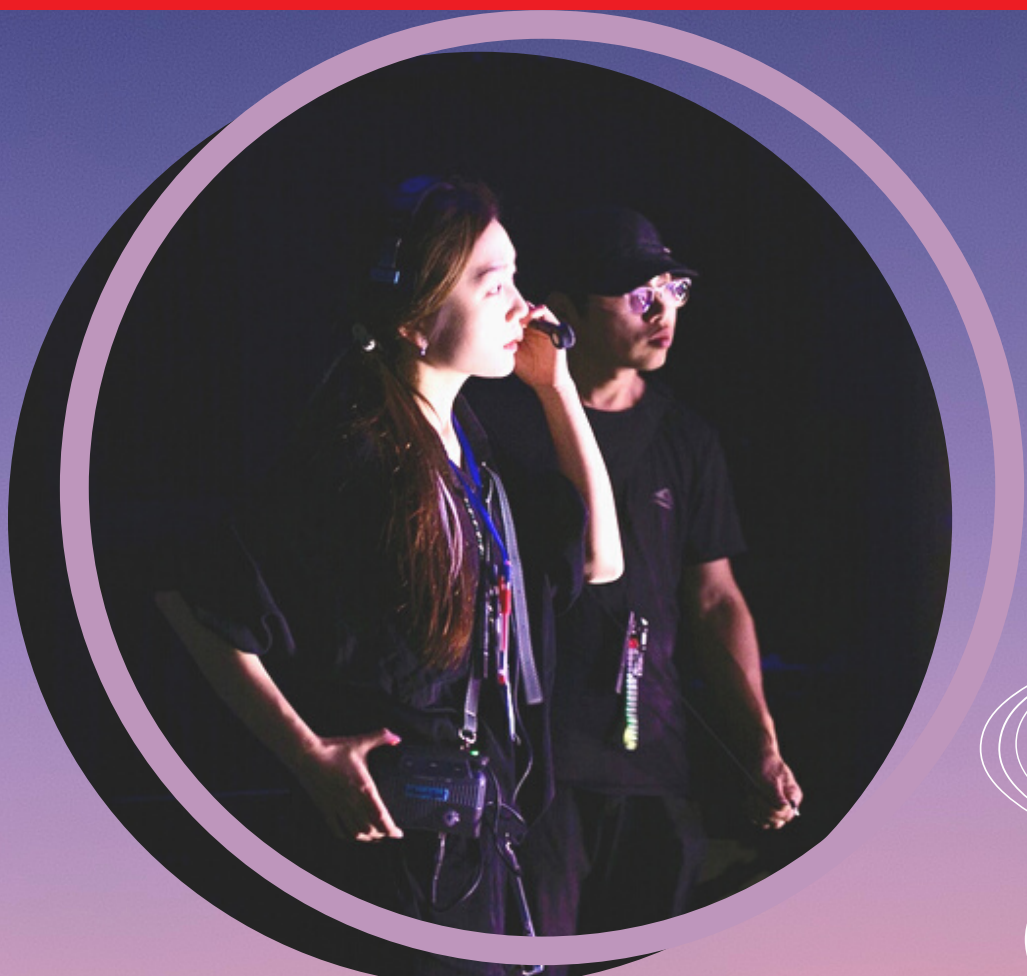


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JANUARY 2022

Bridging The Communication Gap

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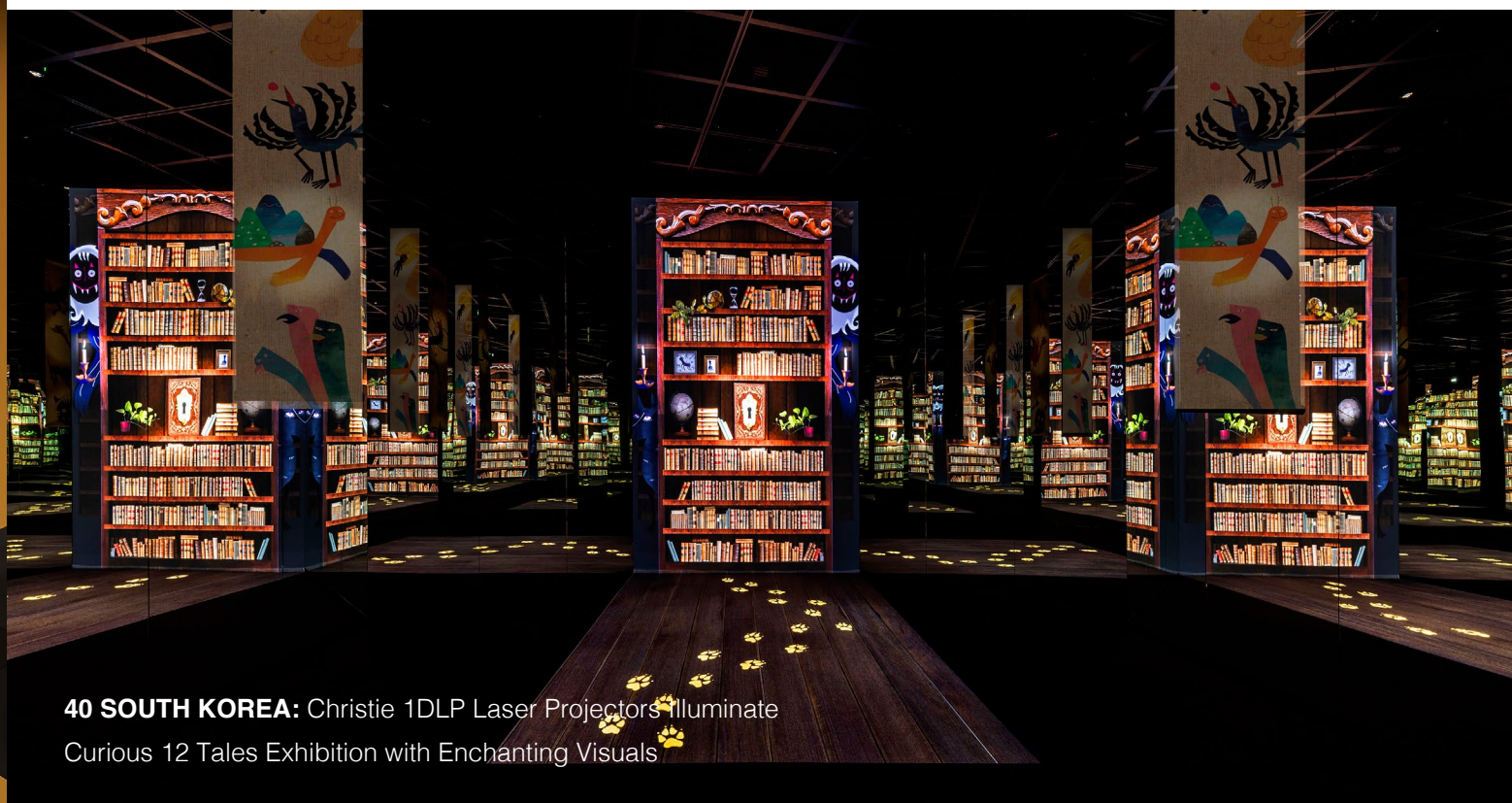
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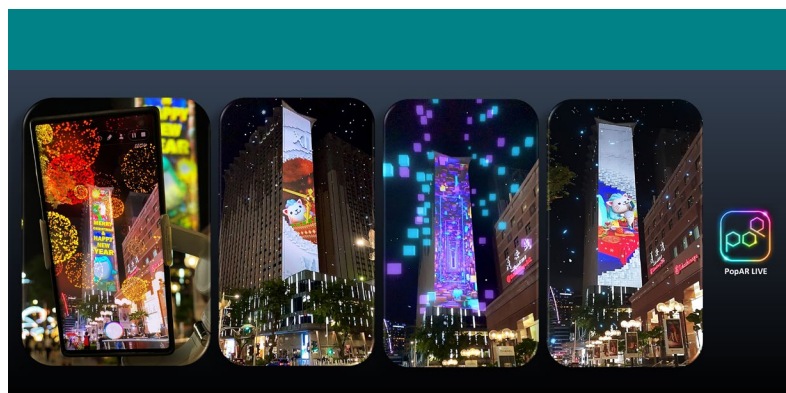
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Happy New Year to all our Readers. We wish all of you to continue to be optimistic despite the challenges. It is easier said than done but try we must. Do take care of your mental health, and do not be shy to seek help if needed. It has been a challenging period for those in the rental&staging and events business. There

has been some spark of hope with concerts and in-person events taking place, but it is nowhere near how the industry was performing before COVID-19. It is heartening to note that many companies have been adaptive and creative in managing the challenges as we stagger towards a new normal. Let us continue to be resilient.

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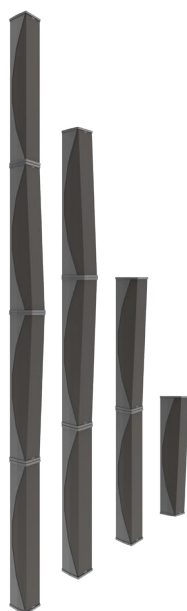
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NEXO

Waves and VMT Enterprise Provide In-depth Training Seminar on the Waves eMotion LV1 Digital Mixer



INDIA: In a move that marked the official launch of Waves' partnership with VMT Enterprise in India; the two companies partnered to co-organise an in-depth training session that spotlighted Waves' eMotion LV1 Digital Mixer.

Attended by some of India's most noted sound engineers; the training session was conducted at VMT Mumbai's live arena; and served as a great platform for the engineers to not only brush upon their theoretical understanding of the console, but to also be able to have a test drive on the live system.

"The eMotion LV1 is the Digital Mixer of the future. It was great to see that some of India's top engineers were already familiar and advocated the console. We are humbled by the response of the engineers and we hope to have many more of such engaging sessions" shared Jeff Mandot, National Sales Manager, VMT Enterprise.

The training was conducted by Eran Ben Zur - a renowned FOH Engineer and also Waves' Live Application Specialist. "The training was fairly brief. We covered everything from setup basics to practical usage troubleshooting," said Ravisankar Nadiyam, Regional Sales Manager, Waves.

"It was great having Eran to be able to conduct this session for us from America. His on-field knowledge and vast experience mixing shows could be seen in his interactions. The session was very informative and enriching for all who attended" says Vicky Perreira, Application Engineer, VMT.

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Immersive Theatre Production Uses LD Systems CURV 500



SOUTH KOREA: From 22 June to 4 July 2021, the experimental stage of the Sejong Performing Arts Centre in the Korean capital, Seoul, was transformed into a large garden. The occasion was the “In This Garden We Loved” play, which also placed the audience acoustically in the middle of the stage set with its immersive audio sound system. For the all-round sound reinforcement, the project integrator – Sonic Value – relied on an LD Systems CURV 500 system.

“We wanted to give the audience the feeling that they are actually in a garden during the play,” explains Director Oh Kyeong-taek. Working closely with the artistic direction team on the play, the Sonic Value team – led by Senior Engineer Hyunchul Yoon – designed an immersive setup based on 60 CURV 500 satellites. Five flown CURV 500 TS arrays, each consisting of two S2 array satellites and two D SAT duplex satellites, served as the main system. To the sides, six CURV 500 D SAT duplex satellites each were used on two levels – flown on the bottom level, and on tripods on the top. The immersive setup was completed by six CURV 500 D SAT positioned behind the back row of audience members. For the front rows of the audience, Sonic Value also

placed five Stinger 10 A G3 loudspeakers as near fills lying at the front edge of the stage.

For Hyunchul Yoon, the challenge of an immersive theatre sound system is not only the sound quality of the audio system used, but also – and perhaps most importantly – the interaction of the numerous loudspeaker components to create an immersive sound image in the room. “The CURV 500 system absolutely convinced us with its precise sound dispersion. With its three tweeters, each CURV 500 satellite already forms its own array with crystal-clear sound. In combination with all the speakers together, the CURV 500 system also allows for clean handling of the dispersion angles and thus a clean sound image.”

In addition to the sound quality, the compact size of the CURV 500 also provides more room for manoeuvre in terms of integration into the room and stage design – a decisive reason why Sonic Value was able to convince those responsible at the Sejong Centre to use the CURV 500 system in the first meetings. Hyunchul Yoon says: “With another loudspeaker system, the implementation would definitely have been more difficult.”

