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CST transforms Parkroyal Collection Marina Bay

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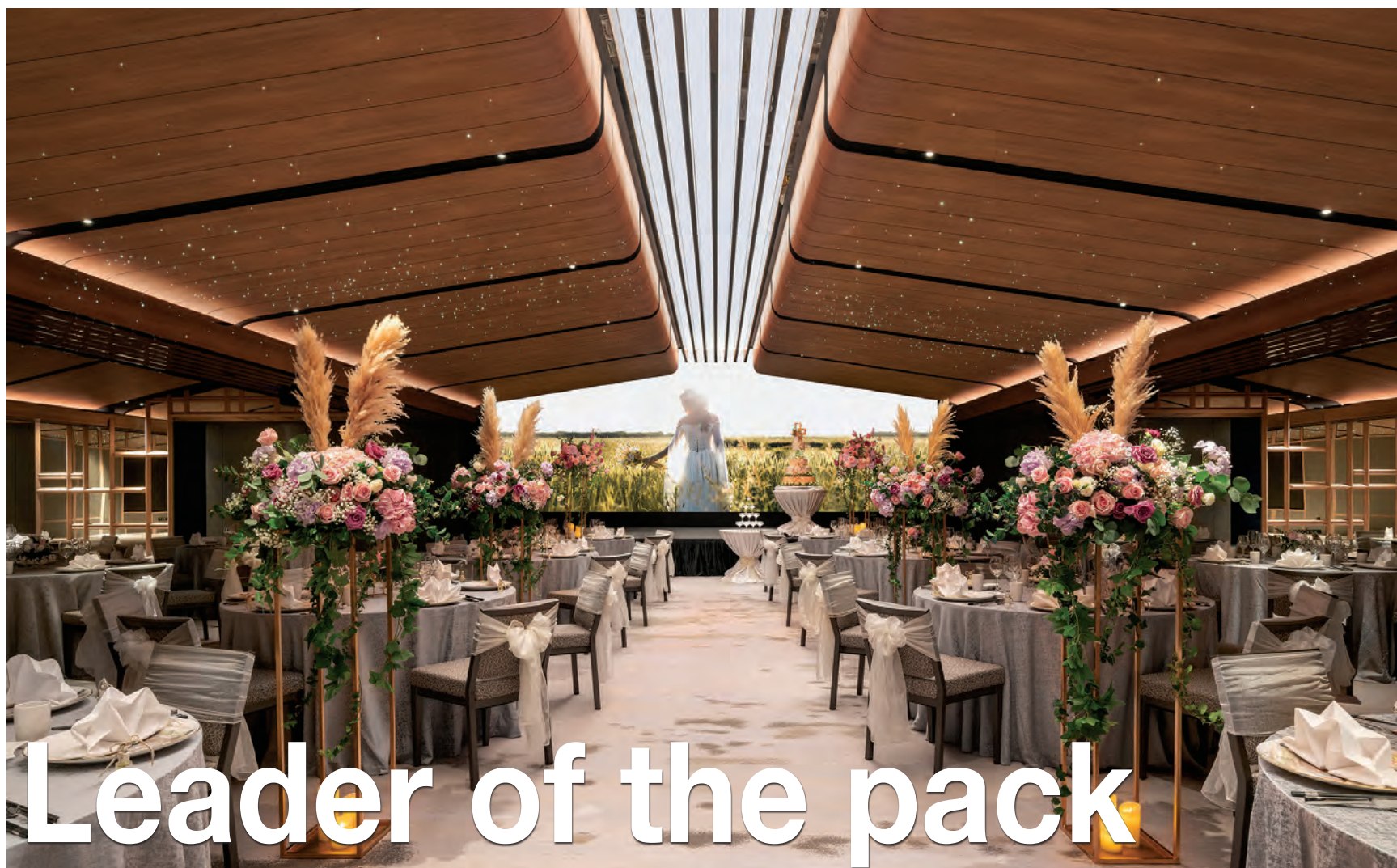
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The nature-inspired Garden Ballroom is designed to host wedding banquets and corporate events *Image courtesy of Parkroyal Collection*

The Parkroyal Collection Marina Bay has undergone a major AV upgrade during Singapore's circuit breaker. **Richard Lawn** checks in – virtually, of course



Concept Systems Technologies' project manager, CK Lim



Concept Systems Technologies' project and sales director, Gerald Fong

AS THE COVID-19 PANDEMIC LINGERS STUBBORNLY ON, tourism continues to be one of the sectors hardest hit in APAC. With Singaporean hotels forced to close their doors to guests, one in four have been transformed at the request of the government into facilities for so-called stay-home notices (SHN). Here, expats were required to quarantine within the guest rooms for 14 days. However, over at the Parkroyal Collection Marina Bay, it was business as usual for Concept Systems Technologies (CST) as the systems integrator worked around the circuit breaker measures to upgrade the audiovisual and lighting system within the public areas.

Previously known as the Marina Mandarin Singapore, the Parkroyal Collection Marina Bay is a significant landmark on the waterfront cityscape with its impressive architecture. New owner the Pan Pacific Hotels Group, which acquired the property in 2019, ordered a complete renovation of the existing building as the group expands its hospitality ventures to new, key markets. Singaporean hotels fully appreciate that enhanced AV technology often makes all the difference when wooing a corporate client or a wedding party to their ballroom. To maintain that competitive edge, some follow the pack while others seek to differentiate themselves by providing unique features.

Although CST has previously undertaken works for the existing hotel in addition to the new owners, the company was nevertheless required to submit a tender bid for the proposed works. Having branched out into other verticals including houses of worship and education over the years, CST's growing list of glowing hotel references can be attributed to its detailed, futureproofed designs and ease-of-use functionality. The fusion of dazzling LED walls, lighting effects and audio intelligibility that CST consistently delivers ensures that its trademark signature remains in high demand among aspirational five-star properties. With the tender bid approved, CST project manager CK Lim and his team was approved to go onsite over three protracted phases throughout the ongoing pandemic.

With a mission to provide a holistic hospitality experience with impeccable service to guests, quality sound featured as a high priority when selecting a suitable system for the new pillar-free Garden Ballroom. Designed to host wedding banquets and corporate dining events, the 767m² nature-inspired venue on level one can be divided and partitioned into three separate rooms for smaller, corporate seminars. Acoustic and AV consultant CCW Associates was tasked with the technical specifications of the Garden Ballroom. As is the norm, an essential requirement was that all speakers needed to be concealed at their installation points within the elegant interior.

CST project and sales director Gerald Fong explains that the system previously installed in the space had limited sound power and coverage ability. "A stereo pair of point source enclosures and 6.5-inch ceiling speakers had been distributed across the 4.2m-high ballroom," he says. "Unfortunately, the technical limitations of the system prevented the team from being able to push the levels to their desire."

