AV-ICN *e*-magazine

AV INTEGRATION COMMUNICATION NETWORKING

Bose ArenaWatch Array at Nantional War Memorial, New Delhi

AV-ICN Expo 2021 advanced two weeks ahead of ISE 2021

AV-ICN EXPO 2021
AV INTEGRATION COMMUNICATION NETWORKING EXPO

palmexpo 2021
record ▶ play ▶ perform

13-14-15 MAY 2021
BOMBAY EXHIBITION CENTRE, GOREGAON (EAST), MUMBAI, INDIA

News:
Dynamic new focus sections
- **Latest AV Technology**
- **Streaming and Transmission**
- **Cinema**

Cybernetyx - Visual Collaboration
Guest Column by Ramya Chatterjee

Pulz custom made 5.1 channel installed at Adiyogi

Executive Speak
Nitin Joshi, GM, Maxhub Unified Communications

AV-ICNx EXPO 2021

AV INTEGRATION COMMUNICATION NETWORKING EXPO

13 - 15.05.2021
BOMBAY EXHIBITION CENTRE, GOREGOAN (E), MUMBAI, INDIA

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Concurrent with **palm expo**

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The ArenaMatch AM40 loudspeakers and ArenaMatch AM20 loudspeakers were placed strategically across the space to ensure optimized intelligibility and even distribution of sound coverage with consistent tonal experience, with additional reinforcement that was delivered through a pair of FreeSPace DS40SE loudspeakers.

PALM AV-ICN EXPO PREPONED IN MAY

ANNOUNCES NEW DATES FOR THE MUMBAI SHOW

MAY 13 – MAY 15, 2021, BOMBAY EXHIBITION CENTRE, MUMBAI

After carefully considering the impact of ISE shifting its show dates from February to June first week, PALM AV-ICN has decided to advance its show dates by two weeks.

PALM AV-ICN expo earlier scheduled to take place in the last week of May, will now take place from May 13- May 15, 2021.

Manish Gandhi, Director and COO of ABEC-ITE said, "PALM AV-ICN is a very important expo for ABEC-ITE. We consider these markets playing a significant role in the economy. Especially in context to commu-

Manish Gandhi, Director and COO of ABEC-ITE

nication networking as the digital economy develops. We need to ensure success of this platform in 2021 as advancing the show by two weeks is meaningful. This will have a positive impact."

The decision to reschedule and prepone the dates by two weeks, was taken due to the rescheduling show dates of ISE expo in Barcelona from 1-4 June 2021. Just a gap of one day from PALM AV-ICN Expo show dates.

"PALM AV-ICN Expo is the gravity centre for product sourcing in pro audio and audiovisual. It becomes imperative to host the show on dates that don't clash with ISE. The AV industry finds it important to be at PALM AV-ICN. ISE too increasingly attracts pro audio. Thus, preponing the show will allow all exhibitors and professionals to schedule their participation stress free," said **Anil Chopra**, Founder Director of PALM expo.

PALM AV-ICN expo is readying to deliver

Anil Chopra, Founder Director of PALM expo

a safe and motivated expo in 2021, that will allow the pro audio, lighting and AV community to reconnect and showcase their products and solutions to an eager audience waiting to attend the show after a year of unanticipated interruption.

Ramesh Chetwani, Exhibition Director of the PALM AV-ICN expo said, "In the last twenty years, the expo has proved to be the ideal platform for delivering business to the pro sound & light market in India. The constant support of our exhibitors and their faith in us has motivated our efforts in attracting more and more business to the trade floor. In 2021, the PALM AV-ICN expo will once again aim to help businesses reconnect, with focus

Ramesh Chetwani, Exhibition Director of the PALM AV-ICN expo

on foolproof safety and security measures as mandated by the government, thereby ensuring the safety of all our exhibitors and visitors."

The expo aims to once again present limitless opportunities for business, brand building, distribution and promotion of technology with Content and Exhibit features such as AV-ICN Summit (Conference, Seminar, Workshop), Certified AV Specialist (CAVS) Education Course, AV Education & Training Programme, PALM Sound & Light Summit, PALM Demo Qube, Open Line Array Demo, PALM Live Rigging Workshop, PALM Sound & Light Awards, IRAA Awards and more.

"The expo has two parallel three-day conferences programmes taking place at the venue. The AV-ICN show has its own dedicated Conference Programme with leading Indian industry AV Consultants and experts discussing business and technology. The PALM conferences will attract leading speakers from the pro audio and lighting industry. Delegates can look forward to a comprehensive and diverse schedule, encompassing

Smita Rai, Conference Director

enriching educational sessions focused on evolving businesses, technologies and solutions," said **Smita Rai**, Conference Director. "As Conference Director, I'm confident that the new dates are more suitable as it will allow greater participation from the leading AV consultants and expert speakers, as there will be no conflict owing to their travel plans to Barcelona." she added.

BENQ PARTNERS WITH ZOOM TO DELIVER CERTIFIED VIDEO CONFERENC-ING DISPLAYS FOR MODERN MEETING ROOMS

BenQ announced that its large-format displays will now deliver video conference solutions from Zoom Video Communications, Inc. on its digital signage and interactive displays.

"Today's workplace is rapidly changing and employees are demanding better experiences faced with the challenges of the pandemic. Workplace efficiency has become equivalent to the increase or decrease of the business outcome. Keeping this in mind, in the process of corporates adjusting to the new normal of remote working, BenQ reaffirms its commitment by integrating with Zoom and creating innovative smart technology while understanding the need

for technological innovations and the market demands in the current scenario. We are confident that we will start to see businesses adapting corporate visual communication and video conferencing on an even faster rate", said **Rajeev Singh, Managing Director, BenQ India**.

Collaborative technology has always been crucial to corporate needs, for effective communication, trading ideas, best practices, and information for the profit of business and clientele alike. With the integration of Zoom Rooms, BenQ interactive displays and digital signage will bring back the work efficiency and provide seamless interactive telecommunication through video confer-

ring and chat services, enhancing remote screen sharing, content collaboration, and whiteboarding with notes, whether in a big conference room or a personal office.

"The partnership with technology leader like BenQ is key to our mission of delivering high-quality visual communications to the world," said **Jeff Smith**, Head of Zoom Rooms, *Zoom* Video Communications. "Together with BenQ, we can help businesses and individuals overcome today's challenges to build toward tomorrow's success."

BRIGHTSIGN AU335 AUDIO DISTRIBUTOR FOR RETAIL, INCLUDING DOLBY ATMOS

BrightSign, LLC, recently announced the **BrightSign AU335**, an ultra-affordable audio player that supports the latest sound technologies. The player's ARC and eARC support enables the AU335 to distribute up to three zones of audio to soundbars and AV receivers that offer high-bandwidth, 24-bit sound, including Dolby Atmos.

AU335 provides background music or powering the display of complicated consumer electronics products at retail, the BrightSign.

Consumer audio products are particularly challenging to display in-store. Retailers need the ability to display soundbars, wireless Bluetooth speakers and other audio devices in a way that customers can intuitively test and compare products side-

by-side. Achieving this level of approachable simplicity requires a great deal of technical sophistication,

The AU335 supports multi-zone audio, with the ability to integrate interactivity

BrightSign AU335

via physical buttons, proximity sensors and more via USB, GPIO or Ethernet connectivity. This enables customers to control the volume and toggle between devices. The BrightSign **AU335** includes a free subscription to BSN.cloud Control Cloud for access to real-time player health and other controls. Additionally, the new player supports free presentation-authoring through BrightAuthor:connected, BrightScript, JavaScript and node applications, plus a host of CMS solutions available within BSN.cloud Control Cloud.

DATAPATH IÑAKI VALORIA LOPEZ GLOBAL TRAINING MANAGER BASED IN UK HEADQUARTERS

Datapath's training program around the world will be overseen by Ignacio (Iñaki) Viloria López is Training Manager,

Iñaki has over 16 years technical experience of audio visual systems, specializing in 24/7 control room applications following his graduation from the University of Madrid with a First Class honours in Telecommunication Engineering.

Datapath's training courses are approved by AV

governing body AVIXA, with its VSN video processing courses earning points towards the industry's widely recognised Certified Technology Specialist (CTS) accreditation. Based at the company's UK headquarters, Iñaki spoke of his delight in taking the role: "I look forward to meeting its many customers around the globe ."

CHRISTIE PURE LASER CP4450-RGB FOR CINEMA SCREENS

REALLASER LARGE FORMAT FOR SCREENS UPTO 111 FEET

Christie recently launched a unique CP4450-RGB Pure Laser Projector that re-imagines the whole PLF cinema experience. This large-format projector is equipped with dual-laser optical systems (LOS) and high-speed CineLife+ electronics capable of 4K @ 120Hz HFR playback and is claimed to be the world's first advanced format cinema projec-tor featuring Christie RealLaser technology for screens up to 111 feet (33 meters) wide. With an output of up to 55,000 DCI lumens, the CP4450-RGB is the brightest direct-cou-pled RGB pure laser cinema projector on the market.

Hyper realism and ultra-fast processing

Built on the CineLife+ platform, the CP4450-RGB is capable of displaying HFR titles in 4K at 120 frames per second. Christie claimed with this new system architecture and ultrafast processing, audiences won't see the motion blur typical of the giant screen experiences.

Align dual cinema projectors quickly with Mystique Cinema

Known as Christie Mystique Cinema, it is a fully built-in dual-projection integration kit for DCI-compliant cinema projectors that easily aligns the images from both projectors within seconds for a completely seam-less image on large screens.