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Creative Technology Middle East (CTME) Expands Team



Artur Kurowski - Senior Project Manager and Wissam Shaheen – Head of Audio

MIDDLE EAST: Creative Technology Middle East (CTME) welcomes Artur Kurowski as the newly appointed Senior Project Manager to their live events division. Artur has over 18 years of experience throughout the Middle East, UK, and Europe. He comes from a strong technical design and production background and has extensive knowledge in the latest audio, video, lighting and rigging technologies. He specialises in Vectorworks Spotlight and Braceworks software for AV Technical and events planning. Alongside managing a team of engineers, Artur has built strong relationships with clients worldwide, providing communication and problem-solving solutions. He has a diverse portfolio across large scale event spectacles, live entertainment, sporting events, festivals and corporate events. He has worked on some of the most technically complex projects such as IRENA, Saudi Cup, Eminem Concert, Special Olympics, Arabian Hotel Investment Conference, KSA National Day to name a few. Artur prides himself on delivering the right solution for his clients, while successfully planning and executing projects to the highest standard.

Kurowski comments, "I am thrilled to have joined the CT family and look forward to working alongside with some fantastic professionals who share the same love and passion towards live events. I am excited to bring my knowledge and experience into a growing team and be a part of many memorable productions".

Wissam Shaheen has also recently joined Creative Technology Middle East (CTME) as Head of Audio. He has been working in the Audio industry for over 22 years and is a highly accomplished audio practitioner who has extensive experience in Musicology, Acoustics and Electroacoustics. He is responsible for the creative vision, strategy, and delivery of all technical audio elements, providing guidance and practical solutions across an array of projects. Wissam is an award-winning engineer and has worked across multiple high-profile projects and delivered world-class services to some of the largest and most prestigious artists and events in the region such as, WCCE 2021, Word Energy Council 2019, Party In The Park 2019, AFC Annual Awards 2018, JazzFest 2017, and Al Ain Air Championship to name a few. Drawing on his diverse experience, he leads a team of audio experts providing technical direction and management to ensure a seamless delivery of all projects to the highest standards.

Shaheen says, "I am honoured to have been chosen by CTME to lead and grow their Audio discipline. CT is a company that I have always admired and have worked side by side with on some of the region's biggest shows. Being a part of such a dynamic and forward-thinking team is very exciting to say the least".

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Meraki and Mascot Join the Adamson Network



INDIA: Meraki Brand Services and Mascot, Delhi's premiere full service production companies, have joined the Adamson Network after accepting delivery of 8 S10 line array enclosures and 6 E119 subwoofers. The new system is powered by Lab.gruppen PLM20K44 amplification and Sommer cable Elephant SPM840 cables.

"As an organization dedicated to creating unforgettable events for a wide range of clients and different industries across India, we are constantly updating with new technology and design solutions to deliver best in class partnerships to our clients that simply stand out," explains Abhinav Talwar, of Meraki. "The new Adamson system enables us to accomplish this; the brand has round the globe recognition, and everything we're looking for in a sound system – excellent audio quality, versatility, and ease of use. I am excited that Meraki can now provide the most advanced equipment with unrivaled quality and latest specifications to our customers."

Mascot - a professional sound, lighting and audio visual production and rental company, is known for providing efficient solutions and demanding the highest technical standards from both engineers and equipment.

Monty Khanna, Director of Mascot & Mix DJ Entertainment Services shares, "Being a DJ, I have performed on various sound systems around the globe and so I have the outlook of an artist in addition to a production person in assessing the quality of a sound system. And Adamson's S10 definitely comes out on top! The tremendous output combined with its compact nature, and simple rigging make it a very valuable addition to our inventory. The E119 sub is amazing at reproducing clear, low end audio, and provides superb directional control. The smaller and lighter size of the boxes enables us to pack more in the same footprint which is a serious perk for transporting and rigging. We're thrilled to be part of the Adamson Network."

The Adamson solutions were supplied by distributor, StageMix.

[StageMix](#)



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Digital 6000 is Hujan's Wireless System of Choice



Hujan performing on the final day of their special four-day concert.

MALAYSIA: After a two-year hiatus due to the Covid-19 pandemic, popular Malaysian indie band Hujan made a comeback with a series of virtual concerts entitled 'Hujan 16 Tahun' that were transmitted live from the Petaling Jaya Performing Arts Centre to their large fanbase. The concert was held on four nights – 20, 21, 23 and 24 October 2021– with different genres and themes, showcasing a cross-section of the band's 16-year career, their struggles, ups and downs and fantastic successes. It was also the very first time that Hujan used Sennheiser's Digital 6000 System, which lifted their stellar performance to a new level in audio tech. Wireless monitoring was done via evolution wireless and 2000 Series IEMs, and the backline included several Sennheiser and Neumann microphones. Neumann KH 310 monitors helped to finetune the mix for the live streams.

In planning this very special concert series, the band wanted to ensure that their shows came as close as possible to a real-world performance to reignite the Indie music spirit in their dedicated fans – commonly known as the "Raingers" – who had to wait such an unusually long time for a performance from their favourite band. The

newly constructed hall of the Petaling Jaya Performing Arts Centre was chosen as the ideal location for "Hujan 16 Tahun", which incidentally inaugurated the centre.

For vocals, Hujan relied on a four-channel Sennheiser Digital 6000 system plus additional wired mics. Vocalist Noh used an SKM 6000 with Neumann KK 205 head, lead guitarist AG Coco an SKM 6000 with Neumann KK 105 capsule and Azham an SKM 6000 with MM



Lead singer Noh with his Sennheiser SKM 6000 and Neumann KK 205 head.



Monitor engineer Zunnun Zolaznan.

445 capsule. Bassist Izzat relied on a wired MD 435 microphone, while backing vocals were picked up by an e 935 and e 945.

Recording Engineer Bijan FX was thrilled about the audio performance of Digital 6000: "It was band vocalist Noh's first time on the D 6000 system, and it felt as if it was not wireless at all! Its latency is so low that it seemed like a wired microphone. On the mixing side, the Neumann KH 310 monitors helped me in making critical decisions – their precision was fantastic."

FoH Engineer Ahmad Syafiq, who looked after the sound for the limited number of live guests, added: "I liked how the sound felt coming out of the SKM 6000 handheld and the KK 205 super-cardioid capsule; complemented with the Neumann V 402 pre-amplifier, it sounded much smoother for the vocalist's rock nature. With the lead guitarist singing into a super-cardioid KK 105 and the bassist into a super-cardioid MD 445, we were able to bring studio sound onto the stage." Ahmad Syafiq had patched the V 402 in-line between the EM 6000 receiver and the sound console – for the benefit of the engineers at FoH, monitor and recording – and the audience.

Guitar and bass used wireless instrument systems from the evolution wireless and Evolution Wireless Digital series, while the drumkit was miked with various Sennheiser and Neumann models. Syafiq had a special

solution for the snare top: "The evolution 900 series drum mics are my go-to microphones without a doubt; they give me the ability to tailor the music. For the snare top, we took an unorthodox path and used the super-cardioid MD 445, which sounded excellent as its polar pattern helps to eliminate hi-hat bleed. I would strongly recommend everyone to give this a try. Tyler Tan of Sennheiser told me about this application; it was a wonderful idea, and I'm sure that the drum world will benefit from it." In addition to the e 901 and e 902 for the kick drum, the toms and the snare bottom were picked up by e 904s. For the hi-hat and ride, Syafiq had chosen the Neumann KM 184. Ambience was picked up by two MKE 600.

The sell-out crowd in the convention centre was joined by 1400 fans who watched the four-day concert online, making Hujan 16 Tahun the most successful virtual concert in Malaysia.

Band Manager Epain Ahmad was equally enthusiastic: "Thank you, Sennheiser, for the amazing collaboration, especially for the on-site support from Zoul and Tyler. The equipment made us sound better and made the fans feel better. It was a dream come true for us to collaborate with Sennheiser. We're looking forward to our next shows."

Photos credit: @ehhafishah

[Sennheiser](#)

CODA Audio's Compact Line-array Blends in at Chinese Peking Opera Arts Festival



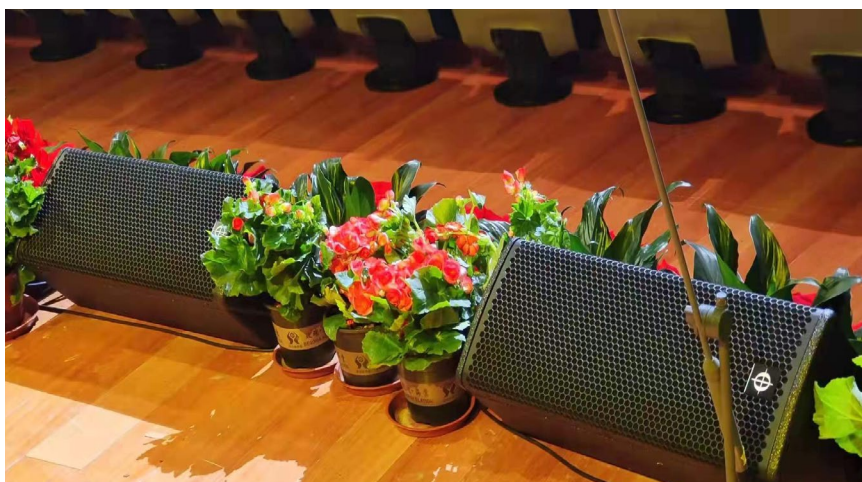
CHINA: Organised by the Ministry of Culture and Tourism and the Beijing Municipal People's Government, the 9th Chinese Peking Opera Arts Festival took place over a three-week period in September and October 2021 at The National Centre for Performing Arts. As the leading opera art event in China, the Festival has been the launchpad for a large number of excellent productions and performances, and has been instrumental in the advancement of Chinese traditional culture.

The principal work featured at the Festival was The Grand Canal of Beijing, a complete orchestral suite for the Beijing Opera, combining a range of different vocal genres with orchestral music. The presentation was a multimedia stage event, combining music, choreography and costumes.

Held in the concert hall of the National Centre for Performing Arts, the symphonic performances not only demanded the

highest quality audio, but also that the loudspeaker system was as discreet as possible in order to avoid compromising video feed sight-lines or other aspects of the presentation. Production specialists and CODA Audio's distributor in China, Tongbo supplied a CODA System based around the German manufacturer's latest N-RAY product.

The system comprises, 6 x N-RAY with 1 x SCN-F subwoofer per side, as well as 4 x HOPS5 for a stage





lip system and a further 8 x HOPS8 for monitoring. The compact nature of all the loudspeakers in the system meant that they were largely invisible in the live video feed. Following the performance, Wang Lei of the Technical Department of the National Centre for the Performing Arts, and the sound designer for the production, declared that the audio was "exceptional".

David Webster, Global Marketing Director for CODA Audio commented, "It's fantastic to see N-RAY being deployed for such a prestigious occasion. Tongbo's excellent work in delivering the CODA Audio message to the Chinese market is having a strong impact judging by the number of high-profile events with which the systems are involved. N-RAY was clearly the ideal choice for this particular application, where as an ultra-compact yet very powerful solution, it was able to meet the production team's precise need for discreet, high quality coverage."

CODA Audio

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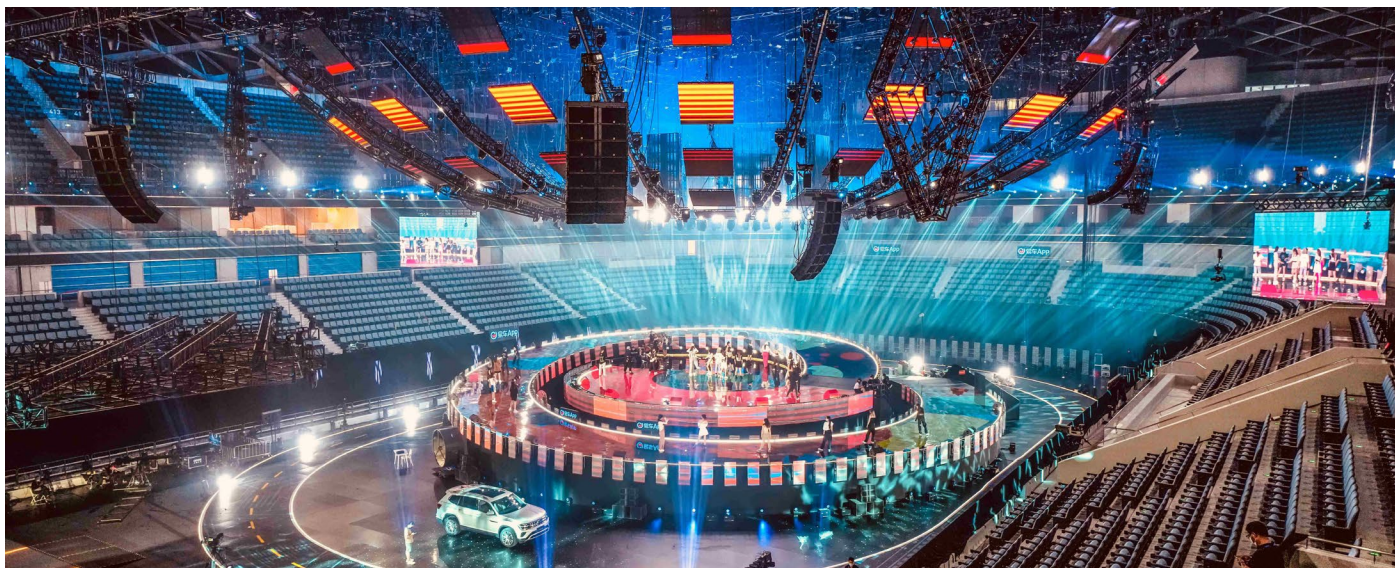
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L-Acoustics Delivers Full Range Sound for The Super 818 Party Broadcast



CHINA: Combining an interactive automobile exhibition with pop music performances, the Super 818 Party Night was broadcast from the Hangzhou Olympic Sports Expo City. The gala event, produced by Zhejiang TV and the automobile advertising portal Bitauto.com, showcased the synergy of technology and innovation across the entertainment and automobile industries in the Republic of China. The event featured popular young superstars such as Zhou Shen and Liu Yuning, who entertained viewers watching via streaming media platforms as well as on local television.