As an L-Acoustics certified provider Fong, together with his colleague Jimmy Lim, proposed the low-profile design of the French manufacturer's Syva system on account of its exceptional coverage capability. CCW was invited to a demonstration at the company's Ubi showroom and left suitably impressed. The L-R stereo design would be augmented by a distributed network of L-Acoustics 5XT ultra-compact coaxials on account of their high output-to-size ratio. Crucially, Soundvision modelling confirmed that the combination would achieve both power and even dispersion while providing discretion.

Offering a full 140° horizontal coverage across the 36m-wide ballroom, the pair of L-Acoustics Syva cabinets are neatly concealed within doorframes behind fabric on either side of the Garden Ballroom stage. Low-frequency extension is provided by a pair of Syva Low enclosures embedded in the ceiling area close to the stage.



Image courtesy of Parkroyal Collection

Each divisible section of the ballroom is served by six compact 5XT speakers, with CST using its expertise to conceal the cabinets within the ceiling architecture. Fixed into position pointing downwards, the evenly dispersed 5XT coaxials provide full-range clarity with 110° dispersion. Providing a clear low-end response down to 27Hz, six additional Syva Subs are hidden in the rear and side ceiling area. Rackmounted in a rear ELV room, two L-Acoustics LA4X and three L-Acoustics LA2Xi amplified controllers power the 5XTs and subwoofers, respectively, over 4Ω of impedance.

Fong reflects on the success of a concert-grade sound system that guests can enjoy as an integral part of the luxurious Parkroyal Collection Marina Bay experience. “The Syva system looks, sounds and feels comfortable for guests who come here to celebrate some of life’s most momentous occasions,” he says. The system is equally appreciated by event organisers. “We have had events companies coming to this venue for setup and, when they recognise and hear the L-Acoustics Syva installed, they will promptly request to use the system for the event. I believe they are pleasantly surprised by a system that

is well-hidden in the beautiful interior design, delivering pristine sound for their clients and guests.”

Room dividing and combining DSP settings have been accurately programmed within the SymNet software of a 12-input, 8-output Symetrix NX 12x8 processor. Despite having only been appointed as the Singaporean distributor for Symetrix in 2018, CST has been specifying the US brand for its projects for many years. “The SymNet software is easy to programme in addition to being versatile, scalable, flexible and straightforward,” explains CST programmer, Sofyan.

“As with most of our hotel projects, the Symetrix processors are programmed as standalone systems without networking requirements. In addition, the wall panels are straightforward to install and easy to navigate for users.”

Each divisible ballroom is equipped with customised AV wall panels incorporating audio, HDMI, USB and VGA inputs and speakON connectors in the rear room in addition to the front and side sections of the stage. Belden 8760 two-core shielded cabling routes the microphone and line signals to AVP audio patch panels, while Canare coaxial cables have



Concealed within door frames, L-Acoustics Syva columns provide horizontal coverage

been installed for composite video signals and 24DV-2U patch panels are equipped for BNC video signals.

The uncertainty of hotel bookings brought about by the pandemic led to inevitable budget cuts for the project. However, the main visual output of the Garden Ballroom was spared. CCW and the hotel management team were given a tour of the Orchard Hotel grand ballroom, where CST had engineered two spectacular LED screens in 2019. Having been impressed by the screen’s flexibility of orientation in either portrait or landscape mode, the tour party insisted on its inclusion.

Drawing the main focus of attention onto the front stage, a 9.6m x 3.36m LED screen is offset by two 3.36m x 1.92m AOTO LED screens to the left and right in ballrooms A and C. The 2.5mm pixel pitch of the central LED wall comprises of 122 U2.5 M2.5C 480mm x 480mm tiles fixed to brackets, while the lateral LED walls each consist of 28 tiles. 4K resolution imagery is processed by an ATLVC-HS/3 LED control system, which is managed from a PC loaded with Blue Peacock software. Three Datavideo PTC-140 PTZ cameras serve as the main inputs into a Kramer VS-88UHDA 8x8 digital matrix switcher. When partitioned, Epson LCD projectors and LAV motorised screens can be utilised in the left and right sections for smaller-scale presentations and events.

Wireless Apple iPad touchscreens are used to manage AV and lighting parameters programmed into the Crestron AV3 processor in the rear ELV room. Each ballroom is equipped with Crestron C2N-CBD eight-button control keypads for individual control when divided, and a Furman CN-3600 power sequencer has been added to provide ease of powering up (and down) the AV system.

Phase one works on level one included the fitting out of two function rooms adjacent to the Garden Ballroom. Keeping with the garden theme, Clover 4/5 and 6/7 are divisible, but when combined have been designed to accommodate 171 and 124 seated guests, respectively. VGA and HDMI sources can be sent to floor boxes for outputting to Epson EB-L1070U 7,000-lumen LCD projectors on customised lifts for displaying on 2.44m x 2.44m motorised screens. Powered by a single Powersoft Ottocanal 1204 eight-channel amplifier, a network of Apart CMRQ108 5.25-inch ceiling speakers provide audio playback and clear speech from Shure SLX wireless handheld and head-worn transmitters. Simplified room combining and dividing DSP presets stored in a Symetrix Solus NX 4x4 processor can be recalled via Crestron control.

Phase two of the project was played out from October 2020 on levels four and five. The main focus of activity took part in the Atrium Ballroom, which can host up to 300 guests and comes



Image courtesy of Parkroyal Collection

Concept Systems installed AOTO LED displays in the Atrium Ballroom

with a private foyer with commanding views of the indoor atrium. The 346m² venue on level five can host bilateral events with the Garden Ballroom four levels below thanks to the provision of a 100m AV and control tie line.

Like its bigger brother, the Atrium Ballroom is defined by a unique, but slightly lower, 4m ceiling height that has been cropped down to 2.5m and could not house regular loudspeaker outputs. Having conducted works in the same hotel prior to the current contract, CST had unwittingly futureproofed the current Pan Pacific Hotel Group's investment. Both the Yamaha M7CL digital live console and the pre-existing Electro-Voice Evid 8.2C speaker system were passed for continued use. "The EV 8-inch ceiling speakers had to be reorientated horizontally and disguised from view in overhead black panels," explains Fong. Lighting in the form of 14 Martin Rush MH 5 moving heads had only been installed by CST in 2018.

Set up as a smaller replica of the Garden Ballroom, the main AOTO 6.24m x 1.92m 4K LED wall comprises 52 tiles. "Owing to a limited stage depth of 1.5m, we had to customise the LED wall so that it can be controlled from a dedicated wall panel to move forwards or backwards electronically on tracked rails," explains Lim. "The solution allows the hotel to conceal or reveal the mini



Image courtesy of Parkroyal Collection

The foyer area of the Garden Ballroom

stage depending on whether the function is hosting a presenter onstage or playing a video."