The CP4440-RGB and CP4450-RGB is fully compatible with Mystique Cin-ema which reduces setup time to deliver a truly advanced image experience, allowing for super-bright 2D and 3D presentations, and enables 4K 3D content to be played at 120fps.

"The compact and DCI-compliant CP4450-RGB excels in image quality, operational lifetime, and onscreen brightness, making it the ideal projection system for PLF theatres," said Brian Claypool, executive vice president, Global Cinema, Christie.

MEYER SOUND MAPP 3D SOFTWARE TOOL FOR AUDIO SYSTEM DESIGN

Meyer Sound has announced the release of MAPP 3D, the most extensive upgrade to its industry- standard system design tool since the original MAPP Online software program was introduced in 2001. MAPP 3D works on both the Mac and Windows plat-forms, employs local processing (no Internet connection required) and is now available as a free download from the Meyer Sound website.

MAPP 3D provides, three-dimensional renderings of predicted sound system perfor-mance within detailed, wire-frame venue drawings. MAPP 3D now offers complete in-tegration with the GALAXY Network Platform and Compass control software for a seamless workflow from initial design through on-site tuning.

Comprehensive processing parameters for complex systems can be optimized using MAPP 3D predictions, with the resulting pro-cessor settings pushed directly into multiple GALAXY processors with the click of a mouse.

"What you measure with MAPP 3D's virtual microphones is precisely what you will see in measurements from real microphones." says **Perrin Meyer**, *Meyer Sound director of emerging technologies.*

The combination of a streamlined, us-er-friendly interface and seamless integra-tion with GALAXY processors — and easy import of SketchUp (SKP) and AutoCAD (DXF) files — will afford significant time and cost savings in both system design and on-site optimization. With multiple views and fingertip control of a free-rotation tool, audience areas can be quickly defined, even within complex architecture. Line arrays can be quickly configured and automatically splayed for uniform coverage, and multiple system options can be evaluated simultane-ously.

In addition, MAPP 3D enables system designers to perform virtual system op-timization in the design phase. MAPP 3D includes virtual GALAXY signal processors,

allowing the designer to add and configure processors, view prediction results, and later synchronize these settings directly to the hardware processors on site. Complete output processing functions of all GALAXY processor models are available, and a copy and paste feature can be used to replicate settings in one or more other processing channels.

MAPP 3D loudspeaker performance is based on more than 65,000 three-di-mensional measurement points, taken in 1/48th-octave resolution in the Meyer Sound anechoic chamber. Also, MAPP 3D predic-tions are accurate across the full bandwidth of all loudspeakers, including as low as 12.5 Hz for the VLFC very low-frequency control element.

MAPP 3D also leverages the inherent advantages of working with loudspeakers that are self-powered and manufactured to extremely tight tolerances for uniformity of performance.

CRESTRON FLEX MM COMPACT VC SYSTEM

With one-touch Microsoft Teams and Zoom conferencing, the Crestron Flex MM offers audio and video on 7" touch screen

Crestron Flex MM, sleek and compact audio and video conferencing solution and an easy-to-use, deploy, and manage tabletop meeting and collaboration system. With native Microsoft Teams or Zoom Rooms software, Crestron Flex MM aims at newly converted or dedicated small workspaces both in the corporate office and the home office. The device features a sleek and sophisticated design with a 40% reduction in size, without sacrificing high-performance audio and video quality found in the tabletop series of devices.

Andrew Gross, Director, Unified Communi-

cation Enterprise at Crestron said "Our desks are overrun with migratory devices that are never ready for the next video call. Crestron is engineering products to solve these problems;

The system features:

• Native support for Microsoft Teams or Zoom Rooms
• A simple, consistent user experience with one-touch to join meetings
• 7-inch touch screen
• 10-foot / 3 metres mic pick-up range
• Ultra wide-angle HD camera with 150° diagonal field of view
• Enterprise-grade network security
• Remotely provision, control, and manage
  A certified partner of both Microsoft Teams and Zoom, Crestron features a range of enterprise grade UC solutions for the evolving work from anywhere workforce.

MINDSTEC DISTRIBUTION PVT LTD - BANGALORE DATAPATH SPLITTING THE SIGNAL AT THE VIDEO WALL

Datapath IQS4 – a one in/four out splitter solution engineered for video wall applications.

When paired with Datapath's Image 4K graphics cards, the IQS4 offers a cost-effective solution for powering video walls of up to 96 screens. Using IQS4s reduces the overall number of graphics cards needed,

IQS4- a new 4-way splitter for video walls

streamlining the video wall controller by reducing load and optimising capacity. IQS4 gives integrators the option to distribute video in 4K and split the signals at the video

wall rather than having to use separate, expensive extenders for every HD output.

Mounting flexibility means the IQS4 can be used for any application. VESA mounting is supported for direct mounting behind displays. Where the IQS4s are hosted with the video wall controller, various rack mount options are available depending on the number of IQS4s required. Plus, there is the standalone option for placing on desks, workstations or shelving.

IQS4 4-way splitter. Sabarish Director at Mindstec, Bengaluru, explained X-Series multi-display processor IQS4, used that same basic splitter technology to provide discreet solution for powering large video walls. With zero configuration required,

the IQS4 is a plug-and-play device which offers near- zero latency. By having true

Sabarish N – Director Mindstec Distribution Pvt Ltd

'splitting' of quadrants, users and integrators can reduce cabling by distributing video content from the processor in 4K, and then splitting via the IQS4 at the video wall.

Mindstec distributor of Datapath also provides complete product engineering expertise to customers.

"TIMES COME AND TIMES GO, IT'S THE DETERMINATION, PASSION AND INTEGRITY WHICH DECIDE THE BETTER TOMORROW."

by Nitin Joshi

NITIN JOSHI
General Manager - Indian Sub Continent, Maxhub India

These are very disruptive times, has Team, Zoom, Skype, WhatsApp turned the VC market upside down?

Well, they haven't turned the VC market upside down, in fact, they have opened up the VC market from the software prevue. For eg. Earlier the same software existed, but they were not accepted or utilized in such a large way, like they have been in the past 6-8 months now, because of the disruptive times, i.e. the Noble Covid-19 every one was restricted by mobility and had no access to the hardware base VC Solution and have adopted to the VC solutions over internet. Like they have started opting for Zoom, or Skype or similar format Software Based VC solutions. In fact, we have observed a new set of users for the software based VC market, i.e. the educators. A sudden spike was observed in the adaptation of the Software Based VC solutions by Educators/Teachers of the competitive exams and the Educational Institutes. These disruptive times have led to an entire new segment of users into the VC Market. Seeing this kind of disruption, the enterprise solutions from Maxhub, is agnostic to any software like Zoom, Team, Skype etc. these software can be installed in our enterprise hardware which is shipped with a built in computer, a microphone line array, speaker and camera. You can utilize it as a complete solution for all your Unified Communication needs. This has made it a complete out of the box solution eradicating the need of separate hardware like earlier times.

The Interactive Panel market for the Educational sector has observed a tremendous growth across the globe, which Maxhub technology feature leveraged this growth.

Maxhub/CVTE has been in the Interactive Panel since the early 2008, it has been more than a decade and is known for its Interactive Flat Panel Touch Technology (IFPT). CVTE can be rightly called to be the torch bearer of the interactive panel as we have been a part of the journey right from Interactive White Board Technology to Interactive Flat Panel technology today. As AV-ICN Magazine rightly pointed out, Educational sector has observed a tremendous growth in the last few years. With the continuous research by the Maxhub Team, we understand the need of the educators and their expectations from the Interactive Panels. Our Educational series of panels come with an in-built Intel based Chipset computer. Maxhub, is not only a hardware manufacturer, but we also have our own Educational Suite Software, which has enabled the Educators/Professors in their teaching aid. Maxhub provides a complete Eco-system for education which has helped us leverage the growth in the Educational Sector. Ruggedness of the Panels, dual-pen technology, overall writing experience, built quality etc are some of the key features helping us gain the forefront position in the Educational Sector.

How do you define the Indian AV market in the next 12 months.

As an Indian AV industry person, and with the occurrence of the Pandemic, the Indian AV market has observed its first slowdown ever since its inception in the country. But, with the break in the daily business routine, OEM's have taken it in optimism to bring out new technology that caters to the need of the hour today and at the same time is future ready for all possible uncertainties. The market is going to adapt to the changes that the end users and decision makers have made in their technological needs. The AV Market is going to be defined by more of Unified Communication products, more of Unified Collaboration Solutions, more of Software Based video Conferencing Solutions, more of portable conferencing solutions, etc. The Key factor that will help an organization make its mark is by providing solutions that are "Mobile". As we know and are aware, that the traditional conference rooms are out, and WFH is the new normal, Mobile solutions is where the AV Market will trend too. We can, with a conscious mind claim to see robust growth in the Indian AV Market with all the new technological changes and new product offerings coming from all OEM's.

What's the focus for Maxhub in 2021.

With the changes that we have observed in the past few months, our major emphasis are on two broad segments of the Indian AV Market. One being the Interactive Flat Panel market for both, Educational sector as well as the Corporate sector. Two, the VC or the Unified communication Market. We also have our range of wireless presentation solutions for meeting and conference rooms which has been very well accepted by the market and we are keen on penetrating deeper on these fronts. To summarize it, we will have our focus mainly into Interactive Teaching Technology products which will be more user friendly and easy to adopt in the Education Sector and at the same time, we will bring in more collaborative solutions to ease way of doing business for our end users.

Are there any new Products launching for the Indian Market in the coming Quarter?

We do have some Product Launches planned for the Indian as well as the Global AV Market, we have some state-of-art technological products lined up, we shall inform and cover the same in the AV-ICN Magazine going forward.

