JOURNEY OF LIGHTS
Chimelong Ocean Kingdom

Every night on the island of Hengqin, in Zhuhai, China, visitors to the breathtaking Ocean Kingdom theme park are treated to one of the most spectacular nighttime parades of any entertainment venue in the world.

CHALLENGES

Named "Journey of Lights", the parade represents a delicate meeting of art and technology. Dancers and other performers accompany the ocean-themed amusement park's distinctive mascots on a series of floats as they embark on a 40-minute journey around the central lagoon. Covering 32 different zones, the result is an ingeniously choreographed son et lumière.
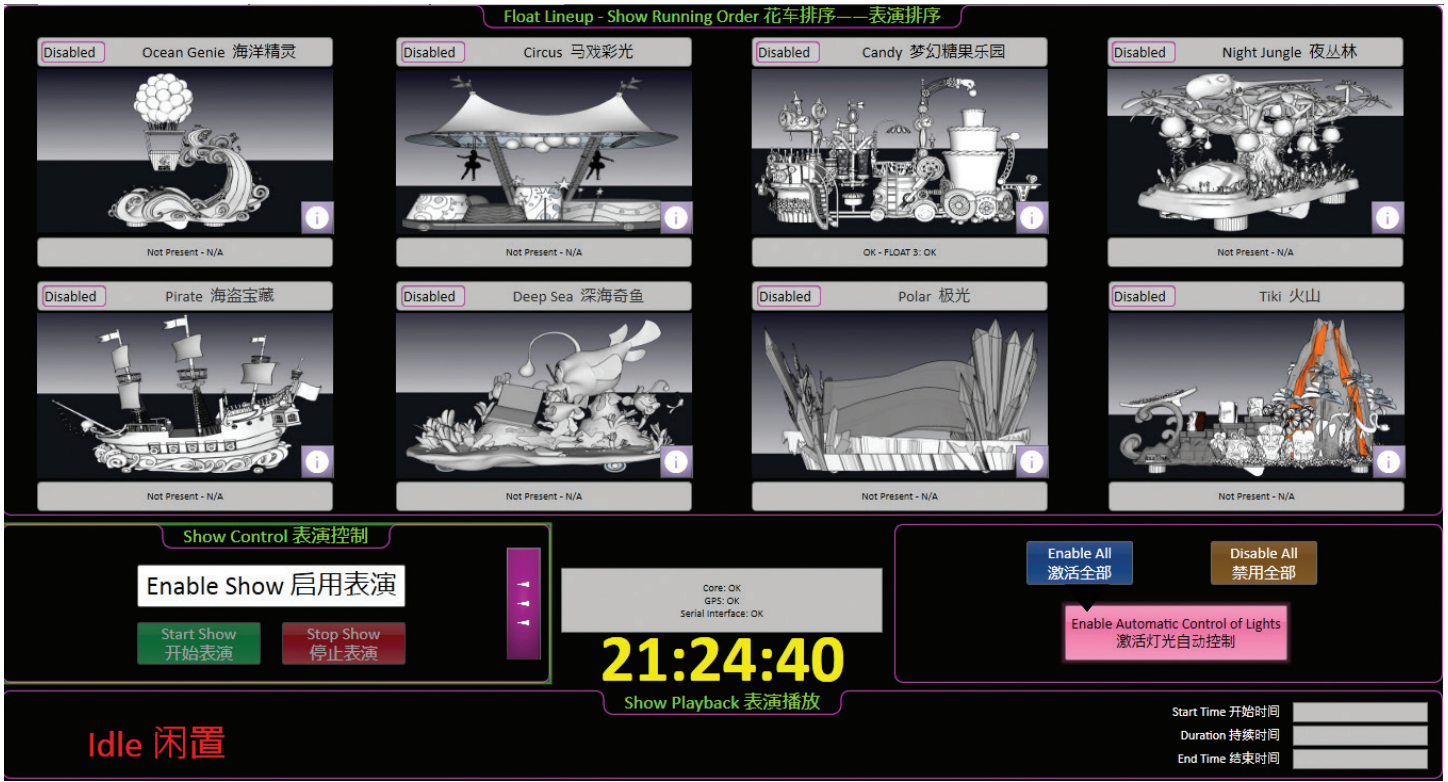

Photo Credit: David Foley, Miziker Entertainment

With one of the floats involving more than 200 universes of DMX alone, the scale and intricacy of the lighting design is difficult to comprehend. The same can also be said, however, of the audio and control system which delivers the parade's original musical soundtrack. The Q-SYS™ Platform processes and routes every audio element from every float, and triggers third-party visual controls while maintaining near sample accuracy as each float crosses from one zone to the next.