Three Datavideo PTC-140 PTZ cameras serve as the main inputs into a Kramer VS-88UHDA 8x8 digital matrix switcher. Wall-mounted on the left and right walls to mirror the level one venue, added visual outputs have been installed in the form of Samsung 98-inch HD displays. Added audio, HDMI and VGA input connectivity has been built in with custom AV wall-mounted panels discreetly integrated into the front and the rear of the stage.

Full AV and lighting control is managed from eight-button control keypads and iPad touchscreens connected to a programmed Crestron AV3 room processor. Kramer TP-752T

761 DSP unit provides paging and BGM control. The Apart components creating the BGM solution include a PCR 3000 MKIII mixer for hosting wireless microphones and other inputs and Revamp eight-channel amplifiers for outputting the various signals to a network of Mask 6T cabinets and CM30 ceiling speakers.

Having commenced and concluded the AV upgrade works between a circuit breaker programme and phase two restrictions almost 12 months later, CST endured its fair share of Covid-19 obstacles onsite. "The works on their own were relatively straightforward," stresses Lim. "But timeline changes, manpower issues and Covid regulations constantly affected our efforts. There were occasions when an

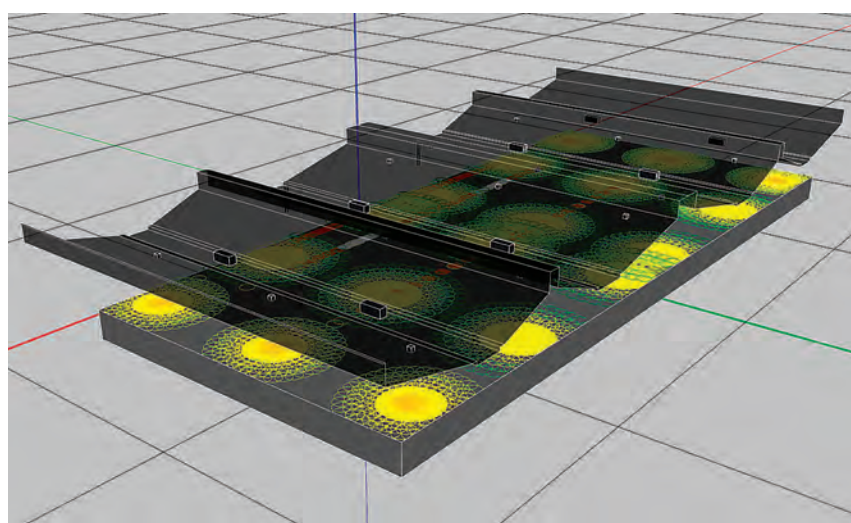


The project played out over several levels of the hotel

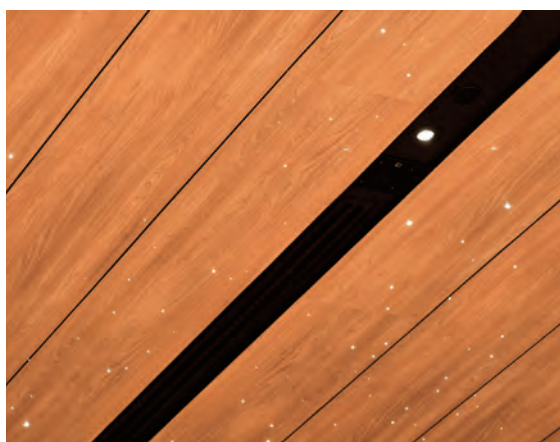
Image courtesy of Parkroyal Collection



L-Acoustics systems were selected for the divisible Garden Ballroom



Soundvision modelling highlights ideal locations for the Syva Subs and Lows in ballroom ceiling



Each divisible ballroom section is discreetly served by six L-Acoustics 5XT coaxials

transmitters and TP-752R receivers were added to ensure no degradation of signals.

Standalone BGM systems have been integrated into the Peach Blossoms restaurant, gym and St Gregory spa area on level five, in addition to the Peppermint restaurant on level four. In both restaurants, Symetrix Solus NX 8x8 eight-zone mixer distribution amplifiers receive inputs including Apart PCR 3000 MKIII audio players. Apart Revamp 4120T eight-channel amplifiers output 100V line signals to a network of Apart CM60 5.25-inch ceiling speakers. Both the Atrium Lounge on level four and the gym rely on Symetrix Zone Mix 761 DSP units for paging and BGM control for up to six zones equipped with Apart CMRQ108 wall-flush and Mask 6T 8-inch speakers. Used by fitness instructors, the two gym studios distinguish themselves with higher output Bose FreeSpace3 surface-mount satellite speakers and Powersoft Mezzo 322 amplifiers.

The final act of the upgrade for CST was staged in the pool area in May 2021, where another Symetrix Zone Mix

outbreak would be detected onsite, leading to an immediate stopping of works, which was naturally frustrating."

Hotel projects may be the norm for CST, but the integrator's success in supplying eye-catching AOTO LED screens has led to a growing demand for these among hospitality groups. "During our time onsite at Parkroyal, we also supplied and installed LED displays into the neighbouring Ritz Carlton," continues Lim.

Indeed, when it comes to hotel AV upgrades, an AOTO LED screen is commonly the only technology on display. The responsibility to differentiate a property lies with the interior designer, whose vision for the end result dictates the work of the systems integrator. Keeping out of the limelight, like the bulk of the technology the company discreetly installs, Lion State hospitality specialist CST seems to be able to check out any time it likes but is never allowed to fully leave.

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Safe bet for Venetian Macau

One of Macau's top hotels has opened a sleek Japanese restaurant and ramen bar with AV systems to match. **Caroline Moss** checks in with the Venetian Macau

BACK IN 2019, ANTICIPATING BOOM TIMES AHEAD, THE Venetian Macau was planning to overhaul its F&B outlets, raising the opulence levels even higher at the Las Vegas Sands-owned resort. Renowned Japanese chef, Hiroshi Kagata, was brought in to create Hiro, a high-end, modern Japanese fusion restaurant catering to a young, discerning clientele, serving teppanyaki cuisine in an elegant environment featuring a main room, VIP rooms and a sake bar. Hiro Ramen, meanwhile, was aimed at clients in a hurry to hit the casino. Both needed AV systems to deliver BGM which, as the evening progressed, would raise the tempo during cocktail hour and segue into DJ sets alongside vibrant video content. The hotel commissioned local Macau AV contractor Electrasia to supply, design, install and programme most of the AV systems, and Electrasia in turn brought in Hong Kong-based AV design house, the Den.

