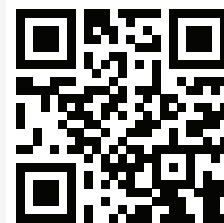


AN EXCLUSIVE MAGAZINE FOR THE SMART HOME INDUSTRY.

SMARTHOME WORLD

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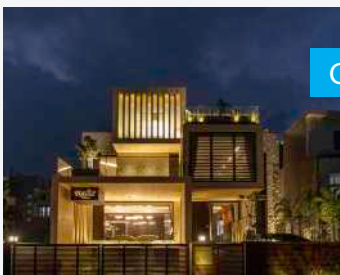
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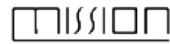
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FROM THE EDITOR



SWATI BALGI

As we bid farewell to the old and embrace the new year, we find ourselves at the threshold of a new beginning. The turning of the calendar not only marks the passage of time but also brings an assurance of opportunity for renewal, growth, and positive change.

As we begin the year on a positive note, Smart Home World has collated a cover story on how the integration of Building Automation System (BAS) in most of the upcoming projects is providing added advantage, and how it is gradually transforming the Real Estate segment.

In the Feature Section, we give you an insight on the latest advancements in soundbars, and how they are the most preferred options amongst the other audio products. We feature two projects, the first project by Milind Bargal is a smart home designed in collaborating with Eagle Techsec and Communications India Pvt. Ltd., which has resulted in a home characterised by reliability, flexibility and comfort. The second project showcased here is an office designed by Ar. Abhishek Bij, Partner at Design Plus Architects, which is an artfully designed tech-savvy office for William Grant & Sons. This workspace seamlessly combines smart features to create a stimulating work environment.

Plus, we feature the dynamic and enterprising interview of Paul De Pasquale, CEO of Tivoli Audio Global, who shares his keen passion for innovation, music, and design. This exclusive interview discusses their state-of-the-art audio products and their plans for the Indian market.

Our professional readers are always on the lookout for new products, here we share two new products from Smart Node: HomeLink, a Home Automation Screen Panel, and Curtain Flow-Wi-Fi-based Curtain Motor. We are sure you will enjoy reading this issue.

On behalf of the entire team, we wish you a promising start to the year ahead.

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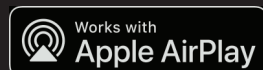
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Transforming Spaces Through Building Automation for Sustainable Living

The evolution from conventional structures to smart buildings by integrating Building Automation Systems (BAS); Real Estate Developers are looking for ways to differentiate their projects by incorporating intelligent and sustainable features. Read on to know more...



India is witnessing a transformative shift from conventional buildings to smart buildings. The rapid integration of Building Automation Systems (BAS) among builders and developers is reshaping the entire industry. Will this fundamental shift change the dynamics of the industry? Will it be heralding a new era of Smart Building? These are the most debated topics in most seminars and conferences related to the Real Estate industry.

Smart Home World has a positive outlook on mass integration of BAS by Builder and Developer across the sector in the coming years. Though Building Automation System (BAS) is a very common concept abroad, even in India we have Buildings, where BAS has been used extensively in Commercial, Retail, Hospital and Hospitality structures and residential is also gradually adopting it. As there is growing awareness amongst builders and developers about the benefits they provide, developers are embracing

these intelligent solutions to meet the growing demand for energy-efficient and technologically sophisticated spaces.

For those few readers who are not familiar with The Building Automation System (BAS), this is a network designed to connect and automate certain functions inside a building.

All of the building control systems, from lighting and HVAC (Heating, Ventilation & Air Conditioning) to fire and security systems—all wired through one set of controls. This system regulates various types of functions such as Heating, Electricity, Air Conditioning, Water and Sewer Management through sensors and controls within a particular project.

This system enhances functional efficiency, sustainability, and overall user experience. From automated lighting and climate control to robust security systems, the functionalities offered by BAS are unlimited.



Positive Outlook and Growth Drivers

Many experts have a positive outlook and believe that, in the coming years, the synergy between real estate and Building Automation Systems is poised to redefine urban living, creating environments that are not only responsive to occupants' needs but also contribute to a sustainable and interconnected future. The journey from traditional buildings to smart structures in India is not just a transition; it's a paradigm shift that promises to shape how we build and inhabit spaces for future generations.

India is experiencing rapid urbanization, with an influx of people into cities. This has led to increased construction and a growing need for efficient and sustainable building solutions, this is one of the reasons for driving the demand for Building Automation Systems (BAS) in India.

Rising energy costs and a growing emphasis on sustainability have led businesses and building owners to seek energy-efficient solutions. Building Automation Systems (BAS) can optimize energy usage, reduce operational costs, and align with India's focus

on promoting green and sustainable practices. The Indian government is showing interest in promoting energy efficiency and smart building technologies. Initiatives such as the Smart Cities Mission and various building energy codes encourage the adoption of BAS. Government incentives and policies can significantly impact the growth of the BAS market.

Advances in technology, including improved sensors, communication protocols, and data analytics, make BAS more accessible and attractive. As technology becomes more cost-effective, it becomes feasible for a wider range of buildings in India, including both new constructions and retrofits.

With digitalization, there is an increasing demand for intelligent and connected infrastructure in India. BAS plays a vital role in creating smart buildings that can adapt to the needs of occupants, optimize resource usage, and enhance overall efficiency.

As India integrates into the global economy, there is a growing awareness of international industry standards and best practices. Businesses are more inclined to adopt

technologies like BAS to align with global standards and improve competitiveness.

When it comes to commercial sectors businesses in India recognize the importance of providing a comfortable and productive working environment for their employees. BAS allows for better control over environmental conditions, contributing to improved occupant satisfaction and productivity. Property developers are looking for ways to differentiate their projects through smart and sustainable features.

Functionality and Advantage

A Building Automation System (BAS) serves as a centralized control system for managing various aspects of a building's infrastructure, playing a crucial role in optimizing energy efficiency, comfort and operational performance. The primary functions of a BAS encompass control over heating, cooling, ventilation, lighting, and other essential building systems.

BAS functions to limit energy usage as a whole and can result in a slew of environmental benefits that keep building occupants healthier and happier. Some positive outcomes

of automation include lower energy usage and tapered waste that lead to cost savings. A building's stress on the electrical grid also plays a factor, with automation severely reducing that strain.

Facilities management expenses also go down with automated building operations because systems control how things like HVAC and lighting work. Automation also results in a reduction in overall energy use, a positive environmental outcome that can assist in a building earning a green certification. Alternatively, a BAS can mitigate potential problems in real-time, creating a more preventive posture. Building automation solutions can also be tailored to the type and size of facility or facilities, helping a facility manager better oversee larger buildings or multiple buildings.

The brands that provide BAS solutions are Honeywell International, Siemens AG, Johnson Control, Schneider Electric, Carrier, Robert Bosch, Legrand, Hubbel, ABB, Lutron, Creston, Hitachi, Delta Controls, General Electric, Cisco Systems, Rockwell, Control4, Signify Philips, Emerson Electric and Infineon Technology to name a few.



Sudip Saha, Chief Operating Officer (COO) at Future Market Insights Inc, explaining



the advantages of Building Automation to the real estate sector says, “The integration of Building Automation has not only elevated real estate projects but also reshaped the very essence of modern living. Smart homes have become the epitome of convenience and sophistication, with

automated features leaving an indelible mark on the quality of life for residents. Beyond the immediate benefits, the financial landscape of real estate projects also experiences a positive surge.”

He further adds, “Looking ahead, building and home automation integration is not merely a gradual change but a transition that promises to redefine urban living. Artificial Intelligence (AI) and machine learning, two formidable technological forces, will merge to give outstanding results.”

Speaking about the challenges hampering the adoption, Sudip says, “In the real estate industry, challenges in adopting building and home automation persist like intricate puzzles waiting to be solved. The formidable hurdle of the initial implementation cost looms large, encompassing the acquisition of advanced systems and the essential training of personnel. Convincing stakeholders to make this upfront investment demands a delicate dance of showcasing long-term gains and future-proofing strategies, as the benefits of automation often become more apparent over time. Developers must navigate the intricacies of ensuring that different automation systems seamlessly communicate and collaborate. This demands meticulous planning during the selection phase and ongoing efforts to stay abreast of evolving technologies, ensuring a harmonious and future-ready integration that enhances the overall resident experience. The spectre of data security and privacy concerns casts a long shadow over the integration process. Developers must go beyond superficial assurances and explore the implementation of robust cybersecurity measures and transparent privacy policies. Earning the trust of potential homeowners requires a proactive stance in safeguarding personal information.”

Smart Home World interacts with Select Builders and Developers who share their positive outlook on BAS.

Sanjeev Agarwal, Chief Design Officer, Ashwin Sheth Group says “The integration of Building Automation Systems is a transformative milestone for the entire real estate industry, ushering in a new era of operational excellence. The real-time coordination and responsiveness of smart building systems, empowered by data networks, not only redefine user experience but also set the stage for a future where structures can be operated with unparalleled intelligence and adaptability.



From an industry-wide perspective, this innovation is well-aligned with our collective sustainability goals. The ability to harness data for intelligent energy management has emerged as a cornerstone for reducing operational costs across the sector. Automated adjustments to lighting, HVAC systems, and other critical components based on real-time insights, not only optimize energy consumption but also position the industry to meet and exceed stringent environmental regulations. This commitment to sustainable practices paves the way for a future where buildings become



more than mere structures, emerging as active contributors to a greener, more eco-conscious world.

Looking ahead, the ongoing evolution of Building Automation Systems, driven by advancements in technology, will likely redefine the benchmarks for operational efficiency and sustainability within the real estate sector. Smart buildings, at the forefront

of this evolution, will continue to reshape the industry, offering intelligent, adaptive, and eco-conscious living spaces that align with the evolving needs of both occupants and the environment. In embracing Building Automation Systems, we are not merely witnessing a transformation; we are architecting a new status quo where buildings play a pivotal role in enhancing sustainability, resilience, and quality of life."

Neeraj K Mishra, Executive Director, Ganga Realty shares his experience on integrating a Building Automation System in his project and how it has impacted the overall performance of their buildings says, "Building Automation System is one of the most desirable features of our uber-luxury project, Nandaka 84, located in Sector 84, Gurugram. It allows single access control and a common interface to manage key operations, such as Heating, Ventilation, and Air Conditioning systems (HVAC), Lighting, Security Systems, and Air purification. The management from a singular interface is helpful in multiple facets such as coherent coordination, sound decision-making, and running energy-efficient and cost-efficacious functions with lower contingencies of human inaccuracy. There is a range of high-quality



automation, such as Thermostats, Occupancy Sensors, Humidity Sensors, and Fire and Smoke Detectors performing functions like



regulating room temperature, lighting, and stamping out the risks of fire accidents, channelizing lower operational and energy costs. In a nutshell, Building Automation Systems have significantly upscaled our project's quality based on parameters of time and occupancy."

He further adds insights on how the Building Automation System has contributed to the sustainability goal, "Promoting Sustainable Living through our projects and undertaking every possible measure to ensure this is

one of the primary goals at Ganga Realty. Using Building Automation Systems is also a profound step taken in the same direction. It feels an immense amount of pride in stating that our endeavors to integrate the building management systems within our project, Nandaka 84, have truly helped us to expand its sustainability footprints. The centralization of utility management through a common interface allows us to effectively reduce operational expenditure and energy profligacy. The authorization of a single-access control for managing multiple functions also lowers human errors and enlarges the scope of green inclusion within a project by emboldening home buyers to invest in them and make well-informed decisions. To cut a long story short, Building Automation Systems has helped tremendously with the sustainability goal of our new project. We have partnered with foreign architects like UHA as our architectural partner. Alongside, we have associations from well-established designer groups, such as Mace (Technical Partners), IGBC (Sustainability Partner), JLL (Knowledge Partners) FDF (Facade Partners), and GSA (Landscape Partners), respectively for Nandaka 84."

Saransh Trehan, Managing Director, Trehan Group, Says, "We will be using the Building



Automation System in our upcoming luxury project, Trehan 71, which is located on the Southern Peripheral Road in Sector 71, Gurugram. It will allow us to run cost-effective operations while also propagating conservation and judicious use of energy systems

with little to no scope of manual follies. Instituting BAS will equip us to prevent unauthorized access, trespassing, and privacy or security violations through Security and Access Controls and will also alert and neutralize fire mishappenings or other risk concerns."

