

Secure wireless connected future with Light Communication

HomeGrid Forum working on the certification for Visible Light Communication (VLC) and Light Communication (LC)

The Visible Light Communication (VLC) industry is growing at a rapid rate and is set to exceed ten billion devices by 2023, according to HomeGrid Forum President Dr Len Dauphinee. Today, Dr Dauphinee laid out a roadmap of the future of VLC and its role alongside G.hn in promoting a secure wireless environment.

Speaking ahead of DEF CON 27, a hacker convention that takes place immediately after Black Hat USA 2019, Dr Dauphinee highlighted the potential that VLC has for environments where there is sensitive information that could be the target of a cyberattack. These environments include financial institutions, government buildings, critical businesses and military bases.

"VLC is a wireless technology with a unique ability to support specific use cases and eliminate common issues in environments -- particularly where there are concerns surrounding security," said Dr Dauphinee. "VLC requires a line of sight between a light source and a connected device, meaning VLC eliminates the risk of data interception by outsiders which are out of sight. It offers a vastly enhanced security platform that other technologies cannot provide, which is crucial in environments where sensitive data is transmitted."

"For an environment where users need high levels of security as well as high density connectivity, VLC provides low latency and avoids the overcrowding that is often seen with the radio frequency spectrum where Wi-Fi operates," added Dr Dauphinee. "VLC also supports larger bandwidths, can act as both a source and receiver, has low power consumption and is easy to install."

The hybrid combination of a G.hn wired network with a VLC wireless network can provide a secure, robust, and flexible connectivity solution for any environment without requiring new infrastructure. G.hn can use existing powerlines, coaxial cable or telephone wires and VLC can use existing LED lighting with the addition of a modulator.

"This is an exciting time as the drive towards VLC gathers momentum. At CES, we announced HomeGrid Forum was expanding to include VLC, Smart Grids, the IoT and Connected Cars to reflect the role that a G.hn backbone can play in these

technologies," explained Dr Dauphinee. "The International Telecommunications Union (ITU) followed this by announcing that a new ITU standard for VLC (ITU G.9991) based on G.hn would establish the foundations for the growth of the VLC market whilst market leaders have recently announced a slew of new products using G.9991 based products."

Only months after anticipating the need for specific requirements within certain markets and technologies, HomeGrid Forum has extended its G.hn profile to include VLC. Applications for G.9991 technology are not limited to visible light. The same technology can be applied to infrared and laser light under the broader technology category of Light Communications (LC).

To further these developments, HomeGrid Forum is now working on a certification for LC high-speed indoor optical wireless communication products.

"Wireless connectivity technology is already well-established with the support of Wi-Fi, but it is time to expand the capabilities of wireless connectivity and explore what more we, as an industry, can achieve," continued Dr Dauphinee. "The potential for VLC and LC is enormous, but everyone needs to feel secure and safe as the industry progresses forward, especially as technology is driving forwards at such rapid speeds. VLC and LC technology are key parts of making wireless connectivity more secure."

For more information about HomeGrid Forum, VLC, and LC, please visit: www.homegridforum.org

HomeGrid Forum: HomeGrid Forum (HGF) is an industry alliance that brings together the world's best in technology innovators, silicon vendors, system manufacturers, and service providers to promote G.hn, a globally recognized gigabit home networking technology based on ITU-T standards. G.hn is the most reliable and versatile wireless home network backbone available today. Our members promote the global adoption of G.hn, a single unified, multi-sourced networking technology – over coax, copper pairs, powerline, and plastic optical fiber. HomeGrid Forum provides G.hn silicon and system certification through a strict compliance and interoperability testing program.