The main room at Hiro features high ceilings and reflective surfaces including a glass façade, steel teppanyaki hobs and granite floor and wall finishes. To overcome these challenges, a main mono system of five Quest Engineering HPI111 10-inch, two-way speakers has been mounted horizontally above the kitchen with asymmetric horns rotated to 90° x 50°. The directivity of the HPI waveguides projects clear HF and intelligibility to every table, especially in low level and subtle BGM mode, avoiding reflections on the walls. A sixth HPI111 is set vertically on a pillar near the entrance directed towards the sake bar; this has its own signal, giving the bar a stereo soundfield. A private seating booth and sofa area, as well as the waiting area and each of the VIP teppanyaki rooms, are covered by smaller HPI8i 8-inch two-way speakers, suspended vertically at a high level and focused on the target zones, using the speaker's asymmetric beams of 90° x 50°. Five HPI12S super-compact 12-inch subwoofers are located above the natural wood ceiling of the restaurant and aimed downwards. The 12-inch version was chosen to provide the bass reinforcement required for a cocktail lounge without overloading the room with sub-low frequencies which would increase noise levels.

FrenchFlair AS-3 compact 3-inch cylindrical speakers with AS-S10 subwoofers provide BGM in the main VIP room and can also



Five Quest HPI111 speakers are horizontally mounted above Hiro's open kitchen

relay audio from a TV integrated into the furniture on a motorised lift. FrenchFlair AS-3s have also been installed in a corridor leading to the restrooms, with Quest QTC2080i ceiling speakers installed in the cubicles.

While Hiro is part of the Venetian Macau F&B public mall area and open to the public, Hiro Ramen faces the casino area and is designed for casino clients needing a quick refuel. Their attention will be captured by a 4.5m x 3m LED videowall floated from the ceiling, displaying content promoting the restaurant. A solution was needed to provide clarity at a distance of more than 100m, which would require bright LEDs but would also work at up to 10m away for those on nearby slot machines, and up to 5m for incoming visitors. The Den drew on its experience in LED design, selecting a pitch of p4.81 to provide clear resolution and high brightness LED pixels for far distance viewing and a granular view without overpowering brightness when close up. "To ensure the nearfield screen quality can be maintained at such a low pitch, we used an extremely flat type of video LED panel to ensure a perfect performance even at extreme side angles," explains the Den's senior AV adviser, Nicolas Kirsch. "At the time



A Quest HPI8i in the Hiro waiting area

of design several uncertainties remained, such as the method of mounting the screen, the type of structure and maintenance access. To prepare for possible changes the DLW Magic Series from Digital Light Windows was identified as the best solution, as this series is the Swiss army knife of LED walls: suitable for both touring and installation, with front and rear maintenance and a wide array of pitches and customisation possibilities. Its



A DLW Magic Series LED videowall attracts casino clients to Hiro Ramen

touring-grade mechanical locking system ensures a perfectly flat alignment and makes system setup and alignment extremely fast; an important aspect as we were only given a single day for the installation of the giant LED videowall.”

Hiro Ramen has a modern take on a ubiquitous feature of Japanese ramen shops: the vending machine, which allows orders to be placed, paid for and relayed to the kitchen automatically. An LG 98-inch LCD TV is mounted vertically with a ZaagTech IR multipoint touchframe allowing clients to interact with graphic animations, browse the ramen menu, place orders and pay via mobile phone apps such as Apple Pay, Ali Pay or WeChat Pay. The interactive multimedia feature content was designed and produced by Japanese design agency Teamlab, which also provided the LED wall content. The animation

soundtrack is played out via Quest HPI5 ultra-compact speakers installed within the wall. Orders are sent to the kitchen and queuing numbers displayed on a 55-inch display near the shop entrance, while clients who want to order at the table are presented with an iPad e-menu. Two BrightSign media players provide backup content for the two screens in case streaming from the Venetian video network is lost.

The sound system installed in the ceiling at Hiro Ramen comprises seven Quest HPI8i full-range long-throw speakers and two HPI12S compact subs, all aimed at the tables and waiting area below. The HPI8i was chosen for its directivity, which can cut through the nearby casino noise without overpowering the ambient acoustics nor bleeding onto the casino floor. A set of Xilica Rio input panels behind the

service counter can connect to an iPod or microphones, while wall panel controls allow staff to adjust levels.

All amps and processing for the entire installation – a combination of Quest Engineering QX4280 four-channel and Quest Engineering Q1K digital amps and Xilica Neutrino matrixes – are integrated into a single 16U rack hidden inside a service cupboard. All room controls are provided by Xilica Mini Series wall panels and a master panel based on Xilica XTouch 80 and iPad control. From the single Xilica Neutrino 16x16 matrix, Dante lines have been run to three different Rio input panels located around the venue, receiving local signals including those from the TV in the VIP room, or to connect external sources such as DJ equipment and microphones. Such a small control rack is possible because of the Quest Q1K's power capacity, which can drive up to 500W/8Ω per channel, or as a 70V line, 1,000W amp in bridge mode. Additionally, the Xilica Neutrino, a high-power DSP offering a range of functions, has the capacity to drive an entire system. “We pushed the system to the limits of its capabilities and the number of control and input panels that it can support,” says Kirsch.

All cabling is from the CAE S2CEB range of high-quality, flexible FHP speaker cable and AudioLan6 Cat6 network cable. Extron video switchers, a Novastar LED wall controller and Cisco Ethernet switch complete the picture.

Following a two-month kitchen preparation and rehearsal period during which all tuning and GUI programming was carried out, the new Japanese F&B outlets opened on 1 February 2020 and prepared to impress visitors to the hotel. Just weeks later, a by-now familiar tale unfolded as Covid hit Macau and closed the casinos. Some reopening has since been allowed and, when the territory is able to return to full capacity, it's a safe bet that the Venetian Macau's new star attractions will lure visitors keen to sample Chef Kagata's Hiro cuisine and gamblers eager for a quick ramen before hitting the tables.

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Good on the dancefloor



Nightclubs across China are continuing a long tradition of installing Martin Audio systems to deliver the latest sounds to a nation of dance music fans. **Caroline Moss** discovers the latest on the Chinese club scene

EVER SINCE THEN-MD DAVID BISSETT-POWELL PLANTED

a flag for Martin Audio in China in the 1990s, predicting the massive boom in entertainment that was waiting to happen, Martin Audio and its partner, Sino Huifeng, have been installing bars and clubs across the entire country. A further boost has been the rapid spread of EDM across China, and in 2018 the UK manufacturer further strengthened its presence in the region with the appointment of Dave McKinney as APAC sales manager under the banner of his new company, Generation AV.

According to recent Chinese surveys, the audio element is slowly taking a bigger slice of the total investment in club sound and light systems. It has become a major trend to move outdoor electronic events indoors and, with the pandemic creating restrictions of movement outside China, the desire for homegrown entertainment has never been higher.

