

PHOENIX NETWORKS + MEYER SOUND INDIA PRESENTS AN EPIC SONIC WONDERLAND AT ED SHEERAN'S + -= ÷ X CONCERT

The stage is set for an exquisite acoustic marvel to sweep the audience off their feet, as Ed Sheeran's + -= ÷ x Concert in Mumbai, India is brought to life by Phoenix Networks and Meyer Sound (for which Sun Infonet is the official distribution partner in India)

*What is the secret recipe to deliver an unforgettable live concert experience to a country of more than 1.42 billion people? **Animesh Mishra**, Founder and Director, **Phoenix Networks** reveals how he raised the bar for live entertainment in India while planning and commissioning the audio architecture for **Ed Sheeran's + -= ÷ x Concert** in Mumbai, India*

Spanning four legs across the globe, including Europe, Oceania, North America, and Asia, with a staggering total of 116 concerts worldwide; English singer-songwriter **Ed Sheeran** recently graced India with his presence, marking the final stop of the Asian leg of his highly acclaimed fourth concert tour, The + -= ÷ x Tour, i.e. "**The Mathematics Tour**". Following his triumphant Divide Tour in 2017, Sheeran returned to enthrall his Indian fanbase once again, this time at the iconic Mahalaxmi Race Course in Mumbai on March 16th. The monumental event was brought to fruition by **BookMyShow Live**, the live entertainment arm of BookMyShow, in collaboration with AEG Presents. The event proved to be an unprecedented success, boasting a record-breaking attendance of over 55,000 enthusiastic fans, making it the largest live concert by a solo international performer in recent Indian history. Sheeran's + -= ÷ x Tour served as a culmination of his illustrious discography,

featuring an eclectic mix of genres ranging from rock and hip-hop to country and pop. The setlist comprised an array of his chart-topping hits, including "Tides", "Blow", "I'm a Mess", "Give Me Love", "Eyes Closed", "Photograph", "Shape of You", and "Bad Habits", among others. From the moment Sheeran graced the stage, he effortlessly commanded the attention of the audience, captivating them with his charismatic presence and prompting them to sing along to every word of his songs. Despite a scheduled performance duration of approximately 1 hour and 55 minutes, Sheeran's unwavering connection with his audience prompted him to extend his set to over 2 hours and 15 minutes, fuelled by the overwhelming love and adoration he received.

All things in tow; it is important to note that the concert was not only a feast for the senses for Ed's fans; but also an audio-visual spectacle that any world-class performer would be simply amazed by – as state-of-the-art production design, coupled with breathtaking stage detail and impeccably executed technical reinforcement, all came together in a seamless confluence to definitively raise the bar for live entertainment in the country.

"Trust me, bringing together the enchanting aural adventure for the $+-\div\times$ concert had me and the team exploring the various complexities of mathematics and physics like never before!" chuckles **Animesh Mishra**, Founder Director of Phoenix Networks, as he shares his experience of spearheading the planning and commissioning of the superlative audio architecture for Ed Sheeran's supremely successful concert that took Mumbai and the Indian live entertainment scene by storm in March 2024.

Creating A Mesmerizing Acoustic Experience:

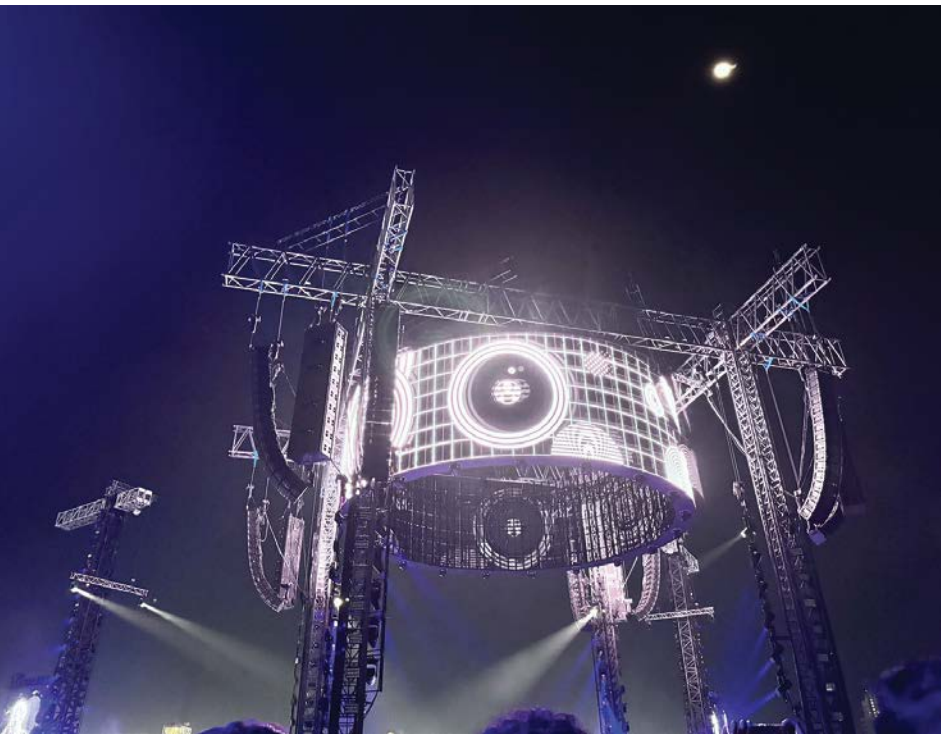
Ingeniously crafted in a stadium-style setup, a first-of-its-kind mammoth 360-degree circular stage that rotated on its axis ensured an unparalleled view of Sheeran from every corner of the venue, while a giant circular 'HALO screen' positioned at the top-center of the stage further enhanced the visual

concert in Mumbai demanded a world-class level of attention to detail, precision, and expertise to ensure a flawless execution that would elevate the concert experience to unprecedented heights. And taking charge of bringing this ambitious vision to life was the team of experts at Phoenix Networks, led by their visionary Founder and Director, Animesh Mishra – as team Phoenix took the reins of planning, designing, and deploying the awe-inspiring Meyer Sound system at the Mahalaxmi Race Course.

"For us at Phoenix Networks, it was both a challenge and a thrill. Right from the start, we knew that crafting an immersive audio experience would take a mix of creativity and technical know-how; and throughout the planning process, we did encounter numerous challenges. But the truth is that each challenge was an opportunity for innovation; and each obstacle we faced only made us more determined to exceed expectations and give the audience something truly unforgettable!" exclaims Animesh as he recaps the experience of shouldering the massive responsibility.

Working in close collaboration with Ed Sheeran's technical team that included the tour's Technical Director and Audio Production Head; Phoenix Networks with Animesh at the helm, meticulously planned the deployment of the colossal **Meyer Sound** system inventory with the objective of creating a 360-degree stereo sonic effect that seamlessly complemented the bespoke and breath-taking stage design. The audio plan, according to team Phoenix, not only accounted for the artist's demands, but also took into consideration key factors such as the spread of the audience section, and variables such as the atmospheric conditions including heat, humidity and wind-speed among others – all of which would have a notable impact on the concert's eventual sonic environment.

Starting off with the main rig which formed the center-piece of the audio setup, the audio team decided that a total of 128 units of the **PANTHER line array** modules would be needed for the job. The strategic deployment of the



The concert stage has a unique layout, with a 360-degree configuration that rotated on its axis to deliver an uninterrupted view of Ed Sheeran from every nook and corner of the venue along with a giant 'HALO screen'

experience. On the other hand, the audio amplification was taken to new heights with a monumental deployment of the globally acclaimed PANTHER & LEOPARD line array systems from Meyer Sound, strategically installed on an ultra-modern gigantic trussing arrangement to deliver a truly sublime sonic experience to the entire audience. Easily the largest deployment of a Meyer Sound system ever witnessed in India; this monumental feat was made possible through the intervention of Sun Infonet – the official distribution partner of Meyer Sound in India – who facilitated a strategic collaboration between the country's most noted live event rental solutions providers – each of whom are esteemed owners of comprehensive loudspeaker systems from Meyer Sound.