How Teacher friendly are the Interactive Panels from Maxhub, and how future ready are they?

As I mentioned before, Maxhub is focused on delivering a complete out of the box solution for the Educators and not only the

PROJECTION SCREENS

Da-Lite – Parallax Thin - PRO AV

Parallax Thin comes assembled with a thin-bezeled frame. The ambient light-rejecting technology features a micro-layered optical lens system that rejects light. This new technology mimics the look of a television when it is on and when it is off, but without the glare from windows or lighting fixtures.

With extremely wide viewing angles, no speckle and no glare, the surface is ideal for applications in Pro AV as well as Home Theater.

Each layer of Parallax Pure plays a role in preserving the image that is reflected back to the viewer in high ambient light environments. Some layers absorb light while one special layer is shaped like a microscopic saw-tooth that blocks light from above resulting in the preservation of high-contrast, bright images in brightly lit environments.

Key Features:
- Parallax Pure 2.3 surface for standard throw projectors (1.8:1 or greater)
- Parallax Pure 0.8 surface for standard throw projectors (1.5:1 or greater)
- Parallax Pure UST 0.45 surface for ultra short-throw projectors (0.4:1 throw or less)
- Thin 3/8" bezel aluminum frame
- 1" depth

dnp Supernova One 2.0 - DIGITAL SIGNAGE

Supernova One 2.0 incorporates true ALR optical technology that combats ambient light and enhances contrast and image quality. The new version comes with a 20mm or 30mm frame (in flock-version) that is up to 66% narrower than the original screen. For a safer installation the dnp Supernova One got a new Fire-Retardant alu-panel that makes the rigid screen compliant with the ASTM E 84 CLASS B fire rating. Moreover, the new frame is well suited for portrait digital signage applications in retail environments, airports and museums.

The new slim-frame version of the claimed award-winning dnp Supernova One is equally well suited for meeting room applications and portrait digital displays in retail environments.

Supernova One 2.0 is available with SN 23-23 or ISF certified SN 08-85 screen materials in five standard sizes: 100" and 110" in 16:10; 100", 110" and 120" in 16:9. Supernova One 2.0 is ideal for digital signage in portrait mode.
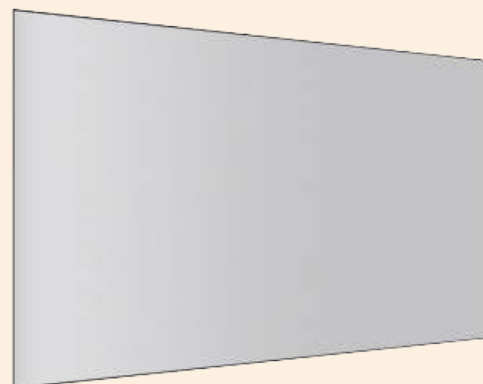
Elite Screens - CORPORATE

The Aeon AcoutsicPro UHD is an acoustically transparent (AT) Ultra-HD Fixed frame projection screen. The AcousticPro is designed to compliment in-wall speakers while allowing sound to pass through the materials with minimal attenuation. Its tight perforated weave design allows a superior AT Performance.

AcousticPro UHD is made with a transparent projection material which allows speaker placement behind the speakers to be placed behind the material.

Aeon Acoustic Pro has a 180degree wide viewing angle with 1.0 gain, enabling wide diffusion uniformly.

Supports active 3D, 4K Ultra HD.

The Aeon AcusticPro UHD is available in 100", 120", 135" and 150" diagonal sizes in 16:9 format.

'Panara' Narrow Edge Fixed Frame Projection Screen - HOME

'Panara' Narrow Edge Fixed Frame Projection screen is available in different types of projection fabric, such as White, Grey, Dark Grey with Crystal, White acoustic, Grey acoustic, etc. Panara has a wide Viewing angle; it's up to 160 degree. Acoustic fabric is specially used for in-wall speaker system.

The Narrow Edge Fixed Frame Projection screen construct by 2 High Grade Aluminium Profile. Back side is main structure frame and the front is 12mm Narrow Edge with Matt Black Finish. 12mm Edge gives you very decent look. Narrow Edge Frame is known for Home Cinema segment.

The Narrow Edge Fixed Frame Projection screen is available in different diagonal sizes such as; 96", 100" , 106" , 110" , 120", 133", 150", 180", 200" in 16:9 Aspect Ratio . Also can make as per custom size in different diagonal and different Aspect ratio such as 4:3, 16:10, 1.85:1 and 2.5:1

Lumina Colour Pro- triple layer - EDUCATION

Colour Pro projection screen has white matte surface with a Nano texture finish. The unique pattern does not attract dust, makes the cleaning process easier, and does not get dull over a period of time. Visual quality is not affected with unique texture as matte finish is extremely high. Unique diffusive layer of fabric enables dispersion of light evenly throughout the surface. Colour Pro's class leading surface offers precise definition, true colour reproduction and enhanced contrast for an immersive experience. Colour Pro White is optimized for 16K and HDR compatible and exclusively available at Lumina screens.

Key features:
- 1.1 Gain
- Triple layer screen
- Optimised for 16K
- Performs best in controlled ambient light

Stewart FilmScreens - Directors Choice EVO - CINEMA

Claims to be a game changer, Director's Choice EVO now comes with a smaller 6.5 inch border and a 30% bigger image, D.C. EVO delivers engineering and build-quality along with a choice of reference screen materials including SnoMatte 100, StudioTek 100, StudioTek 130 G4, and FireHawk G5. D.C.EVO is available in sizes up to 96 inches by 192 inches; that's up to 215 inches diagonal. Additionally, all masking is completely hidden behind the 6.5 inch fascia. You get more on-screen content in any aspect ratio with D.C. EVO's 4-way continuously variable masking screen system.

D.C. EVO offers future-proofed, 16K+ resolution and handcrafted premium quality.

Director's Choice EVO is easy to install in three phases with quick assembly of the frame, intuitive attachment of the screen, and easy snap on of the light-deadening Velux fascia. The fascia is designed to give quick access to service motors, controls and the screen material. Stewart's lace and grommet system provides even tension all the way around the screen for a smooth, flat surface.

BOSE INTEGRATOR FINE ARTS SOLUTION EXPLOITS ARENAMATCH FLEXIBILITY FOR OUTDOOR INSTALLATIONS

AV outdoor installations especially in sensitive constructions with peculiar physical restrictions require
Speaker systems that are manipulative, customizable, for coverage horizontally and vertically. Bose featured this spec as well complementary amplifiers, processing and control to meet the challenges of a difficult project.

Overview

Spread over 40 acres of land and built around the existing canopy near the iconic India Gate in New Delhi - the National War Memorial (NWM) was inaugurated on February 25, 2019, by the Honourable Prime Minister of India Shri Narendra Modi; and it stands as a stellar tribute to the Indian armed forces, as names of personnel martyred during the armed conflicts of 1947–48, 1961 (Goa), 1962 (China), 1965, 1971, 1987 (Siachen), 1987-88 (Sri Lanka), 1999 (Kargil), and other operations such as Operation Rakshak, lay prominently inscribed on the memorial walls.

Drawing inspiration from the 'Chakravyuh' formation (a multi-tier defensive formation that looks like a blooming lotus), the memorial has been designed in the form of four concentric circles around the main 15mtr tall obelisk which is located at the center.

The innermost circle is named the Amar Chakra (circle of immortality), which hosts an eternal flame that burns bright at the foot-end of the obelisk; and it is at the Amar Chakra Section where a memorial service is held each evening honouring the life and sacrifice of martyred personnel, in the presence of their family and loved ones,

Challenge

The Amar Chakra Section had a previously outfitted system which, over a period of time, began to deteriorate in terms of its audio performance. The NWM management therefore sought to equip the space with a new pro audio system that would not only deliver the kind of high-quality sound experience befitting the space, but would also be easy to use and maintain, and would also be cost-efficient, taking into account the management's failed investment into the previous system.

From the design and integration point of view; finding the right combination of durable high-quality and high-performance weatherized loudspeakers that offer precise coverage angles was a key challenge owing to the outdoor nature of the project and the sheer physical dimensions of the space. Added to this was the onus of optimizing the loudspeaker system to achieve the desired result through the use of fewer modules in order to keep costs manageable per the client.

Finally, in order of the team to appropri-

The ArenaMatch AM40 loudspeakers and ArenaMatch AM20 loudspeakers were placed strategically across the space to ensure optimized intelligibility and even distribution of sound coverage with consistent tonal experience, with additional reinforcement that was delivered through a pair of FreeSPace DS40SE loudspeakers.

ately install the loudspeakers at the desired point, the team had to commission extensive civil work at the space; all of which had to be completed within a 30-day deadline.

Solution

Taking into account the client's needs and the demands of the physical space itself,; the Amar Chakra section has been commissioned with Bose Professional's leading-edge ArenaMatch loudspeakers which emphasize Bose' proven DeltaQ technology sound quality and flexibility to outdoor installations, offering features like IP55 weather rating, impressive SPL with long-throw music reproduction, impeccable vocal intelligibility, modules with multiple coverage patterns, and inter-changeable waveguides.

With the Bose Professional ArenaMatch series, the design and integration team could choose from nine different coverage patterns and modules that offer 10°, 20°, or 40° vertical coverage, and easily swappable 60°, 80°, or 100° horizontal waveguides, which meant that they could build a custom loudspeaker array system that's not only lighter than most other systems, but also easy to use, easy to rig, and easy to maintain.