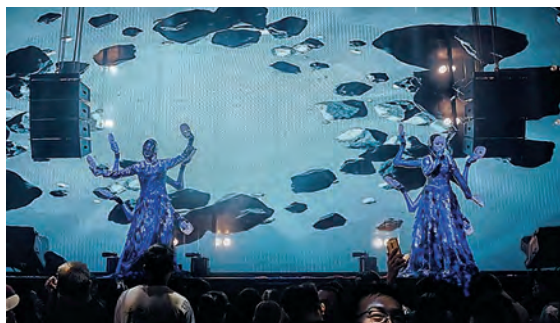
One of the latest Martin Audio installations is at the Supermiami club in the ancient capital city of Xi'an. This is the latest brand for the Xinhuaapeng Group entertainment company based in Xi'an, which has worked with Sino Huifeng in the past to create entertainment projects in Shijiazhuang, Baotou, Yinchuan, Datong, Xi'an and other cities. Supermiami, the latest of these, has been installed with an MLA/MLX loudspeaker array in its 7,000m² main room.

Spatial architectural design specialist Cheng Jiheng teamed up with a Dutch stage art team to create an exclusive concept for Supermiami, with stage structure, image transmission, lighting, effects and sound all enveloping clubbers in an immersive multimedia AV experience. Sino Huifeng's engineering team set out to create a sonic experience for the open, column-free interior, which emphasises the 18m-wide dancefloor and 360° space for partying, plus a VIP deck area known as the Sky Box, a cantilevered structure open on both sides, giving guests the sense of an enlarged space.

Luo Chunrong, engineering director of Sino Huifeng, has designed an MLA/MLX system using proprietary Display intelligent software technology, balancing LF with the high end so that all types of dance music can be presented to optimum effect.



Martin Audio MLA/MLX array in the main room at Supermiami



The main Martin Audio WPC dancefloor system at Atlantis

The MLA hanging array system comprises 12 MLA (Multi-cellular Loudspeaker Array) cabinets and a pair of MLX subwoofers, while Martin Audio Wavefront W3P speakers provide the external fills. The bass arc of the MLX subs is matched to the delay settings of MLA. While ensuring high-frequency extension, the design also highlights the impact of low frequency to distribute a powerful energy right across the site.

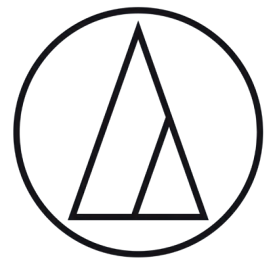
"Sino Huifeng have once again showed their expertise in the Chinese nightclub market and we're delighted that Martin Audio systems have taken pride of place at this landmark venue," comments McKinney.

Across China, Sino Huifeng has helped create another spatial EDM experience, this time for the multi-million-dollar Legend of the Atlantis club in Datong, jointly produced by China Datong Atlantis Investment Group and the domestic First-Line Entertainment Management Group. The club gets its name from the legend of Atlantis, which came about during a movement of the earth's plates, causing a highly developed civilisation to sink into the Atlantic Ocean. Clubbers get their EDM fix in a 2,000m², 15m-high party space – safely above sea level – via a Martin Audio WPC (Wavefront Precision Compact) line array system. Sino Huifeng has used dual 10-inch passive WPC multi-cell line array speakers for the main dancefloor system, with Blackline3 FX15 high-energy coaxial speakers used for full-range fill, and a further pair for DJ monitoring. Blackline3 B218 subwoofers provide the main low-frequency energy. This dynamic sound system is complemented by eight sets of robotic arms mounted with lighting effects which pulse through the space to create an immersive experience for clubbers.

There have also been another seven prestigious installs across China in recent months, all comprising optimised line arrays and products from across the Martin Audio portfolio, including a new One Third club in Nanning, two further Miami clubs in Nanning and Shijiazhuang, the Beast Club in Haikou, Modern Club in Guangzhou, as well as bbR Carnival in Huangshi City and Dr Oscar Night Club in Shaoxing.

"Sino Huifeng have shown their dedication and expertise in the night club sector with these landmark installs," says McKinney. "Optimised line arrays from Martin Audio's MLA and Wavefront Precision series alongside our legendary subwoofers are delivering stunning audio and impact for clubbers throughout China, and we look forward to further installs in the near future."

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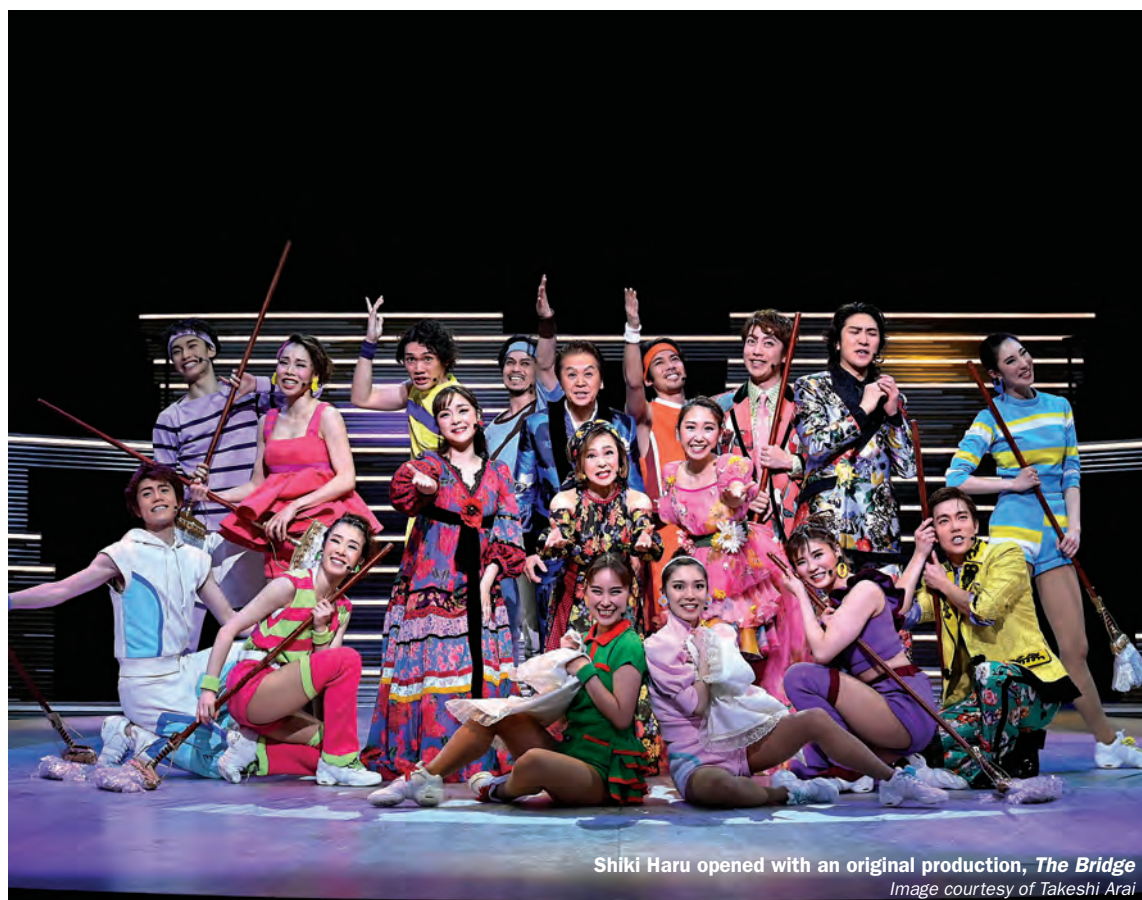
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Shiki Haru opened with an original production, *The Bridge*
Image courtesy of Takeshi Arai