"Trehan Home Developers is devoted to chalking out, initiating, and undertaking new and refreshing methods to increase the energy-efficiency plank of our new projects as it promotes a noble message of energy conservation and sustainable use of resources, undergirding an era of green real estate projects. BAS has redefined our project by increasing its eco-friendly, energy-saving, and sustainable growth card, aligning with our objectives and vision regarding this project."





When it comes to untapped opportunities **Sudip Saha, Chief Operating Officer (COO) at Future Market Insights Inc.** says, “Developers can bring fresh perspectives and cutting-edge solutions by developing partnerships with technology start-ups and established players in the automation industry.

By tapping into the collective originality of these collaborators, projects can transcend conventional boundaries, offering residents unparalleled experiences and features that redefine modern living. Developers are also challenged to think beyond the conventional and embrace the uncharted territories

of automation. The fusion of creativity, sustainability, and collaboration addresses challenges and propels real estate projects into realms of innovation where the potential is limitless. As the industry transforms, those who dare to pioneer these untapped opportunities will undoubtedly shape the future of real estate development.”

Developers and stakeholders who embrace these technologies will undoubtedly lead the way into a future where Intelligent buildings and smart homes are the new standard in the Real Estate segment.



Advancements in Soundbar Technology

*From unparalleled spatial sound technology to AI-driven innovations and seamless integration with TVs, discover how the latest **Soundbars** are the most preferred Audio Systems.*

Creating unwinding environs with music is a regular practice in most homes. It is observed that homeowners do not think twice when it comes to investing in Audio Systems this is specifically true in the case of Soundbars. There are many market research reports indicating that **Soundbars** continues to dominate the audio consumer product category, outpacing receivers and traditional passive speaker systems.

As mentioned earlier, the soundbar market in India is experiencing robust growth driven by several key factors. Prominent amongst them is the rising demand for home entertainment

systems and the slimming down of TVs affecting built-in speakers, soundbars have become popular for providing enhanced audio quality. The compact and aesthetically designed soundbars are a popular choice for most urban homes, especially compact homes. With a plethora of International and National brands offering unlimited choice in terms of design, and competitive pricing, coupled with the convenience of wireless connectivity, it is no surprise that more and more people are opting for Soundbars.

Apart from the sleek and compact design of Soundbars, tech-savvy homeowners are



are driving the growth of the soundbar market, making it a dynamic and thriving segment in India.

Features and Components

A soundbar comprises essential components that collectively contribute to an enriched audio experience. Multiple speaker drivers, including tweeters, mid-range drivers, and woofers, are integrated to cover the full spectrum of frequencies. These devices are powered by built-in amplifiers, ensuring optimal volume and clarity. Crossover networks divide the audio signal, directing specific frequency ranges to the appropriate speaker drivers. Sound processing technology, often through digital signal processing (DSP), enhances audio quality by offering features like virtual surround sound and equalization. Some soundbars include an integrated subwoofer for deep bass reproduction, while others have a separate wireless or wired subwoofer. Various connectivity ports, such as HDMI, optical, and analog options, facilitate connections with TVs and other audio sources. Wireless connectivity options like Bluetooth or Wi-Fi enable seamless audio streaming from compatible devices. Control mechanisms include remote controls or smartphone apps, offering flexibility in managing settings and volume levels. Soundbars may also incorporate smart features like voice assistants. Mounting options, such as wall brackets or adjustable stands, cater to different installation preferences. LED displays or indicator lights provide visual feedback on settings and volume levels, ensuring user-friendly operation. Altogether, these components create a versatile and immersive audio solution, making soundbars a popular choice for home entertainment systems.



looking for Smart features, integration with voice assistants, and compatibility with smart home ecosystems. Plus, the growing demand for gaming and sports content is also one of the factors that is fueling the demand for soundbars with immersive audio capabilities. Aggressive marketing strategies, e-commerce availability, and continuous product innovation

Latest Advancement

Recent advancements in soundbar technology have brought about a host of features designed to elevate the audio experience. One notable trend is the support for immersive audio formats such as Dolby Atmos and DTS:X, providing a three-dimensional sound environment. Object-based audio processing technology allows for precise



sound placement, contributing to a more realistic auditory experience. The integration of artificial intelligence and machine learning algorithms enables soundbars to analyze and optimize audio output based on the content being played and the room's acoustics. Voice control features have seen improvements, with many soundbars now compatible with popular smart assistants like Amazon Alexa and Google Assistant, offering hands-free operation. High-resolution audio support caters to audiophiles, delivering superior sound quality and detailed audio reproduction. Enhanced Wi-Fi connectivity

facilitates seamless streaming from various online sources, while HDMI eARC ensures high-quality audio transmission. Advanced digital signal processing and equalization algorithms contribute to fine-tuned audio settings, allowing for a more personalized listening experience. Soundbars also feature compact and aesthetically pleasing designs, integrating seamlessly with modern home decor. Gesture controls, multi-room audio capabilities, and upgradable firmware options make soundbars a popular choice amongst further contribute to the evolving landscape of soundbar technology.

DIFFERENT TYPES OF SOUNDBARS

2.0 channel: The most basic soundbar configuration with left and right speakers. Delivers stereo sound and is fine for casual music/TV use.

2.1 channel: Includes a wired/wireless subwoofer along with left and right speakers. Most popular configuration for impactful home theatre audio.

5.1 channel: Includes a soundbar, subwoofer, and surround left/right speakers. Provides

an immersive cinematic experience through multi-channel surround sound.

Dolby Atmos: High-end soundbars that support 3D Dolby Atmos audio for an ultra-realistic soundstage. Require Dolby Atmos source content.

Smart Soundbars: Premium soundbars with built-in streaming apps and voice assistants. Let you stream music and control smart home devices.

With so many brands and models in the market, finding a suitable soundbar can be a time-consuming effort. Smart Home World has made this job easy for you by curating a list of the best soundbar in India.

Loewe, a distinguished German manufacturer renowned for crafting high-end audio and visual solutions, boasts an impressive lineup of soundbars that are designed to elevate the audio quality of home entertainment systems. Among their offerings, the **Loewe Klang Bar 5** stands out as a pinnacle of sophistication, delivering impeccably clear and potent Dolby Atmos sound. Its wireless capabilities seamlessly integrate with streaming services and Google Chromecast, enhancing its versatility. Exhibiting premium craftsmanship, the Klang Bar 5 MR, is a Dolby Atmos and DTS: X-capable soundbar system, solidifying its status as a high-end audio solution. Boasting 5.1.2 channels and a wireless subwoofer, it offers 440 watts of total music power, supporting various audio technologies like Dolby Atmos, DTS:X, and DTS Virtual: X.

Designed for a captivating 3D cinema sound experience, the Klang Bar 5 MR ensures compatibility with multiple connectivity options, including three HDMI ports, 4K upscaling, and 4K pass-through. With its premium materials, sleek design, and



advanced audio technologies, the Loewe Klang Bar 5 MR emerges as a top-tier choice, seamlessly blending aesthetics and cutting-edge functionality for any space.

Tech Specification:

- This soundbar offers expandability, transforming into a 5.1.2 system through wireless multi-channel (WDAL 2.0) or multiroom audio with Apple AirPlay 2, Chromecast built-in™, and DTS Play-Fi.

- With a slim profile measuring less than 3 inches in height, the Klang Bar 5 MR combines elegance with a clear design language and employs high-quality materials.

- Supporting a variety of streaming services, including Spotify, Amazon Music, Tidal, Deezer, and Internet radio.

Polk's MagniFi Max AX SR is a flagship 7.1.2 Dolby Atmos and DTS:X soundbar system designed to bring movies, TV, music, and games to life like never before. The heart-pounding cinematic thrills delivered by a sophisticated 11-driver array, featuring built-in height drivers and two wireless surrounds, are all enhanced by Polk's patented SDA technology for an expansive soundstage.

Some of the highlight features are the complete Wireless Entertainment for Your Home Streaming high-quality music wirelessly from your phone, tablet, or computer using Apple AirPlay 2, Google Chromecast, Spotify



Connect, or any Works with Alexa compatible music service. Additionally, it connects effortlessly via Bluetooth. With these services,

you can synchronize multiple MagniFi AX Series soundbars for a seamless multi-room music listening experience.

This model includes a robust 10" down-firing subwoofer, delivering the deep, effortless bass for which Polk is renowned. The wireless connection allows for flexible placement, and with BassAdjust, you can fine-tune the subwoofer to achieve the perfect balance of power and precision.

It also provides a total Immersion Wireless Surround Speakers Experience with the inclusion of wireless surround speakers. These speakers contribute to a complete surround sound setup, enhancing your audio immersion and creating an authentic home theater experience. This model can support audio formats like PCM, Dolby Mono, Dolby Digital,

Dolby Digital Plus, Dolby Atmos, Dolby Atmos True HD, DTS Digital Surround, DTS-HD, DTS-HD Master Audio, DTS:X and DTS Virtual X.

Tech Specification:

- Enjoy immersive, SDA-optimized 7.1.2 Dolby Atmos and DTS:X surround sound.
- Stream music via Wi-Fi (Chromecast, AirPlay 2, Spotify Connect) or Bluetooth
- Experience the deep bass you can feel with the included 10 wireless subwoofer
- Two wireless surround speakers included for total immersion
- Streamline your setup with 3-in/1-out 4K HDMI-switching with eARC



the width of your specific TV. This model is available through Audio Nirvana.

Tech Specifications:

Dual Woofer + Spherical PMD LCR "MTM x3"
Designed for 75" to 100" nominal diagonal TV sizes

- Absolute minimum width is 65.42" (1661mm)
- Absolute maximum width is 90.8" (2306mm)
- Spec/Performance
- Sensitivity: 86dB, 2.83V@1m
- Frequency Response (+/-3dB): 90Hz-20kHz
- Low Frequency Bandwidth (-10dB): 54Hz
- Recommended Minimum Amplifier: 75 Watts
- Maximum Power Handling: 200 Watts
- Impedance: 4 ohms

Wisdom Audio's Insight Series P9m-LCR

Soundbar is specifically designed to avoid the compromises inherent in other conventional soundbars. They offer "custom length" designs, that offer the best sound quality that will match the width of any television.

The P9m-LCR is available in custom lengths from a minimum of 65.42" (1661mm) and a maximum of 90.8" (2306mm). It contains (3) Spherical PMDs for the high frequencies playing down to an amazing 900 Hz and (6) 4.5" Woofers to do the low-frequency heavy lifting. Insight P9m series loudspeakers are specifically designed to avoid the compromises inherent in conventional speaker designs. P9m Series speakers are customized to fit



The Yamaha SR-X50A+WS-1XA (True X) one of the premier ranges from the brand offers connectivity options abound with optical, Bluetooth, HDMI eARC, Wi-Fi, and Airplay 2, ensuring seamless compatibility with a wide range of devices. The Yamaha SR-X50A+WS-1XA boasts key features such as Dolby Atmos for a captivating audio experience, Airplay 2 functionality for enhanced connectivity, and the convenience of wireless surround.

Tailored for optimal sound delivery in living rooms, bedrooms, and guest rooms, the channel configuration of this audio system is designed to elevate your audio experience. Available in a sleek black colour, this model seamlessly integrates into any living space.

Offering the flexibility of wireless connectivity for both the subwoofer and surrounds, the Yamaha SR-X50A+WS-1XA (True X) delivers not only powerful sound with a 100W output from the subwoofer but also a stylish addition to

your entertainment setup.

Tech Specifications:

Power Rating: 280W

Configuration: Soundbar, Wireless Subwoofer, Wireless surrounds

Connectivity: Optical, Bluetooth, HDMI eARC, Wi-fi, Airplay 2

Key features: Dolby Atmos, Airplay 2, Wireless surrounds

Application area: Living room, Bedroom, Guest room
Sizes and colours: Black

Wired or Wireless: Wireless Subwoofer & surrounds

Output: 100W(Subwoofer)

Devialet Dione, the Dolby Atmos Soundbar in a sleek dark grey finish delivers a premium home entertainment experience with key performance features. With a sound pressure level of 101 dB SPL at 1 meter, 5.1.2 multichannel audio channels, and a frequency response ranging from 24Hz to 21kHz, the Dolby Atmos Soundbar ensures immersive and dynamic sound reproduction. This soundbar boasts a total amplification power of 950 Watts RMS, driven by advanced audio technologies that include SPACE®, a proprietary up-mixing algorithm for mono and stereo content, and ORB®, a patented central sphere design adaptable to both flat surfaces and wall-mounted setups. The ADE® technology ensures optimal speaker



placement with digital filters, contributing to a three-dimensional immersion experience. AVL® provides real-time dynamic equalization for harmonized sound levels, enhancing the overall viewing experience.

