MEDIATEK

An Ultra High-Speed Wi-Fi 7 Broadband Gateway Solution

Case Study

Challenge

Deutsche Telekom Group sought to develop a highly advanced broadband gateway capable of supporting its portfolio of broadband and fiber internet services. As German's leading telecom service provider, this CPE device is intended for large-scale, nationwide residential deployment so it must ensure high-performance, low-latency, and reliable broadband, Ethernet and the latest Wi-Fi 7 connectivity.

The system requirements were complex, including a comprehensive set of custom-designed hardware components tightly coupled with RDK-B software integration by Deutsche Telekom Digital Labs Team, while also ensuring seamless interoperability across in-home devices, broadband access services, cloud-based services, and companion mobile application.

The hardware architecture was required to support key technologies such as multi-WAN operation, including GPON, DSL, Ethernet, and cellular failover, while concurrently running multiple software applications for operator services. In addition, the wireless platform needed to integrate seamlessly with existing home network infrastructures and support interoperability with third-party AI and Mesh networking solutions.

This was Deutsche Telekom Group's first Wi-Fi 7 product program, the most ambitious system integration of their in-house software to date, and the first collaboration of this kind with MediaTek Group.

Results:

On 28 October 2025, Deutsche Telekom officially launched the Speedport 7 router, powered by Airoha AN7551 SoC, and MediaTek Filogic 7600 that provides state-of-the-art Wi-Fi 7 BE7200 with simultaneous dual band (2.4 GHz and 5 GHz) operation. Speedport 7 supports DSL and fiber connectivity up to 2Gbps. It features three 1 Gbps LAN ports, one 2.5 Gbps WAN port, a USB 3.0 port, and a DECT base station.

The device controls Mesh extenders for whole-home networking and mobile-based internet outage backup, intuitive app-based management, and built-in protection against online threats. The design is targeted to precisely meet Telekom customers' core expectations: the Speedport 7 is simple to use, fast, reliable, and secure.

Solution

MediaTek engaged with Deutsche Telekom through the full customer journey, committing to support client's requirements directly through close partnership.

Meeting operator requirements necessitated a unique collaboration framework, including dedicated program management, local EU resources, and multiple onsite support teams. This also involved establishing specific SQA processes and new methods of collaboration using Deutsche Telekom–managed software repositories.

This collaboration oversaw compatibility with MediaTek platforms, software customization, and integration of third-party applications, while ensuring that quality, performance, and reliability targets essential for customer satisfaction were met.

MediaTek also adapted essential technologies such as Wi-Fi 7 Multi-Link Operation and EasyMesh to the required RDK-B framework.

Quote

" *The success of the Speedport 7 is a direct result of the comprehensive joint work between DT and MediaTek teams. MediaTek's holistic approach enabled us to bring the most advanced broadband and connectivity technologies to our customers throughout Germany, without compromising on the critical requirements of performance, reliability, interoperability, and security.*

Speedport 7 is now widely deployed, and we are thrilled by positive customer feedback: its Net Promoter Score is excellent, and public benchmarks confirm its Wi-Fi performance edge. "

Pedro Bandeira,
Senior Vice President Home Products
at Deutsche Telekomt

About
MediaTek

About
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