The 1,200-seat Shiki Aki auditorium



The newly rebuilt theatres form part of the Waters Takeshiba complex

Shaking up theatre

Japan's Shiki Theatre Company not only finished rebuilding two theatres during the pandemic but is now staging international productions of *Frozen* and *Phantom of the Opera*. **Caroline Moss** pays a virtual visit

SHIKI IS ONE OF THE BEST-KNOWN THEATRE COMPANIES

in Japan. Since it was set up almost 70 years ago, the company has gone on to stage almost 3,000 performances to an audience of over three million in a typical year, employing more than 700 actors and staff. Shiki operates seven theatres for its exclusive use, and in recent years its programming has branched out from straight plays towards Western and Japanese musicals.

The Shiki Theatre Company was founded in 1953 on France's Bastille Day – 14 July – by a group of university students aspiring to bring about a revolution in the theatrical world. They wished to decentralise the epicentre of culture from the Tokyo metropolitan area and make it more accessible to all of Japan by opening theatres in multiple cities. The company presents a wide variety of shows including plays, original musicals and international productions from New York City's Broadway and London's West End, as well as all Disney shows transferring to Japan. Each venue requires technology that is adaptable and can accommodate changes between types of shows, as well as between productions and rehearsals.

In 2017, two of the theatres, JR-East Performing Art Center's Shiki Theatre Haru and Aki – spring and autumn, respectively – were closed due to the redevelopment of Tokyo's Takeshiba district, with a plan to entirely rebuild and reopen in 2020 as JR-East Shiki Theatre (Haru) and JR-East Shiki Theatre (Aki). Haru had had a record-breaking run with 6,327 performances of *The Lion King* to an audience of 6.88 million, while Aki had staged 91 productions more than 5,670 times for 4.02 million people. During the redevelopment, both theatres were demolished and reconstructed from the ground up in exactly the same locations as before, and now form part of the Waters Takeshiba waterfront multiplex development.

Due to the impact of Covid-19, the opening night of *Phantom of the Opera* at the new, 1,200-seat Aki theatre was postponed from July to October 2020. Meanwhile, the slightly larger, 1,500-capacity Haru opened in January 2021 with original Shiki



The auditorium of Shiki Haru can seat an audience of 1,500

production, *The Bridge*, before it was finally able to go ahead with Disney's *Frozen* in June.

Since Shiki stages so many productions, the company purchases and operates all its equipment rather than renting.

Three members of the company are responsible for selecting, designing, installing and tuning the systems before handing over to the show operators. Every effort is made to keep up with the latest technology, and this often involves visits



The balcony delay system at Haru consists of Meyer Sound Ultra X42s

to overseas factories to select new technology, providing feedback to manufacturers on product development.

In some cases, overseas designers are responsible for everything from equipment selection to tuning, with Shiki installing the equipment based on data received. Both new theatres have been installed with Meyer Sound systems provided by local distributor Artwiz, with a planned Constellation setup for Haru postponed due to travel restrictions. Currently, Haru is running an installed L-R system consisting of 13 Meyer Sound Leopard compact line array speakers and two 900-LFC low-frequency control elements per side. Six more 900-LFCs are flown as a centre hang along with four UPQ-D2s. Down fill is provided by one Lina, front fill by six Ultra X22-XPBs and orchestra side fill by two MM4-XPBs. Delay systems include under balcony delays of six UPJunior-XPBs and seven Ultra X22-XPBs, a balcony delay system of four Ultra X42s and two Ultra X22s for mezzanine delay. Foldback monitors include UPJ-1Ps, UPM-2Ps, MM4s and E6s, with MM4-XPBs, UPJuniors and E6s for special effects (SE). Processing for the entire system is handled

by D-Mitri DAI-24, D-Mitri DAO-24, D-Mitri DCP-72, D-Mitri DGPI0, Galaxy 816, MPS-488HP and MPS-482HP units with Stagetec Nexus I/O devices, and DiGiCo's theatre-specific SD7T Quantum at FOH. During tech rehearsals, a DiGiCo EX-007 in the centre of the auditorium was used to make adjustments remotely, but during the show it is placed next to the main console and used by a sub-operator, mainly to balance the orchestra.

The Meyer Sound Constellation system will be tuned early next year, to include UP4slim, Ashby-5C and 8C, UP4XP and UMS-1XPSP elements running on the D-Mitri platform.

A Sennheiser EM 6000 digital radio mic receiver with SK 6212 digital mini bodypacks and MKE 1 miniature lavalier mics are used on the cast.

Over at Aki, *Phantom of the Opera* – set to be a long-running production – started on 24 October 2020. When rehearsals started in September, Arthur Masella, who as associate director of international productions has overseen versions of the Andrew Lloyd Webber show for three decades, worked across time zones from his home in New York together with music director Kristen Blodgett, also in New York, and UK-based choreographer, Patricia Merrin.

The show opened with an L-R Meyer Sound system consisting of four CQ-1s, four UPQ-1Ps, two UPJuniors and four UPA-2Ps, with two 500HP subs, two 900-LFC orchestral subs, six UP4XPBs for front fill, six UP4slim for under balcony delay and four for mezzanine delay and a further UP4slims for orchestra and mezzanine seats. Monitoring is being provided by a combination of Meyer Sound UPJ-1P, UPJunior, UP4XP and CQ-1 speakers, with Apogee SAT-3, Bose S1-Pro and Turbosound TQ-308 models on SE, the latter for moving the voice of the phantom around. Wireless mics on this production are Sennheiser EM 3732-II and SK 5212-II systems with MKE 2 subminiature lavaliers.

The main mixer is a Yamaha CSR-10, which mainly controls the wireless microphones, with a CSR-10S for the orchestra and SE. These are controlled by a Yamaha DSP-RX-EX DSP engine on a console network. Three Yamaha RPI0 622 I/O

racks are also being used. The recording and playback system is a Tascam DA-6400 with Dante input.