The solution was devised by primary consultant Evan Hall and programmer Brice Helman of Forward Thinking Designs, and utilizes Q-SYS to deliver audio and control for the individual floats as well as full integration with the park-wide audio system. One year after the completion of the installation, the Q-SYS Platform is working so seamlessly with the attraction that not a single support call has been made.

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> Q-SYS gives the team the flexibility to do whatever is needed, whenever it is needed.
>
> **– Evan Hall, Forward Thinking Designs**

SOLUTIONS

The investment in Q-SYS spans the entire Chimelong Ocean Kingdom site and includes multiple units of different Q-SYS Core processors, including the Core 250i and Core 4000. But for "Journey of Lights" the specification revolves around a standalone Q-SYS Core 110f processor located on each of the floats, facilitating the multi-track BGM playback that accompanies the show.

1 x Q-SYS Core 250i

Despite the Core 110f being the smallest Core processor in the line, the parade floats do not suffer from a lack of processing power or functionality. The Q-SYS Platform was designed with a singular software stack, which means all processors in the platform offer the same functionality and the only difference between them is the channel count. In fact, the Q-SYS Core 110f delivers a market-leading

Equipment
- 8 x Q-SYS Core 110f
- 1 x Q-SYS Core 250i

cost-to-I/O ratio within a single 1RU chassis, which suits the requirements of the floats perfectly. It offers 24 available I/O (including eight flex channels, as well as 16x16 USB channels on a single product).

"Q-SYS plays such a pivotal role in Journey of Lights," explains Li Kai Wai, Technical Manager, Entertainment at Chimelong Ocean Kingdom. Li was confident that Q-SYS was capable not only of handling all the audio requirements on each float, but also as serving "as the show control system".

The result is that each of the eight floats in the parade features an on-board audio configuration of loudspeakers and amplifiers managed by a Q-SYS Core 110f. There is also an Alcorn McBride unit, which is triggered by Q-SYS custom Lua scripting. Q-SYS enables broader show synchronization by supplying an overarching control function for the entire parade system via a single Core 250i processor which is located in the main show operations area.

The capabilities of the control interface and the ease of coding within Q-SYS through Lua were hugely beneficial, as Brice Helman, of Forward Thinking Designs, remarks: "The wonderful thing about Q-SYS from a control standpoint is the magic of the Scriptable Control component. The single block allows me to source all the controls for the user interface in the same place where the code base lives, which drastically cuts down on the complexity of the entire design. Moreover, the way Lua behaves allows me to do several clever things with data manipulation, which was crucial for handling constant data streams between multiple Cores."

The parade's Q-SYS Core processors provide ease-of-integration with the park-wide Q-SYS deployment – a primary advantage of their use for "Journey of Lights", but only one of many, as Li reveals: "The QSC technology can also handle GPS location and wireless communication so we can achieve perfect synchronization of the audio and visual control as the floats cross from zone to zone, as well as other show elements. We were also struck by the user-friendly and easy-to-create graphical user interfaces. The Q-SYS Designer Software makes it possible to build user controls for touchscreen devices quickly and easily."