Equipped with the Devialet Intelligence Processor, this soundbar integrates Devialet's award-winning technologies, including ADH® and SAM®. The speaker setup comprises 17 neodymium drivers, featuring 9 full-range aluminum drivers and 8 aluminum long-throw subwoofers. The digital-to-analog converter (DAC) embedded in the processor supports 24-bit/96kHz audio.

Constructed with premium materials, the central core is made of anodized aluminum, while the external and sides feature acoustic fabric. The rear protective panel is crafted from PC-ABS. The Dark Grey color adds a touch of sophistication to your audio setup. In terms of dimensions, the soundbar measures 1200 mm in width, 77 mm in height (88 mm with the sphere), and 165 mm in depth, with a weight of 12 kg. The power supply is custom-built by Devialet, supporting a range of 100-240 V~50/60Hz.

Connectivity options include 1x HDMI 2.1 with eARC/ARC and CEC compatibility, 1x Optical TOSLINK S/PDIF, and support for AirPlay 2, Spotify Connect, Bluetooth 5.0, and UPnP. The Devialet Operating System 2 (DOS 2) powers the soundbar, and it is compatible with the Devialet Application, offering room calibration, SPACE™ audio mode control, volume control, and regular updates.

Network capabilities include dual-band Wi-Fi (802.11a/b/g/n/ac 2.4 GHz & 5 GHz), Gigabit Ethernet RJ-45, and Bluetooth 5.0. The soundbar supports a variety of audio formats, including PCM/LPCM, Dolby Digital, Dolby Digital Plus, Dolby TrueHD, and Dolby Atmos.

Included in the package are the Devialet Dione soundbar, a High-Speed HDMI cable supporting Dolby Atmos, a TOSLINK Optical cable, a power cable, documentation, and a wall-mount guide with accessories.

Sonos Arc is a premium smart soundbar designed to elevate the home cinema experience with immersive sound for TV, music, and more. Powered by Sonos' advanced software platform, the Arc brings a new level of cinematic audio sophistication to entertainment spaces. The Sonos Arc delivers a rich, realistic 3D sound experience with support for Dolby Atmos surround. Its acoustic design creates an ultra-wide soundstage with impressive bass, providing dramatic clarity, detail, and depth. It provides adaptive, software-driven sound that is perfectly tuned to your space and setup with Trueplay. The Arc dynamically adjusts its tuning based on the other speakers in your home cinema setup and the type of content you're enjoying, whether it's music or TV.

The Arc's elongated shape and seamless 270-degree curved grille enable multi-directional sound while fitting elegantly into your room. Whether placed in front of a standing TV or wall-mounted using a custom-designed mount the setup is simple with an HDMI eARC or ARC connection for high-quality audio playback.



This model provides seamless control through the Sonos app, your existing TV remote, voice commands with Amazon Alexa or Google Assistant, Apple AirPlay 2, and more. It also has eleven Class-D digital amplifiers, eight elliptical woofers for faithful playback of mid-range and vocal frequencies, three silk-dome tweeters for crisp high frequencies and clear dialogue, and four far-field microphone arrays for effective voice assistant response.

Tech Specification:

Dimensions: 3.4 x 45 x 4.5 inches (87 x 1141.7 x 115.7 mm)

Finish: Black with matte finish / White with matte finish

Weight: 13.78 lb (6.25 kg)

Power supply: Auto-switching 100-240 V, 50-60 Hz AC universal input.

Ethernet Port: 1 10/100 Mbps ethernet port. Wire directly to your router if WiFi is unreliable.

WiFi: Connects to your home WiFi network with any 802.11b/g, 2.4 GHz broadcast-capable router.

Idle energy usage: 4.3 watts of power in idle mode.

Infrared (IR) receiver: Syncs with your TV remote for streamlined control.

Contents: Arc, Power Cable, HDMI Cable, Optical Audio Adapter, QuickStart Guide, Legal & Warranty Information

Krix subwoofer The LX-7

was recently awarded the StereoNet Product of the Year Award 2024. The LX-7 is a stylish, high-performance passive loudspeaker, custom-built in Australia for screen sizes 75 inches and above. Featuring left, center and right channels, it can be combined with surround speakers and an AVR/Processor to create a genuine, immersive cinema soundscape without the need for virtual or 'bouncing' effects. The sleek design requires minimal space above or below your screen. The LX-7 is intended to be combined with a Krix subwoofer(s) to accurately reproduce the lowest frequencies for the very highest level of home cinema performance.

Tech Specification:

Power Rating: 50-250 Watts RMS
recommended amplifier power – per channel

Configuration: 2-way

Three 90 x 90 Krix short-throw waveguides
Suitable for mounting below or above your screen

Included bracket to be mounted flush or at adjustable angles up to 15 degrees

Cinema Black with grille and bracket LX-7
75 75 to 84 220mm high x 1670mm wide x 142mm deep 25kg, LX-7 85 85 to 97 220mm high x 1892mm wide x 142mm deep 27kg and LX-7 100 98 to 115 220mm high x 2180mm wide x 142mm deep 30kg

LG S95 is a flagship model of the 2023 lineup of soundbars is a complete package and an ideal solution for home cinema buffs, offering an 810W output, 9.1.5 channels and center up-firing speakers. It has a total of five up-firing channels – three on the soundbar itself, and two in the wireless rear speakers – to create an expansive, dynamic soundscape that surrounds users and draws them deeper into the onscreen action and to make Meridian, Dolby Atmos, DTS:X and IMAX enhanced content even more immersive. One of the



key highlights of the model is the Triple Level Spatial Sound. The virtual mid-layer provides more immersive 3D surround sound. The front & top channel synthesis and HRTF-based 3D engine creates a virtual speaker in the middle layer.

The Smart Up-Mixer converts any audio source, including two-channel audio, into stunning surround sound utilizing every available audio channel. The AI Room **Calibration Pro** optimizes audio output according to the dimensions of the room. It covers the front and center channel bands to improve the balance and loudness of the voice. With the seamless correlation analysis of L/R channels, the product delivers a more realistic center and center top channel.

Tech Specification:

- WOW Orchestra provides rich surround effects by using TV speakers resulting in the TV and Sound Bar working as a single product.
- The product also comes with an improved volume UI design for external audio device connection.
- WOW interface Provide additional Sound Modes that are made available to the TV

through the Sound Bar (with a new software update).

Perfect for Gaming

In addition, variable refresh rate (VRR) and auto low latency mode (ALLM), which help make console gaming more immersive by perfectly syncing the sound with the gameplay on screen. The soundbar is also equipped with 4K/120Hz pass-through, which will provide the best image quality by reducing or eliminating lag and frame tearing.

Centre up firing speaker

LG designed the world's 1st center up-firing speakers in which the voice clarity and surround effect are further improved. The center up-firing speaker moves the position of the dialogue to the center of the TV screen.

LG's latest high-end models support IMAX Enhanced, Dolby Atmos, and DTS:X, allowing movie buffs to enjoy authentic cinematic experience.

LG's soundbar models also welcome MERIDEAN support, which delivers a new level of audio three-dimensionality when playing compatible content.

JBL Bar 1300 features MultiBeam™ and six up-firing drivers— four in the bar and two in the detachable battery-powered surround speakers—that deliver massive Dolby Atmos® and DTS:X 3D surround sound enhancing your music, movies, and gaming experiences. 1170W of total output power and thrilling bass from a 10" subwoofer is more than enough to make the room shake. Though, you'll never miss a word due to our PureVoice technology, which makes sure the dialogue is clear even when other sounds are at their loudest. When you want to enjoy your favourite tunes choose streaming via either AirPlay, Alexa Multiroom Music (MRM), or Chromecast built-in that gives you over 300 music streaming options. A powerful 10" wireless subwoofer's thrilling, precise bass adds excitement to action movies and emotion to music. The detachable surround speakers can also work as Individual



Portable Speakers or can connect with each other to form a stereo pair.

Tech Specification:

- Power Rating 1170 W RMS
- Configuration HDMI eARC with 4K Dolby Vision Passthrough

- Connectivity works with voice assistant-enables speaker like Alexa, Siri, Google Assistant
- 11.1.4 Channels with 6 up-firing drivers
- 1170W power output
- Dolby Atmos®, DTS:X 3D surround sound and MultiBeam™ technology
- 10" Wireless Subwoofer

- HARMAN PureVoice technology
- Compatible with JBL One App

Channel Configuration: 11.1.4

Application area: Approx 400 sq ft.

Sizes and colours: Black

Wired or Wireless: 10" wireless subwoofer

Output: 1170W



Future Prospects

The future of soundbar technology holds exciting developments in both audio quality and smart home integration. Emerging audio technologies promise a more immersive experience, with advancements in spatial audio processing, object-based audio, and superior acoustic technologies. Soundbars are expected to deliver studio-quality sound, utilizing innovative signal processing algorithms and materials. Concurrently,

soundbars are evolving into central components of smart home ecosystems. With seamless integration with popular virtual assistants, such as Amazon Alexa and Google Assistant, soundbars will not only enhance audio experiences but also serve as hubs for controlling various smart devices in connected homes. This dual evolution positions soundbars at the forefront of audio innovation, offering users a harmonized blend of cutting-edge audio technologies and intelligent home connectivity.

CASE STUDY

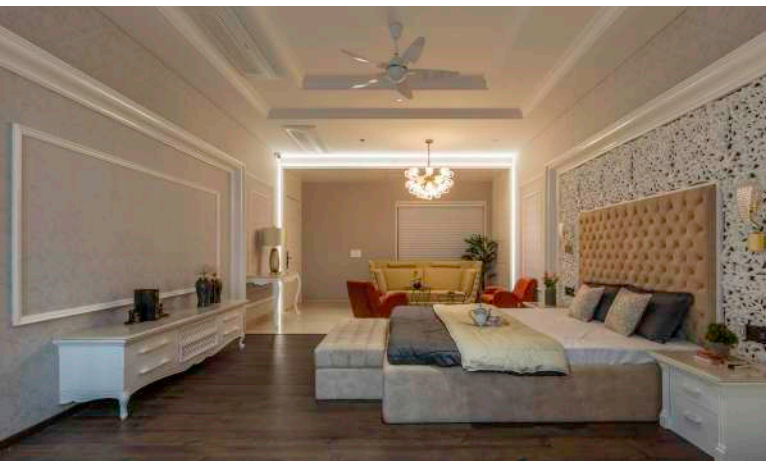
A Symphony of Luxury and Smart Technology





V. Hakwani
22-23 RH
SCHEME NO. 54
VIJAYNAGAR
INDORE

Milind Bargal Interior Designers have designed a home with a unified control system by partnering with Eagle Techsec and Communications India Pvt. Ltd., which has resulted in a home characterised by reliability, flexibility, and comfort.