The show's stage design challenged the norm with two identical but separate performing areas. An oval-shaped track that showcased vehicles on the move surrounded a spiral structure that ramped up towards a circular platform where musical performances took centre stage. With the stunning stage design set, D&S Stagecraft Engineering along with L-Acoustics Certified Provider Distributor Rightway Audio Consultants (Racpro) came in to design and deliver pristine audio for a 360-degree sound experience.

Zhou Fengxin, Technical Director at Racpro created the sound design for the gala event. Nan Hu, Marketing Director at Racpro reveals: "Our challenge was to determine the number of speaker cabinets we needed

for a venue of this size, as well as the proper coverage for the audience area. We also needed to ensure that the sound system was placed outside of the multiple broadcast camera sightlines."

The approved system design saw D&S Stagecraft Engineering fly a total of seven hangs of eight K2 each, symmetrically distributed around the 360-degree stage. Five of these line-arrays were for the main audience area, while two hangs of 10 K2 each acted as side fills on the stage's left and right. Placement of the hangs was well-planned in order to avoid numerous staging structures, as well as lighting and projection screens. Powerful and well-defined extended low frequency sound was provided by 26 KS28 L-Acoustics subwoofers. Performers of the show relied on Kara boxes for on-stage monitoring.

Zhou, and the teams at Racpro and D&S Stagecraft Engineering ensured that the dynamic and detailed production design was executed perfectly, as planned. "Zhou was pleased with the quality of the sound system, and its ability to create a dynamic environment for the performers. All the partners involved and clients were pleased with the high level of technical quality achieved for this show," Hu concludes.

L-Acoustics

Claypaky Arolla MP Fixture - Spot/Profile Modules Switching (eSwap Technology)



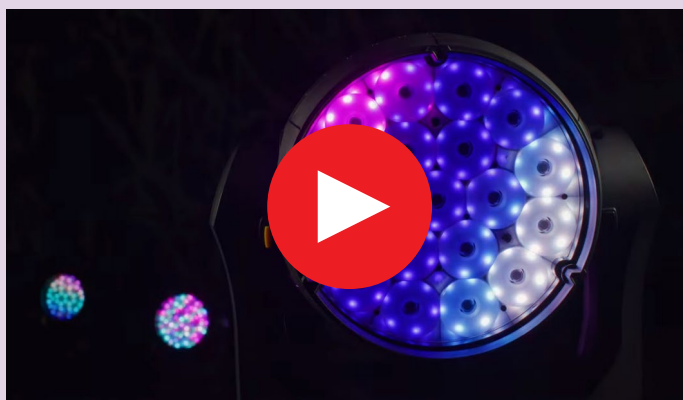
Thanks to the exclusive #eSwap function, you can benefit from 2 light beams, Profile and Spot, within a single fixture. Once the module has been switched, the new module is automatically recognized with the new configuration: users do not have to make any changes themselves to the menu system. With a simple switch, customers will experience significant cost savings, and at the same time will benefit of a new versatility of use according to their application needs.

On Location 18 – Patrick Woodroffe at the Bahrain International Circuit



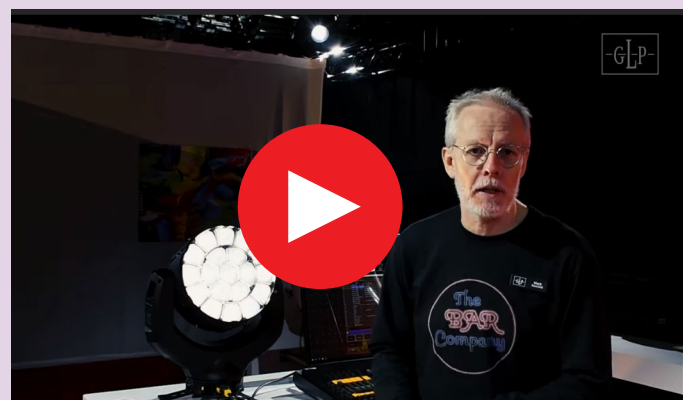
Patrick Woodroffe is Robe's OnLocation guest... and he needs no introduction to the entertainment lighting industry. Known for his imagination and painting beautiful pictures with light, Patrick is a global influencer. In the interview, he highlights the importance of networking and connections as well as creative skills ... and he talks specifically about a very recent architectural project, illuminating the Sakhir Tower at the Bahrain International Circuit / Formula 1 racetrack.

Martin MAC Aura PXL



Bigger and brighter than the MAC Aura, the PXL features significantly higher intensity and a tighter beam as well as a smaller face and less busy lens look compared to the MAC Quantum Wash. The MAC Aura PXLs bigger "bubbles" provide a more appealing look and beautiful wide wash fields. Check out this video is to see what you can achieve with the MAC Aura PXL. Beautiful washes, narrow beams, full pixel control, hundreds of built-in FX macros and Martin P3 Control.

GLP impression X5 / X5 IP Bar



The impression X5 IP Bar is an IP65-rated batten fixture that features 18 powerful 40 W RGBL LEDs, a 12:1 zoom range from 5 to 60 degrees. The impression X5 wash uses 19 powerful 40 W RGBL LEDs to give an incredible output with increased colour gamut. GLP's new iQ.Gamut calibration algorithm ensures the X5 creates clean white points with CRI 90 at 6,500 Kelvin and the ability to switch to other fixed colour temperatures instantly, all calibrated exactly to the black body line.

C2G Now Shipping Performance Series Ultra High Speed HDMI Cables With Ethernet



C2G is now shipping the company's new Performance Series Ultra High Speed HDMI cables with Ethernet. Offering high bandwidth to 48Gbps, the cables support all HDMI 2.1 features — including uncompressed 8K at 60Hz and 4K at 120Hz, dynamic HDR, and eARC — making them ideal for high-resolution applications in video production, broadcasting, gaming, and more.

“The Performance Series’ 48Gbps bandwidth allows for higher resolutions, faster refresh rates, and enhanced audio and media features,” said Brad Shinkle, Product Manager at C2G, a brand of Legrand. “With their support for 8K resolutions — and even 10K for commercial AV applications — the cables deliver an incredibly immersive viewing experience. In addition, with their 4K 120Hz capability, they ensure that ultra-fast motion images from gaming and VR applications are crisp and sharp.”

With support for dynamic HDR, C2G’s Performance Series cables optimize displayed video on a scene-by-scene or even a frame-by-frame basis. They provide an extended contrast range, delivering darker blacks, brighter whites, and greater image detail across all

color spaces. In addition, with their eARC capability, they support the latest audio formats, including uncompressed 5.1, 7.2, and 32-channel audio.

An in-wall (CMG/FT4) rated jacket allows installers to safely run the cables inside walls for a clean, clutter-free look. For high-density environments, they feature compact overmolding. Integrated finger grips on the connectors allow for easy insertion and removal. The cables’ gripping connector shells deliver twice the port retention to keep devices firmly connected, while gold-plated connectors allow for better shielding, increased electrical conductivity, and durability. Certified to ensure low EMI, the cables reduce interference with wireless networks, streaming media players, Bluetooth devices, mobile phones, and more.

C2G’s Performance Series Ultra High Speed HDMI cables with Ethernet are available through retailers and direct to users from C2G. Offered in five lengths from 2 feet to 12 feet, the cables are backed by an unprecedented lifetime warranty.

C2G

KLOTZ PowerLink Truss & Stagebox: Compact and Robust Power Distribution Box for Live Use



The PowerLink Truss & Stagebox by KLOTZ AIS is an extremely robust, ergonomic and easy-to-use new power distribution system. Its various application possibilities are a big advantage. This brand new product is at home not only in event technology, but also in theatres or TV studios.

The PowerLink Truss & Stagebox is equipped with one input and four outputs of the NEUTRIK powerCON True1 plug. It offers a power carrying capacity of up to 16A /250V. Due to the compact size and the ergonomic arrangement of the connections, easy handling is ensured in tough everyday stage use - even with work gloves.

The plastic housing is designed with rounded absorber edges and a robust surface to absorb shocks. This ensures that any external shocks are optimally diverted.

Inside the box, stiffening cross ribs, in conjunction with six housing screws, give the PowerLink Truss & Stagebox a very high level of resistance and provide compliance with current safety standards. A fall from truss height is easily absorbed, which underlines the robustness and durability. In addition, the housing is ultra-light.

The PowerLink Truss & Stagebox can be easily and quickly attached to a truss via two PowerLink Clamps; additional securing with two O-rings is also possible. Alternatively, the box can be equipped with an optional metal bracket underneath. This has 2 pre-drilled holes as well as an M10 screw connection to ensure secure fastening.

As a useful accessory, KLOTZ AIS will add coloured rubber sleeves to the PowerLink's portfolio. Fitted with these, the power distributor is optimally marked so that circuits can be quickly distinguished from one another even at a greater distance.

KLOTZ AIS has protected the design and registered it with the European Union Intellectual Property Office (EUIPO) at the beginning of October 2021.

The PowerLink Truss & Stagebox System will be available from the second quarter of 2022.

Klotz-AIS

JBL Professional Introduces EON700 Series Portable PA Loudspeakers and Subwoofer With Bluetooth



Launched in 1995, JBL's best-selling EON family of PAs set the benchmark for how great a powered loudspeaker system can be.

The EON700 Series represents a major step forward in innovation and technology by delivering truly intelligible, clearly consistent coverage at any volume level. JBL engineers used exclusive, state-of-the-art design and measurement techniques to deliver the best-performing loudspeakers in their category, regardless of application. EON700 leverages the latest acoustic science, transducer designs, cabinet materials and advanced DSP, amplification and control technologies and extraordinary performance in a fully professional, highly flexible, easy to use, portable system.

With four models available, including the 10-inch EON710, the 12-inch EON712 and the 15-inch EON715 powered PA speakers and the 18-inch EON718S subwoofer, EON700 systems cover the needs of today's working musicians and sound providers. These flexible systems are designed to effortlessly scale with customers' needs, from DJ performances and full bands to solo singer/songwriter gigs, presentations and worship events. Configure speakers as mains or stage monitors, hung or stacked, in portable systems or permanent installations—the opportunities are endless.

Dial in optimal system sound in an instant using a built-in 3-channel mixer and dbx DriveRack Inside technology, featuring Automatic Feedback Suppression, 8-band output EQ and optimized use-case presets. Access functions quickly and easily via an onboard backlit color LCD screen or take control from anywhere using the JBL Pro Connect app. Bluetooth 5.0 streaming and control, mounting options and built-in speaker delay bring even



more versatility to these rugged, reliable systems.

“The EON700 Series truly represents the next generation of portable PA systems,” says Brandon Knudsen, HARMAN Professional Product Manager, Portable PA Loudspeakers. “When we started designing these new PAs, we looked at our best-selling EON Series and made that core technology even better by upgrading drivers and amplifiers, refining waveguides, supercharging the effects package, and incorporating the most up-to-date Bluetooth protocol and universal app control. The result is a powerful, versatile system that sounds incredible at any volume, anywhere in the room.

“We’ve made it even easier than ever for performers to sound their best without having to rely on outboard gear, thanks to built-in advanced dbx DSP and presets that are optimized for a range of scenarios. And the series’ incredible power-to-size ratio and low weight mean a faster, lighter load-in, which we can all appreciate.”

Acoustics and Amplifier

JBL’s advanced waveguide and transducer technologies, coupled with highly efficient amplification, ensure uniform coverage across the entire listening area, even when you push the system to the limit. Woofers are redesigned for lower impedance and higher efficiency, an improved horn delivers a smooth off-axis beamwidth and JBL’s powerful 2414H compression driver features a premium neodymium magnet for balanced response in a lightweight footprint. Speakers are powered by 1,300 (loudspeakers) or 1,500 (subwoofer) watts of ultra-efficient discrete Class D amplification, for clean, clear sound. It all adds up to superior coverage, consistency and intelligibility at any volume.

