industry is written, one of the most significant events may be the November 1997 adoption of the ILDA Standard Projector (ISP) specification. The ISP represents the industry's first complete attempt at defining the laser equivalent of NTSC television, or 35mm film. When ISP projectors become widespread, laser displays will shift from being technology-driven to being art- and customer-driven.

The ultimate goal of these standards is to ensure the compatibility and interchangeability of hardware, software, and artware so that shows can be faithfully reproduced from system to system. Additional benefits also arise from standardization, such as less expensive and more reliable hardware, immediate plug-and-play artware, and simplified troubleshooting.

A rudimentary, although unofficial standard already exists for laser graphics largely by virtue of the common base of equipment in use. For example, almost everyone uses X-Y scanners and PCAOM color control, and therefore an informal X-Y-R-G-B standard already exists. For graphics-only applications, X-Y-R-G-B is fine.

But laser shows often consist of much more than laser graphics. Lumia and diffraction effects can be used to punctuate graphics. Actuated beam positions can be used for atmospheric effects. Other outboard devices such as fog machines and strobe lights are commonly used to accentuate the drama of a laser show. The specifications for the ISP allow all of these effects to be controlled in a consistent and predictable manner.

Lower Costs, More Sales

The wide adoption of the standard will benefit virtually everyone involved in producing and using laser displays. With these specifications, projector manufacturers will be able to produce many units of a standard model. They will be able to fine-tune their projector production line for higher quality and faster turnaround times. This will ultimately lead to lower cost manufacturing, which in turn will be reflected in lower sales prices.

Manufacturers of components, such as scanners, PCAOMs, and board-level devices such as geometric correctors, will benefit as well. Currently many of these manufacturers concentrate on producing

(continiued on p. 13)

ISP Sets Path for Artwork and Hardware

(continued from p. 7)

a wide variety of components to meet inconsistent market demands. With the ISP standard in place, manufacturers will be able to concentrate on improving a few specific models, resulting in higher quality, lower cost components, with greater interchangeability.

Software manufacturers will receive similar benefits. They will be able to create software that excels with a single projector standard rather than software that works adequately, or marginally, with numerous different projector configurations. The resulting software interfaces will give the user more creative tools.

For laser artware companies, the ISP standard provides a larger market. Already, the ISP graphics standard has helped artware companies create and distribute more graphics-only shows. The addition of beams and lumia standards allows artists to work with dramatic effects not available in other media, and be confident that the end result will be close to their original vision.

The Standard: A Closer Look

The designation of a basic, one-scanner pair, graphics-only system, whether monochromatic or RGB, is "ISP Level One." A single-scanner graphics system which has effects capability such as lumia, beam table, etc., is designated as "ISP Level Two."

The scanner tuning specification (standard identifier ISP-30K) requires that scanners must produce a proper deflection response when displaying the ILDA test pattern with a sample rate of 30,000 points per second.

The DB-25 connector and signal specification (standard identifier ISP-DB25) describes the physical connector, pinout, voltage and current requirements for the hardware interface. This is basically a DB-25 connector that allows differential signals for X, Y, Red, Green, Blue, Blanking, and some user-defined pins. It also recommends how to use these user-defined pins.

The DMX-512 signal specification (standard identifier ISP-DMX) describes the physical connector, pinout, voltage and channel assignment for DMX-512 control of various projector effects. These effects include actuated beams, lumia, diffraction, scan-through effects, and even house lights and fog. This specification recommends how to extend the number of channels for custom use.

The Effect specification (standard identifier ISP-EFX) describes the DMX-controlled effects in detail, and discusses the size, shape, texture and control of these effects. For example, it describes effect wheels as 100mm round discs that are to be inserted directly into the control mechanism. The ADAT Tape specification (standard identifier ISP-TAPE) describes the track assignment, signal level, and modifications needed to meet the standard.

Flexibility Built In

An important feature of the ISP is that it is voluntary. ILDA is not saying that all projectors must be ISP-compatible. Just as film comes in many formats (IMAX, Circlevision, 70mm, 35mm, 16mm) laser shows will also remain available in many formats. However, it should be possible for even the largest laser show to be reformatted so it can be projected using one or more ISPs. Certainly there will be some differences, but then there are differences when an IMAX film is transferred to 35mm, videotape or CD-ROM. And just as selling the IMAX film on videotape provides additional revenue as well as free advertising for the "full size" product, having an ISP version of a multi-scanner show will allow already-created artwork to reach new markets and whet the viewer's appetite for the full scale show.

A complete copy of the ISP standard is available through the ILDA Web site: www.ilda.wa.org