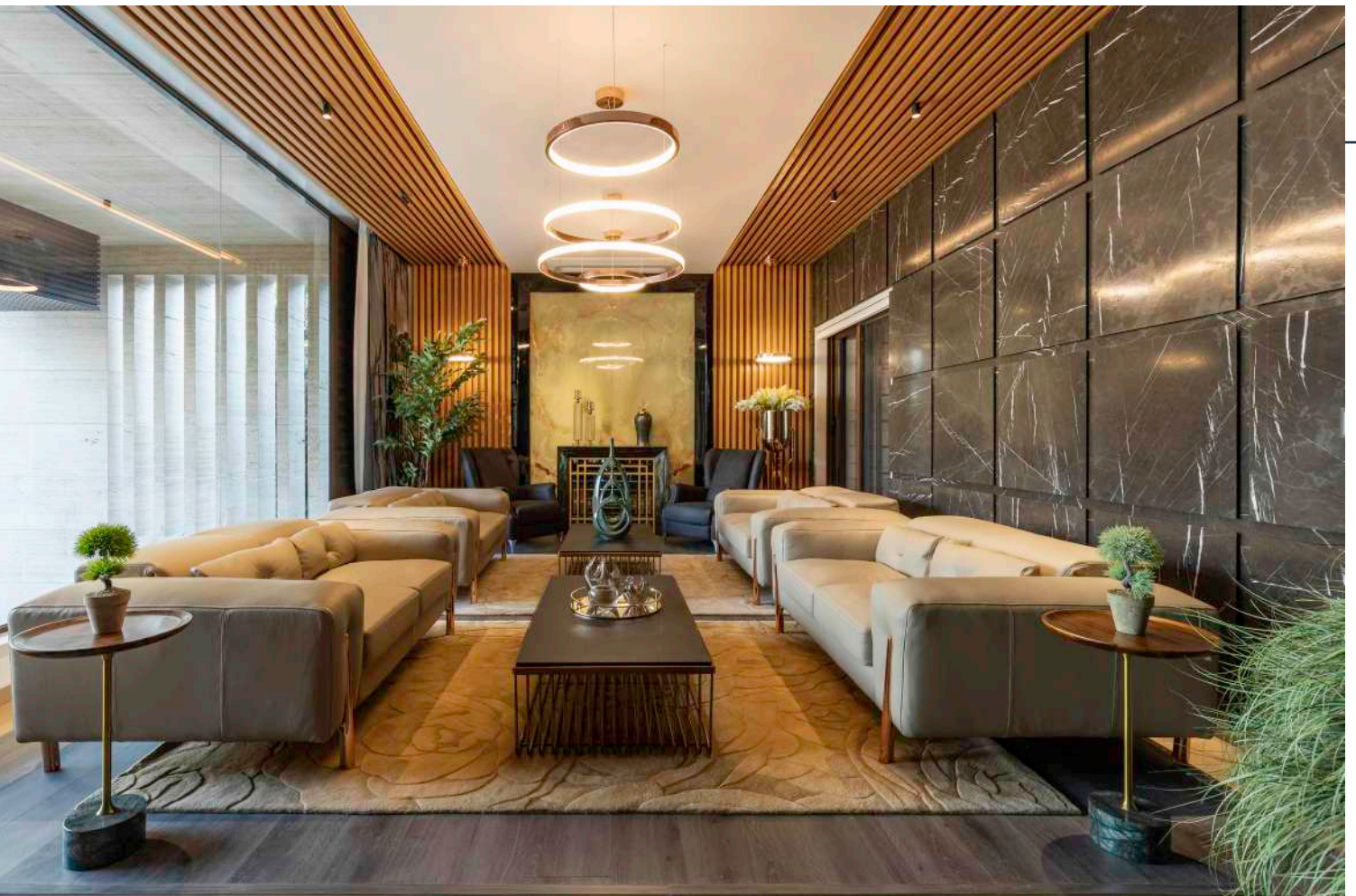
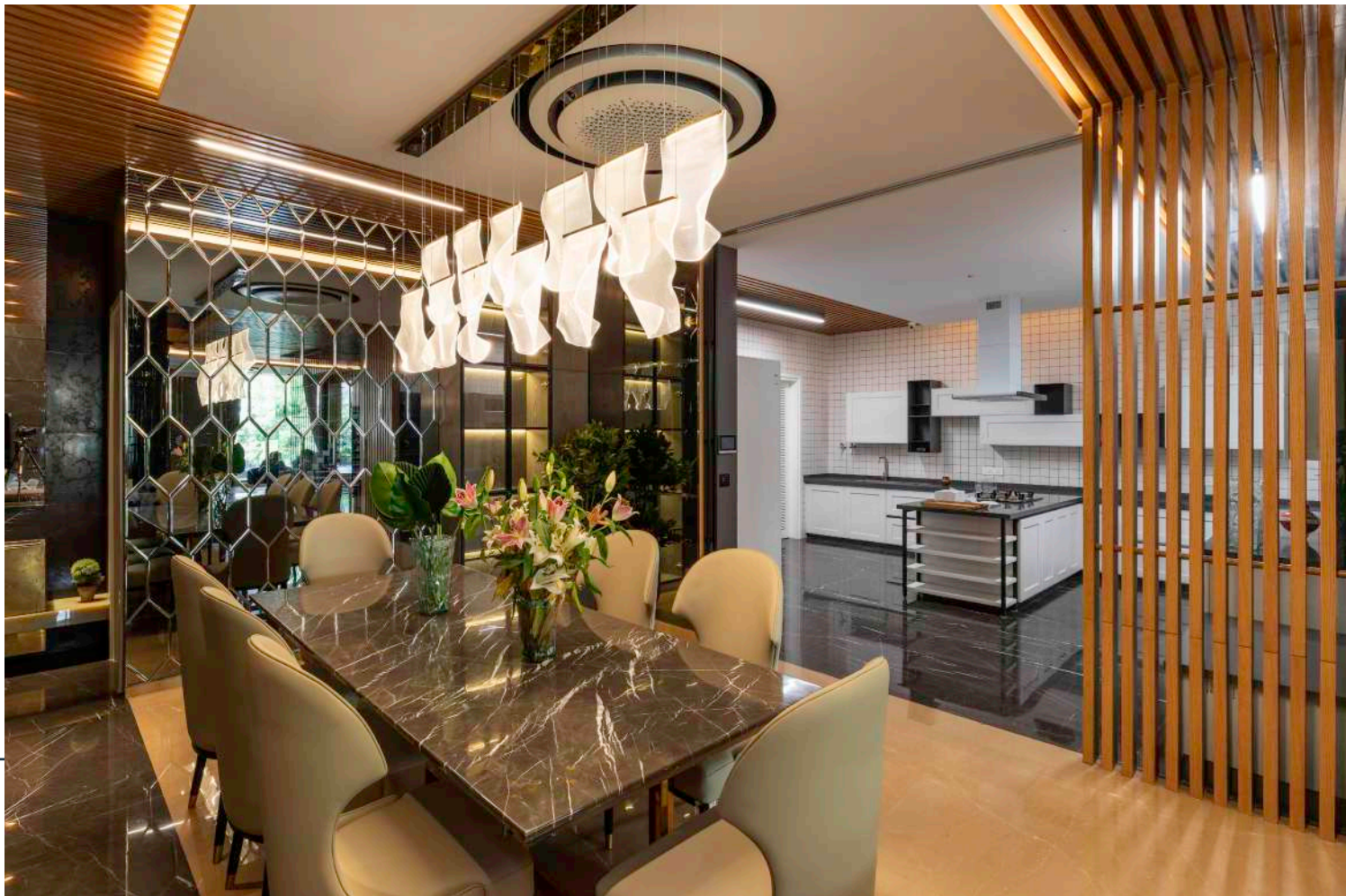
Renowned Architect and Interior Designer, Milind Bargal has designed an opulent residence for the Kakwani family that is a blend of sumptuous design with cutting-edge technology. This home is located in Vijay Nagar in Indore and is spread over an area of 16,000 sq ft. The client's brief to the Milind Bargal Interior Designers was to have a unified control system for the entire home, ensuring ease of operation without complexity. **Milind Bargal Interior Designers collaborated with Eagle Techsec and Communications India Pvt.**

Ltd. to successfully integrate lighting, shades, audio-visual equipment, security surveillance, and HVAC under a single, easily accessible platform. The design prioritized minimalistic and user-friendly lighting and shade keypads, particularly for the client's parents. Reliability was a key factor in system selection.

Integration of Smart Home Technologies

The designer opted for a wired system for lighting and AV controls, keeping in mind the reliability size of the home. **Lutron** handled lighting and shades, **SAVANT** integrated audio-visual controls and security features, while **Coolmaster** managed HVAC. A dedicated smart device application provided centralised control, complemented by **Lutron keypads** strategically placed for effortless operation.

"Understanding the importance of simplicity, the lighting and shades' keypads were customized to the client's preferences, and engraved by Lutron for easy identification. **SAVANT application UI** was tailored uniquely for each family member, ensuring





a personalised and user-friendly experience.” explains Milind Bargal.

Not compromising on the security aspect, the interior design team opted for **Honeywell** surveillance cameras that cover the entire property, incorporating varifocal cameras for optimal visibility at the main gate. **EEKEY** access controls managed servant entries with customizable schedules. Intrusion alarms by **AJAX** and **Texecom** fortified vulnerable entry points, integrated with lighting controls for enhanced security. Lutron’s vacation mode provided an added layer of safety, simulating occupancy during the client’s absence. The integration of a firewall into the house networking system ensured the constant safety of data and privacy, even from potential interference by household staff.

Entertainment Space

The entertainment area has been equipped with the client’s desire for an immersive entertainment experience. Configured as a 5.1.2 surround sound system with **ATMOS**, it has **Martin Logan** speakers, an **Epson**

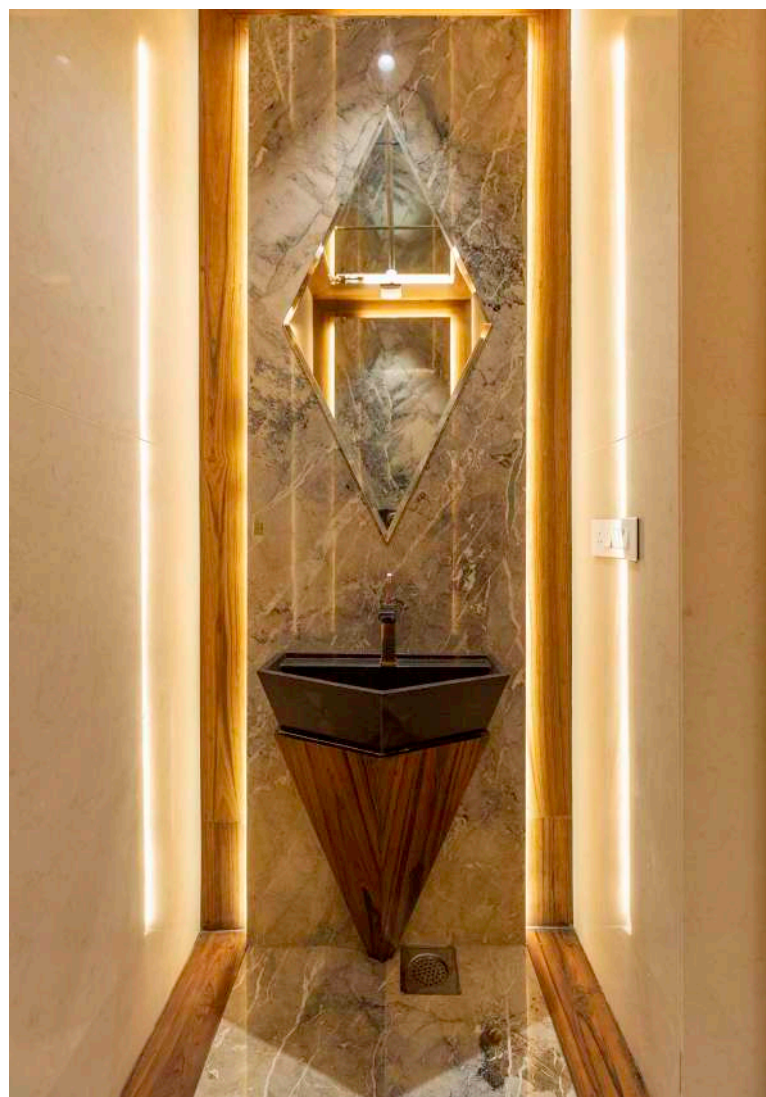


projector, and an **Onkyo** audio-video receiver. The emphasis on easy operation extended to a user-friendly lighting and shades keypad in each area, along with a personalized **SAVANT UI** for managing other services.

One of the most important aspects of this project is the lighting. The designer opted for **Lutron**, an industry-leading brand known for its reliability and flexibility was chosen for lighting and shade controls throughout the house. The decision was rooted in the brand's reputation for inventing dimming and controls.

Keeping the scope of future expansion, Eagle Techsec and Communications ensured the system's scalability by implementing an IP platform. This choice allows for the seamless integration of future technologies and accommodates evolving homeowner needs without the constraints of an analog system.

Overall, Milind Bargal Interior Designers has transcended conventional luxury with this smart home project, seamlessly weaving together aesthetics and technology.





TECH SPECIFICATION

Architect/Interior Designer: Milind Bargal
Interior Designers

Systems Integrator: Eagle Techsec and
Communications India Pvt. Ltd.

Automation System Used: Lutron and Savant

Lighting: iGuzzini & Abby Lighting

Security Cameras: Honeywell

Digital Locks: Yale

Projectors: Epson

Amplifier: Onkyo

Sound System: Martin Logan

Sensors: Ajax and Texecom

Biometrics: EEkey

Hardware used: Hettich & Blum

Networking Devices used: D-Link

HVAC Control: Samsung

A photograph of a modern office lounge. The ceiling is made of horizontal wooden planks with several recessed circular lights. Large windows on the right side offer a view of a city skyline at dusk. In the foreground, there is a curved wooden platform with blue sofas and teal cushions. A round wooden table is placed in the center of the seating area. A large potted plant is visible on the left side.