Advanced DSP and Control

EON700’s advanced DSP package provides comprehensive control over EQ, limiters, delay, dbx Automatic Feedback Suppression, ducking and other speaker functions. Access settings on-speaker via an integrated backlit LCD screen, or from anywhere in the venue using the JBL Pro Connect App. Built-in Bluetooth 5.0 audio streaming (full-range speakers) and control take advantage of the newest protocol’s security features, low latency, broad range and improved audio fidelity.

System Versatility

EON700 loudspeakers can be used as main PA speakers or floor monitors. Full-range models feature top and rear suspension points for flying speakers; rear suspension points serve as connections for fixed installations, using an optional universal yoke mount. Indexed feet molded into enclosures enable a range of acoustic configurations and secure stacking for traditional stand-up configurations and convenient storage and transport. EON718S subwoofers feature a threaded pole mount for full-range speakers and are easily stacked for cardioid configurations.

Rugged and Reliable

All audio products have useful lives, and JBL engineers are committed to making that lifespan as long as possible—not only in terms of reliability, but in terms of how good the system sounds every time it’s turned on.

Full-range speakers feature FEA optimized composite enclosures, taking advantage of injection-molding and mechanical-shaping techniques for added durability without sacrificing cabinet size or performance. Subwoofers are housed in rugged 15-ply birch enclosures; computer-optimized ergonomic handles make moving boxes a breeze.

Every JBL Professional product undergoes stringent testing that goes above and beyond any conditions the product would face in the real world. JBL’s industry-leading 100-hour power test ensures longevity so musicians and audio engineers can rely on JBL components in any scenario.

JBL/EON700

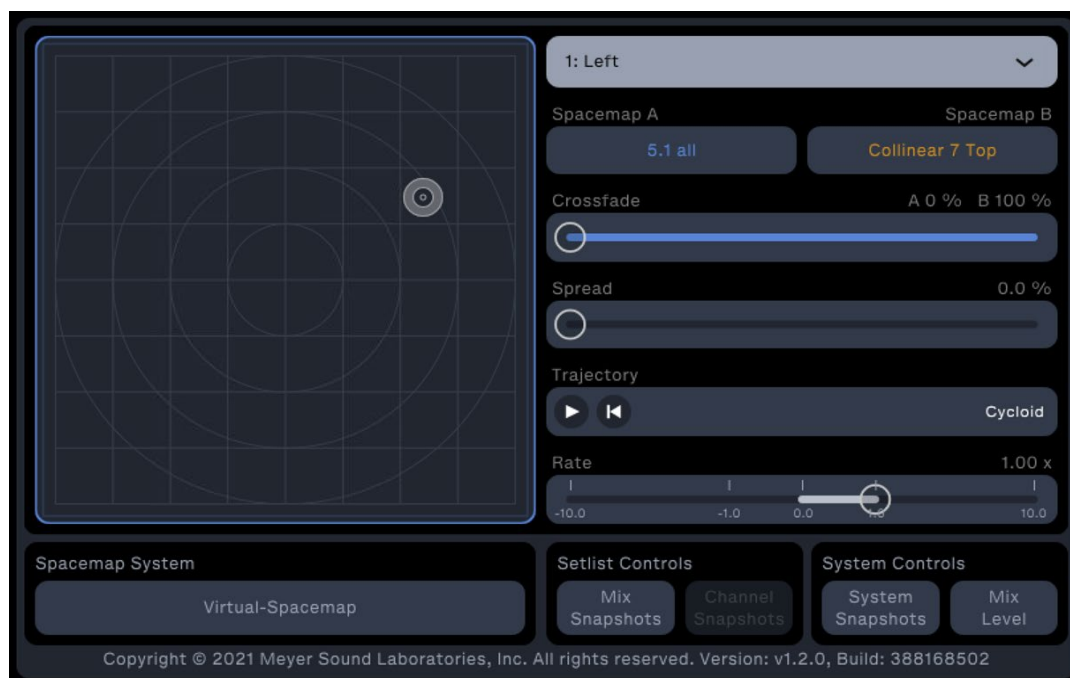
Meyer Sound Introduces Spacemap Go Plugin for Avid VENUE | S6L Live Sound Consoles and Pro Tools



Meyer Sound has announced the introduction of a new Spacemap Go plugin for the VENUE 7 software platform and the Pro Tools digital audio workstation. Available immediately, the free AAX plugin enables users of Avid VENUE | S6L systems to directly access functions of the Spacemap Go spatial sound design and live mixing tool from the console's built-in touchscreen and control surface. In addition, the new plugin allows integration of Spacemap Go snapshots into the VENUE master show file to create virtual loudspeaker layouts and automate dynamic panning within the immersive sound field. Also, the parallel introduction of a plugin for Pro Tools, the de facto industry standard for digital audio workstations, allows creation of audio projects incorporating Spacemap Go functions.

When installed in VENUE 7, the Spacemap Go plugin functions as a client of the Spacemap server. When the console and the server (in the GALAXY Network Platform) are connected on the same network, setup is automatic. No IP addressing or port management is required. Functions accessible on the S6L control surface (touchscreen and CKM module knobs) include X/Y position, crossfade, spread, trajectory status (play/pause/stop) and trajectory rate for each channel. Also accessible are snapshot recall at the Channel, Mix and System levels as well as Mix Level for the global system.

"I'm thrilled to see Meyer Sound join the S6L platform with the addition of plugin control for Spacemap Go," says Robert Scovill, renowned FOH Engineer and



Avid's Senior Specialist for live sound products. "Having this level of object access at the channel strip of S6L, in conjunction with an iPad running Spacemap Go, provides much-needed control and flexibility when mixing in an immersive environment. Combined with the Milan network compatibility of S6L and the Meyer Sound GALAXY processor for easy audio transport, it's a match made for the times."

Spacemap Go is a spatial sound design and live mixing tool that leverages the processing power of Meyer Sound's GALAXY Network Platform in an intuitive iPad app. Snapshots can be created in most DAWs and integrated into the S6L master show file for static placement or dynamic movement of sound. Snapshots can be fully automated, or synchronized in conjunction with live, on-the-fly trajectories using the console control surface, one or more iPads, or both simultaneously.

For Meyer Sound Technical Support Specialist Jose Gaudin, a Principal Designer of the plugin, the server-based architecture gives Spacemap Go exceptional flexibility as well as reliability in a live sound environment. "Because the plugin functions as a client, if the connection fails for any reason the server remains aware of what it is supposed to do. Also, because multiple clients can be running simultaneously — the console plus one or more iPads — this provides back up control

and allows operation from multiple locations."

Avid VENUE | S6L is a unified live sound platform with full software, hardware and show file compatibility across the entire line. Control of Waves and AAX plugins are supported from the console surface, and 128-tracks of built-in Pro Tools recording enable a time-saving Virtual Soundcheck capability.

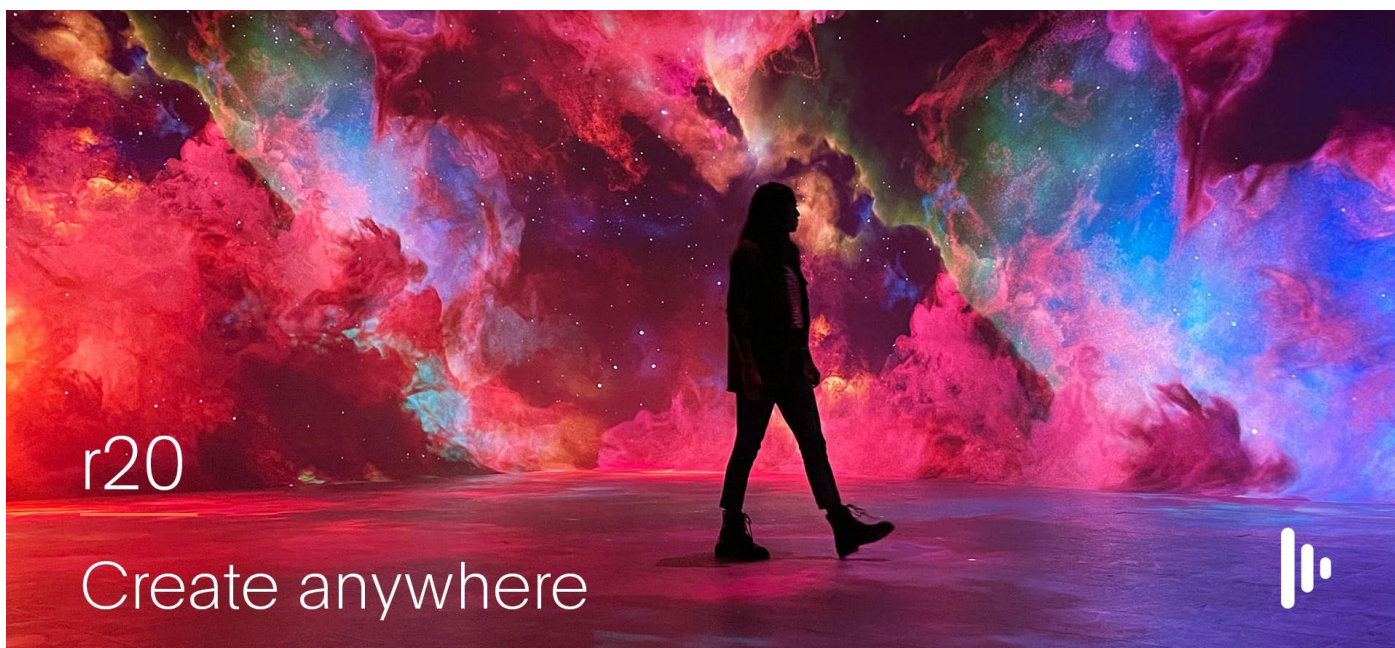
VENUE | S6L (with the optional AVID 192 card) and the GALAXY Network Platform are certified by the Avnu Alliance as compliant with the AVB-based Milan network protocol. This unique combination of network interoperability, flexibility, and powerful features presents sound designers and live performance engineers with the industry's most advanced toolset for creating and controlling immersive sound environments.

The new Spacemap Go plugin is compatible with VENUE 7 and later software and version 1.2.0 of the Spacemap Go app for iPad. The plugin is free and may be downloaded from the Meyer Sound website.

The Meyer Sound Spacemap Go plugin also is available in the AU and VST formats, enabling use across a variety of digital audio platforms.

[Meyersound](https://www.meyersound.com)

disguise's r20 software release goes global, now available in six new languages



disguise, has launched its latest r20 software release in six new languages. In addition to English, disguise's Designer software is now available for use in Spanish, German, French, Korean, Japanese and Simplified Chinese, expanding the reach of its award-winning platform around the globe. The localisation represents the next step in the company's move towards remote, cloud-based collaboration following its recent acquisition of leading 3D content previsualisation platforms Mapping Matter and Previz.

Trusted for over 20 years on some of the world's biggest, most complex live shows, broadcasts and virtual productions, the disguise Designer software is a powerful toolkit for winning pitches, developing storyboards, creating camera fly-throughs, validating content, testing technical setups, and designing entire projects. Its timeline-based interface allows users to build a 3D model of their stage, projection canvas or LED volume, then map video content onto the simulated environment. With the new additional languages included in disguise's groundbreaking technology, more users will be able to bring their most ambitious creative visions to life.

Upon downloading the new r20 release from the disguise website, users will be able to easily control which language they want to work in by selecting their preferred language in the language switcher as they launch the software.

Users will also have the opportunity to undergo training in their local language to become certified disguise specialists, with access to translated training materials and user manuals in the above six languages.

"Productions nowadays are comprehensive and of a global nature. We understand that many of our users are not native English speakers and we want to enable them to solve complex problems without worrying about the language barrier. With r20, we are empowering our disguise community to work in their local language from anywhere in the world," says disguise Chief Product Officer, Raed Al-Tikriti.

disguise has recently expanded its operations around the world with new office openings and dedicated support and technical solutions teams based permanently in Seoul, Korea; Tokyo, Japan; Beijing, China; and Auckland, New Zealand. disguise also ensures relevant representation for its key markets in

EMEA and the Americas - with a dedicated support and technical solutions representative in Spain and an ever-expanding team in its London and LA offices, ready to travel on site across these regions to offer hands-on support to critical projects. Users around the world can also benefit from premium support, extended warranties and worldwide server cover for help around the clock wherever they are based.

“As our global user community grows, disguise must grow with it. With over 300 xR stages powered by disguise around the world and the much anticipated return of live events, the need for local support is more

crucial than ever. In our commitment to democratise our workflows, we want to ensure everyone feels as confident as possible to work with disguise and I'm incredibly proud of this massive step forward in localising our software and expanding our global presence to enable teams to create from anywhere,” says disguise CEO Fernando Kufer.