The loudspeakers were rigged using customized mounting brackets; with the exact loudspeaker placements being finalized only after a detailed analysis of the available space was carried out, which involved commissioning extensive civil work at the venue.

System Components

The Amar Chakra section of the National War Memorial has been commissioned with a total of four units each of the ArenaMatch AM40 loudspeakers and ArenaMatch AM20 loudspeakers that are placed strategically across the space to ensure optimized intelligibility and even distribution of sound coverage with consistent tonal experience; with additional reinforcement delivered through a pair of FreeSPace DS40SE loudspeakers. Individual zone control and amplification is achieved through the use of Bose Professional's acclaimed PowerMatch PM8500 power amplifier and FreeSpace IZA250LZ zone amplifier along with total loudspeaker system processing and control achieved through the ControlSpace ESP880A engineered sound processor.

Featured Products

Loudspeakers: Bose Professional Arena-Match Series (AM40 + AM20)

Amplification + Control: Bose Professional

Col Digvijay Singh Basera, VSM**(Now Brigadier) was the Director, at the National War Memorial (NWM) during the installation, seen here along with his team and the team at Bose Professional and M/s Fine Arts Solutions

PowerMatch 8500 power amplifier, Bose Professional FreeSpace IZA250LZ zone amplifier, Bose Professional ControlSpace ESP880A engineered sound processor

Results

The Bose Professional audio solution installed at the Amar Chakra section of the NWM has worked splendidly in meeting the client's expectation of attaining high-quality world-class sound experience through a cost-efficient system that delivers comprehensive audio coverage through the use of fewer modules.

Vibhor Khanna – Country Manager SAARC, Bose Professional

Atul Tripathi of Fine Arts Solutions reveals, "Bose ArenaMatch is an absolute dream to work with. Not only is it super impressive in its performance value, but also the fact that

it is so easy to rig and tune enabled us with the comfort of dealing with the last-minute stresses of commissioning the rehabilitation of the ground surfaces in order to capably support the installation of the loudspeakers. It feels great to have positive feedback from the management at the National War Memorial about the performance of their new Bose ArenaMatch system. We couldn't be more pleased!"

Col Digvijay Singh Basera, VSM**(Now Brigadier) professes, "From the onset, we knew we would need a sound system that could do justice to the sentiment of purity and sanctity that the memorial service at the Amar Chakra represents. And we were left impressed with the performance of the Bose Professional system since the first time we heard it when M/s Fine Arts Solutions provided offered a demo of the system on-site. The sound experience sublime was sublime indeed; and we were also acquainted with how easy it is to use and maintain the system. Plus, the decorum, attention to detail and timeliness displayed by the team at M/s Fine Arts Solutions and by Bose Professional's official representatives in presenting the preliminary sound system designs and for our project and quick resolutions to all our queries, made it an obvious choice for us to partner with them. We're very pleased with our decision to have Bose as our sound partner – not only has the system met all our expectations, but it has continued to amaze us with its performance value with each passing

day!

Integrator/Distributor/Consultant: Fine Arts Solutions, Haryana, India

About Integrator/Distributor/Consultant: Fine Arts Solutions is a company based out of Haryana, India, providing design, installation, and maintenance of AV systems for a variety of application segments like offices, schools, medical institutions, corporate facilities etc and more, across India.

Additional Comments: Additional thoughts, details

Vibhor Khanna of Bose Professional (India) shares, "The new ArenaMatch series represents Bose Professional's evolution in bringing our patented DeltaQ technology to outdoor install applications. The Arena-Match DeltaQ modules accentuates unique design philosophy and an extraordinary set of features that empower SIs and system designers with the capacity to conceive easy to assemble outdoor loudspeaker arrays that assure consistent, intelligible sound for outdoor installation venues of all types. And it is amazing to know of the great results that Atul and his team at Fine Arts Solutions have managed to achieve with the ArenaMatch system at the National War Memorial. It is a privilege for Bose Professional to be chosen as the preferred audio solution for such an esteemed project; and we thank the management at the National War Memorial and the Fine Arts Solutions team for investing their faith and belief in our path-breaking products, technologies and extended capabilities."

AV-ICNx

AV INTEGRATION COMMUNICATION NETWORKING

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2018 - 2020

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PULZ CUSTOM DESIGNS 5.1 AUDIO SYSTEM COVERING 10,000 SQ FT AREA

ADIYOGI AUDIO-VISUAL PRESENTATION NEED FOR ALL WEATHER OUTDOOR MODULAR AUDIO SYSTEM

The Isha Yoga Centre, Coimbatore has been attracting spiritual seekers and devotees in large numbers. The Dhyanalinga temple, a powerful consecrated space is now recognized as one of the most powerful places for meditation. Adiyogi statue, a 112 feet tall bust, the largest face on earth is the latest addition to the sprawling Isha complex of 150 acres in the foothills of Velliangiri, an extension of the Western Ghats. The large open venue facing the Adiyogi statue is where Mahashivratri is celebrated, attracting lakhs of devotees.

Sadhguru wanted to tell the story of Adiyogi by using the latest technology in audio-visual presentation. 3D mapping was the preferred format for visuals, to be complimented with a high impact audio system. This was no standard project. If projection on a black surface was not challenging enough, the need for a high impact all weather outdoor audio system yet compact enough to move around was equally demanding. Extensive discussions followed and it was decided to be a 5.1 system with an extended low frequency response and mid and

Pulz 5.1 all Weather Outdoor Modular Audio System

high frequency section with a well-defined propagation pattern covering the Mandapam area of about 10,000 square feet.

Pulz accepted the challenge and decided to custom design a system as no existing product could meet these demanding specifications. Starting with the LF section a dual interactive vented chamber enclosure was designed with the help of advanced software using finite element analysis. The system was built with a careful selection of material and powered with two new generation 18" drivers of 1,000 Watts each and long excursion capability. For directivity control, the LF section was configured to be cardioid. A total number of nine Pulz SIC 218 subwoofers were deployed in three groups. They were powered with 25,000 Watts of continuous power amplifiers with sophisticated digital signal processing for directivity control and impact.

For perfect timber matching and image formation, the Left, Centre, Right (LCR) and the surround channel speakers were decided to be identical. The challenge was to create a system compact and moveable yet capable of very high Sound Pressure Level (SPL), well defined directivity and extremely low distortion. The venue demanded 85dBc SPL reference at 118' with 20dB headroom in open air. After several engineering hours and considerations specific to the venue a 3-way active system was configured with 4" X 12" (1,000 Watts) each neodymium LF section making a semi line source. The mid-high section consists of a horn loaded MTM configuration with two high SPL compression midrange section and a concentrically placed HF compression unit. The mid-high section is capable of going below 500Hz. Hence, the entire system performs stunningly well with minimum vertical lobing and a wide horizontal coverage without any frequency aberrations. To ensure headroom, 20,000 Watts of continuous power with sophisticated digital signal processing was a must.

The result was striking realistic sound to compliment the full impact of the 3D projection befitting the narrative and Sadhguru's vocal compliments.

Pulz SIC 218 sub-woofer, powered with continuos amplification of 25,000 watts

PRODUCT SHEETS

AURORA
TABLETS CHECK YOUR TEMPERATURE - TTS-21

The TTS-21 is a 21.5" Android based all-in-one infrared temperature sensing tablet. To ensure that people entering a location are not running a high temperature, the TTS-21 will provide alerts when a person is running a high temperature within 1 second from 3.3ft (1 meter) away.

The system uses an advanced algorithm for detecting and calculating heat signatures. Based on technology developed in Germany, the highly accurate sensor measures with a tolerance of +/- 0.3 degrees Celsius (+/- 0.5 degrees Fahrenheit).

Why a temperature sensor?
– Provides the first layer of screening protection
– More hygienic with non-touch infrared technology
– Multiple devices can be monitored by a single user

Advanced Features
– Photo & thermal result email alerts
– Customized flagging
– ReAX control engine for automation & integration with third-party devices and access systems
– Digital signage capabilities
– QR Code Detection
– Gesture Responses
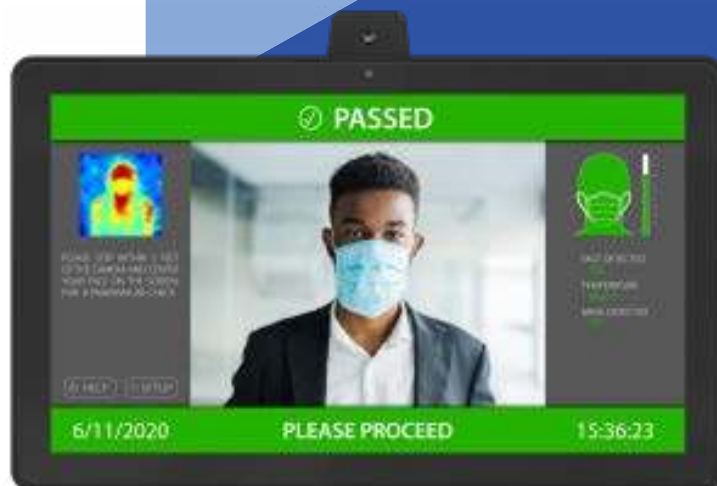
CRESTRON
DM-NVX-360- SINGLE DEVICE ENCODER DECODER/ TRANSMITTER OR RECEIVER

The DM-NVX-360 is a high performance AV over IP encoder or decoder that transports 4K60 4:4:4 video over standard Gigabit Ethernet with no perceptible latency or loss of quality. Supports HDR (High Dynamic Range) and HDCP 2.3 with built in scaling and video wall processing, adaptive bit rate, AES67 transmit and receive capability, USB and KVM routing, and optional fiber connectivity. Provides a secure, scalable 4K signal routing solution for enterprise and campus wide content distribution applications.

