

The **Nita Mukesh Ambani Cultural Centre (NMACC)** is home to the largest cultural and performance spaces in India. Opened in March this year, the NMACC has been instrumental in, according to Founder Nita Mukesh Ambani, “showcasing the best of India to the world and welcoming the best of the world to India”. The NMACC’s debut exhibition, ‘India in Fashion: The Impact of Indian Dress and Textiles on the Fashionable Imagination’ proved to be a veritable reflection, not just because of dazzling, stylish costumes on display, but also because of the smart, sophisticated sound enveloping the space. **Dave Haydon**, Director, Out Board and **Kapil Thirwani**, Audio and Acoustic Consultant, Munro Acoustics flesh out how the right sound system made the exhibition a success

In late March this year, the **Nita Mukesh Ambani Cultural Centre (NMACC)** opened its doors in Mumbai, India, ushering in a new era of creativity in a city renowned for its Bollywood influence. This multidisciplinary arts centre boasts a 2,000-seat theatre, two intimate performance spaces and a four-storey Art House. To mark its grand opening, a three-day celebration blended musicals and international art exhibitions, including ‘India in Fashion: The Impact of Indian Dress and Textiles on the Fashionable Imagination.’ The exhibition is curated by Vogue’s Global Editor, **Hamish Bowles** and presents a multi-zone exploration into the impact of India on global fashion and vice versa.

A Sonic, Sartorial Splendour: India in Fashion Oozes Acoustic Excellence with Genelec and TiMax



The ‘India in Fashion’ exhibition at the Nita Mukesh Ambani Cultural Centre (NMACC) is an ode to India’s influence on global fashion, which is delivered with serene seamlessness with a sound system from Genelec and TiMax

'India in Fashion' wove together India's colourful relationship and influence on fashion across the globe from the 18th century to modern day, featuring the delicate and detailed garments in glass domes under spotlight. The exhibition explored everything from the Mughal emperors to the imperial rule that brought the country's craftsmanship over to Europe. Throughout its two-month run, India in Fashion attracted a prestigious line-up of celebrities and influential figures from the fashion industry, including Gigi Hadid and Zendaya.

Overseeing the project was Mumbai-based technology and acoustic consultancy firm, **Munro Acoustics**. Their mission was to craft a soothing auditory landscape without compromising audio quality, while ensuring the seamless integration of the loudspeakers into the background and their continuous operation for 12 to 14 hours daily.

"We work extensively on projects where new ideas are explored for culture and entertainment," explains **Kapil Thirwani**, Audio and Acoustic Consultant at Munro. "We were called in mid-January 2023 to explore possibilities of adding an immersive sonic experience to a fashion exhibition for the NMACC launch. The concept was the influence of India and its fabrics and handiworks on the world of fashion against a backdrop of world music with subtle Indian influences, with 15 zones playing different tracks to build the soundscape."

"Munro is well known for its sonically excellent designs," adds Thirwani. "If we are hired to design, we also have to keep up to the same design sense for sonic aesthetics. This led us to the Smart IP loudspeakers by Genelec. They run seamlessly off a PoE+ switch via a single CAT cable and ticked all the boxes. We verified this by comparing electroacoustic modelling simulations of similar IP speakers and analogue speakers, followed by the creation of a mini rig for a singular immersive zone which we measured to verify performance against the theoretical model. Genelec was a clear winner."

Genelec Delivers Discreet, Superlative Sound In Form & Function

The exhibition celebrated the global influence of Indian design on fashion with the help of 128 **Genelec 4430 Smart IP loudspeakers**. The Genelec 4430 is a small but powerful, self-powered, Smart IP installation speaker which connects to a Dante network and supports external control via third-party hardware or software. Each

running on a single CAT5 cable, the self-powered Genelec speakers were not only discreet but avoided the use of over 20Km of expensive and hard-to-conceal copper wiring.