The intricacies of coalescing a monumental audio production that could do justice to the visually grandiose allure and appeal conceived for the $+-\div\times$

PANTHER line array modules was done in an arrangement that featured 2 array hangs of 16 units each suspended on each of the stage pillars, which totalling to a whopping 32 units across 2 sets being suspended off of each pillar. Positioned at a height of 17 meters above the ground and inclined at a precise angle of 6 degrees downwards, the main rig ensured optimal sound coverage and impact for audience members, even those situated at the farthest distances from the stage. And to further optimize the coverage pattern and ensure truly consistent and uniform sound dispersion, an additional array configuration was deployed, which comprised a total of 12 units of the 80-degree long-throw PANTHER line array modules at the top of the array and 4 units of the 110-degree wide-throw PANTHER line array modules at the bottom; with this strategic move being instituted in order to efficiently encompass both long and wide spans of the venue. Each of the modules within the array hang



A total of 128 units of the PANTHER line array modules, 10 units of 1100-LFC subwoofers, were deployed for the concert, 12 units of the Meyer Sound Galileo GALAXY 816, and 5 units of the Galileo GALAXY were deployed at the concert venue for seamless, clear audio delivery

were meticulously tilted outward at an angle of 15 degrees to minimize sonic hotspots within the audience area located near the stage and ensure linearity across the overall audience area.

In addition to the main rig, a total of 22 units of **LEOPARD line array** modules were strategically positioned around the circular stage to serve as front fill reinforcement, while a further 16 units of LEOPARD line array modules were deployed as in-fill reinforcement in stacks of 2 units each at each pillar, where in each pillar was flanked by 2 stacks of the LEOPARD modules positioned at a height of 1.6 meters from the ground to deliver an absolutely sublime sonic experience for audience members located closest to the stage.

Opting for the formidable PANTHER line array system as the primary PA, supplemented by the LEOPARD line array system for additional reinforcement as fills, enabled the audio production team to guarantee a uniform sonic experience for every audience member, regardless of their proximity to the stage or their location within the venue's expanse. This was made possible by leveraging the shared voicing characteristics of the PANTHER and LEOPARD line array modules, each contributing its own distinct strengths in coverage and throw. As a result, the audio production team could meticulously tailor the sound dispersion and impact to suit the venue's layout and audience distribution effectively.

A comprehensive sonic experience is never truly complete without impeccable low-frequency fidelity; and the audio team on this occasion guaranteed thunderously impactful bass resonance throughout the vast audience landscape, as they chose to deploy a uniquely designed gradient of 4 suspended arrays of subwoofers, with each array comprising 10 units of the **1100-LFC subwoofers**, positioned at a height of 16.5 meters from the ground. Furthermore, the subwoofer hangs were complemented by an additional six ground-stacked and gradient subwoofer clusters that surrounded the magnificent 360-degree revolving stage, with each cluster comprising 3 units of the 1100-LFC subwoofers. While the ground-stacked subwoofer clusters offered a chest-thumping experience to the near-field audience, the suspended subwoofer arrays allowed the team to leverage the impressive throw of the 1100-LFCs to offer a similar high-quality low-fidelity experience for the far-field audience members as well.

With complexities being inherent in large-scale productions such as this particular concert; effective signal routing becomes paramount to achieving clarity, balance, and coherence in the overall sound output, mainly because a robust signal distribution management architecture not only enhances reliability and resilience while mitigating the risk of signal loss or degradation, but also safeguards the integrity of the audio system throughout the production. And armed with a thorough knowledge and understanding of this; the audio



team collectively chose to deploy a total of 12 units of the **Meyer Sound Galileo GALAXY 816**, all of which were strategically positioned to offer unparalleled flexibility in terms of signal routing options; with 2 units of the Galileo GALAXY allocated to each of the audio towers, while 3 units were stationed at the FOH console area. The signal routing was primarily managed through **Luminex' GigaCore 26i switchers** which helped ensure truly seamless signal distribution

with a defined backup source.

“The moment of truth for us was when the rehearsals finally came around – and that’s when we saw our hard work pay off! The feedback we received during rehearsals was overwhelmingly positive, as the flawless audio quality surpassed even our wildest dreams. It was just a testament to the kind of effort that went into bringing such a world-class experience together; and it was so gratifying to see just how successful our efforts were. From there on out, nobody had any doubts about the concert culminating in a massive success!” Animesh affirms proudly.

