



# How will high-rise living **shape future emergency warning systems?**

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## In the global spotlight

To meet urbanisation demands, the world is seeing unprecedented growth in the construction of high-rise buildings. As a result, the effectiveness of public over-the-air warning systems is compromised as the increase of building structures may obstruct sound travel. How can we innovate to ensure emergency messages reach the population reliably and promptly?

## Tackling the issue

If over-the-air public warning systems are losing its effectiveness due to the changing urban landscape, an alternative is to enable the sound of warning sirens to radiate from within the building. This ensures all occupants in the building are able to respond swiftly to any emergency situations. To address this challenge, FreeSystems is developing the Wireless In-Building Notification System (WINS) in partnership with the Singapore Civil Defence Force (SCDF).

## What makes the solution innovative

The Wireless In-Building Notification System (WINS) will be the first of its kind in the world. Easy to install and highly adaptable in different environments, it harnesses a mesh network architecture that allows communication nodes to be rapidly deployed in different building configurations. Even as individual nodes get disrupted, the network has the ability to heal by itself to ensure minimal downtime.



## **Singapore's role in developing the solution**

Singapore's high-rise buildings serve as the ideal environment to test the Wireless In-Building Notification System (WINS), which is designed to complement our current Public Warning Systems. FreeSystems is exploring a potential partnership with the Singapore Civil Defence Force to test bed WINS.

## **Exploring new frontiers**

With rapid urbanisation, governments today look for solutions to effectively broadcast public messages in densely populated cities so as to better manage emergency situations. Having established Singapore as its base for research and product testing, FreeSystems will use the city-state as a reference model for future projects.

## Background on solution provider

FreeSystems is a local integrated circuit design company that develops advanced microchips for wireless audio transmission and digital audio processing. Over the years, FreeSystems has developed a unique set of core competencies, and demonstrated the capability and capacity to support major CE customers and technology partners in rapid product realisation. The company's technologies are widely used in digital wireless headphones and speakers to receive CD-quality digital audio.



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## **What is *Singapore: Future Ready*?**

*Singapore: Future Ready* articulates Singapore's aspiration to be an ingenious partner for global businesses as they develop their ideas for tomorrow's solutions. We do so by recognising the value of long-term relationships, adopting a forward-looking approach, and taking on challenges with a can-do spirit. Against the backdrop of an ever-changing economic landscape, it also underlines Singapore's unique ability to help companies deliver solutions more quickly, with the right combination of talent, innovation, and strategic leadership.

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