A Technologically Advanced Office Space Redefining Work Environment

Ar. Abhishek Bij, Partner at Design Plus Architects, has artfully designed an advanced and tech-savvy office for William Grant & Sons. This workspace seamlessly combines smart features to create a stimulating work environs. The expertise of Systems Integrator, Fluitech Engineers, further elevates this workspace.





The William Grant & Sons office, designed by the architecture firm Design Plus Architects, stands as a testament to the evolution of office spaces in the modern era. Spanning an impressive 2,200 sq. ft., this workspace reflects the core values of pride, responsibility, professionalism, entrepreneurship and sustainability which are the core values of the brand. The design not only embodies these values but also addresses the contemporary need for interactive and collaborative working environments.

Design Concept and Spaces

“Gone are the days of linear offices with repetitive workstations. The William Grant & Sons’ office embraces a new-age design philosophy, focusing on interaction and the exchange of ideas. Divided into two distinct zones – the Ideation Space (Meeting Hall) and Conversation Room – the office caters to both formal and informal discussions. The Ideation Space features sunken discussion pods, each accommodating 14 seats, fostering a collaborative atmosphere. This space can host gatherings of over 80 employees for management pitches, HR revisions,



or celebratory events. A seamless 8’ wide slider connects the Ideation Space to the Conversation Room, which offers various seating configurations, including coffee sets, hot desks, and a 12’ long bar table.” explains Ar. Abhishek Bij, Partner at Design Plus Architects.

Materials and Aesthetics

The architectural design draws inspiration from distillery dispatches, utilising hardwood batons and MS flats for a symbolic connection and added warmth. Distinct ceiling and lighting patterns differentiate the two zones. The design maintains simplicity by minimizing the use of materials and textures, creating a harmonious and productive environment.



Smart Technologies Integration

The integration of smart technologies and automation in the William Grant & Sons' office was driven by specific objectives aimed at enhancing functionality and efficiency. The primary focus was on simplifying the management of ambient light and sound, all while fostering a democratic office environment. Systems Integrator, Fluitech Engineers Pvt. Ltd. played a critical role in integrating technology and transforming this space.

The automation system employed Control4/ Raylogic, ensures a seamless and integrated control mechanism. Panasonic was chosen for conferencing solutions, offering state-of-the-art communication capabilities. LG touchscreen displays provide intuitive interfaces for enhanced user interaction.

In terms of lighting, the office utilized DALI/ Phase-cut/0-10v systems from ENDO, allowing for dynamic control and ambiance adjustments. Shading controls, efficiently managed by Hunter Douglas, further





contributed to a customizable and comfortable workspace.

The comprehensive list of technology solutions includes security cameras from Hikvision, digital locks by Yale, projectors from Epson, amplifiers by Denon/Episode, sound systems from Episode, sensors provided by Esylux, and biometrics by ESSL. Additional hardware, and networking devices from ESSL, Cisco, D-Link, and Grandstream further contribute to the robust and interconnected technological infrastructure supporting the office's dynamic operations.

The William Grant & Sons office stands as a testament to the successful integration of modern design principles and smart technologies. By fostering a collaborative and interactive environment, this workspace not only reflects the brand's values but also enhances the overall user experience and productivity of its employees. The thoughtful selection and integration of smart technologies ensure a seamless and efficient operation, contributing to the success of this new-age office space.





TECH INSIGHTS

Systems Integrator: Fluitech Engineers.

Automation System Used: Control4/ Raylogic

Conferencing Solutions Used: Panasonic

Touch Screens Displays: LG

Lighting Used: ENDO

Lighting Control: DALI/ Phase-cut/ 0-10v

Shading Controls: Hunter Douglas

Security Cameras: Hikvision

Digital Locks: Yale

Projectors: Epson

Amplifier: Denon/ Episode

Sound System: Episode

Sensors: Esylux

Biometrics: ESSL

Hardware used: ESSL

Networking Devices used: Cisco, D-Link, Grandstream



*In the second of this series of articles on **KNX IoT**, Bruno Johnson explains how KNX and the wireless **Thread** protocol bring benefits to Commercial Building Automation.*

The Advantages of KNX Integration with Wireless Thread Protocol in Commercial Building Automation

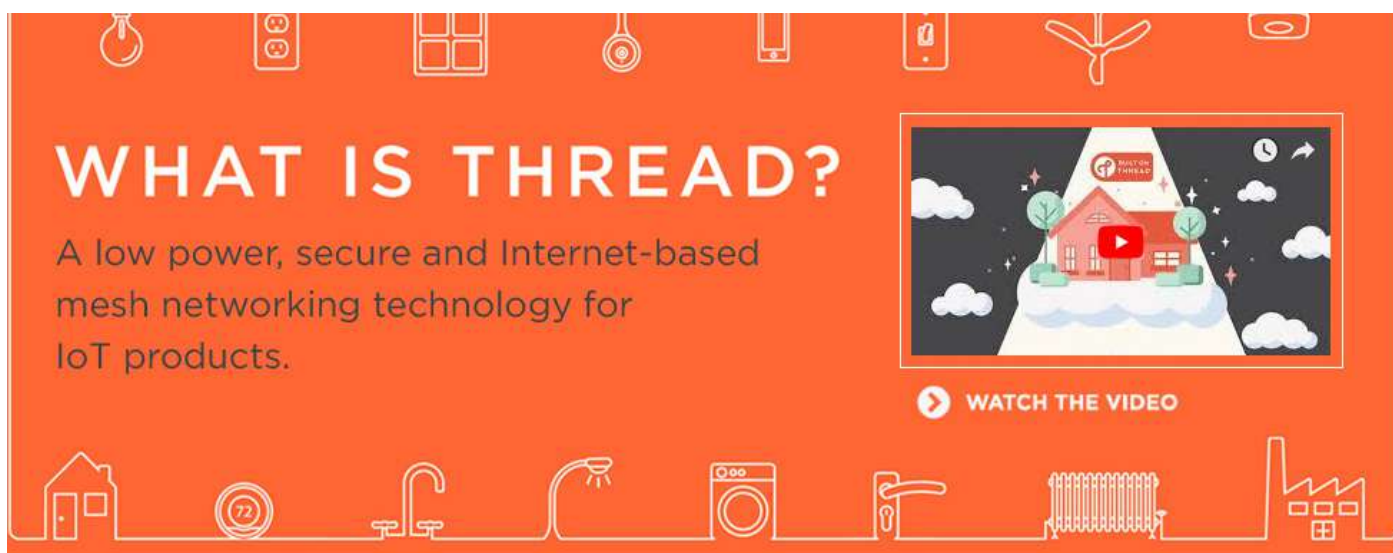
Digital transformation has been one of the main strategy topics on company board meeting agendas for the last few years. The opportunity to develop digital services from cloud-based applications requires Internet protocol (IP) based network connections to edge devices that become the customer interface. Businesses of all shapes and sizes in commercial building automation have been asking for wireless IoT solutions to make this happen.

The wait is finally over and the opportunity is right here, right now, with the launch of KNX IoT Point API (KNX IoT). This is a new addition to the suite of KNX physical transmission media. The transmission medium is IPv6 (the later Internet protocol standard) thus future-

proofing KNX as it can be used on IT equipment and all common IP physical transports.

KNX Association contracted Cascoda, a-UK based IoT semiconductor and communications company, which has spent 12 years building industry-leading knowledge in this area, to develop the KNX IoT Point API open-source software stack, thereby catapulting itself into the leading wireless IoT solution for commercial building automation.

The new open-source software stack is based on the robust, tried and tested Thread Mesh LPWAN wireless standard. This has been extended with banking-level security and all that is required to be a perfect product market fit for KNX users.



What is Thread?

Thread is a IPv6-based low-power wireless mesh network-layer protocol. Thread enables direct IP-based device-to-device and device-to-cloud communications. It reliably connects hundreds (or thousands) of products and includes mandatory security features. Thread mesh networks have no single point of failure, can self-heal and reconfigure when a device is added or removed, and are simple to setup and use.

Why is IP important?

IPv6 vs IPv4

With IP communications, each device has a global unique identifier called an IP address, which allows it to be uniquely addressable over the internet. There are two systems in use, namely IPv4 and IPv6. IPv4 uses a 32-bit address space, which equates to 4.3 billion, while IPv6 has a 128-bit address space which equates 340 undecillion global unique addresses. Thread uses IPv6, thus allowing seamless scalability.

IT vs OT

IP-based infrastructure is already installed in buildings and forms the IT network. IP technology has become fast enough and reliable enough to run our Operation Technology (OT) infrastructure. Since IP technology is also the basis of the internet, IP-based technology is at the heart of any digital transformation strategy.

No gateways

By contrast, non-IP based protocols require

a gateway to connect to the IT network or the internet. The setup, configuration and maintenance of such gateways is complex and often requires an on-site engineer. IP-based technology however simply requires a router. IT professionals are highly proficient at setting up, configuring and maintaining IP-based equipment and tools for performing such work remotely are commonplace.

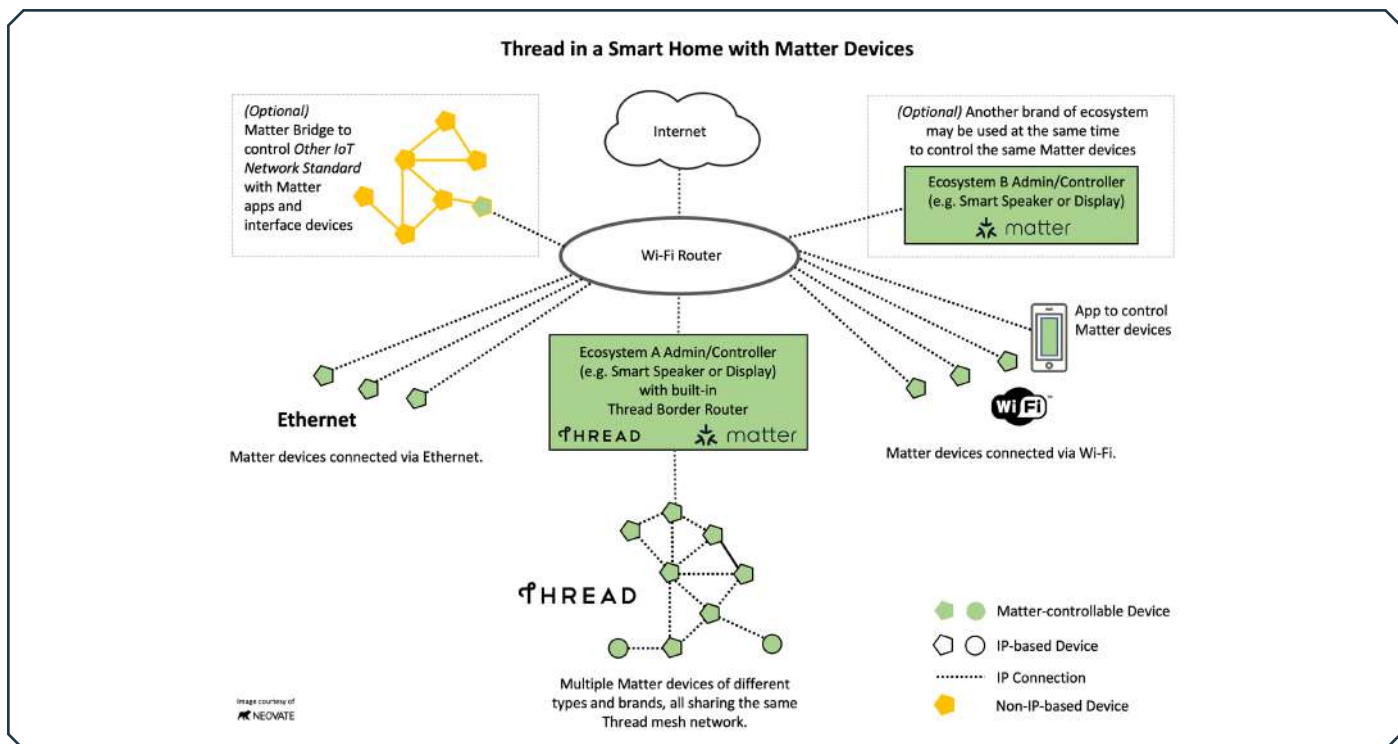
Multi-protocol support

The other major advantage of IP-based technology is that multiple applications can share the same wired or wireless IT infrastructure. This means that for example a Thread network can be installed in a building for the DALI+ lights to be configured, and the KNX IoT HVAC system can later be installed, sharing the same Thread infrastructure of routers. Such sharing of infrastructure is normally not the case with proprietary technology.

Why is wireless important?