Video wall processing

The DM-NVX-360 is a compact AV-over-IP encoder/decoder designed to function as either a transmitter or receiver. Capable of handling a network AV installation of any size, the DM NVX 360 includes features such as secure web-based control and management, a scaling HDMI output, video wall processing, an analog audio input or output, native AES67 transmit and receive capability, USB 2.0 and KVM integration, and support for copper and fiber Ethernet connectivity.

Engineered for demanding conference room and classroom applications, DM NVX technology ensures real-time, full-motion 4K60 video performance for the presentation of multimedia, videoconferencing, and live camera images.

A DM NVX system incorporates Pixel Perfect Processing technology, which provides flawless video transport in all applications.

The DM NVX 360 provides solution for applications that require encoder and decoder operating modes in a single device.

PRODUCT SHEETS

DATAPATH
FX4

Datapath FX4 is One box with Four outputs enabling unlimited multi-monitor canvas

Advancements in digital signage allow much greater freedom in creating and deploying any scale signage projects. Datapath Fx4, a multi-faceted display controller. The Fx4 supports a choice of inputs, high bandwidth loop-through as well as 4 genlocked outputs in either DisplayPort or HDMI.

The Fx4 features a DisplayPort1.2 main input alongside two HDMI1.4 inputs offering either 4k 4096x2160p at 60fps or UHD 2160p at 30fps respectively. The intuitive user interface allows each output monitor to take its input from any region of the input image as all of the required cropping, scaling, rotation and frame-rate conversion is handled by the Fx4 hardware. These regions can overlap to allow any output to replicate another or can be configured to support any creative splice of the source material. This allows the support of many non-rectangular screen arrangements, as well as any mix of monitor orientations allowing users to create an almost unlimited multi-monitor canvas.

The Fx4 also allows users to pre-load an image for immediate display in those cases when the media source or cables malfunction and no signal is being received.

Network connectivity

The Datapath Fx4 has dual ethernet ports to allow users to add the device to their networks. Only one Datapath Fx4 in the chain requires connection to the physical LAN as ethernet loop-through is supported on the second port, meaning multiple devices can be connected.

LUMENS
LC200- MEDIA PROCESSOR – RECORDING, SWITCHING, MIXING AND LIVE STREAMING

The LC200 is a 4 in 1 Media processor that supports recording, switching, mixing and live streaming at 1080p

The LC200 is a stand-alone device that allows you to mix four video sources, record, stream, and live-switch simultaneously, which serve' as the core system for your video project. The LC200 supports Full HD 1080p video and audio recording with high definition images and crystal clear audio, which is ideal for lecture capture, conference recording and event streaming. It supports popular streaming platforms and content management systems such as Youtube, Facebook, Kaltura and Panopto.

HDMI output

LC 200 can capture up to 4 video sources through multiple inputs and supports a direct output to an HDMI display

The LC200 captures various video sources, including HDMI inputs, Lumens IP cameras, and RTSP streams, and allows you to switch among them. Together with four line-in / MIC-in inputs, LC200 provides a complete audiovisual experience to the viewers! Furthermore, programmed video can directly show on a HDMI display without any device in between. The LC200 from Lumens is a User-Friendly Multi-View director and advanced Scenes Switching to ease your video process

By just one click, you can roll out user-defined scenes that contain PBP PIP layout, title/logo overlays, and pleasing background and generate a decent video while streaming.

PRODUCT SHEETS

▼ **VIEWSONIC**
75" VIEWBOARD 4K INTERACTIVE DISPLAY

COMING SOON

ViewBoard IPF50 is for the teachers in the modern classroom and features intuitive interactive interface. It keeps continuous interaction within the first vision area and keeps everything within comfortable reach. Additionally, it is an eye-care certified display with low blue light and flicker-free at all brightness levels. The pen serves as an extension of the finger tips thus giving smooth and synchronized writing performance. ViewBoard also features wireless content sharing. Not only the teachers but even the students can share their screen using the ViewBoard Cast app. ViewBoard can be split into 4-way screen display allowing the teachers to do advanced group activities. It has an aspect ratio of 16:9 and a viewing angle of H = 178, V = 178 typ.

Look out for:

Synchronous Writing Performance with Dual Pens
Lag-free, Pen-on-paper Writing Experience with Ultra Fine Touch Technology
Native Whiteboarding Tool with built-in myViewBoard App
Wireless Content Sharing and 4-way Split Screen with View Board Cast App
Processor: ARM Cortex-A73*2 + Cortex-A53*2 1.5Hz
RAM: 3GB DDR4
Storage: 32GB

▼ **MAGNETIC 3D**
GLASSES-FREE 3D VIDEO WALLS

Magnetic 3D designs and produces (glasses-free 3D) solutions for a wide array of applications. The Company's proprietary blend of hardware, software and content provides production tools for 3D experiential marketing and digital signage.

Empreza Video Wall Displays

Magnetic 3D makes large format glasses-free 3D viewing a reality with super-narrow bezel video wall solutions.
Super Narrow Bezel
Empreza displays come with a super narrow bezel design that is only 1.85 mm thick.

Multiple Configurations

Empreza displays can be tiled to create various video configurations from 1×2 to 10×10, and other custom aspect ratios to meet your needs.

3D Conversion

Real-time conversion technology accepts various 3D formats and translates them to glasses-free 3D in real-time. Formats include side-by-side, top-bottom, 9-tile, frame-packed, and 2D.

RAMYA CHATTERJEE

CHANGING NEEDS OF REMOTE TEAMS & GROWING DEMAND FOR VISUAL COLLABORATION TOOLS

Now, working together no longer requires to be at the same place. The COVID-19 pandemic has made remote work a new normal of work and the right collaboration tools are helping organizations to keep their employees safe and workflow stable.

We started working from home mid-March and this sudden transition was not a major challenge for us because even as a distributed team, we use a host of collaboration tools, devices, and software to stay in-sync and collaborate on a daily basis. After six months of work from home, we are open to implement a hybrid work pattern.

To continue working at the home, office, or in a hybrid model, the right set of visual collaboration tools are needed to message, call, collaborate and share.

• An instant messaging app brings the entire team on a single platform to communi-

cate either directly or via different channels.

• Video conferencing allows teams to collaborate virtually and screen sharing serves the purpose up to a certain extent.

• Visual collaboration offers video conferencing, screen sharing, content sharing, and digital whiteboard with smart tools to collaborate team members simultaneously on the shared screen.

A newly launched retrofit visual collaboration device called **Thinker Connect** supports the new hybrid workspace with flexible installation, intuitive user experience, and integrated features.

Thinker Connect is a retrofit solution for a standard display or TV or monitor that brings touch interactivity. Place the device on any monitor or screen and convert it into a perfect meeting room solution. It allows remote teams to join the meeting, has enterprise-level video conferencing with high-end audio and video features, and enables co-annotation on the shared screen across different devices.

With proven capabilities of Artificial intelligence and Machine Learning, Thinker Connect solves many challenges of effective collaboration while working in Hybrid Model.

Turn your display interactive to annotate: The advanced motion-sensing technology of EyeRIS® Sensor intelligently tracks the users' pen gestures in real-time to perform touch interactivity on Thinker Connect, which enables seamless information control from any display. It gives freedom to write, draw, and annotate directly on the screen.

New Sound for Meeting: The most vital element of collaboration is the voice. Thinker Connect comes with a beamforming MEMS microphone array that has a pickup range of 5m with an omnidirectional response. The Voice Activity Detection (VAD) and Direction of Arrival (DOA) feature focus the microphone directly on the speaker and suppress

the background noise with Full-duplex Acoustic Echo Cancellation (AEC). So, don't worry about your kid playing in the same room, you will still be loud and clear to everyone.

Appear good in every meeting set up: The camera detects and identifies the participants, auto-tags the speakers, and frame them in a high-resolution screen. The 1080p

Ramya Chatterjee, CEO at Cybernetyx,is an achievement driven and high-performance leader, having a strong record of contributions in streamlining P&L functions, new business development, stimulating businesses, heightening productivity and improving systems & processes. He has gained hands-on experience across industries in technology product companies in Audio Visual (AV), Information & Communication Technology (ICT), IT Hardware / Software and Office Automation

(OA) segments with vertical focus includes Education, Corporate, SME & Govt. Ramya Chatterjee is a dynamic change agent, skilled in positioning organizations to achieve operational excellence with strong ROI drive. Delivered improvements in process, market positioning, cost control, business model re-structuring and consistent growth. He is well organized with a track record that demonstrates self-motivation, entrepreneurial ability, creativity and initiative to achieve corporate goals. He is persuasive and influential professional with a strong verifiable career track for successfully propelling through start-ups/emerging businesses and managing end-to-end business with conceptualization & sound thought process and having outstanding success in building and maintaining relations with key partners/clients. He can be reached at ramya.chatterjee@cybernetyx.com

camera ultra-wide-angle camera captures the participants irrespective of the place they sit, near of far from the table. The light optimizer in Thinker Connect captures participants in perfect light, even if you have joined the meeting from a dim-light room.

AI-powered Conversational UI: A virtual assistant that understands the intent of the user with dialogue management, and question-answer abilities have been incorporated into Thinker Connect. It is a conversational AI that has been developed using a powerful combination of AI and ML. With natural language processing technology, visual collaboration tools have developed conversational AI, which hears the conversation during collaboration and parses the information

in the form of preparing automated MOM, scheduling meetings, and setting reminders.