[disguise](#)

Martin Audio Announces White Versions of Best-Selling WPS and SXC118 Cardioid Subwoofer



Martin Audio has announced that its best-selling Wavefront Precision optimised line array system, WPS, is now available in white, as a made-to-order option, and is also accompanied by its cardioid subwoofer partner, SXC118.

Designed to set a new benchmark for 8" line arrays, Martin Audio originally announced WPS in 2019—the fourth model in the award-winning Wavefront Precision series—and it has since gone on to be a firm favourite by owners and users alike.

As Dom Harter, Managing Director, explains, “With WPS it was a ground up product development. We wanted

to overcome the deficiencies and compromises of other 8" line arrays available on the market. That's why we believe we have more drivers in WPS than anything else in its class, with spacing, waveguide and crossover point engineered to deliver in particular optimum HF performance with exemplary mid and high frequency pattern control, even at higher SPL. And our rental partners, FOH engineers and system integrators, have really taken WPS to

their heart.”

The SXC118 is a cardioid subwoofer featuring an 18" driver in the front and a 14" driver in the rear, coupling together for increased output to the audience while maintaining control and reducing noise behind it.

Harter continues, “The success of WPS and its partner sub has naturally meant that for houses of worship and auditoria there was a growing demand for a white variant and so moving forward we are happy to make this available as a made-to-order option.”

[Martin Audio](#)

Proteus Excalibur Launches as the 21st Century's Ultimate Searchlight Effect



The newest member in Elation's industry-leading Proteus range of IP65 automated fixtures, Excalibur's extreme power, long throw beam and wide front aperture make it perfect for creating aerial light columns, sweeping beams, throws of CMY colour, and prismatic/air FX rivaling existing Xenon searchlights.

Cuts through the sky

Excalibur is the brightest IP65 full-featured beam fixture ever created, producing up to 200,000 lux at 20 meters (7500 lux at 100 meters), an incredible light output from a surprisingly compact, and fast, body. Rivaling existing Xenon searchlights and sky trackers, the Excalibur's extremely narrow 0.8° beam ensures the fixture cuts effortlessly through the sky and is visible at great distances. The intense beam projects from an ultra-wide 260mm front lens as a massive column of solid, attention-grabbing light, a towering beacon that is impossible to miss.

Design options

A wide array of gobos (8 interchangeable plus a 17-position static wheel) and prism overlays (4- and 8-facet) allow for a large variety of dynamic sky animations that

add excitement and draw attention to any event. The upcoming integrated sky animation system allows the Excalibur to operate impressive aerial shows without needing an external DMX controller.

The Excalibur offers full CMY color mixing plus 14 dichroic colors including CTO and UV. With its incredible light intensity, all CMY colours remain strong and vibrant, even when fully saturated.

Beam control through a precise internal focus lens provides crisp projection without optical errors. Dual variable frosts allow for softening of the beam when required and a remote-controlled Expander lens widens the beam to approximately 3.5 degrees for an even fuller look.

FLEX lamp efficiency

The Proteus Excalibur uses Philips' highly efficient FLEX lamp technology for long lamp life, lower power consumption and reduced fixture maintenance. The discharge lamp/ballast package produces an impressively high output for such a compact fixture while performance remains resourcefully economical with a lamp life of up to 4,000 hours.

The Philips Platinum 500 FLEX (550W) lamp is dimmable via the internal ballast, which not only dims the lamp electronically but offers a Hibernation Mode that reduces power to the lamp when not in use, resulting in lower power consumption. The lower internal heat produced extends the life of not only the lamp but all internal components of the fixture.

A new standard

The Excalibur supports DMX, RDM, Art-NET, and sACN protocols and is naturally outfitted with all the professional features and IP65 connections that designers have come to expect from a Proteus luminaire. With unprecedented power and a full array of professional design features, the Proteus Excalibur sets a new standard in IP65 beam moving head fixtures.

Proteus Excalibur

Are You Immersed Yet? Part Three



After we talked about cinematic environment last time, I would like to have a look in this issue at how our human hearing system works. This is where I think, it gets much more exciting. Once we understand and learn how we do perceive sound in space, we get a better understanding of how

to produce and reproduce sounds as well. So let's get to it.

Historically audio systems started out being MONO, since spatial information was not concerned for many limitations. When STEREO was introduced, it was quickly adopted and the results were amazing, even up to this day. A properly set up stereo system delivers Phantom sources with very clear and exact locations in between the loudspeakers and there is literally no audible phasing involved. This meant, that what was seen during live performances on stage, or later by watching content on TV with a decent stereo system, would reproduce the sounds very closely like the visual impression was. It was now possible to cover a space in-between loudspeakers without adding more resources. The center channel in most systems both live and cinematic was for dialogue or vocal amplification purposes only. A STEREO system just suited our human hearing system well and still does today and will also in the future.

Why? Simple answer: Stereo uses two speakers, we have two ears, end of story. Let's take a closer look. Our hearing systems works very well in the horizontal plane and this is based on the location and also shape of our ears. The resolution of height in our hearing is much more limited than what can be differentiated horizontally. On top of this our hearing is not as sensitive to interference at any single location, as a measurement microphone would be, since the ear/brain system eliminates such interference, when the two channels from the ears are compared inside the brain. We are able to locate sound very precise in the horizontal plane because our brain does excellent calculations on delay times between the arrival of signals. It really only gets

confused in extremely reverberant spaces, which is also why such spaces are quite discomforting. As soon as a sound moves around us and behind us, the delay system alone does not work anymore and this is where the shape and form of our Goncha (our external Ear shell) comes into play. As a sound appears behind us, it receives some "shading" by the Goncha and thus the brain knows that the sound is behind us. So front left and right is being determined mostly by delay between the two channels. Behind and in front utilises a frequency shading component. Height just has a natural limitation because neither the delay, nor the frequency shading does a very good job and so our height hearing is very forgiving because it is not well developed.

You can imagine that this is all a very individual thing, which makes it such a big challenge for commercial applications. People have very different ear shells and despite any temptation, I won't name any famous ones with giant ear shells here. The ability to hear in space around us is very clearly determined on a rather individual basis. The individual ears/brain system works very different and the least common set of data is just not really good enough alone by itself. This is where HRTF (head related transfer function) comes into play. See, I was able to drag you along until here and now there is a risk, that I am loosing you all! The HRTF is a whole other topic, but it shows and confirms that the spatial experience is rather individual and the quality of reproduction depends to a large extend on this unless of course your HRTF is flat, which it isn't.

If you play any sound on a high resolution sound system around your head, then HRTF is irrelevant, since what you play back is then being processed by the ear/brain system accordingly. However, whenever you look to take this experience into the binaural (headphone) space, then a good understanding of how we perceive sound is mission critical for a good user experience. And just because it is so much fun, of course this one comes with its own special challenge. What about the head-tracking, when the head moves and is not still? More on that next time....

Join the conversation and share your thoughts with Alex. Alex can be reached at alex@asaudio.de

Bridging The Communication Gap

by Elton Noronha



Clear-Com IP Solutions helped paved the way for world premiere of Sound of the Silk Road in Xi'an China.

Once overlooked – intercom systems for live events have traversed the path of technological evolution to now offer cost-efficient, intuitive, dependable solutions that assure interoperability, agility and ease-of-use-and-maintenance.

An intercom system is integral to the behind-the-scenes success of any kind of production - be it live entertainment, virtual events, fixed / mobile broadcasting, theatre, stage shows, or any other application that requires real-time coordination of several different technical and production facets. Show-runners and producers need the intercom to call the show, while directors need the intercom to co-ordinate aspects like lighting, camera, effects etc. Moreover, even sound engineers need the intercom to communicate with each other – especially when the FOH engineer needs to switch over to one of the back-up microphones, and needs to communicate this to the monitor engineer.

Despite its importance, intercom systems have often been one of the most underrated (and sometimes even overlooked) tools of the trade within the event and

production ecosphere. There seems to be a general sense of mystery when it comes to specifying the right intercom solution for a given application; with the responsibility of doing so usually accorded to the equipment rental service partner for the said event.

A fair bit of understanding and experience goes into designing and implementing intercom systems of varying complexities for different kinds of applications. Whether you need a single-channel, wired partyline system, a complex multi-channel wireless system, or anything in between – it is essential to narrow down on the right solution for the project so that you ensure that you aren't overwhelmed or underwhelmed during production. And in order to specify the right system for the right application, there must first be a fair bit of understanding of the various types of systems available; and the various

crucial components that come together to comprise an intercom system.

First up, it is important to know about the the crucial elements that come together to form a conventional intercom system:

First, let's start with some important definitions:

Party-line: Similar to a telephone conference call, the Party-Line (PL) is also called conference line; i.e. when someone speaks, everyone can listen.

Two-wire: Only two wires needed to make this system work electrically; talking and listening are on the same line.

Simplex: Form of communication where only one person can talk at a time; i.e. typical two-way radio communication where only one person can key into the radio at a time.

Full Duplex: Form of communication where everyone can talk and listen at the same time with many users on the same line.

Headset: A headphone set with an attached microphone. This is the main way users communicate on intercom systems. It can have one earpiece/headphone or two earpieces / headphones, whereas microphones could either be dynamic or condenser styles depending on brand & purpose of deployment.

Belt Pack: A portable user 'station' that can be clipped onto a belt, and has a headset plugging into it for the user to talk/listen, while an external connection to the intercom system powers the unit. The combination of a belt pack and headset is sometimes referred to as a "drop" of intercom.

Main Station: A user station unit with the ability to intercommunicate with multiple channels (sometimes called a base station). Such units are almost always rack-mounted at the main console area, and sport the ability to communicate with a headset or with a built-in speaker and gooseneck microphone.

Master Station: Usually a main station that also provides power supply for the intercom system.

Wall Panel Station: User stations with built-in speakers that can be mounted directly into walls. Facilitates easy communication usually in theatre and stage-play settings with backstage areas like dressing rooms etc.

Additionally, it is imperative to familiarize oneself with the below key terminologies that denotes the in-function aspects of the intercom systems:

Sidetone: A small amount of the microphone feedback to the headphone circuit which allows the user to hear if they have correctly keyed a channel.

Call: User stations generate and display a visual signal to get someone's attention or to cue a particular action.

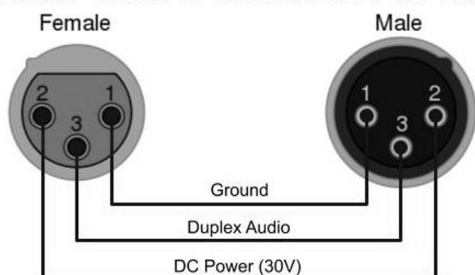
Wet / Dry: When a two-wire XLR line carries power on it (wet) vs When a two-wire XLR carries no power and only audio (dry).

Wired Intercom Systems

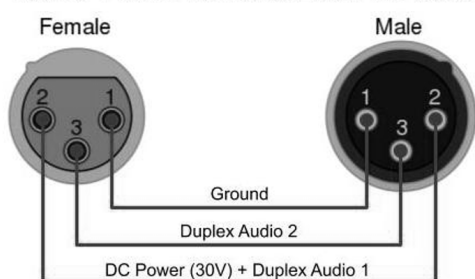
Wired or Analog Intercom systems have been around for several years now; and analog party-line intercom systems are perhaps the simplest form of such systems – especially when considering use within live event production communication scenarios. Party-line intercom systems have remained largely unchanged over the past several decades – in terms of functionality and operability – because they have withstood the test of time and ever-evolving user demands; while presenting itself to be the most cost effective and efficient solution for the most diverse range of events and live productions.

While several different brands do offer two-wire party-line systems, it must be observed that there are only two major styles of system wiring that are most commonly observed i.e. Clear-Com style and RTS style.

Clear-Com 2-wire XLR Pin-out



RTS TW 2-wire XLR Pin-out



Clear-Com vs RTS Style 3-pin XLR connectors.

It is true that both, the Clear-Com style as well as the RTS style, use standard microphone interconnect cable with 3-pin XLR connectors. However, the configurations are such that they are not natively compatible with each other. While Clear-Com style systems have separate lines for power, audio, and ground with only a single channel of duplex party-line audio; the RTS style systems have a conductor with power and audio, a conductor with just audio, and a ground, thereby giving them the capability to offer two channels of duplex party-line audio on the same standard 3-pin XLR connection as used by Clear-Com styles.

The similarity between both systems also extends to the fact that both operate on a distributed amplifier model – meaning there is no directionality in the wiring connections. This allows for connections to be split using y-cables or adapted with XLR turnarounds with no loss to the intercom signal; and in turn present a simple and efficient scalability option of the system to meet larger event scales.