Wireless connectivity is important because the cost of wiring-up infrastructure is costly and time-consuming. However, the most common IP-based wireless technology, Wi-Fi, has been designed for the streaming of large packets of voice and video data, rather than the occasional transmission small packets of sensor and actuator data.

Moreover, Wi-Fi is based on a star topology to each access point and even Wi-Fi mesh is based on a star-of-star topology, which limits the maximum number of nodes. Also, Wi-Fi has not been designed to support sleep-



modes and it consumes too much power for long-term battery operation.

Proprietary wireless protocols have been developed to overcome many of the above issues, but they are not IP-based.

Thread mesh

Self-managing

Thread forms a self-managing, self-healing, mesh network. Thread devices can upgrade themselves to routers and downgrade to end nodes dynamically, as the needs of the network change. This allows Thread networks to be installed by unskilled professionals and minimises the need for mesh network management.

Energy efficient

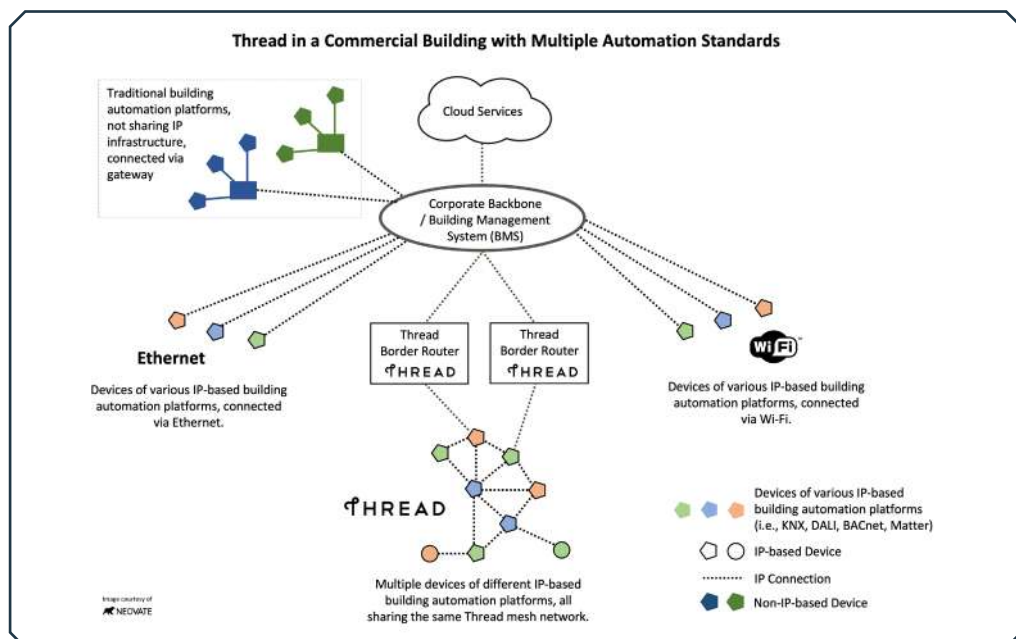
Thread devices can sleep to minimise power consumption, and securely re-join the network at any time. Since Thread has been designed for sleeping and re-joining, the process is seamless and very

fast, which is important for power-constrained devices.

Secure

Thread has been designed with security from the ground-up, and mandates established Internet Engineering Task Force (IETF) security standards. The use of established IETF security standards future proofs Thread against forthcoming cybersecurity standards.

Below is an example of a Building Management System (BMS), using IP-based connectivity, including Thread.



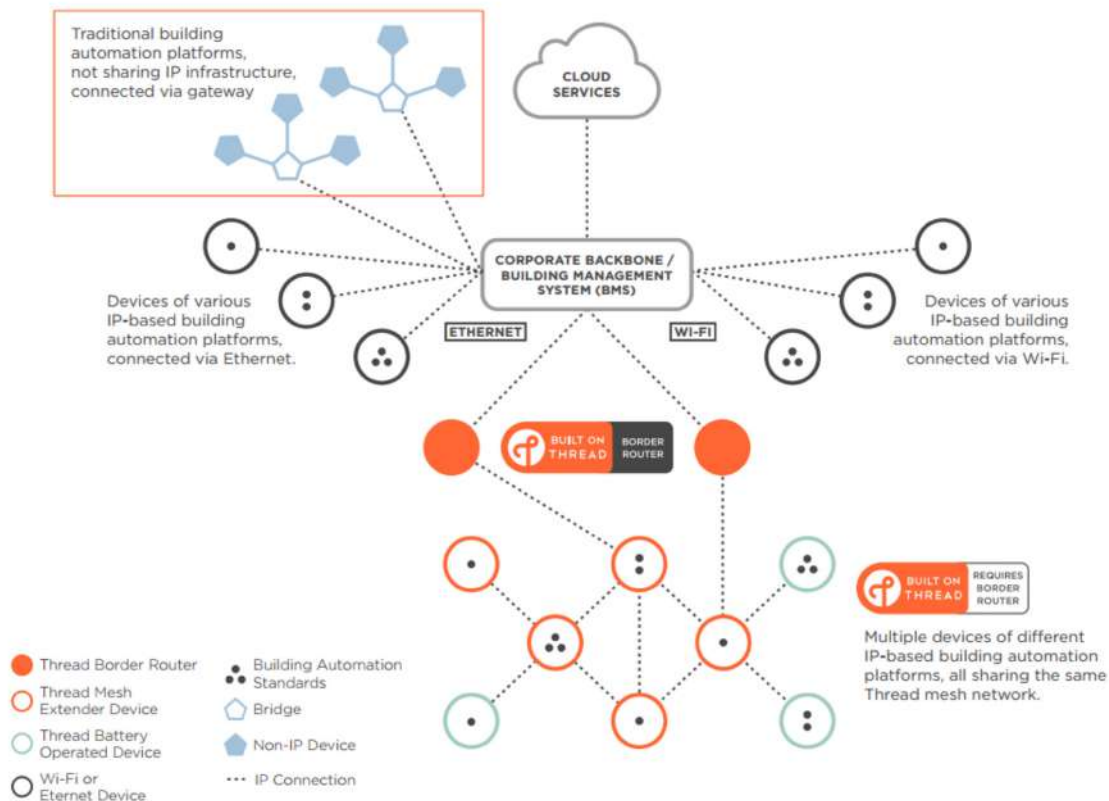


Figure 1 – Thread Smart Building Network Topology, 2022. Courtesy of the Thread Group.

KNX IoT and Thread

The KNX IoT specification and the associated open source software stack have been developed specifically with small low-power embedded devices in mind. This means that the choices made in both the specification

and the stack work very efficiently on Thread devices.

Indeed, Cascoda has implemented KNX IoT on its Thread-certified wireless modules, which run with as little as 512kB of storage memory and 96kB of memory and implemented the security with ARM® Trust zone® constructs.

Summary

The advantages of KNX IoT are that the new technology is IP-based and can therefore be used over IT networks. It has been developed with guaranteed interoperability with existing KNX technology, and it uses latest underlying internet-based technologies in its specification, thereby making KNX IoT secure by design.

Cascoda will shortly be releasing a KNX IoT over Thread development kit, and later a series of reference designs for particular applications. This development kit has been designed for flexibility and allows a huge range of commercially available sensors and actuators to be used, thereby covering thousands of use cases.

Bruno Johnson and Wouter van der Beek

are the CEO and COO respectively of Cascoda Limited. Cascoda is a communications company that manufactures secure IoT semiconductor radios and modules, and leads the development of secure IoT communications standards for smart building and smart city. Its products solve range, reliability, security, power and scalability issues for industrial and commercial IoT through patented innovations and the latest most secure standards, all integrated into inexpensive ultra-low power IoT modules.

For more information: <https://www.cascoda.com>)

(Entelechy are Distributors and Partners for Cascoda in India. For More Info

www.desiit.com ;

Contact Bhavesh Doshi +91 9820629675)

“Tivoli Audio offers traditional craftsmanship, functionality and cutting-edge technology in their Audio products.”

*Paul De Pasquale, CEO of Tivoli Audio Global shares his keen passion for innovation, music, and design. Paul has been heading Tivoli Audio in creating cutting-edge and design-centric audio products that redefine the intersection of style and sound. Under his leadership, Tivoli Audio has set new standards in the audio industry. In an exclusive interview with **Smart Home World**, Paul discusses their state-of-the-art audio products and their plans for the Indian market.*





Tivoli Audio has been in the industry for around 20 years and you've already reached 30 countries. So, what kind of opportunity do you foresee in India?

With our extensive global experience, we have identified common threads that run through many markets in how we represent and position Tivoli Audio. This holds true for the Indian market as well, where we have understood the market dynamics. Our commitment is to provide superior sound quality, innovative audio designs, user-friendly hand controls and high-tech audio products.

For the Indian market, we recognize a unique opportunity. Here, we can be exceptionally open-minded in our approach, exploring diverse strategies and product assortments. By capitalizing on our core strengths and incorporating elements that align with local preferences, we aim to not only maintain but

enhance our brand presence. The goal is to experiment with various initiatives that appeal to different segments of the Indian market, ensuring a versatile and dynamic brand experience.

Through your partnership with Alphatec, you launched four Tivoli Audio products namely -- Model One BT, Music System Home Gen2, Model One Digital Gen 2 and Revive. What has been the response to these products? Can you share the USP of this product line?

Alphatec are a very good partner in our journey, they come with their own skill sets and knowledge of the market. This helps and we have planned various proportional activities for this year. The response to the products launched has been good.

Coming to the USP of each model, the Model One BT boasts a meticulously crafted handmade wood cabinet that not only



enhances its aesthetic appeal but also serves as an acoustically inert housing, ensuring optimal sound quality. Featuring a tuner that significantly enhances the clarity of even the weakest stations and Bluetooth capabilities, this radio offers a unique blend of traditional craftsmanship and modern functionality. Despite its simple appearance, the Model One conceals a wealth of cutting-edge technology, delivering superior sound reproduction and reception compared to anything of similar size in its vicinity.

The ART Generation 2, Model One Digital 2, and the Music System Home GenZ merge advanced technology, premium materials, and minimalist style with Tivoli's renowned audio excellence; these products are designed to elevate your smart home with both sophistication and performance. Keeping the diverse global technology updates, we have equipped our new releases with built-in AirPlay 2 and Google Chromecast, catering to various Wi-Fi access and audio streaming preferences. Supporting both 2.4GHz and 5GHz Wi-Fi bands, our products offer a seamless and user-

friendly experience. Excitingly, we have plans to expand our offerings with various latest compatibilities.

Apart from the residential segment, which are the other segments where your range can be used?

In addition to the residential segment, we have a significant B2B and commercial focus, particularly within the hospitality industry. Collaborating with hotels worldwide, including major groups like Marriott and Starwood, we specialize in providing in-room audio solutions. This involves supplying products such as bedside alarm clocks and in-room audio systems tailored to the specific needs of different hotel segments. Our successful projects extend beyond large hotel chains to encompass numerous boutique hotels. Notably, our work has gained recognition in reputable publications like Wallpaper, further establishing our position in the market. Last year, we also launched a new product in Europe, receiving positive acclaim for its innovative features.

What is the range you plan to get into India from each of these segments?

We are set to introduce several products from our esteemed Classic Collection, representing our heritage line. This collection primarily features radios and FM table radios, all designed with a consistent retro style characterized by wood finishes and a natural aesthetic, delivering a warm and authentic sound. In addition, our Art Collection, known for its wireless offerings, will showcase all three models: Model One Digital, Model Two Digital, and the Music System Home. Each model within this collection boasts distinct characteristics, varying in size and performance profile. However, they all share common features such as Wi-Fi compatibility, AirPlay connectivity, Google Cast compatibility, and seamless integration with Spotify. This diverse range ensures that consumers can choose from various options, each tailored to specific preferences and needs.

What are some key factors that help Tivoli Audio stand out from the rest of the Indian

market? Are there any specific brands that you plan to compete with?

Our brand stands out in the market due to several unique selling points (USPs). Firstly, we prioritize creating special and high-quality products, embodying a unique design that may be perceived as slightly higher in cost. However, we believe in providing a product that offers longevity and a distinctive user experience.

Secondly, we take pride in our commitment to quality and craftsmanship, placing a strong emphasis on customer support and service. We aim to ensure that customers receive ongoing assistance and value from their investment in our products, even as technology rapidly evolves.

Lastly, our brand is increasingly adopting a sustainable mindset. While manufacturing can be inherently wasteful, we are making significant changes in our packaging, materials, and post-sales services to minimize environmental impact. Our warranty policies





align with consumer laws in each country, and beyond that, we offer extended warranty options, repair services, replacement programs, and even trade-in options for certain product lines. This customer-centric approach reinforces our commitment to providing value and support well beyond the initial purchase.