Integrates well with all popular software: Compatible with major collaboration software like Slack, Zoom, Teams, Trello, etc., Thinker Connect is good for home and office setup.

You can host and attend meetings via Zoom or Teams using Thinker Connect that offers HD audio and video, cross-platform messaging, content sharing capabilities.

Make a product development and design strategy on Miro using Thinker Connect that has easy-to-use tools and allows real-time collaboration on the shared canvas, without any lag.

While ideating over Thinker Connect, the

foremost factors were portability, interactivity, and enterprise-level video conferencing. Large panels are surely an alternative to modern meeting room solution but its large size and skyrocketing price become a major issue. Rather, we look for a retrofit solution that could add value to our existing setup and developed Thinker Connect as the best meeting room solution.

We gained more confidence when the first lot of the device got diluted within three weeks of its launch and we were in a phase of the happy problem of 'out of stock.' With more and more companies adopting a hybrid workplace model in their system and policies, we are sure Thinker Connect is going to be the first choice of everyone.

EXECUTIVE SPEAK - NITIN JOSHI...

Hardware of interactive panels. The Interactive Panels of the education series are easy to use, easy to adapt and as the teachers are Subject Matter Expert/s (SME) they like that they do not have to go through extensive training for using the Interactive Panels. The intuitive writing is a feature that all educators have loved and has become the talk of the town. Also, the Education Suite provides a complete Education Eco-system which has made the Panel widely accepted by the Educators and the Educational Institutes. We have recently launched our new Educational Series Interactive panel where we have upgraded the Intel Chip based processor, along with Android enabled feature, with a 4K LED display, Toughened glass, multi-touch lighting, Dual-Pen, Gesture controls, easy to write infinite pages etc, which makes our new E-Series of interactive Panel not only teacher friendly but also future ready. As you are now aware, that Maxhub is not only a hardware provider but also provides the softwares, we can with time update and upgrade our Interactive Panels once installed with the advancements and needs of the Educators. As the technology is relevantly new for the educators, we not only ship the product, but also ensure that a complete training is provided to the Educators either directly from our end, or from our distributors end.

What is the challenge in interactive panel design in this new era of online VC?

The main challenge in the online VC era has been touched by us in the first Question. Now what has further more happened is that with the traditional Black Box slowly taking a back-step, as coding and decoding through a codec box is no longer the

technology of today, everything is through a software in a computer. To tackle this Unified Communication Solution, and merge it along with our Interactive Flat Panel, we have our Enterprise Series. There are two models if we have to talk in terms of design. The Standard Series which has one in-built camera and the Ultimate Series with 3 built-in camera's both being all-in-one solution Panels. The Panels are built in with a High Definition wide angle Camera, Microphone array system which covers up to 10 Meters of distance, built in speakers and a Intel Based Compute System to run any Video conferencing Software. With all these features loaded in one panel, all you need is an internet connection for all Unified Communication Calls. While designing the Panel for the Enterprise Sector, we also have to keep in mind that it should look presentable and a sleek design that enhances the overall look and feel of the conference rooms and big corporate houses. Therefore, we provide all of these as a built in feature and not as integrated features with our Enterprise series of Interactive Panels.

Please tell us about your Unified Communication products.

We have a couple of products in our Unified Communication product line, but let me speak about the UC Bar from Maxhub. With the sudden change in the way of doing business, we were discussing how do we tackle the challenges that will now be faced with the New Normal of WFH. That is when we came out with our UC Bar. The UC Bar is an all-in one Unified Communication Product and is a "easy to connect, plug-n-play" solution. The UC Bar has industry's best

HD wide angle camera, which can cover not only a single person, a group of 4 people but a room as big as 16 people. Having an in-built Microphone array system covering a range of 8 to 10 meters, a speaker and an Android PC. The UC Bar which is enabled with the Android PC is now only a display away for all your Unified Communication Calls. We have received a very good response from our end users as well as our channel partners all across the country for the All-in-one UC Bar.

Is Maxhub planning to expand its reach in India through more distributors? Are there any Experience centers made or in the making across the country?

At Maxhub, we follow a distribution module, and YES, we are open and wiling to expand our reach all across the country. Apart from our distributors, the Maxhub India team is spread across the country like Calcutta, Hyderabad, Bangalore, Mumbai and North where we are headquartered i.e. Jasola. Apart from this, we also have now expanded further more from Calcutta towards the North-East region. We are present across the country through our Distributors and Channel Partners and are looking for further expansions through distributors in regions we have not yet penetrated. We have one State-of-Art experience center at our headquarters Jasola and one in Mumbai. With the growing support and love from our End-Users and Industry colleagues, we have the Hyderabad, Bangalore and Calcutta Experience Centers in the making, which will soon be available for our end-users and integrators to walk-in for product demo's.
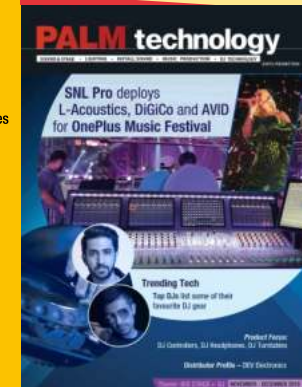
PALM™ technology

SOUND & STAGE • LIGHTING • INSTALL SOUND • MUSIC PRODUCTION • DJ TECHNOLOGY

EXPO PROMOTION

YOUR CONNECT TO THE GLOBAL AUDIO INDUSTRY

The PALM technology magazine is today considered as the premier information facilitator and knowledge catalyst for the pro-audio industry in India, providing responsible, expeditious and a persuasive mix of company business news, product & technology updates, features & interviews, market reports, industry analysis and more.

The magazine content provides solutions for not only audio for stage sound and music production but also high quality audio solutions for studios, broadcasters and audio for video and post production. PALM technology is the ideal platform to source high-end audio-for-video and advanced sound processing equipment to enhance sound and Foley effects, location recording, live broadcasting etc. The magazine circulation comprises readership of 100% industry professionals across application segments like live Events & Entertainment, Music production and post-production and professional AV, television and broadcast Installation & Systems Integration.

PALM technology

SOUND & STAGE • LIGHTING • INSTALL SOUND • MUSIC PRODUCTION • DJ TECHNOLOGY — EXPO PROMOTION

Bishwadeep Chatterjee shares his unique perspective and experience on Music Recording and Sound Design.

Studio Install
Shankar Mahadevan's new studio **Lambodara Studios** designed by **Sound Wizard**

Mrinal N's dream project - **Stained Class Productions**

Features
Renowned Independent Music Producers talk about their recording approaches and technology

In Conversation with **Sreejesh Nair**

BOSE reinforces sound at Sardar Patel Stadium, Motera with **ArenaMatch**

STUDIO ISSUE
MARCH - JUNE 2020

PALM technology

BECKET TUNDATIL Pg:48
Firefly Lighting

PALM AV-ICN expo 2021 Preponed in May Pg:04

palmexpo2021
record ▶ play ▶ perform
AV-ICN EXPO2021

13-14-15 MAY 2021
BOMBAY EXHIBITION CENTRE, GOREGAON (EAST), MUMBAI, INDIA

Lighting Designer Becket Tundatil talks about the lighting industry scene in the current scenario and the future of lighting design in the virtual events space

IRAA 2020 – 1000 nominations highest ever

INDIAN RECORDING ARTS ACADEMY

i R A A

Anil Chopra, Founder & Chairman of IRAA

Awards live streamed on Youtube and Facebook
14th edition - 55 awards in 42 categories presented

SEPTEMBER - OCTOBER 2020   The Lighting issue

Fixed Install Pg:08
National War Memorial – Bose Professional gives befitting tribute to War Heroes

Virtual Events Pg:38
NJSM-BNA set the ball rolling for Virtual Live Entertainment Events

Product Focus Pg:32
Moving Heads
Lighting Consoles

PALM technology

JULY - AUGUST 2020

Product Focus
House of Worship Speakers

HOSPITALITY INSTALL

STUDIO INSTALL

CRUISE INSTALL

HOUSE OF WORSHIP INSTALL

INSTALL ISSUE

IRAA CAMPAIGNS FOR ROYALTY

IRAA VIRTUAL EVENT
14th edition
INDIAN RECORDING ARTS ACADEMY AWARDS
Supported by HARMAN

PALM technology

INSIDE:
2020 Year Planner

TOP 50 PRODUCTS 2020

STONEWATER Rocks SUNBURN WITH **FULL SPECTRUM SOUND**

Questions with de Hvidt Nielsen, Microphones

THE MAKING OF **U2 JOSHUA TREE TOUR**, INDIA

Stage Production
RY - FEBRUARY 2020

PALM technology

MSS Projects delivers Son-Et-Lumiere multimedia show at **Jyotisar**

An Unequal Music
Restarting Column on albums, recording and studios *Unequal Music* by Music Producer, Abhimanyu Majhotra

Sound engineers flock to **Monitor Mixing Summit**

CEDIA
Interview with Wendy Griffiths
OHM at Digha Convention Centre

Theme: LIGHTING

PALM technology

SNL Pro deploys **L-Acoustics, DiGiCo and AVID** for OnePlus Music Festival

Trending Tech
Top DJs list some of their favourite DJ gear

PALM technology

INSTALL STORY

palmexpo
POST SHOW REPORT

SOUND & LIGHT AWARDS

KNOW THE WINNERS

ACOUSTIC AND AUDIO SYSTEM DESIGN FOR SMALL ROOMS

- PART 3

**By - Rahul Sarma, CEO, Menura Acoustic Labs
In collaboration with Sound Wizard**

In Part 2 of the series, Sarma elucidated about the importance of sound isolation and how background noise can adversely impact the dynamic range of the audio playback. In Part 3 of the series he dives deeper into small room design and the science behind absorption and diffusion.

