

LG Innotek Develops the World's First Automotive Wi-Fi 6E Module

- **Automotive-qualified near-field, wireless communication components based on Wi-Fi 6E**
- **Improved communication performance, durability, and applicability**
- **“LG Innotek will accelerate the evolution of in-vehicle infotainment”**

LG Innotek (CEO Cheol-dong Jeong) announced on the 2nd of this month that it has developed the world's first automotive Wi-Fi 6E module with next-generation Wi-Fi technology. This breakthrough will allow LG Innotek to occupy a vantage position in the vehicle communication module market, which has been led by Japan until now.

Automotive Wi-Fi 6E modules are near-field wireless communication components connecting in-vehicle infotainment (IVI) systems, which control driving information and multimedia content, to internal smart devices and external routers. With the next-generation Wi-Fi 6E (6th Generation Extended) technology using 6GHz bandwidth, the module boasts data transmission speeds approximately 3 times faster than the existing Wi-Fi 5.

This product is a module that combines a communications chipset, a radio frequency (RF) circuit, and other components. The module is mounted on multiple components of a vehicle, including the audio-video-navigation (AVN) system and smart antenna. A passenger can enjoy movies, games, and more on the in-vehicle display or audio system by wirelessly connecting it to a smartphone. The module also allows easier software updates of the automotive navigation system and such.

With the development of automatic driving technologies, vehicles have turned into spaces for entertainment and rest. This change led a fierce technological competition among component makers over the core component for in-vehicle infotainment: automotive Wi-Fi module. However, Wi-Fi 6E was not suitable for cars due to its limited communication performance caused by the compact vehicle interior.

Despite this challenge, LG Innotek has successfully developed the world's first Wi-Fi 6E module with advanced RF and antenna technology. The company has accumulated development capabilities in automotive communication for many years from 2005. Using this experience, LG Innotek has improved data transceiver performance by the new RF structure and antenna design with minimum communication interference. LG Innotek had continuously proved its advanced

technologies in the market. The company previously launched the world's first 2nd Generation Automotive V2X Full Module, 5G Automotive Communication Module, and a brand-new Digital Key Module with improved accuracy and security.

■ **Improved communication performance, durability, and applicability**

With the automotive Wi-Fi 6E module, a passenger can enjoy high-definition movies or AR/VR games conveniently through the in-vehicle display. High-resolution videos often buffer while playing with the current Wi-Fi modules.

This new product has a data transmission speed of 1.2 Giga bit per second, which is three times faster than the existing Wi-Fi 5 modules. It only takes 2 milliseconds to connect to the network, which is seven times faster than the current speed. This is why there is no buffering for high-resolution videos.

Such an improvement in networking speed is possible because Wi-Fi 6E uses 6GHz band in addition to 2GHz and 5GHz bands; the higher the frequency, the larger the data transmitted. Also, available bandwidth becomes twice as wide as that of 2GHz or 5GHz. Simply put, the data speed increases as the available volume and pathway of data grows.

The Wi-Fi 6E module also enables seamless internet use with multiple connections. The unique RF and antenna technologies prevent interference even in a compact space as a vehicle.

Also, this product is so highly durable that can withstand temperature changes between -40°C and 85°C. The module is not easily deformed by the low temperature in winter, and it can endure the heat generated by data transmission. The new module is made to tolerate repeated shrinking and swelling by a larger synapse surface design.

High applicability is a plus. The automotive Wi-Fi 6E module has a small and slim form factor and is compatible with existing modules. For this module, LG Innotek put together more than 200 components including communications chipset and RF circuit in the one-sixth of a credit card size using the company's high-density/superfine modulization technology. Besides, it can be applied to existing devices without any design change as it is compatible with current Wi-Fi modules.

■ **“LG Innotek will accelerate the evolution of in-vehicle infotainment with innovative products”**

With its automotive Wi-Fi 6E module, LG Innotek plans to target the global automotive communications component market. The company tries to secure a leadership position in the market by catching up with Japanese companies that currently have a dominant share.

To do so, LG Innotek is executing promotional activities targeting global automotive components suppliers in North America, Europe, Japan, and China. The company expects to commercialize

the product in 2022. It especially plans to do joint promotions with Germany's Infineon Technologies, which supplies Wi-Fi 6E automotive chipsets.

Sung-kug Kim, VP, and Head of the Automotive Components Business Unit said, "The importance of IVI for the next-generation mobility will grow further. Our automotive Wi-Fi 6E module will accelerate the evolution of IVI. LG Innotek will continue to provide the customers with innovative products enabling convenient, safe, and enjoyable driving experience."

According to Techno Systems Research (TSR), a global market research institute, the demands for automotive Wi-Fi communication modules will grow by 70%, from 51.2 million units in 2020 to 87.3 million units in 2025.

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[Photo description] An LG Innotek employee presents the automotive Wi-Fi 6E module. This module enables near-field wireless communication both inside and outside the vehicle with improved communication performance, durability, and applicability.

About LG Innotek Co.,Ltd.

LG Innotek is a cutting-edge materials and components manufacturer and an affiliate of the LG group. The company's business units include core components for mobiles, automotive, display, semiconductors, and IoT. Furthermore, the company has cooperated closely with the mobile devices, home appliances, and automotive companies, producing camera modules, automotive electronic components, wireless communication modules, and substrate materials.

LG Innotek is headquartered in Seoul, Korea and its sales subsidiaries are located in Germany, USA, China, Japan, and Taiwan with production subsidiaries in China, Vietnam, Indonesia, Mexico, and Poland. For more information, please refer to the website: www.lginnotek.com