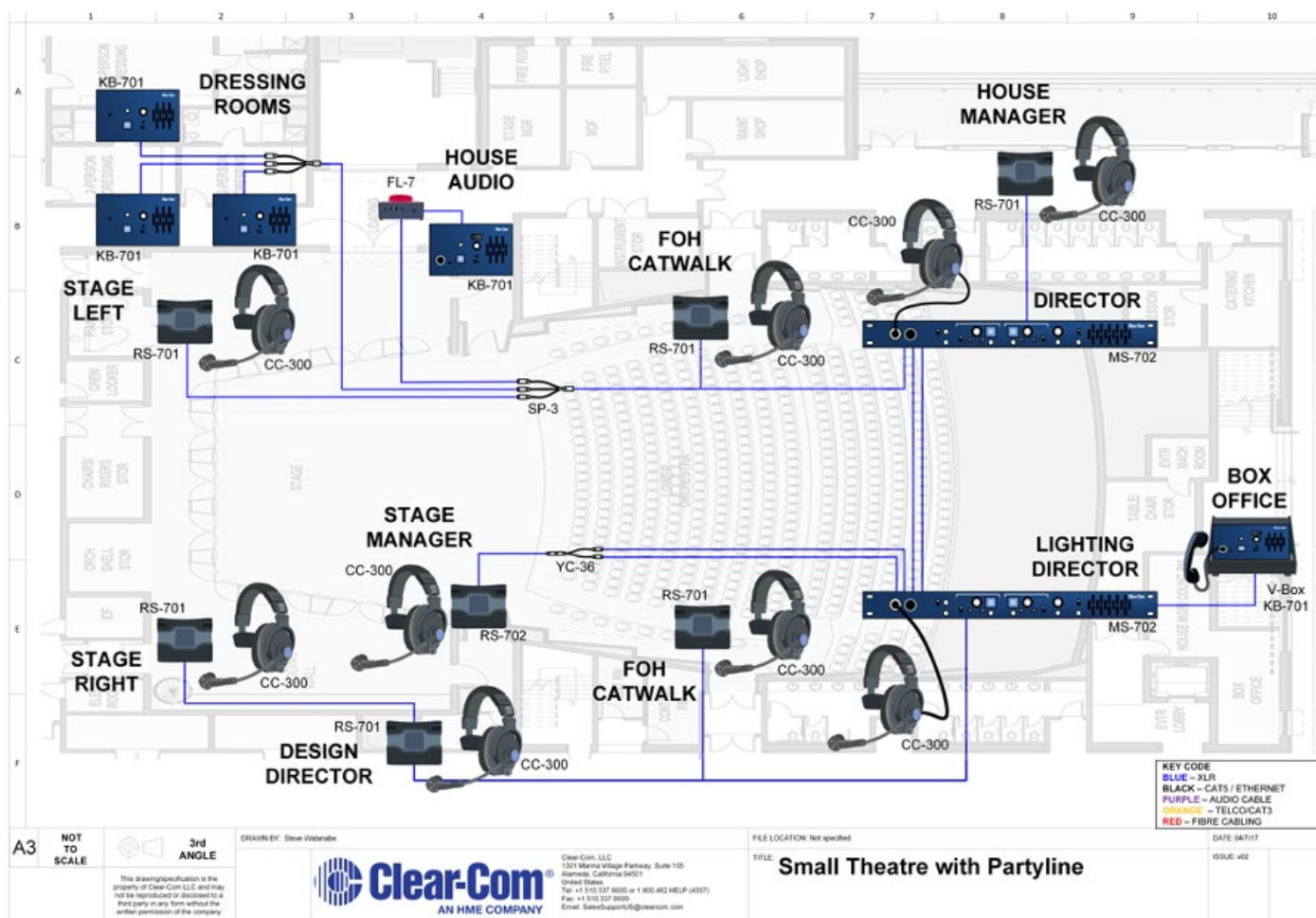
The system in general involves each user station housing a small mixer circuit that sports the external signal and

the user's microphone with a special echo cancellation circuit. Each user station typically allows for control over aspects like listening volume adjustment for the channel, a talk button, and a call button to signal other users. There are a particular set of advanced user stations that afford access to have control over aspects such as sidetone adjustment, and a control to set the action of the talk button to be push to talk then push again to disengage (Latching) or talk only while the button is being pressed (non-latching).

While RTS style systems are commonly used for AV and broadcast applications, Clear-Com style systems are widely used in small-scale theatre, stage and music based productions. Emphasizing Clear-Com style wired intercom systems that are more commonly used in stage and music based applications - the simplest possible wired intercom deployment is a single-channel partyline system that can be made possible with an intercom power supply. Two channel partyline systems will usually have the master station that supports beltpacks or speaker stations; with different models of master stations allowing for support up to 60 beltpacks or 20 speaker stations for larger and diverse applications. These beltpacks may either be single-channel or dual channel in nature; with some dual-channel units sporting 3-pin connectivity while other sport 5-pin connectivity. Some beltpacks allow users to communicate on two channels over a single 3-pin XLR connection, while other options for intercom "drops" include speaker stations, telephone-style handsets, call lights, and more. Then there are options of four channel partyline systems that deploy the likes of the ClearCom MS-440 master station which offers advanced features like 'Linking Control' which allows for instant linking of separate channels together, in addition to four independent program inputs, and three interruptible IFB channels.

Limitations of 2-Wired Party-Line Systems

While Party-line systems have in fact been preferred to coordinate live event productions, especially small scale productions; there definitely are evident limitations to the capabilities they offer. Primary among these is the fact that users cannot have access to communication. Secondly, if one member of the team wishes to communicate with another specific member, all other communications get blocked until this particular line is released. Additionally, there's the aspect of limitation



Typical Clear-Com Partyline system for small theatre.

that comes with the length of XLR cables – when working on productions that have long distances between the main control station and other spots; it becomes tedious to run long lengths of XLR lines, especially when considering key roles like stage managers who are often all around the backstage area trying to coordinate different aspects of the show. Lastly, and perhaps most challenging, is the aspect of interconnecting two-wire systems – either between different brands or with a matrix, or with wireless systems. This task often warrants the need for special adapters and interfaces, which often add to the cost of the overall system. That being said, advancements in technology has ensured the availability of solutions that make private communication and mobility possible using 2-wired Clear-Com PL systems.

Wireless Intercom

With production scales growing larger and more complex; evolution in technology has given rise to the

proliferation of wireless intercom solutions, which are not just flexible but also affordable – thereby allowing such systems to take over from conventional analog systems as an essential part of the inventory. True to its word – the freedom of movement offered by wireless intercom systems makes them an obviously attractive choice, especially in applications that sport a larger expanse and/or multiple points of communications that desire dedicated lines. That being said, applications that warrant the deployment of wireless intercom systems often require a fair bit of planning and design time to ensure that every element of the system works in sync.

Basics of Wireless Intercom Systems

With the key requirement of modern intercom systems encompassing the ability to talk and listen simultaneously with many users – the means to achieving this becomes more challenging within the wireless domain owing to the inherent need for wireless intercoms to operate

with rather specific frequency spectrum requirements. This, quite obviously, vary between analog wireless intercom systems and digital wireless intercom systems. For example, there are simple single-channel wireless solutions that operate in the 2.4GHz band, with each base station being able to support up to a maximum of 15 beltpacks or all-in-one wireless headsets. On other projects that need deployment of multiple wireless beltpacks over an extremely large area, there are systems that operate simultaneously in VHF and UHF bands, thereby affording greater operating range than digital systems operating in the 1.9GHz or 2.4GHz band.

The two main component of all modern day wireless intercom systems comprise a centrally located base station and multiple other user stations (usually wireless beltpacks). The base station makes up for the intelligence network of the entire system and comprises transmitter and receiver components that communicate with the wireless beltpacks; along with also interfacing to external systems such as other wireless base stations, stage announce outputs, and two-wire party-line systems (ClearCom or RTS). Besides this, the base station routes signals between wireless users and these external systems. Finally, the base station itself acts as a user station as it facilitates communication to both wired and wireless users.

On the other hand, wireless beltpacks (“drops”) feature built-in transmit and receive radios that allow users to connect headsets to talk and listen on the system. After being correctly configured, beltpacks transmit and receive audio wirelessly from the base station which routes the audio streams to other wireless beltpacks in the system and/or to other interfaced systems. Wireless beltpacks also allow users to talk on designated intercom channels via buttons that can be programmed to be latching or momentary functions.

Analog (UHF & VHF) Systems

Analog wireless intercom systems typically operate in UHF (300 MHz to 3 GHz) and VHF (30 to 300 MHz) frequency spectrum used by TV station broadcast.

The seamless operability of these systems depends on the careful accounting of several frequencies. For instance – analog wireless beltpacks need to use separate dedicated frequencies if the user wishes to operate them as full duplex (receive audio i.e. listen,

and transmit audio i.e. talk at the same time). Therefore, a typical configuration for analog wireless systems will usually have a dedicated system transmitter frequency that broadcasts to all beltpacks and a separate dedicated receiver frequency for each individual beltpack in the system.

Thus, analog wireless intercom systems typically use different frequency spectrums for transmissions from beltpack to basestation, and for transmissions from basestation to beltpack. For instance, some systems may use VHF frequencies for transmissions from beltpack to basestation, and UHF frequencies for transmissions from basestation to beltpack.

While one of the key advantages of analog wireless systems includes the relative quick and simple system setup and efficient functioning of the system especially in smaller scale productions / one single event area (with no barriers / obstructions); these systems do pose challenges in maintaining quality and efficiency when deployed to cover either multiple areas or an extremely large expanse. Such situations would ideally need significant amounts of extra hardware, in addition to coordinating frequencies in the fairly limited available spectrum.

Digital Wireless Intercom

An evolution from analog counterparts - digital wireless intercom systems do not feature dedicated receive and transmit antennas, rather they deploy cellular communication with many transceiver antennas networked together to the basestation. Such systems adopt “Spread Spectrum” technology which allows the transmitters and receivers to ‘hop’ within a certain frequency band; while working in dedicated “white spaces” in the wireless spectrum like 900 MHz, 1.9 GHz, and 2.4 GHz.

On the other hand, Antenna distribution in most systems is usually achieved through use of standard CAT5 cable, which affords easier deployment of complex antenna systems through different spaces or zones. Coverage and capacity become important factors that determine antenna distribution designs in cellular-style digital wireless systems – i.e the total capacity of connections that can be maintained between a base station and transceivers determines the location of the base station

and the spread of the transceivers relative to the location of the base station.

While digital wireless systems are able to support more beltpack users on a single base station and provide more flexibility and operational complexity than traditional analog wireless systems, they do need a good deal of programming and configuration before they can be deployed to achieve desired results. That being said, perhaps the most lucrative factor that works in favour of digital wireless intercom systems is its ability to allow more usable RF spectrum for productions operating a large number of wireless microphone, in-ear monitoring, and IFB systems. This is perhaps one of the biggest reasons why mega productions and music festivals in recent years have relied on digital wireless intercom systems.

IP Based Intercom Systems (Networked)

With IP protocols gaining precedence as the predominant transport method used in networking, several manufacturers have designed communication products and systems that use standardised IP protocols, along with the introduction of a few specialised ones for remote-to-facility productions. These products/systems are usable on any IT infrastructure, and can typically be accommodated onto the desired network easily from where they can be controlled and run.

The major benefit of networked intercom applications is the ability to route audio throughout a facility using a distributed IP network that makes the cabling and interconnection of devices much easier around a venue, and is far less time consuming. Other benefits include increased bandwidth, interoperability with other devices, common control interfaces, and ease of maintenance. By replacing proprietary device protocols with IP, intercoms can be used on existing IP infrastructures. Plus, since intercom systems would be working alongside audio infrastructure (many of which run on IP as well), they can interoperate with other audio devices like mixing consoles; and using network technologies, this interconnectivity can be designed more efficiently and flexibly. For example; several manufacturers have allowed for provisions where users can be on the move within the venue, yet use their tablets, smartphones and laptops running the brand's intercom applications;

thereby also having access to control and operate other devices on the network; both fixed and remote.

In addition to interoperability, some IP based intercom systems feature the ability to be usable on any network while adapting to the venue's and/or show's requirements thanks to the adoption of international design standards like IEEE, AES, and ITU, that are implemented and supported by many manufacturers and are driven by technical needs of our industry and not by financial interests. Another key contribution of systems that adopt such design standards is its ability to assure low-latency audio transport over the network. Such intercom systems usually are designed to be intuitive, easy-to-use, and dependable; with key features like individual volume control, and advanced administrator system monitoring capabilities.

IP based systems allow for trusted wired intercom systems to work seamlessly alongside latest IP wireless beltacks, thereby connecting users in the control room with those on the move backstage. Dante- and AES67-enabled systems integrate with stage management solutions from a wide range of manufacturers, making it easy to bring together the various intercom technologies, thereby affording seamless communications, irrespective of the varying kinds of intercom systems being deployed.



Clear-Com Freespeak.