We dive deeper into "small room" design, as we can now start to look closer at the science behind absorption and diffusion and how to effectively use both to achieve your desired targets for a particular space. For those of you who have a working knowledge of acoustics, this portion of the series will only be a refresher, but hopefully will still give you a more practical insight into the topic.

Overview

Familiarize yourself with the frequency content of various sound sources. This knowledge is vital to manage any expectations during the design phase of any project. Relate every frequency to its corresponding wavelength, and the picture starts to become clear.

As you read further, you will be able to understand the range of frequencies that you can absorb/block and therefore the type of sound sources you can plan to accommodate in (or block from entering) a space.

Let us first look at what happens to an incident sound wave on a surface. The ability to understand this interaction will help you identify and understand acoustical issues in any space. It helps to visualize an incident source on a surface as multiple waves, each wave representing a different frequency in its spectrum. Each frequency treats the surface it encounters differently because of its wavelength. Some frequencies will be absorbed or reflected, and frequencies with larger wavelengths will pass through some barriers as if they don't exist.

Understanding the frequency dependent behaviour of materials is vital to small room design, especially because not all materials perform in the way that you expect.
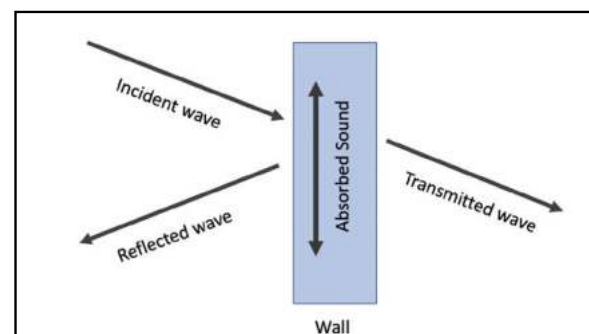

Fig.1: Interaction between wave and barrier

Glass is a perfect example of a material that is often misunderstood and hence mis-

Frequency (Hz)	31	63	125	250	500	1000	2000	4000	8000	16000
Wavelength (m)	11.1	5.5	2.8	1.4	0.7	0.35	0.17	0.09	0.04	0.02

used. Being a hard and non-porous surface, one is perfectly within their rights to think of it as a reflective surface that can be detrimental to good room acoustics. However, it will only reflect down to a certain frequency, which is determined by the thickness of the glass. Below that frequency, sound will pass through the glass, essentially making it as effective as a bass trap! Unless sound leakage is a huge concern (which it often is) allowing low frequency energy to escape from a room is the easiest and most cost-effective way to deal with reverberation below 100Hz. It is often a good idea to use neighbouring spaces like equipment rooms or passageways to allow low frequency energy to escape, since it will lower the amount of absorption required in a space.

Porous Absorbers

Porous absorbers are the most commonly used type of absorber, mainly due to their predictable behaviour. Any porous material converts the mechanical energy of sound waves into heat through friction. The efficiency of the absorption is related to the flow resistivity of a material, but the range of frequencies absorbed is dependent on the depth or thickness of that material. The thickness of an absorber has to be at least a quarter of the wavelength of a frequency it intends to absorb effectively. If you were hoping for your plush 1inch thick carpet to improve the acoustic absorption of a space, you will be disappointed to know that its peak absorption is at 3.4kHz! This often ends up doing more harm than good in a small room, where over-absorption at high frequencies results in a space that appears "dead" while offering no control over troublesome lower frequencies. To put things in perspective, the wavelength of a 50Hz wave is almost 7 meters, and hence a porous absorber will need to be over 1.5m deep to effectively absorb it. This is expensive and impractical, and clearly demonstrates why porous absorbers are only effective at absorbing mid and high frequencies.

Diaphragmatic Absorbers

Diaphragmatic absorbers are the most effective solution to low frequency absorption in small rooms. When allowing these frequencies to leak out of a space is not an option, diaphragmatic absorbers provide a space-saving and efficient method of controlling reverberation below 100 Hz. Having

spent the last few years testing and developing these devices for Menura Acoustic Labs, I can personally attest to their effectiveness. They work by mechanically dissipating sound energy using a weighted membrane stretched over a box whose volume has an effect on the range of frequencies absorbed. When used in combination with porous absorbers, an acoustic designer can use diaphragmatic absorbers to achieve broadband absorption in a space. When attempting to determine the amount of low frequency absorption in a 'small room', a good rule of thumb is that no amount is enough! The only limiting factors are cost and space, and diaphragmatic absorbers help alleviate both issues.

Resonators

Some rooms have issues at specific frequencies, and specialized solutions are required to address these problems. An absorber with a wider band of absorption will throw off the acoustical balance of your space, and this is where resonators can be the most effective solution. Ever tried driving on a highway at a decent speed, and someone in your car lowers their window just a little bit? A weird phenomenon occurs, an extremely distracting low frequency throbbing that makes your eardrums vibrate, best described as 'buffeting'. This is Helmholtz resonance in a nutshell, a fixed volume of air in a cavity (with a small exit) that absorbs sound at a resonant frequency determined by the volume of the cavity and the size of the exit. If you lower a second window, the 'buffeting' stops, since the opening is now large in relation to the cavity. Resonance theory is also commonly applied to extend the absorption range of other types of absorbers.

Diffusers

Depending on the application, it is often important to preserve some high frequency reverberation in a space for it to sound as natural as possible. Diffusion (scattering) is the best way to achieve this while also taking care of harmful reflections in a space. Diffusers scatter and dissipate incident waves without removing their energy, preventing the listener from localizing reflected waves and psycho-acoustically creating a perception of being in a larger space.
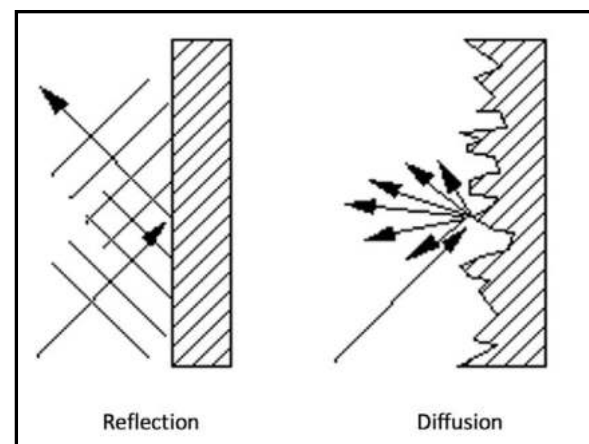
They are a good solution to the issues

Reflection   Diffusion

Fig.2: Reflection vs Diffusion

of comb-filtering that were introduced in part one of this series. As with most acoustic phenomena, it is often misunderstood and misused based on myths propagated by audio enthusiasts. Egg crates do not work as diffusers for multiple reasons; their symmetric design is conducive to diffusion only at one frequency, and their shallow depth mean that they will only diffuse the highest of frequencies. The depth and size of protruding shapes in a diffusor determine the frequencies that it can absorb. All commercially available products are highly asymmetrical so that they randomly scatter incident waves, which is ultimately the goal of a good diffuser.

Practical Application

Armed with this theory, you now have to use these principles to maximize the acoustic performance of your space. Start by determining the optimum reverberation time for your space, which is easy enough to find online. Avoid single number averages and use a reference curve from Dolby (or anyone else) especially for critical listening and recording spaces. Visualize the interaction between different frequencies and the surfaces in your space, and plan accordingly to achieve your desired reverberation time curve, which needs to be relatively flat across the audible spectrum to achieve a transparent listening experience. Diffuse to prevent over-absorption in the high frequencies, absorb the mids with porous absorbers, and extend low frequency absorption with the help of diaphragmatic and resonant absorbers. If possible, also allow low frequencies to escape from a space into a nearby corridor or equipment room; this is the easiest way to tame unruly room modes.

SONY BEAMFORMING MICROPHONE AIMED AT CLASSROOM LECTURES

Sony **MAS-A100** a Beamforming ceiling microphone with advanced speech reinforcement technology – Enabling, truly hands free lectures and meetings.

Beamforming Microphone is affixed to the ceiling, leaving the orator location-free, hands-free to focus on presenting.

MAS-A100 has two channel outputs. Dual output channel enables speech reinforcement and recording simultaneously. The Dedicated rec channel records captures wider range and optimal intelligibility – suitable for lecture capture. With simple settings, central management and no need to monitor battery use, MAS-A100 is claimed to be the convenient classroom audio solution.

Noise reduction: Noise reduction technologies minimize ambient noise. Stationary background noise arising from projectors and air conditioning are automatically detected and reduced.

Automatic gain control: Inbuilt volume normalization feature to maintain stable volume regardless of the distance between the presenter and the microphone.

Dante and PoE compatibility: Compatible with third-party Dante mixers, converters and other devices, as well as power over ethernet (PoE).

Automatic calibration: Audio processing for speech reinforcement. The microphone generates a test signal, which is captured by the loud speakers

LEYARD MICRO LED MASS TRANSFER TECH

Micro LED display technology miniaturizes the conventional LED design structure to the micron level, and arrays these tiny chips through mass transfer technology to become display pixels that can be controlled by a single drive, achieving high brightness, low-energy consumption, high resolution and high saturation.

Mini LED display: chip with a size of 100-300 μ m in two dimensions, and the display product is manufactured by flip-chip packaging through ordinary or massive transfer methods;

Micro LED display: less than 100 μ m in two dimensions, and the display product is manufactured by flip- chip packaging through massive transfer mode;

Four mass-produced Micro LED commercial display products, including 40-inch 2k (P0.4), 54-inch 2k (P0.6), 67-inch 2k (P0.7) and 81-inch 2k (P0.9) are launched.

