



MGP 464 a Winner at the Pinewood Derby



The 2009 Cub Scouts of America Pinewood Derby marked the 50th anniversary of this annual event held throughout the nation. The derby offers Cub Scouts the opportunity to design, cut, paint, and assemble pinewood vehicles that are pitted against others in a racing competition on a miniature racetrack. This year, Pack 727 of the Melinda Heights Elementary School in Rancho Santa Margarita, California, sought to raise the bar by offering racing participants and viewers a high-tech audiovisual experience that addressed some of the problems typically encountered in past races. As a Cub Scout volunteer and active participant in helping stage the event, Paul Chrisope from Video Resources, knew exactly what the race needed: a large screen display showcasing the race action from multiple viewing angles and real time racing statistics powered by Extron's MGP 464, a four window multi-graphic processor.



The MGP 464 allows onlookers to watch the race from a distance through multiple camera angles

Watching the Race Without Disruptions

One of the main challenges at the Pinewood Derby is keeping attendees from disrupting the racing event. A room packed with excited Cub Scouts craving derby action can quickly get out of hand. Furthermore, crowds showing up to cheer for racers only adds to the excitement. As a result, a number of distractions posed problems during the racing event. "Hordes of people would gather around the racetrack, kick it inadvertently, and at times, even spill food or drinks on the track," Chrisope says. "We wanted the audience to have the ability to view the race without disrupting the flow of the event."

Choosing the MGP 464

As an A/V professional, Chrisope is familiar with the Extron product line, so the first issue was a matter of finding the right product to address the issues. In the end, he decided to use Extron's MGP 464. Its capabilities would allow the audience to view the race at a distance through multiple camera angles, and create a racing experience that made the audience and participants feel like they were at a NASCAR event.

More Than Enough Inputs

The MGP 464 is a robust, high resolution graphics processor with the ability to combine four windows on a single display through a built-in 19x4 input matrix

switcher. Early on, it became clear that multiple cameras would be needed to help the audience feel close to the action without crowding around the racetrack. The MGP 464's configurable inputs allow the outputs of those cameras to be combined on a single, large display. In this particular case, three of these inputs were routed from two S-video cameras and one composite video camera. Each camera was strategically positioned near the start line, the length of the track, and the finish line.

In addition, a laptop was used for a fourth input to manually enter and display racing times registered from an optical sensor system placed on the racetrack. This provided real time statistics on every heat of the race, which allowed attendees to keep track of the racers they were following. Furthermore, 15 virtual video inputs on the MGP 464 can accept composite video, S-video, and component video sources. One of these inputs was used for an S-video DVD player that would occasionally play clips of the movie, "Down and Derby", between races and during intermissions.

Chrisope wanted to use a moving digital image as a presentation background, which was not an issue since the MGP 464 contains a dedicated DVI input that displays live, full-motion high resolution computer or HDTV video. To create the feeling of a professional racing environment, a waving

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checked flag was displayed on the screen during the race. The MGP 464 also has Graphic Still Store capabilities, which allow a presenter to use screen captures of an output or uploaded BMP image files as a background to enhance a presentation.

The application required a screen that was large enough for all viewers to see the race. Chrisope used a 12.5-foot diagonal rear projection screen driven by a projector connected to the MGP 464's RGB output. Typically, from start to finish, a heat will last roughly three seconds, so the MGP 464's ability to display four images at once gave the audience multiple views of the race, which they wouldn't see if they were simply standing near the track.

Ease of Use

Although Chrisope is an A/V professional, this was his first time using the MGP 464 and operating the device did not require any specialized training. "One of the reasons I chose the MGP 464 is because of its user-friendliness," Chrisope notes. "Anybody can operate the MGP 464 with little training."

Chrisope configured the MGP 464 prior to the event, but even that task was not too complicated. The Auto-Image™ feature on the MGP 464 allows automatic image optimization for the incoming video signals when scaling them to the projector's resolution. Dedicated video scaling for each



Configuring and operating the MGP 464 did not require any special training

window helps the input source deliver the best image quality without affecting the processing for other windows or the overall performance of the MGP 464.

Customization Capabilities

Chrisope also took advantage of the MGP 464's full window customization capabilities. The processor can create picture-in-picture window layouts with the ability to size each window and position it anywhere on the display. The image displayed within each window can be sized, panned, cropped, and adjusted for contrast, brightness, color, tint, and other image characteristics. Furthermore, he could add a color border and even a caption to the window and prioritize its order if multiple windows need to be overlapped. Also, when moving between windows, he could apply different transition effects such as dissolve and wipe, or

incorporate simple cuts for a smooth and fluid presentation. Window layouts could be saved as presets and recalled at a later time. When Chrisope wasn't using the four window layout, he could revert to a single window layout to display the racing results.

At the event, the MGP 464 was placed on a folding table that served as a makeshift workstation for Chrisope. He was also able to view the action locally while operating the MGP 464 on a computer monitor connected to the MGP's DVI output. A front panel security lockout kept curious Cub Scouts from changing any settings on the MGP 464.

MGP 464 Sets the Standard

Chrisope received many compliments related to the A/V setup. "Kids, parents, other Cubmasters, and executives at the district level praised the A/V experience that the MGP 464 helped bring," he says. "It felt like an actual professional racing event, and the race went on smoothly without any crowd interference." Looking ahead to the 2010 Pinewood Derby, Chrisope plans to use the MGP 464 again. With the introduction of the new MGP 464 HD-SDI, the ability to use HD-SDI for camera and projector connections is an enticing thought.



The MGP 464 gave the derby a look and feel that was similar to a professional racing event