From the wide range of products, which is the most popular model?

One of the most popular models is Model One Digital Gen 2 which seamlessly merges timeless design with advanced technology to deliver an elevated audio experience. Offering wireless connectivity through Wi-Fi, the speaker allows effortless streaming from popular platforms like Spotify, AirPlay, and Google Cast. The Gen 2 version enhances audio performance, ensuring a clear and rich sound profile for a more immersive listening

experience. Intuitive controls maintain Tivoli Audio's user-friendly design, enabling easy navigation and customization of audio settings. With multi-room capability, users can synchronize multiple units, creating a cohesive audio environment. The Model One Digital Gen 2 also provides versatile connectivity, including traditional options like Bluetooth. True to Tivoli Audio's heritage, the speaker features a classic aesthetic with wood finishes and a natural look, making it a stylish addition to any interior

How compatible are your Audio Systems with the technicalities?

Tivoli Audio's latest lineup includes the ART Generation 2, Model One Digital Gen 2, and the Music System Home. These innovations seamlessly blend advanced technology, premium materials, and minimalist style, reflecting Tivoli's commitment to

sophistication and performance in smart home audio.

Our new releases come equipped with AirPlay 2 and Google Chromecast built-in, catering to diverse global smart home preferences as mentioned earlier. Leveraging the latest integrated technologies, our product lineup seamlessly integrates with compatible devices through Bluetooth. Whether it's the classic radio approach or a portable device, Bluetooth connectivity is a standard feature across most of our products. This ensures compatibility with various systems, making our range versatile and easily adaptable to modern connectivity needs.

How competitively are your products priced for the Indian market? Please comment. Do you take customization orders?

Tivoli Audio strategically positions its pricing to offer value beyond what lower-priced Bluetooth speakers provide. While not exclusively targeting the premium category, we cater to customers seeking quality and a unique audio experience.

Customization is part of our ethos. Although we don't handle custom installations directly,



we collaborate with contractors for special projects. For instance, we've partnered with boutique hotels like the Ace Hotel Style in Melbourne, Australia, creating customized versions that align with their brand aesthetics. These collaborations allow us to explore diverse colors and styles, making our products adaptable to different environments.

In terms of product launches, we used to introduce a new product annually, aligning with market trends and customer demands. Our approach ensures a balance between innovation and meeting the evolving needs of our customers.

In your opinion how will advancements in IoT, AI, and cloud computing will impact consumer audio technologies' evolution?

The impact of new technologies on Tivoli Audio has been dynamic. While voice-activated products were explored, they didn't



gain significant traction due to perceived limitations and short-lived use cases. Looking ahead, there's a keen interest in leveraging AI for advanced development processes, particularly in audio products that can measure room acoustics and adjust sound profiles accordingly.

In the context of the hotel business, the focus is shifting towards interconnected products, cloud-based services, and a more customizable guest experience. Tivoli Audio anticipates incorporating these trends into its hotel offerings, aligning with the demand for connected and smart hospitality solutions.

What are your plans for the Indian Market?

As for the Indian market, Tivoli Audio aims not

only to establish a presence but also to sustain positive growth. The plan involves introducing their best products to the market and developing offerings tailored to the unique needs and preferences of Indian consumers. The goal is to become a well-known and trusted name in the Indian market, leveraging the potential for expansion and innovation.

Our primary emphasis is on user-friendly features, given that our products are not geared toward high-end standing speakers or complex pro audio systems. We aim to provide an easy and enjoyable experience for users, irrespective of their technical proficiency. Whether someone is tech-savvy or not, our focus remains on ensuring that everyone can effortlessly engage with our products and have a positive experience.



CES 2024 Puts Artificial Intelligence in the Limelight: Transforming Communication, Business, and Lifestyle

CES 2024 served as a global stage for the dominance of Artificial Intelligence (AI), sparking discussions on its profound impact across communication, business practices, and overall well-being. The event showcased how cutting-edge AI applications are poised to revolutionize various aspects of human life. Digital health emerged as a focal point at the expo, featuring innovative tools and technologies aimed at reducing costs, enhancing health equity, and saving lives. Hisense, a global electronics and home appliance corporation, demonstrated the transformative potential of its home appliances when paired with the ConnectLife smart platform and VIDAA TV operating system. Highlighted products included the 98UX Mini LED TV, 110UX, 75UX, and CanvasTV.

Intuitive and accessible smart home control took center stage, exemplified by innovations like the Uber Cool Mui Board and Samsung's Ballie Home Robot with its roving projection screen. The need for universal accessibility was underscored, emphasizing user-friendly interfaces for everyone.

A noteworthy highlight was the introduction of Map View, with major tech companies such as LG, Samsung, Amazon, and TP-Link's Tapo showcasing new map-based interfaces. These interfaces presented a 3D map view of homes with connected devices placed throughout, allowing users to control devices effortlessly through simple gestures.

The smart home devices, companies like



Philips 5000 Series Wi-Fi Palm Recognition
Smart Deadbolt

GE Cync, Nanoleaf, and Aqara introduced cutting-edge solutions. Kohler continued its commitment to transforming homes into personal sanctuaries, showcasing Anthem+ Smart Showering Valves and Controls, Atmo Fan, and PureWash Bidet Seat, along with new variations of Numi 2.0, Innate, and Veil.

LG's smart home AI agent took center stage, boasting robotic, AI, and multi-modal technologies. With its advanced 'two-legged' wheel design, LG's smart home AI agent showcased independent navigation and the ability to engage in complex conversations.

Samsung Electronics shared its vision for AI technology, with the Neo QLED 8K QN900D featuring a built-in AI Processor, NQ8 AI Gen 3. This processor promised enhanced AI capabilities, automatic upscaling of low-resolution content to 8K quality, and features like Active Voice Amplifier Pro for optimized TV listening.

Samsung's commitment to inclusivity was evident in innovative accessibility features, including a sign language feature and Audio Subtitle feature for viewers with different needs. New releases like The Premiere 8K projector, Music Frame speaker, and the Bespoke 4-Door Flex™ Refrigerator with AI



LG's smart home AI agent

Family Hub™+1 2 were also showcased.

SmartThings Energy stood out as the first to integrate with Tesla's API, enhancing the residential energy experience. Schneider Electric unveiled a groundbreaking home energy management solution, Schneider Home, offering simplicity, intelligence, and sustainability in energy control.

EcoFlow DELTA Pro Ultra introduced the highest capacity whole-house battery generator, designed for both extended outages and daily use. MediaTek showcased its commitment to Wi-Fi 7 technology, presenting a full ecosystem of consumer-ready devices.

CES 2024 showcased a convergence of AI and innovative technologies, setting the stage for a future where intelligence seamlessly integrates into daily life across various domains.



HomeLink Lite(8 Inch Screen)

SmartNode Launches HomeLink and Curtain Flow

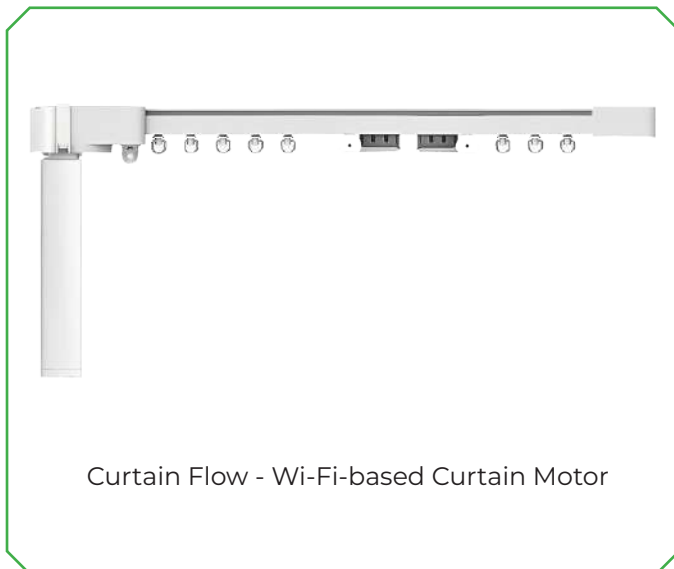
*Smart Node launches two groundbreaking products, **HomeLink**, a Home Automation Screen Panel, and **Curtain Flow**-Wi-Fi-based Curtain Motor. Read on to know more...*

Smart Node, India's premier home automation company, proudly presents its latest innovations designed to elevate your living experience. With a focus on innovation and excellence, Smart Node offers a comprehensive range of smart home solutions, including retrofit automation, KNX automation, sensors, and hotel automation products.

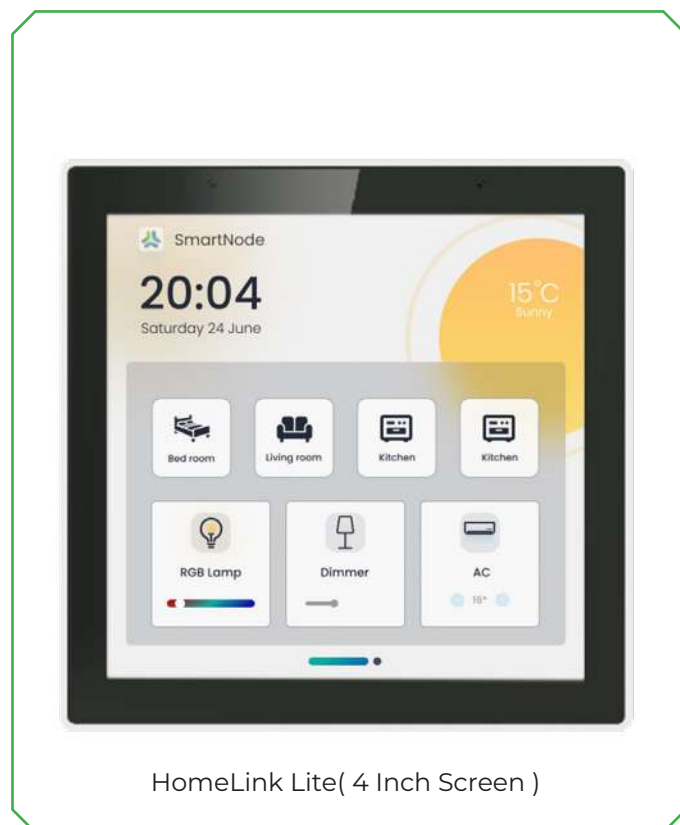
As a leading brand in the country, Smart Node is dedicated to delivering cutting-edge

technology seamlessly integrated into the lifestyles of its customers. This commitment, combined with local manufacturing and unwavering customer satisfaction, positions Smart Node as the preferred choice for those seeking a smarter, more connected living experience in India.

Having successfully transformed over 5000+ homes as of 2023, Smart Node continues to make a significant impact on the Indian



Curtain Flow - Wi-Fi-based Curtain Motor



HomeLink Lite(4 Inch Screen)

home when it comes to providing innovative solutions in the automation segment. Its applications extend to both residential and commercial spaces, catering to diverse needs for smart automation and Smart Technology.

Smart Home World gives you a preview of the two new range...

Curtain Flow - Wi-Fi-based Curtain Motor transforms the way you interact with your curtains. With its seamless connectivity and user-friendly features this Wi-Fi-based Curtain Motor offers:

Multi-Mode Control: Effortlessly control your curtains through various modes - Manual, Remote, Application, Touch Panel, and Voice.

Precision Positioning: Tailor your curtain's position from 0 to 100% in precise steps for the perfect blend of natural light and privacy.

Effortless Scenes Integration: Seamlessly integrate Curtain Flow into your daily life with easy scene creation for automatic opening and closing.

Live Feedback: Stay informed with real-time feedback on your curtain's status, ensuring you're always in control.

Intuitive Pull-to-Open and Close: Effortlessly operate your curtains with a gentle pull, offering a user-friendly and versatile control mechanism.

Their second offering **SmartNode HomeLink and HomeLink Pro** offers the ultimate convenience when it comes to smart home management. The device offers the flexibility of controlling everything at your fingertips.