Genelec's Smart IP series supports PoE, AoIP and sophisticated loudspeaker management, combining exceptional audio with single cable networked convenience. Featuring Genelec's trademark Minimum Diffraction Enclosure (MDE) and Directivity Control Waveguide (DCW), Smart IP loudspeakers provide clarity, intelligibility and uniform coverage, combined with 24/7 reliability.

The Genelec 4430, though compact, envelopes the exhibition in powerful yet discreet sound by connecting to a Dante network and supporting external control via third-party hardware or software.

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Designed to integrate with any **Smart IP loudspeaker system**, Genelec's Smart IP Manager software allows installers to configure an almost unlimited number of rooms, loudspeakers and audio channels, and includes device discovery, room-equalisation tools, system organisation and status monitoring. This enables installers to deploy Smart IP loudspeakers even on complex, acoustically challenging projects.

TiMax Steps Up To The Challenge – Take Immersive Soundscapes A Notch Higher

The audio brief for 'India In Fashion' demanded an array of immersive soundscapes that segued from zone to zone. Calling upon the expertise of distributor, **Alphatec**, Thirwani quickly discovered that only the unparalleled capabilities of TiMax SoundHub would meet the complexity of the audio solution in its entirety.

Out Board Director, **Dave Haydon**, explains, "Alphatec showed Thirwani various ways TiMax could handle this project, which involved playing spatial music and effects across 15 different zones, starting and stopping it all automatically without anybody having to touch it. He worked out that TiMax was the only thing that could do it all at once."

The exhibition played with multiple immersive and stereo zones stored on two **64 channel TiMAX servers** via the Dante network. These outputs were then assigned via Smart IP Manager and Dante Controller. "Time delays and source intercorrelation data were adjusted and stored both on the Genelec and TiMAX software," elaborates Thirwani. "The TiMAX stored the preset for the show reel and tracks and the global level variations between zones, while the Genelec sources stored the individual local information of that source in a particular zone."

The soundscapes for the individual exhibition zones were originated by Goa-based musicians **Sandunes**. With some multi-channel spatial audio tuition from Haydon in hand, the duo cleverly created audio content in the same key, which



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Two 64 channel TiMax servers housed within the exhibition space imbued 15 separate zones with truly immersive soundscapes, spatial music and effects – and they required zero human interference to start or stop

served to prevent musical clashes from one zone to another. Various show content stems were sent to the UK, where OutBoard’s Haydon could begin programming the showfiles, and he subsequently visited Mumbai to help Sandunes bed in the immersive content on-site.

Without walls between the exhibits, overlap was unavoidable, but once the audio installation was complete, the team started auditioning the soundscapes over the

various zone speaker systems, walking from zone to zone with a Mac to fine-tune them.

Following this process, all the settings were saved and the SoundHubs locked. Set to fade up at 10:00 a.m. and then slowly fade out at the end of the day, simplified client control for the TiMax-controlled system was provided via a TouchOSC iPad for each SoundHub. Changes could be made to master level and individual zone levels for out-of-hours VIP visits, press and TV interviews without impacting the saved set-up.

Arriving at the completed project shortly before it opened to the public, Haydon said, “The integration and design were amazing, and all the equipment was up and running to provide totally automated, hands-free, fully integrated show-in-a-box operation.”

Thirwani concludes, “This was a team effort, and solutions like these require meticulous planning and execution, drawing expertise from various fronts. From conceptualization to planning and execution, the project faced challenges on site that had to be resolved before completion. I’d like to thank the team involved in the design and execution of this project: **Utkarsh Naidu, Cyril Thomas, Johan Pais, and Aman Prajapati**. Everyone worked incredibly hard, and the exhibition was an undeniable success.”

The completed project received positive feedback from both the client and industry stalwarts. India in Fashion was a successful celebration of techniques, practices and centuries of India’s influential impact on global design. It featured over 30 of the world’s most celebrated designers and threaded this together with intelligent yet discrete audio from Genelec and Timax Spatial Audio to create a truly immersive experience.

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