While the audio production in and of itself was no less than a piece of technical wizardry; it cannot be denied that a myriad of challenges loomed on the horizon as the date of the event approached, with each demanding meticulous attention and innovative solutions.

Monumental Challenges:

Foremost among these challenges was the formidable task of sourcing the requisite quantity of Meyer Sound loudspeakers specified by Ed Sheeran’s team. The onus to do so fell on Sun Infonet, the official distributors of Meyer Sound in India, as they were tasked with orchestrating a smooth collaboration primarily between Phoenix Networks, **Total Multimedia India**, and **Friends Of Shiva** – all of whom are proud members of the Meyer Sound’s growing family of users in India. This collaborative effort brought to life by Sun Infonet was instrumental in ensuring the seamless execution of the audio production for the event, with Phoenix Networks not only playing a pivotal role in spearheading the audio planning and commissioning, but also accounting for the largest stake of Meyer Sound inventory contributed for the event. Phoenix Networks isn’t just renowned for its pioneering adoption of the PANTHER sys-

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tem in India since its official launch in 2022, but also for holding the distinction stocking the largest inventory of PANTHER as well as LEOPARD systems in the entire country.

Technical ingenuity emerged as another formidable challenge in the planning and execution of the imposing audio system for the event; as devising such a meticulously detailed audio architecture and executing it with unparalleled precision demanded a unique blend of creative vision and technical expertise that has seldom been witnessed in India. And this is exactly where Animesh and team Phoenix Networks proved their mettle and unparalleled value; as they drew upon an invaluable wealth of experience and expertise in orchestrating breathtaking mega productions in some of the most challenging live event scenarios.

“Rigging the system on a cantilever at significant heights and steep angles presented a unique set of hurdles. A comprehensive analysis using MAP3D software revealed an intricate set of requirements; primary of which was the fact that the system had to be rigged at a height of 17 meters with the rig point positioned at 22.7 meters, and a further need for the rigs to be angled downwards at 6 degrees, and outwards at 15 degrees. Plus, the fourth pillar that was to hold the PANTHER array on the cantilever had to be erected 4.22



L-R: Dan Mosley; Animesh Mishra, Founder & Director, Phoenix Networks; and Chris Marsh, FOH Engineer for Ed Sheeran strike a pose for a photo at the concert venue in Mumbai, India

meters outwards, with the second suspension point at exactly 3.25 meters and the pullback at 1.3 meters. Bear in mind that these precise measurements, right down to the T, were pivotal to achieving optimal coverage and dispersion, and eventually ensuring a consistent, pristine and immersive sonic experience throughout the venue,” recounts Animesh as he details the nuances of the audio architecture for the concert and highlights how innovative measures were required to overcome the plethora of challenges.

“Additionally, ensuring the stability of the rigs amidst the rigors of the outdoor environment was equally essential, as increased wind pressure posed a significant risk of displacement”, Animesh further explains, revealing that he had to leverage his innate understanding of physics to suspend the loudspeaker rigs using hoists from three points. According to Animesh, this was the most practical solution to ensuring that the rigs would stay secured in place, as this strategic approach not only mitigated the risk of movement but also enhanced the stability of the hangs to an unprecedented degree.

By the end of the concert, it was clear that team Phoenix’s unwavering commitment to excellence and innovative problem-solving ensured the seamless realization of the event’s audio production while emphatically leaving an indelible mark on all who experienced it. And a clearly ecstatic Animesh concluded, “At Phoenix Networks, we’re driven by a passion for excellence and a commitment to realizing our vision. This concert exemplifies the transformative power of dedication and hard work. It’s a testament to what can be achieved when creativity and technical expertise come together. We’re immensely proud to have been a part of this project and to have played such a crucial role in creating such a magical experience for the audience. And looking ahead, we remain committed to pushing boundaries and exceeding expectations in all our endeavors, as we enthusiastically continue exploring new opportunities to push the limits of what’s possible in live event production. With each project, we aim to raise the bar higher and inspire others to strive for greatness.”