This smart panel offers:

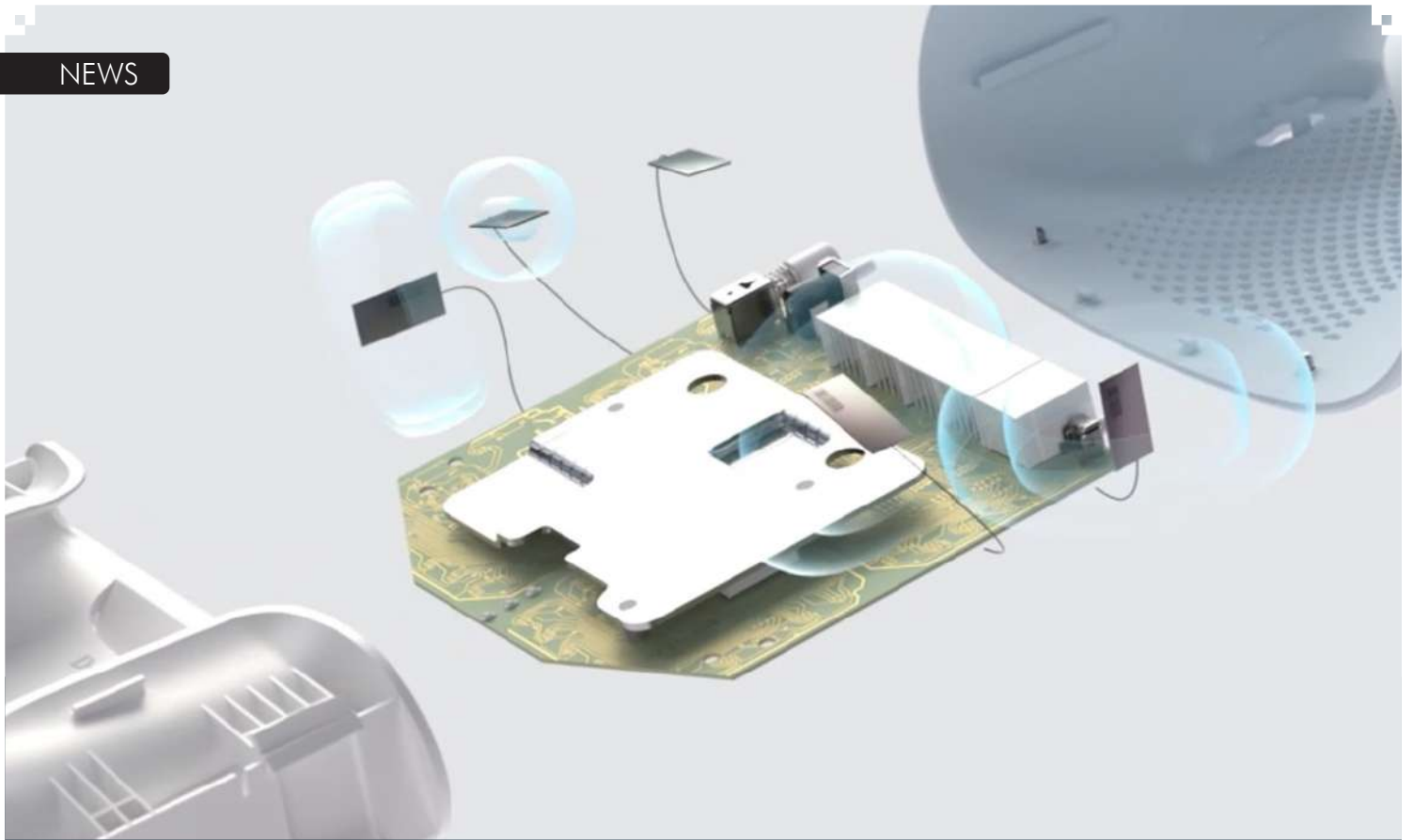
Centralized Control: Effortlessly manage all your smart devices in one place for a streamlined daily routine.

Sleek Design: Enhance your living space with a modern, unobtrusive design that seamlessly blends into your home.

User-Friendly Interface: Navigate and customize your smart home with ease, making smart living a breeze for everyone.

All-in-One Convenience: Access and control various devices effortlessly, eliminating the need for toggling between different apps.

These two products SmartNode's Curtain Flow and HomeLinkPro are redefining the possibilities of home automation, providing convenience and sophistication for a smarter living experience.



D-Link's AQUILA PRO AI Series Introduces New M60 AX6000 Wi-Fi 6 Smart Mesh System

D-Link Corporation is thrilled to unveil its latest addition to the AQUILA PRO AI family – the M60 AX6000 Smart Mesh Wi-Fi 6 system. Striving to provide a worry-free and superior connectivity experience, this MIT (made in Taiwan) Smart Mesh system has passed rigorous engineering and verification processes to ensure exceptional and reliable performance. With the capacity to connect more than 30 devices simultaneously, the AQUILA PRO AI M60 empowers users to stream multiple 4K/8K movies, engage in online gaming, and enjoy uninterrupted video calls, all without a hint of delay.

The M60's elegant appearance is inspired by the concept of the Aquila constellation and the majestic eagle, making it a tasteful addition to any modern home environment. Whether placed horizontally or wall mounted, it showcases technological beauty without compromising your home's aesthetics.

Smart Connectivity Through AI

The AQUILA PRO AI M60's smart connectivity leverages an AI algorithm, including AI Wi-Fi Optimizer, AI Mesh Optimizer, and AI Traffic Optimizer. These capabilities enable optimal channel selection to minimize interference, auto path selection and self-healing for dynamic traffic routing, and AI-based QoS technology that prioritizes real-time applications for a seamless experience.

Unparalleled Wi-Fi Coverage

The AQUILA PRO AI M60 Smart Mesh system boasts a unique 8 internal antenna array design that strengthens Wi-Fi signals, providing spherical coverage and eliminating dead spots. With a 3-pack Smart Mesh system that covers up to 8,000 square feet, it ensures uninterrupted Wi-Fi connectivity from the backyard to the front door.

Ultra-Fast Speed

Through Wi-Fi 6 technology, the AQUILA PRO AI M60 delivers lightning-fast wireless speeds of up to 6 Gbps. With a 160 MHz channel bandwidth, Wi-Fi 6 provides significantly faster speeds than Wi-Fi 5 (80 MHz bandwidth), even with multiple connected devices. The M60 features a 2.5-Gigabit Internet WAN port and four Gigabit LAN ports for wired devices such as smart TVs and gaming consoles, making it ideal for bandwidth-intensive applications.

Enhanced Security

The AQUILA PRO AI M60 complies with the latest WPA3 encryption, IEC 62443-4-1, and ETSI EN 303 645 cybersecurity standards, making it a safer and more secure router to safeguard the network against unauthorized access and protect smart home IoT devices. Advanced parental controls and guest Wi-Fi help keep the whole family safe without compromising network security.

Easy Setup and Management

The intuitive AQUILA PRO AI app makes setup a breeze with just a few taps. The AI Assistant continually monitors network performance and provides weekly reports, even when you are away from home.

The M60 is compatible with Amazon Alexa and Google Assistant for convenient voice-controlled management of smart home devices.

Eco-Friendly Design

The AQUILA PRO AI M60 adheres to the "D-Link Green" program by using post-consumer recycled (PCR) materials for the product chassis, a 99% natural plant-based Mineral Oil Free (MOF) ink for packaging and minimizing components to reduce carbon footprint. Health mode automatically turns off the router during bedtime hours to conserve energy and help improve rest, while the Target Wake Time (TWT) feature helps to ensure energy efficiency and extends device battery life.

The New KEF LSX II LT Wireless Speakers

The New KEF LSX II LT Wireless Speakers completable to W2 Wireless platform allows listeners to stream from major music services, such as Spotify, Tidal, Apple Music, and Amazon Music, while the KEF Connect app and Bluetooth feature expand options even further.

The LSX II LT feature connectivity options including HDMI ARC, USB-C and optical, customers can plug into a TV, desktop, laptop or console. Users can integrate LSX II LT into their smart home to browse and play music, select sources, or use controls such as play, pause, and adjust the volume via their smart home app or control interface. The LSX II LT only requires a single power cord, as the primary speaker powers the secondary one via the interspeaker cable. This is extremely helpful when power sockets are in short supply.



It comes with mounting inserts for placement on the P1 desk pad and S1 floor stand, allowing for easy and flawless integration into all living spaces. Additionally, LSX II LT is compatible with the C-Link interspeaker cable, made with fabric for enhanced durability and protection. With a length of 8 metres, the C-Link cable offers 5 metres more flexibility than the supplied cable, granting greater freedom in positioning the speakers according to personal preference.

The KEF Connect app and powerful EQ DSP can be used to adjust the sound to allow the LSX II LT to best suit the room, users will be walked through the set-up and the system controls after downloading the app.



Sonos Introduces 8-Inch In-Ceiling Speaker

Sonos has introduced the 8-inch In-Ceiling Speaker by Sonos and Sonance, extending the Sonos Architectural line of passive speakers. The 8-inch In-Ceiling Speaker provides installers and customers with a new size option that sits discreetly within the ceiling and delivers powerful, balanced, and clear sound. The 8-inch In-Ceiling Speaker will be coming in Spring 2024 for \$999/pair.

The 8-inch In-Ceiling Speaker, designed and tuned in collaboration with Sonance, features a custom-built, enlarged woofer and high-excursion motor for a smooth midrange, deep bass down to 32 Hz, and a greater listening area. A 30mm tweeter and newly optimized waveguide ensures natural-sounding vocals and better high-frequency dispersion, for wide and even coverage that fills the room with sound.

While the 8-inch In-Ceiling Speaker is bigger in size than the 6-inch, the aesthetics of the magnetic grille are unchanged, ensuring both models can be used seamlessly together in the same space. The grille for both 8- and 6-inch sizes are available in white for a discreet match with the widest range of ceilings and,

thanks to a specially developed steel grille, can be painted to meet the customization needs of every client.

In combination with Sonos Amp, the Sonos Architectural line provides crisp and clear multiroom audio. When paired with Sonos Amp, the In-Ceiling or In-Wall speakers unlock even more benefits, including overdrive protection and custom tuning enhancements that ensure a fuller sound and a balanced frequency response.

In combination with Sonos Amp the 8-inch speakers also benefit from Trueplay tuning, which accounts for the size, construction, and furnishings of the room where the speakers are placed, and automatically adjusts the EQ for optimal sound.

Like all Sonos Architectural speakers, the 8-inch In-Ceiling Speaker paired with Sonos Amp will benefit from the Sonos ecosystem, including an app that works with all of your favorite streaming services, Apple AirPlay 2 control, regular software updates, and the ability to add additional Sonos speakers and components over time.

Wi-Fi Alliance® introduces Wi-Fi CERTIFIED 7™



Wi-Fi CERTIFIED 7™ has been unveiled, introducing advanced features to enhance Wi-Fi® performance and connectivity across various environments. This latest Wi-Fi generation, Wi-Fi CERTIFIED 7, is set to

revolutionize use cases such as multi-user AR/VR/XR, 3-D training, gaming, industrial IoT, and automotive applications. The certification promises high throughput, deterministic latency, and increased reliability for critical data transfer.

Wi-Fi 7 is expected to witness swift adoption with over 233 million devices entering the market by 2024 and a projected growth to 2.1 billion devices by 2028. Early adopters, including smartphones, PCs, tablets, and access points, will be followed by customer premises equipment (CPE) and augmented/virtual reality (AR/VR) devices.

Key features of Wi-Fi CERTIFIED 7 include:

- ▶ 320 MHz channels: Doubling the widest channel size to facilitate multigigabit device speeds and high throughput.
- ▶ Multi-Link Operation (MLO): Enables devices to transmit and receive data simultaneously over multiple links, enhancing throughput, reducing latency, and improving reliability.
- ▶ 4K QAM: Achieving 20% higher transmission rates than 1024 QAM.
- ▶ 512 Compressed block-ack: Improving efficiency and reducing overhead.
- ▶ Multiple RUs to a single STA: Enhancing flexibility for spectrum resource scheduling to improve spectrum efficiency.
- ▶ Triggered Uplink Access: Optimizing Wi-Fi 6 defined triggered uplink access for latency-sensitive streams and satisfying Quality of Service (QoS) requirements.
- ▶ Emergency Preparedness Communication Services (EPCS): Providing a seamless National Security & Emergency Preparedness (NSEP) service experience while maintaining priority and quality of service in Wi-Fi access networks.

Wi-Fi Alliance® has garnered support from industry leaders including Broadcom, CommScope RUCKUS Networks, Intel, MaxLinear, MediaTek, and Qualcomm. The

certification is anticipated to propel the adoption of Wi-Fi 7, delivering faster speeds, improved efficiency, and increased reliability to redefine the Wi-Fi experience.



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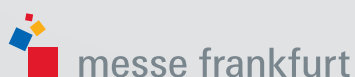
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