The simplicity of the routing enabled by QSC was another important factor. "The use of name tags to route the audio and control signals is very user-friendly," says Li. "This makes it easy to trace and identify signal paths when changes need to be made."
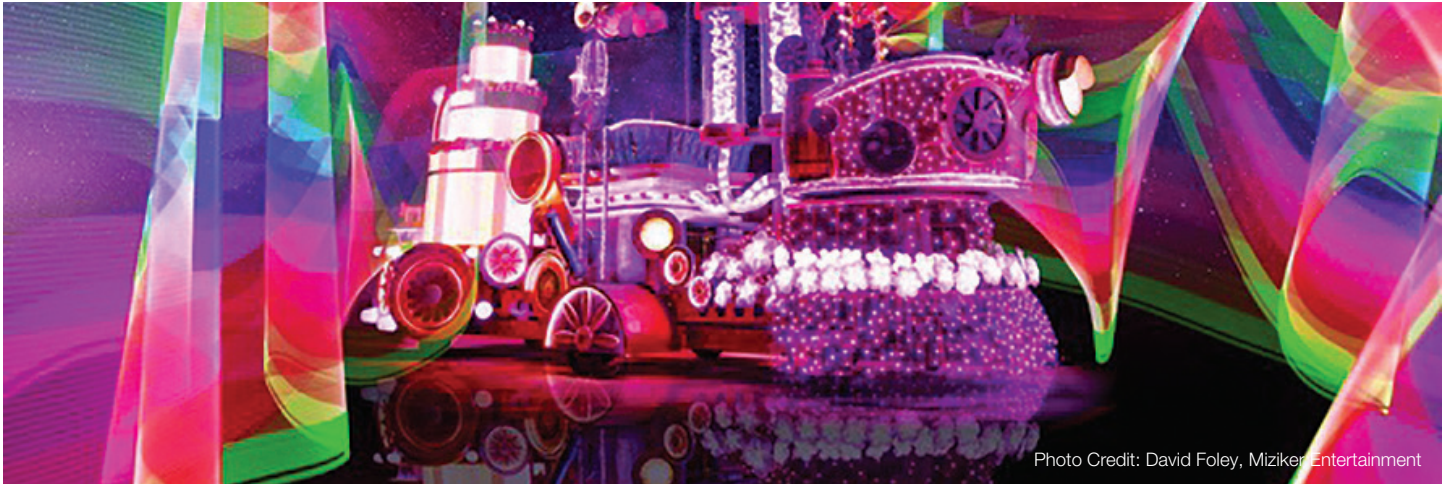
Photo Credit: David Foley, Miziker Entertainment

RESULTS

Site-wide Q-SYS integration means that audio can be shared to other areas of the park if required, via Core-to-Core streaming. In addition, the system can be scaled quickly and easily – Q-SYS Cores are software-based processors, built on standard IT networking protocols, so if Journey of Lights needs to grow, its Q-SYS backbone has the ability to grow with it.

After a year of operation, both Hall and the park's technical team are quick to emphasize that the Q-SYS system has more than proven itself as a solid platform for this application. In particular, Li praises the "stable network audio transmission and user-friendly audio routing" that Q-SYS has made possible. "Adding, changing, and deleting audio files on the fly is no problem at all, and there have been many positive observations about the wonderful GUI interface," he says.

As Hall observes, Q-SYS gives the team the "flexibility to do whatever is needed, whenever it is needed. They didn't have to go out and buy lots of music servers and control systems. Despite sophisticated integration requirements on the floats, Q-SYS never made them feel boxed into a corner and that – in terms of control and future expansion – they have infinite possibilities."
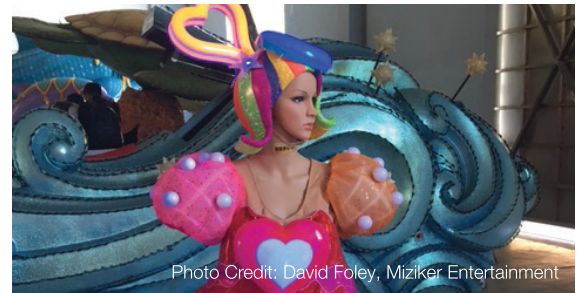

Photo Credit: David Foley, Miziker Entertainment

ABOUT QSC

QSC is a globally recognized manufacturer of audio, video and control (AV&C) solutions for huddle rooms to stadiums—and everything in between. Our systems make it easy for your team to design and integrate flexible, scalable solutions and deliver the native IT integration and standards-based technology your customers expect.

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