Both newly renovated theatres have also been provided with Clear-Com's Encore Analog Partyline. The configuration for each location consists of a four-channel MS-704 main station and KB-702, KB-701, RS-702 or RS-701 remote stations, depending on where they are used. The full-duplex platform allows production staff on the same channel to carry out bidirectional communication, and systems can scale over standard mic cable or IP interfaces.

Japan has been one of the few places worldwide to continue producing theatre on a large scale fairly consistently throughout the pandemic, due in part to its extensive test-and-trace practices from the onset. However, it is estimated that around half of annual performances have been lost.

"Although the situation has recovered, the company is still dealing with the severe situation, such as rules for maximum audience numbers," explains Kaname Morishita, one of three sound preparation specialists from the Shiki technical department. "We have taken all kinds of infection control measures in the auditorium and lobby of course, but also in the dressing rooms and orchestra pit. Visits to Japan by overseas creative staff for *Frozen* were also affected by Covid-19, with travel restrictions, headcount limits and a two-week quarantine period after entry. There were a number of challenges we had to face while exploring every possible means, including working remotely via the internet."

Despite all the restrictions in place, both new theatres have managed to reach completion, open their doors and start staging long-planned international productions during a global pandemic. In doing so, it's no exaggeration to say that the Shiki Theatre Company, which was built with the aspiration of bringing about a revolution in the theatrical world, has achieved its goal.

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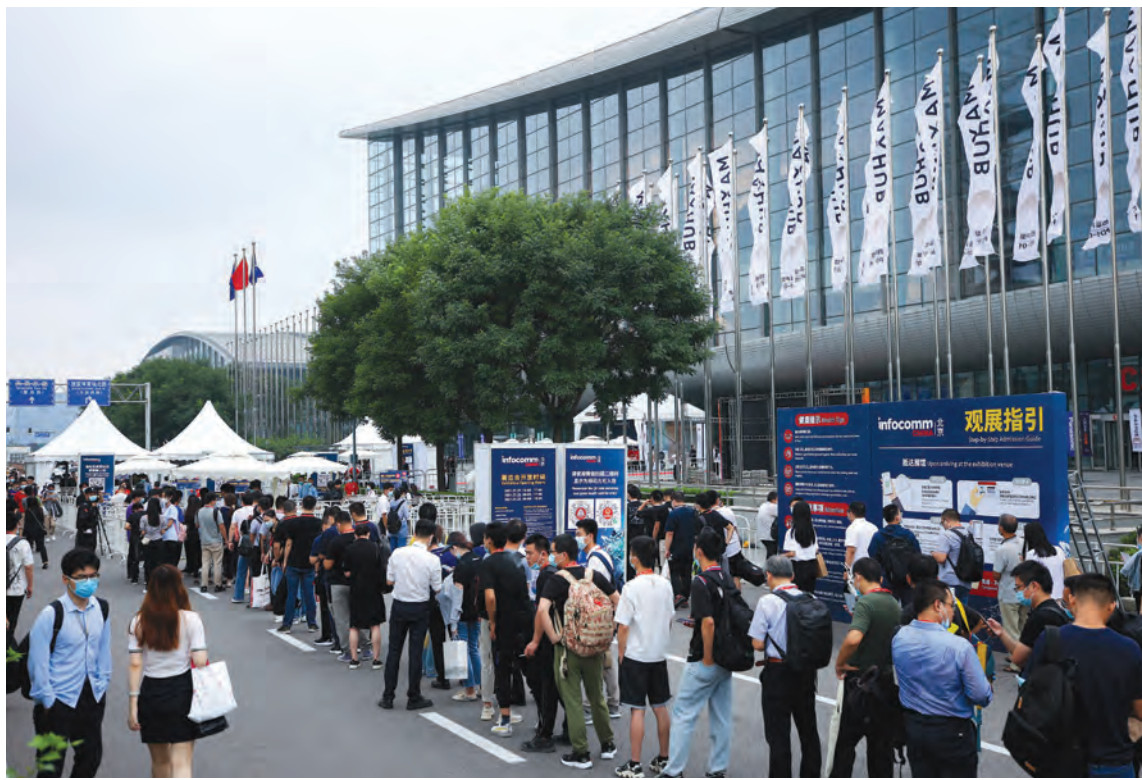
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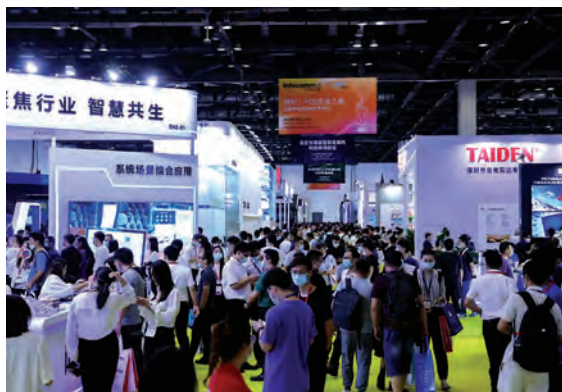
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InfoComm China 2021



Pro AVL Asia's **Frank Shao** reports from the show floor



The show had more traffic than last year

AS BEIJING INFOCOMM CHINA 2021 WENT AHEAD AT THE Beijing National Convention Centre in July, 37,189 unique visitors – mainly domestic – turned up to see what the 400+ exhibitors had on show. The physical event ran alongside InfoComm China 2021 GoVIRTUAL featuring 65 product showcases and 12 webinars, and the NIXT summit, with 46 livestreamed forums and conferences attracting 5,644 physical participants.

On the show floor, EZpro displayed 19 distributed brands, including **Allen & Heath**, **Attero Tech**, **Audinate**, **Audio-Technica**, **EAW**, **Extron**, **ezCloud**, **Furman**, **High End Systems**, **IPS**, **Jabra**, **Modulo Pi**, **NEC Netrix**, **Pan Acoustics**, **Powersoft**, **Symetrix**, **Tectonic**, **Visionary Solutions** and **WolfVision**. The company also launched the EZpro SoftAVC and standardised smart conference solutions. Head of **Tencent Ethereal Audio Lab** (TEA-Lab) and EZpro's vice president, Kane Zhang, held an interactive meeting between Beijing, Shenzhen and Hong Kong to demonstrate the advantages of cloud conferences. "Visitors can experience audio solutions from Audio-Technica and Symetrix for high-end conference rooms through interactive experiences," said Li Huan, manager of the AVoIP marketing department. "They thought the clarity of the sound was very high, especially in such a noisy environment."

Tico was showing the new generation of **Biamp** TesiraFORTÉ X series DSP processors, creating a meeting room solution with Biamp's beam-forming microphones, AMP PoE amplifiers, compact USB and Bluetooth modules and speakers. Also

on display in the fixed installation area were **Panasonic's** auto tracking system, **Renkus-Heinz** and **CAH** speakers and Audinate's DDM platform. As a channel partner for Tencent, Tico was showing its cloud-based videoconferencing solutions, with a dedicated space for Hungarian brand, **Lightware**.