Key Accessories

Irrespective of a wired intercom system, a wireless solution, or some combination of the two, there will almost certainly be a need for some extra pieces of hardware to accomplish tasks that can't be completed with master stations and beltacks alone. These would

ideally include call lights, speaker stations, telephone style handsets, and more for situations where mere beltpacks and headsets would not be sufficient for the job at hand.

Some instances of more complicated applications would warrant the use of a slightly wider selection of adapters and interfaces, with products like dryout boxes (which negates the power from a partyline signal, and outputs a dry line-level signal) commonly used for cueing of personnel (i.e. plugging into a console channel so a monitor engineer can listen to the intercom through their cue monitors). There are also Dante enabled adapter units that interface Dante I/O into Clear-Com partyline systems. There are specific interface units that enable 2-wire to 4-wire interfacing, and/or even interconnect Clear-Com partyline systems with RTS systems. Finally, many productions also warrant the use of special units that allow for two-way radios to interface seamlessly with partyline intercom systems.

Popular Systems

Perhaps one of the most flexible and popular digital wireless intercoms in recent times has been Clear-Com's FreeSpeak II – with the high performance distributed wireless solution being perfect for high-profile, large-scale communications applications. Operating in the 1.9GHz frequency band – the FreeSpeak II system comprises of the base station, beltpacks, transceiver antennas and splitter; with the ability to implement it as a standalone base station system or as an integrated wireless solution within a larger intercom system. The system is fully programmable via the base station, or Clear-Com's browser based Core Configuration Manager tool; and the base station supports up to 25 beltpacks, in addition to also acting as a powerful hub for wired intercoms, with four 2-wire analog partyline connections, and four 4-wire connections. When properly deployed, FreeSpeak II transceiver antennas create an interlocking cellular network, seamlessly passing off beltpacks to one another as users move in between coverage zones. FreeSpeak II also offers a fiber connect option that allows transceiver antennas to be placed at extreme distances from the base station.



RTS ODIN.

In terms of IP based wireless intercom systems, an extremely popular system adopted world-wide has been the ODIN system from RTS featuring OMNEO technology. OMNEO is based on two key platforms: Dante by Audinate and the system-control component OCA (Open Control Architecture); and offers interoperability as a layer three compatible system that is interoperable with any Dante-enabled device. A single ODIN can grow from 16 ports to a maximum of 128 ports; and a maximum of eight ODIN units can be interconnected via an optical Inter-Frame Link creating a single matrix with up to 1024 ports; with the total number of licensed ports allocated freely to any port hardware type supported by the unit. And featuring connectors for AIO, OMNEO and two-wire technology, ODIN supports keypad technology going forward and, as always, RTS legacy keypanels. These provisions equip the ODIN system to provide the highest possible sound quality, interoperability, flexibility, reliability and future-proof technology by using an open public standard, while ensuring low levels of latency in a highly reliable set up that boasts of lower eventual system costs due to the use of standard IT components and lower installation as well as maintenance costs.



Altair WBS-200HD

The market has also been extremely welcoming of other brands as well – with manufacturers like Altair garnering fair bit of support, especially in regions like India and South East Asia. Altair's WB-200 Series Wireless Intercom offers two different models of base station i.e. the WBS-200HD base station which allows communication with up to 4 wireless beltpacks in one single intercom channel, and the WBS-202HD base station which allows communication with a maximum of 8 wireless beltpacks, distributed in one or two intercom channels depending on the user's needs. Apart from the wireless beltpacks, both models can also power cable-based intercom devices (beltpacks, desk stations, etc.), and are compatible with most major intercom manufacturers in the market, making these a preferred choice for those professionals looking to add more intercom systems to their existing inventory.

Experiential User Views



KG Movies – one of Kolkata's foremost equipment service providers for live events – deploys intercom systems for almost every event that they commission; with the company's **Director Manoj Singh** informing,

"Communication between team members while setting up and subsequently managing an ongoing event is extremely critical, and intercom systems play a crucial role in facilitating precise coordination of backstage developments to those at the console area. Any changes or last minute amendments can be better mitigated thanks to clear lines of communication afforded by intercom systems. While we initially adopted basic walky-talky systems to try and suffice our communication requirements, we noticed there were several issues in terms of frequency drops, general interference and signal quality. However, after switching to the Altair WB-200 wireless intercom system that we currently use, we've noticed that the communication experience has become much more seamless and efficient."



AV Tec – a leading rental services company based out of Bangalore that has been considered a pioneer in several aspects of the business locally – has also been a strong proponent of the use of intercom

systems for live event projects; as the company's **Director Dorai Ilangovan** states, "The kind of events that we commission - there are at least 4 to 6 different technical heads are at work – looking into crucial aspects like sound, light, video, camera, backstage co-ordination and artist mic'ing. For the event to run smoothly without any hiccups, it is extremely important for these different professionals to co-ordinate with each other seamlessly and direct them precisely at the cue points to execute their jobs. From initially relying on mere hand gestures (in the late 80's and early 90's) to now having access to wireless intercom systems, IP based systems and matrix systems – technology definitely has come a long way in enabling a more seamless experience for technical professionals on the job. We personally use the Altair WB-200 wireless intercom system and the MS-200 analog intercom system from Axxent (Germany) depending on the kind of event that needs to be commissioned – and we have always had a smooth experience in terms of maintaining optimum communication lines with other technical and production personnel at the event."

Conclusion

With intercoms playing a key role in the production process – it is vital to have a rock-solid intercom solution that can assure optimal efficiency and reliability, irrespective of the nature of application. From single-channel wired intercom, to complex multi-channel systems with a matrix of wired and wireless beltpacks to next-gen IP based wireless intercom systems – the evolution in intercom technology will continue to push the boundaries of possibilities, with an enhanced focus on dexterity to design high-performance and high-capacity intercom systems that are every bit as user-friendly as they are adaptable.

SINGAPORE

Multi-media Show with AR Creates Immersive Festive Experience for Pedestrians at Orchard Road

Hexogon integrates projection mapping with augmented reality to jazz up the festive mood



Singapore's Orchard Road is famed for its many shopping, dining and entertainment options. It is also a central focal point during the Christmas and year-end period, with the approximately 2.5km stretch lighted up to create a festive mood. This year the Orchard Road Business Association (ORBA), which takes care of the interests and welfare of businesses along Orchard Road, decided to up the ante for their "Christmas on a Great Street 2021" campaign, from just street light-up decorations, by adding a new dimension to the area. After contemplating various ideas, they decided that projection mapping would fit their objective.

Hexogon Solution Pte Ltd, renowned for its many projection mapping projects, was called to help ORBA achieve their vision. Hexogon worked on the largest wall in Orchard Road for the multimedia projection show. To make it more interactive, Hexogon included 3D projection content that seamlessly synchronised with Augmented Reality effects viewing from a mobile App developed by Hexogon called PopAR Live.

Hexogon installed high-brightness laser projectors on the rooftop of the Ngee Ann City Building projecting across to the sidewall of the Mandarin Orchard Building. The main 5-minutes Christmas thematic content was specially curated to jazz up the festive mood, which also involved the Mascot from the Singapore Tourism Board. Additional Augmented Reality content was developed and integrated with the main projection through a mobile app, "PopAR Live", produced by Hexogon group of companies. The AR content interacts and blends seamlessly into the projection show creating an additional dimension. The project sponsor, Tudor, also made a 3-minute content featuring their latest product.

Challenges

One of the biggest challenges the Hexogon team faced, is the giant lightbox installed on the opposite building across the street. "We had to significantly increase the number of projectors, focus on the contrast and content adjustments to ensure that the light interference from the opposite lightbox will not "wash out" our projection," said **Adrian Goh, Group Managing Director, Hexogon Solution Pte Ltd.**

"We were also challenged with the task of how we can maximise the limitations of the mobile application. The wall is a huge show space requiring the AR effective tracking zone to work over 200m away from the building and a 3D content space of 200m depth x 200m height x 150m width developed through Unity. We had to find the sweet spot considering technological limitations and various generations of mobile phones. Some functions are not fully available in all phones, and tracking/detecting AR markers on different platforms work differently. We had to integrate a few ways of AR detection methods and apply AR lock as needed to ensure the stability of AR results," said Adrian. The team had to test as many devices as possible and update the application accordingly. They already have the 19th update built into the app to constantly improve the user experience for this show.

Adrian also highlighted that the team synchronised the AR content with the projection with great accuracy. As a result, when users apply the PopAR Live application onto the content, they are "surrounded" by snowfall as they "travel" down Orchard Road while fireworks burst into celebration at the finale of the multimedia show, thus creating an immersive virtual experience. Apart from the main Christmas content featured with AR effects daily, unique AR and projection contents were also developed for Christmas and New Year's eve.

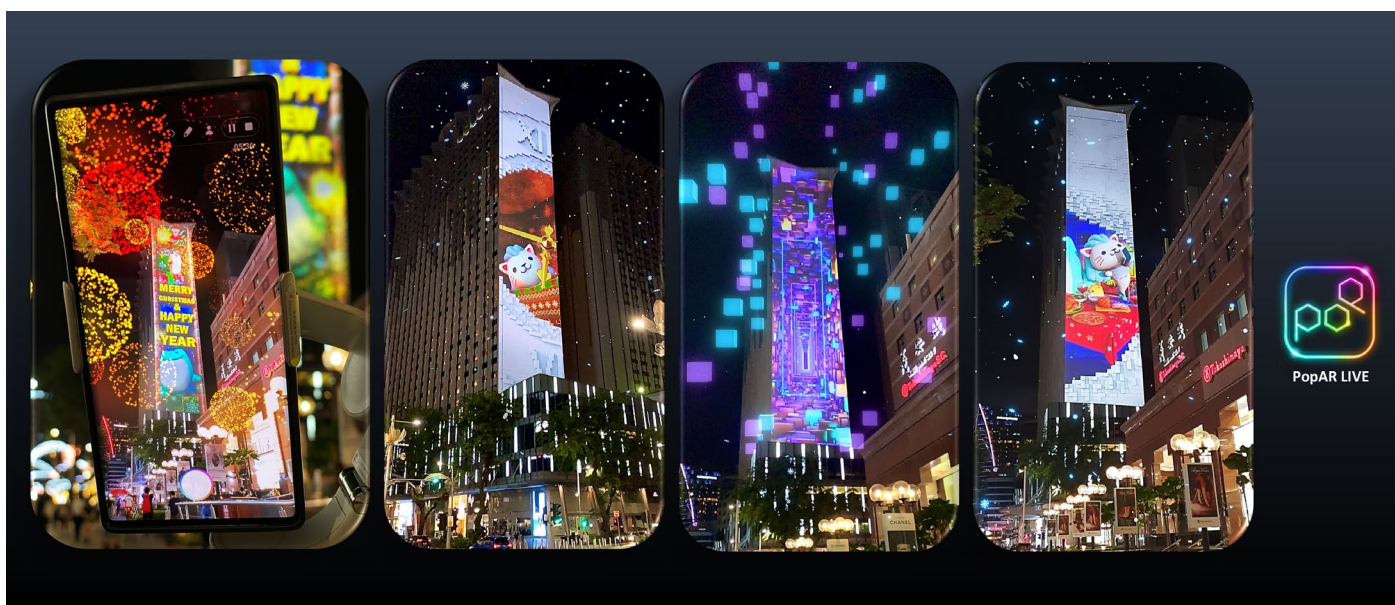
The AR App

According to Adrian, this is only phase one of the app development. "This is a beta version, and we were delighted to know that it works perfectly to our expectations. We are completing Phase 2 that we will launch in 2022. In the new app version, there will be many more functions and ways to integrate with our future projects. Our primary objective is to create another experience level for all our 3D projection mapping shows. Not only bringing good quality projection content to the audience but sharing and exploring new experiences into the virtual world."

"We are extremely pleased with the outcome of this AR approach considering this is the first-ever project we have done with something new to Hexogon. The original idea was to test the app beta version as a small component of this Christmas Show. However, as the plan developed over the months, it eventually became the key highlight of the project. It was extremely stressful for the team to put something new with such emphasis to the show, but I am happy that we have done it with style," said a pleased Adrian.

Hexogon deployed the latest Panasonic laser projector, RQ35Ks, for this project.

Hexogon



Hexogon's PopAR Live mobile app brings the projection to life.

