Know your shows are safe with Pangolin's Professional Audience Safety System (PASS)

The most beautiful and unique laser show effect is audience scanning. To be inside the light, to have colors and shapes wash over you in time to music — there is no other experience like it.

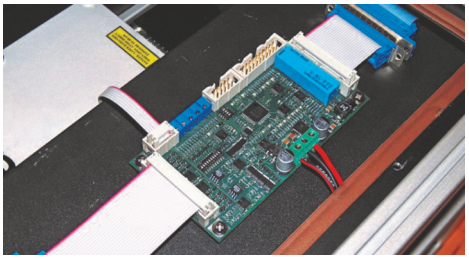
How to ensure audience safety

Clients and regulators justifiably want to know that, when audience scanning shows are performed, the light levels are safe. To accomplish this, Pangolin developed the Professional Audience Safety System.

PASS continually monitors the laser power, scanner signals, and the projector. If anything is not within preset safety parameters, PASS shuts down the laser beam until the problem is resolved.

Goes far beyond scan-fail circuits

PASS is significantly more advanced than any previous "scan-fail" or "laser show safety" products. It went through ten years of R&D, and two years of U.S. government scrutiny to determine that it provides true safety. PASS was also reviewed by ILDA judges last year and received the first place Fenning Award for Technical Achievement.



PASS is designed to be installed inside a projector or X-Y head. You can retrofit the circuit board (above) and light sensor into an existing projector, or build them into new designs.

PASS uses intelligent, redundant circuit design with analog components instead of microprocessors and software that may not have been through recognized safety validation procedures. Due to its redundant approach, there is no single point of failure that permits hazardous light levels to reach an audience.

Safety-critical parameters — such as laser beam power, scanner velocity, effect size and power supply voltages — are checked at least twice, using independent circuits with different designs and components from different manufacturers. If any parameter is unsafe, or if a monitoring circuit within PASS fails, it will go into a safe mode where laser light ceases.

Not just for U.S. shows

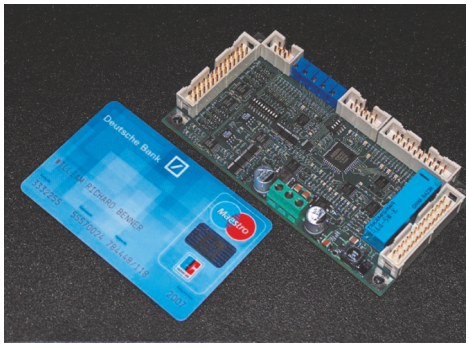
PASS is not just for the U.S. It is for anyone who needs to prove to a client, an insurance company, or a government inspector that an audience scanning show will not exceed user-set safety limits under any condition.

For example, some clients have concerns about liability in case there is a claimed injury. With PASS, you can perform shows that were never before possible. If there is any claim of injury, you'll be able to prove that laser power in the audience was continuously controlled.

Easy to install in any projector

PASS consists of two components inside your projector: a credit-card-size circuit board which inserts into the ILDA signal path, and a light sensor just before the scanners. A few additional connections are then made to the scanner position signals and the system power supply.

PASS provides five trimpot adjustments to customize its response:



The credit-card-sized PASS circuit board continually monitors the show. It is so advanced that a projector designed with PASS was the first system to receive a U.S. FDA/CDRH variance for European style audience scanning laser shows.

- Scanner velocity
- Effect size
- Timing parameters
- Laser beam power parameters
- Horizon level

During setup at the show location, simply adjust the horizon and beam power parameters. That's it! PASS works automatically to protect the audience.

The only guaranteed audience scanning safety system

Increasingly, clients and regulators are wanting reassurance that audience scanning levels are known and safe. Pangolin guarantees that PASS will keep the beam power in the audience at or below your preset level, even under system failure conditions.

To find out more about Pangolin's award-winning breakthrough, visit *www.pangolin.com/pass*

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