Eatrend Audiovisual showed four major brands: **Audiofocus**, **Audix**, **Ecler** and **HH**. Products on display included Audiofocus' ARES 12-inch line array; Audix's MB5050 chorus microphone, M60 desktop microphone and M3 pendant microphone; and Ecler's WiSpeak wireless speaker system. "Compared with last year, the number of visitors has increased significantly," commented deputy general manager, Hu Bin. "More and more customers want to see an overall solution rather than individual products."

PCI divided its booth into two for solutions and new products. The former included conferencing, theme park, digital airport and smart navigation solutions, while products on display included **QSC** Core Nano and Core 8 Flex processing, the **Sennheiser** TCC2 ceiling microphone, **Kramer's** VIA GO² wireless performance technology and **FBT's** JMaxX, Myra, Horizon, Infinito and Shadow systems. PCI also brought **Logitech's** CC 4000E ultra-wide-angle conference video camera to the booth. "The pandemic has had a huge impact on the entire industry, but it has also brought unexpected opportunities," said marketing manager, Hu Jingdong. "For example, many theme parks have had plenty of time to update their systems and solutions."

Audio-Technica was exhibiting its Dante, wireless, digital conference and infrared conference microphone series. "Many visitors are particularly eager to learn about our newly launched ES Series microphones and conference discussion system," said Wang Yi. "The integration of IT and AV might have impacted the low-end AV market a lot, but Audio-Technica has a complete product line to meet the needs of different scenarios."

Genelec was showing its Smart IP network audio solution for AV system integration. The company has created a collaborative IP solution together with Shure microphones, as well as a six-channel system built by Genelec for musician Wang Lu. "In the AV integration market, Genelec is a new brand," said Qu Lu, director of marketing operations. "This is our second year of participating at InfoComm China. However, many visitors think that our speakers are unique in terms of



L-R: Tico's Aaron Lu, Yue Feng, Biamp's Harley Tao and Tico's Ma Cong



L-R: EZpro's Jiang Na, Wu Weisong and Li Huan

sound and appearance and are surprised that a system can create an immersive experience with only one network cable."

Sennheiser's business communications department was participating independently for the first time. The 66m² booth featured the TCC2 ceiling microphone, Evolution Wireless Digital (EW-D) microphone series, Speechline digital wireless microphone, ADN conference system and ew G4 300 wireless system. "We've used a 5G network onsite, combining EW-D and TCC2 to create a remote meeting experience system with Sennheiser Beijing's headquarters," said Chen Ziqian, Sennheiser technical product manager.

The release of version 2.0 of the NAVIOT smart management platform was the highlight of Pacific Budee's booth, alongside the **Extron**, **Lectrosonics**, **PreSonus**, **Void** and **EV** brands. "As a traditional AV service provider, Budee has been embracing IT and implementing IT solutions into the AV field in recent years," said Budee's vice president, Shi Dafei.



PCI's Hu Jingdong

Harman didn't appear in its own right this year and was instead represented by partners Hongzhe Intelligent and ACE. In addition to the Harman brands, Hongzhe Intelligent exhibited its own **Linelink** brand, while ACE was showing Sennheiser's ADN/ADN-W wired and wireless digital conference systems as well as **iMAG**, **AtlasIED** and **CREATELED** alongside **JBL**, **Crown**, **dbx** and **BSS**.

EAD was showcasing **Xilica**, **Alcons** and **Quint**. "After InfoComm China, we will do a series of roadshows," said marketing manager, Deng Yonggang. "The pandemic is now relatively well controlled in China, so the show is a good opportunity to meet customers face to face."

Yamaha's booth was divided into three areas, one for the Adecia ceiling mic solution, one for CIS (Commercial Installed Sound) and a new area for the UC conferencing and communications series. Seminars on the booth were livestreamed on social media.

Taiden showcased its newly developed hybrid conference system, an intelligent meeting minutes system and the fourth-generation paperless multimedia conferencing system, as well as a range of smart teaching products.



Steven Cai from Audinate



L-R: Feng Hanying, Qu Lu and Jack Wu on the Genelec stand

Bose displayed the new member of its DesignMax pendant loudspeaker family, including the DM3P and DM5P, the DM6PE outdoor loudspeakers and the DM10P-SUB subwoofers. A Bose Work integrated meeting room combined Bose speakers, amplifiers and DSP with Sennheiser TCC2 ceiling microphones.

Muse Technology participated in InfoComm China for the first time, promoting French brand **Amadeus** and its Holophonix systems and the Norwegian **TTA** StageTracker II tracking system by building an immersive system. "In the post-pandemic era, the immersive sound system has a big marketplace and prospects," said general manager, Luo Jun.

Audinate was highlighting the Dante Domain Manager management platform as well as the AVIO adapter. The Audinate Summit 2021 took place on the first day at the Beichen Intercontinental Hotel, with senior vice president of engineering, Chris Ware, sharing Audinate's view of development and technical support. "The Dante AV video solution is the focus of Hall E," said Steven Cai, marketing director, APAC. "Many visitors are looking to this solution for audio and video synchronisation."

MYC China was showing four major brands, including the Spectra212 convertible line array loudspeaker and

VIDA series from **Kling & Freitag** and **Cadac**'s CDC digital consoles. Another British brand, **StuudioMaster**, highlighted Digilive's latest digital console and Z series analogue console and there were also speakers from **Outline** on display. Domestic brand **IBO** was launching a column speaker and a horizontally adjustable linear array speaker system, as well as showing microphones and an audio matrix for conferencing projects. **Nexo** distributor Top Plot demonstrated the P+ and ID point source speaker series as well as the French manufacturer's line arrays.

"We've brought visual and image processing technologies to the show, including a 4K projection presented by the **Christie** D4K40-RGB pure laser projector, and a Chinese live performance," said Sheng Xiaoqiang, senior technical service manager of Christie China Commercial Division. Christie also issued authorisation certificates to Chinese resellers at the booth to strengthen partnerships.

With the presence of technology giants such as **Huawei**, Tencent, **Dingtalk Meeting** and **Intel** on the show floor, and other exhibitors focusing on videoconferencing, the presence of audio appeared diminished; d&b audiotechnik was one company that decided not to take stand space this year. However, attendance was up 20% over 2020's edition last September – approaching 2019's 40,866 level – a sign that China is getting back to business as usual.

2021 Dates:	21-23 July
2022 Dates:	13-15 July
Venue:	Beijing National Convention Center
Total exhibitors:	400
Attendance:	37,189
Contact:	www.infocomm-china.com

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