SOUTH KOREA

Christie 1DLP Laser Projectors Illuminate Curious 12 Tales Exhibition with Enchanting Visuals

Christie D20WU-HS laser projectors mesmerizes audiences with excellent colour and contrast

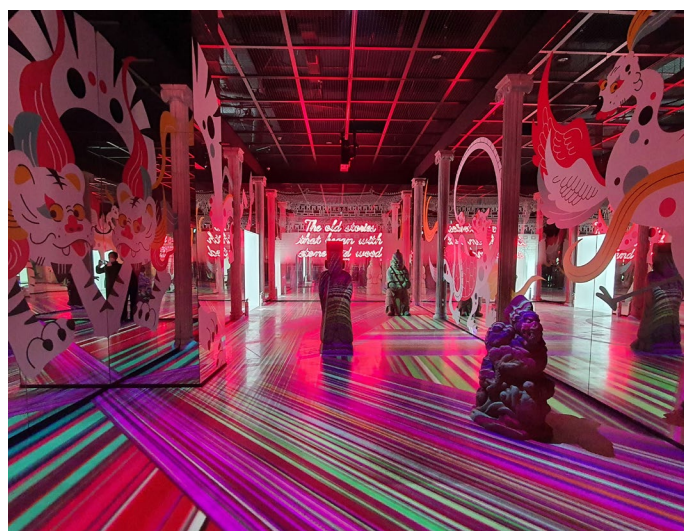


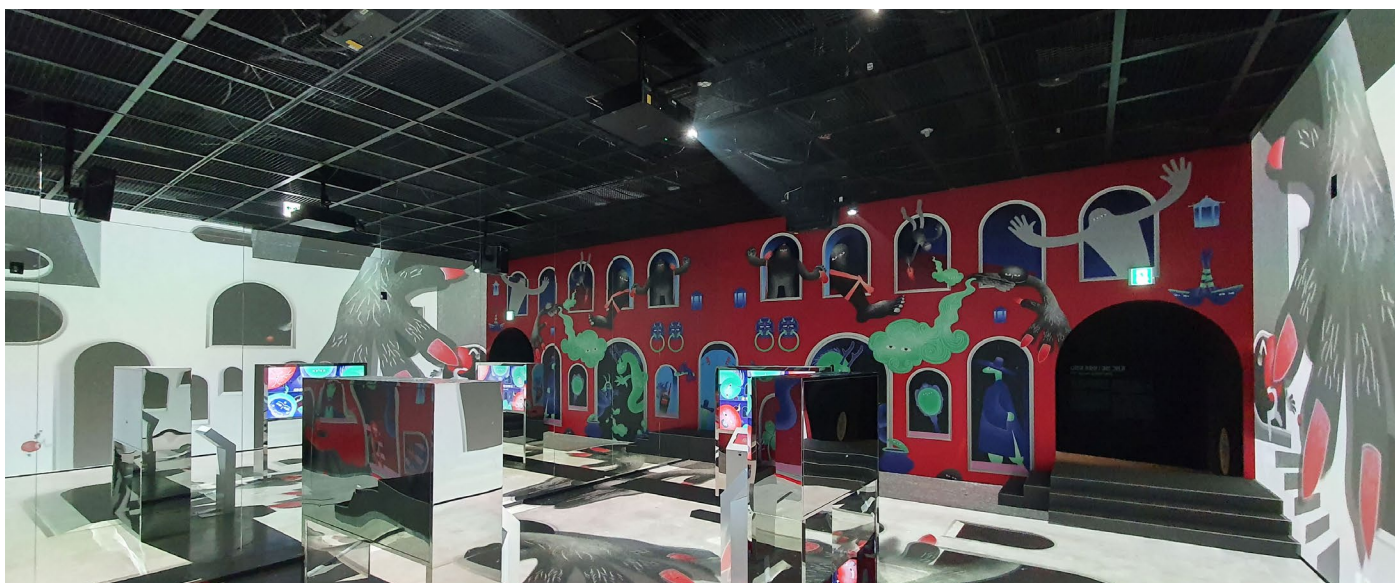
Christie 1DLP laser projectors are enchanting visitors with true-to-life visuals at a new exhibition dedicated to 12 Korean folktales depicting various deities, mythical creatures and plants that have been handed down over the generations.

Titled Curious 12 Tales, the multimedia exhibition is organized by media production firm Design Silverfish, and sponsored by Korea's Ministry of Culture, Sports and Tourism and the Korea Creative Content Agency. It is currently held at Insa Central Museum until July 25, 2022, and comprises 12 exhibition zones. Each zone focuses on a particular myth that has fascinated people of all ages, and features the ingenious use of technologies such as digital projections, virtual reality, augmented reality, and holograms.

Christie is one of the main sponsors of this captivating exhibition, supplying 16 D20WU-HS 1DLP laser projectors to deliver bright and lifelike images that bring these traditional folk tales to life. The projectors were

installed by Christie's local partner, SNC Alliance Co., Ltd. Curious 12 Tales is the second exhibition to be staged by Design Silverfish following the success of 2021 Delight Seoul earlier this year, which highlighted various aspects of culture and daily life in the South Korean capital.





“Curious 12 Tales showcases rich and immersive visuals that enable visitors to reinterpret in their own way these fantastic stories that transcend time and space, and discover anew the way we live in the present,” said Gyoung-tae Hong, CEO, Design Silverfish. “Just like how we approached our parents to tell us traditional folk tales, we want to pass on these timeless Korean stories to our children through the use of beautiful and interesting images at this exhibition. We hope that visitors will enjoy our rendition of these enduring stories.”

Paul Lee, Sales Manager, Enterprise, Christie Korea, commented, “We are delighted to participate in Curious 12 Tales as a sponsor. This is a high-quality multimedia exhibition showcasing amazing visuals based on a deep understanding of Christie’s display technologies, which is synonymous with the creation and delivery of exceptional experiences. This is a great opportunity for visitors to experience traditional Korean stories through wonderful images and spatial design.”

Visitors can enjoy highly detailed images by the Christie D20WU-HS laser projectors fitted discreetly on the ceiling in eight exhibition zones, namely “The Old Stories that Began with Stone and Wood”, “Story of Shadows”, “Reaching the Stars Beyond Our Mind”, “Will O’ the Wisp”, “The Letter of Summoning”, “Curious Tales”, “We Live with the Household Gods”, “Your Very Own Guardian Spirit”.

In particular, several D20WU-HS projectors, together with four-sided media mirrors deployed for spellbinding

projections in “The Letter of Summoning”, successfully created an infinite space that breaks down the boundary between imagination and reality. Images of mythical creatures such as dragons, phoenixes and nine-tailed foxes appear on the floor and bookshelves that seemingly transport visitors to a new dimension.

Lee noted that Design Silverfish was very impressed with the performance of the Christie D20WU-HS laser projectors used for the 2021 Seoul Delight exhibition in January this year, which mesmerized audiences with excellent colour and contrast, thanks to Christie’s BoldColor Technology. “That’s why the D20WU-HS is once again the projector of choice for Curious 12 Tales,” he said. “With their compact footprint and omnidirectional capabilities, the D20WU-HS projectors are allowing public spaces and museums to reinvent themselves in extraordinary ways.”

Ranging in brightness levels from 7,000-20,600 lumens and resolutions including WUXGA, HD and 4K UHD, the Christie HS Series offers a powerful, reliable and cost-effective option for almost any high-use application. Setting benchmarks in brightness, color accuracy, power requirements, and form factor, the HS Series pushes the envelope of what’s possible with 1DLP technology.

Design Silverfish

Christie



NAVEEN DESHPANDE

Director, Ground Control
(Lighting Design and Visual Specialists)

Director, Mixtape
(Artist Management and Event Conceptualizers/Promoters)

ETA SPOTLIGHT is a heart-to-heart with industry professionals from across Asia, as they discuss their foray into the business and their journey thus far, while sharing their honest opinions about key aspects like market trends, technology, upskilling and more...

Brief about yourself. Your Name and nickname within the industry if any, Job Appointment or Expertise, are you working for a Company or are you a Freelancer.

My name is Naveen Deshpande and I am the founder and Director of 2 companies i.e. Mixtape: One of India's leading artists booking and touring agencies; and Ground Control: A leading Lighting and AV design company. Through Mixtape and Ground Control, I've had the pleasure of working with some of the best talent, festivals and experiential events across the globe.

What got you interested in getting into the industry? When did you first get involved with the industry?

Back in 2007, I used to manage a band called Pentagram and I used to keenly observe Roosevelt D'souza who was the band's Lighting Designer (LD) at the time.

I guess that's what really got me inspired with the lighting world. It was quite special to have him on board at the time, especially because back then the country barely had a handful of professional lighting designers. Post 2011/12 Roosevelt got busy touring with Bollywood acts and the band had no one to fill that gap. I saw this as an opportunity, and quickly jumped on existing consoles / set ups at venues initially, which was for just Mixtape's set of artists that the company managed. Later on in 2012, I was in London for a holiday and I wrote to Avolites requesting them for a formal training and certification at their HQ. They were extremely kind to waive off my fees and allowed me to finish my certification, while giving me access to practice every day till my time in the UK. And then the rest, as they say, is history.

What do you feel about the industry?

I believe we've seen a lot of growth as a fraternity over the past 10 years or so. I see a lot of artists now have LD's as part of their touring crew (which until a couple of years ago was pretty non-existent). So that's definitely a good development.

On the other hand, I do feel that we've been slightly behind in terms of keeping up with the developments in technology. But I guess that has a lot to do with demand and supply. Branded fixtures vs regular run-of-the-mill fixtures has been a never-ending discussion; but I believe it's only a matter of time that vendors and event companies will wise up to channelling their investments in the right direction.

What is your most memorable experience and why?

There are quite a few; but the most memorable by far is my stint of being the LD for guitar legend Steve Vai at the NH7 Festival. I had the pleasure of doing 2 shows with him; and a couple of weeks later he wrote me a personal email thanking me for an excellent job on both of his sets in India. Another noteworthy experience for me was the opportunity to work with DJ EZ and Fatima Yamaha at Oya Festival, Norway. Both artists are still in touch with me, and have expressed their desire for me to tour with them in the EU and UK.

What was your worst experience and why?

It's funny actually; I'm doing this interview while returning from a cancelled show. Nothing can be worse than not doing a show!

How exactly has the evolution in technologies impacted your line of work?

The introduction of pre-visualization has definitely been a great boon for our industry. In India, set-ups happen pretty much a day prior to or on the day of the event; giving us a very small window to do our thing. However, with softwares like Vectorworks, WYSIWYG, MA3D and many more, we now can save on a lot of time and plan in advance; this is quite crucial especially if you are a touring LD.

What are the products / technologies that are absolutely crucial to your workflow? Do you have a personal favourite among them? If so, please let us know why.

I have been making a slow move to MA Lighting technology in the last year or so and that has been a key product for me in terms of achieving a lot of my design ideas and also simplifying my workflow.

In your line of work, have you noticed any new trends in terms of workflow / technologies etc that you feel could revolutionise the future for specialists like yourself? If so, please let us know.

My partner at Ground Control, Satvinder Singh, recently introduced me to RDM (Remote Device Management). And I've learnt that RDM enabled lights offer a plethora of benefits, the best of which includes the capability to control the 'addressing' of every light and change modes directly from the operating console. This actually ends up minimizing set-up time to less than half; and I really believe this could be a game changer for the Indian market.

Do you have any Hobbies outside of work and what is it?

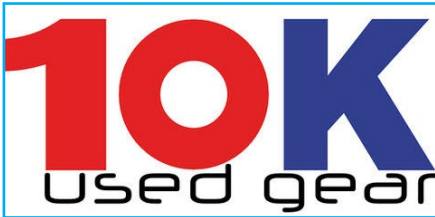
I really love travelling and I'm fortunate that my work has made it quite easy :) I also enjoy playing Chess and Snooker.

Highlight any professional training or certificates.

I am a certified engineer by Avolites as well as grandMA.

What did you do during the COVID-19 period?

I always wanted to dive into the visual world and during the pandemic I started fiddling with Resolume (VJ software). I have been on a tour lately as a VJ and it's been super fun and exciting to learn and understand that aspect of illumination and visual technologies.



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10K fEEbEE LED RGBACL Engine:
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luminaire. Protocols: DMX/RDM . 5-pin
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For sale a brand new Allen & Heath
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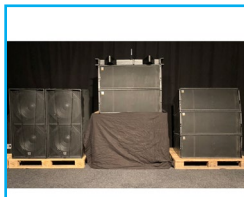
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MA Lighting GrandMA2 Light
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For sale used MA Lighting GrandMA2
Light Lighting Console's in excellent
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For sale a package of 10 x Used Martin
Audio W8LCi, 6 x S218+, 4 x Powersoft
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ETC Source Four LED Lustr+ EDLT
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For sale used ETC Source Four LED
Lustr+ 19° Lighting Fixtures in good
condition (7460A1251 Engine). Price
shown is per piece.

Enquire



d&b Audiotechnik D12
€1,500.00

For sale used d&b Audiotechnik D12
Amplifiers in good condition, corporate
use. Price shown is per piece.

Enquire



ARRI S60-C SkyPanel Package (3)
€11,500.00

For sale used ARRI S60-C SkyPanel
Lighting Fixtures that are in perfect
condition with very low hours. Price is
per 3 pieces in a flight case. 5 sets in
stock.

Enquire

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