Unlike the unexpected appearance of fine-pitch LED products a decade ago, the new multi-size, standardized, and mass-produced Micro LED display products are a response to public needs and have been officially launched to the market for real-life commercial applications.

Unlike the applications of small-size LED displays, the applications of super-size LED displays put more emphasis on product stability, reliability, maintainability, color uniformity, high-density ultra-high- definition image quality, and low-energy consumption.

Super-size displays can reach tens of square meters or even hundreds of square meters, which poses a certain challenge to the uniformity of the display screen. However, the current COB Micro LED is difficult to detect and divide into bin, which limits its application in super-size screens.

Leyard released the first 0.4 pitch ultra-high-definition Micro LED commercial displays. This product adopts the finest size of chip in the current application scenarios on the market, and currently can achieve 81 inches 4K and 162 inches 8K.

The product employs full flip-chip technology to avoid the shielding of light by the electrodes and maximize the light output area and light output efficiency of the chip. At present, the product can achieve a brightness of 2500nit and a contrast ratio of 20,000:1, and realize HDR2.0 display with better image quality.

In March 2019, Leyard collaborated with internationally renowned panel driver manufacturers to develop a new generation of Micro LED driver chips; in May 2020, the driver chip was successfully developed and verified in small batch production. The chips have been applied in mass-produced Micro LED commercial display products.

NEC INTEGRATED WITH BRIGHTSIGN OPS MEDIA PLAYER IS ALL-IN-ONE DIGITAL SIGNAGE SOLUTION

NEC Display Solutions and BrightSign, LLC announced their collaboration to deliver a family of large format displays with integrated digital signage capabilities. The full range of NEC MultiSync V Series large format displays will now be available with the BrightSign OPS digital signage media player included.

"As businesses emerge from the pandemic, digital signage plays a key role in welcoming customers and employees back with informative and important digital content," said Nils Karsten, Strategic Alliance Manager at NEC Display Solutions. "Integrating BrightSign's OPS media player is the ideal complement to our V Series displays, and we can now jointly deliver an all-in-one, industry-leading and very reliable digital signage solution." Retail stores, museums, quick-ser-

vice restaurants, corporate environments and other public settings are target applications. Integrating the media player into the display not only saves on the up-front hardware investment, it also streamlines installation by eliminating the need for additional cables and standalone media players. Adding OPS media player gives option on any display format, particularly for deployments where minimizing external cabling with integrated hardware is a priority.

NEC has integrated the BrightSign OPS media player into the company's full

range of MultiSync V Series models, all of which offer the combination of a brightness output of 500 cd/m² and an anti-glare surface to deliver advanced visibility under common lighting conditions. The slim, modern design is the perfect fit for integration into any application and environment.

Integration of BrightSign's HO523 OPS digital signage media player eliminates the need for additional cables, and provides full integration into the BrightSign infrastructure, which includes access to 20+ CMS vendors via BrightSign's BSN.cloud Control Cloud. The media player's updated BrightSign 8.0 operating system and powerful video engine enable H.265/H.264, provide hardware-accelerated HTML support and enable 4K upscaling.

SHURE'S MICROFLEX MXN5-C NETWORKED LOUDSPEAKER IS NOW CERTIFIED FOR MICROSOFT TEAMS

NOW SHURE OFFERS AN END-TO-END AUDIO ECOSYSTEM CERTIFIED FOR MICROSOFT TEAMS

Shure has announced that its new Microflex MXN5-C Networked Loudspeaker is now certified for Microsoft Teams. The MXN5-C joins a select portfolio of Shure networked systems products – the Microflex Advance MXA910 Ceiling Array, MXA310 Table Array Microphones, and the IntelliMix P300 Audio Conferencing Processor – that are now certified for Microsoft Teams, providing a complete audio signal chain. The networked loudspeaker from Shure provides high-quality speech reproduction for AV conferencing applications. PoE-enabled with an onboard amplifier housed in a low-profile design, the MXN5-C is optimized for easy installation in drop-ceiling configurations.

Microsoft Teams provides a complete solution that includes online meetings, live broadcasts, and audio conferencing. Integrating with collaboration technologies is important on online AVoIP services for a corporate conference room, special event venue or higher education campus.

"This certification illustrates our commitment to providing best-in-class experience across the entire audio ecosystem for Microsoft Teams users," said Paul Gunia, Director of Technology Partnerships, Shure.

Benefits of Shure's audio ecosystem include:

- Microflex Advanced microphones feature Steerable Coverage technology for audio capture that scales to any size room in any configuration.
- Simple, yet powerful IntelliMix DSP made specifically for AV Conferencing Applications.
- Visibility on the network for device access via Shure Designer software for easy

setup and configuration and Shure SystemOn software for remote management and troubleshooting.
- Single manufacturer of the entire on-premise audio chain simplifies service and support
- Shure Audio Encryption for secure meeting content.
- Compatible with Dante Domain Manager software for roles-based security of Dante-enabled devices.

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2021 YEAR PLANNER

AV-ICN EXPO 2021
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	MON	TUES	WED	THUR	FRI	SAT	SUN	MON	TUES	WED	THUR	FRI	SAT	SUN	MON	TUES	WED	THUR	FRI	SAT	SUN	MON	TUES	WED	THUR	FRI	SAT	SUN	MON	TUES		
JAN 2021					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27 28 29 30 31	JAN 2020
FEB 2021	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28				FEB 2020
MAR 2021	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	MAR 2020
APR 2021			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29 30	APR 2020
MAY 2021				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28 29 30 31	MAY 2020
JUN 2021		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	JUN 2020
JUL 2021			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29 30 31	JUL 2020
AUG 2021					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27 28 29 30 31	AUG 2020
SEP 2021			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29 30	SEP 2020
OCT 2021					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27 28 29 30 31	OCT 2020
NOV 2021	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		NOV 2020
DEC 2021			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29 30 31	DEC 2020
JAN 2022					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27 28 29 30 31	JAN 2021
	MON	TUES	WED	THUR	FRI	SAT	SUN	MON	TUES	WED	THUR	FRI	SAT	SUN	MON	TUES	WED	THUR	FRI	SAT	SUN	MON	TUES	WED	THUR	FRI	SAT	SUN	MON	TUES		

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STREAMING AND RECORDING ON TWO PLATFORMS SIMULTANEOUSLY NOW POSSIBLE WITH NVS-34

STREAMING IN VERTICAL (9:16) MODE IS JUST A BUTTON AWAY

Datavideo earlier this month announced the NVS-34 Streaming Encoder and Recorder. The NVS-34 has the ability to stream to two platforms and record simultaneously. Users now have the ability to share their content to multiple platforms without needing to buy another encoder.

One of the unique new features of the NVS-34 is the ability to stream in vertical (9:16) mode. Vertical streaming is the future of online video content. Over 90% of all videos watched on smartphones are watched vertically. Audience retention of vertical presentation is higher on mobile devices than traditional horizonal 16:9 video. With NVS-34, users can share their content in vertical mode to social media platforms like Instagram (IGTV) and Facebook.

"My favorite feature of the NVS-34 is the ability to do dual streaming," says Craig

Moffat, Managing Director of Datavideo US. "It makes it so easy to share your content to a larger audience."

The NVS-34 can also stream and record at

different bit rates simultaneously. It records onto an SD card in NTFS, FAT, or exFAT formats to allow continuous recording up to two hours without a file size limitation.

Front panel operation with easy-to-use buttons makes this encoder desirable for

many applications such as Houses of Worship, Education, Corporations and Live Event Production. In addition to a bit rate selection button on the front panel, the NVS-34 has

video input selection, stream, record, and vertical buttons. Once the NVS-34 is set up initially using a PC/Mac computer or a tablet with a web browser, users can simply press one button to start their streaming and recording.

EXTRON'S SMP 352 – STREAM CONCURRENTLY AT TWO RESOLUTIONS AND BIT RATES FROM THE SAME SOURCE

The SMP 352 allows recording and streaming processor for capturing and distributing AV sources and presentations as recorded media or live streaming. It can create independent recordings from two different sources, and incorporates Extron's FlexOS, a platform for automating system operation. The SMP 352 accepts HDMI, component, composite, and optional 3G-SDI signals and applies two-window processing to selected sources. It can record and stream simultaneously and can stream at two different resolutions and bit rates concurrently using a range of transport protocols and session

management options. The SMP 352 dual recording feature creates independent recordings from two different video sources with independent archive stream settings for each channel. Users can choose to create a single layout for simultaneous recording and streaming, or create synchronized recordings and streams of two video channels with the dual recording feature. A confidence stream provides a composite of two video sources to monitor both channels from a single stream. The SMP 352 also DSP features for level control, filtering, and dynamics, as well as streaming presets that increase function-

ality and provide a simplified workflow.

Features to look for:

- Process two high resolution AV sources from up to five available input signals
- Record and stream simultaneously
- High quality scaling with flexible two-window management
- Produce MP4 media or M4A audio files that are compatible with virtually any media player
- Stream concurrently at two resolutions and bit rates from the same source
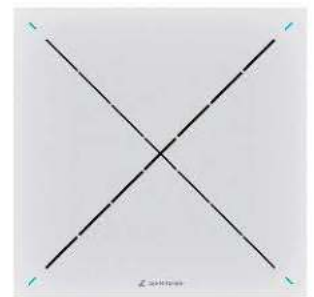- Dual channel recording and streaming with confidence stream