The number and variety of connected devices, applications, and services that consumers use in the home continues to increase, from PCs, 4K video streaming, and virtual reality to security systems and home management dashboards. As a result, home networks require more reliable Wi-Fi connectivity that extends to the furthest corners of a home. Intel® Home Wireless Infrastructure is a portfolio of technologies that delivers consistent Wi-Fi performance and expanded coverage in the home to address this need. It is optimized for a wide range of connectivity scenarios and supports virtually all client devices in the home network. With a tightly integrated hardware and software architecture, the new technologies allow any home network to be intelligently managed to deliver reliable, robust, and power-efficient performance as well as optimal coverage.

Robust and Consistent Throughput

Intel Home Wireless Infrastructure is well suited for tri-band intelligent range extenders and supports two concurrent 5 GHz channels, offering flexibility for a 5 GHz Wi-Fi backhaul or wired backhauls like Ethernet or G.Hn. The architecture allows dynamic multi-hop extension with limited throughput degradation. As a result, it is able to deliver consistent performance of at least 100 Mbps across the home for static and mobile clients, which is higher than most system designs available today.

Reliable Connectivity

Intel Home Wireless Infrastructure provides dynamic channel management and Dynamic Frequency Selection (DFS) mitigation to alleviate the most critical Wi-Fi challenges, including minimizing internal interference and optimizing channel usage and congestion following radar detection. In addition, infrastructure-controlled steering of clients between extenders and/or Wi-Fi channels, coupled with extender load balancing, enables the Wi-Fi signal to be optimized in order to deliver more reliable and consistent Wi-Fi connectivity.

Client Scalability

Intel Home Wireless Infrastructure supports a breadth of devices that connect to a home network, including clients that support 802.11k/v and most legacy devices. The technologies implement system-wide fairness that takes into account bandwidth usage and traffic type to deliver the appropriate quality of service to each device. Customers also have access to advanced statistics and both Android* and iOS* application frameworks to visualize home connectivity scenarios.
# Technology Features

| Radio and Network Resources Manager | • Up to four intelligent range extenders, two hops  
| • Self-organizing, dynamic topology  
| • Steering of mobile clients for optimized path loss – legacy and 802.11v/k clients  
| • Dynamic system-wide Wi-Fi channel assignment for overall network capacity optimization and DFS mitigation  
| • Load balancing between bands and extenders  
| • System-wide Wi-Fi service fairness |

| Key Infrastructure Features | • Over-the-Air (OTA) software updates are synchronized between gateway and intelligent range extenders  
| • On-boarding over Ethernet or Bluetooth* Low Energy (BLE) Proximity (via mobile application)  
| • Self-healing analytics, diagnostics, and failure detection  
| • Network Management User Interface  
| • Local and cloud access  
| • Application samples for Android* and iOS*  
| • Scalability to support API for network analysis application |

| Performance | • Consistent throughput greater than 100 Mbps  
| • Near-seamless client handoff with mobile devices (supporting 802.11v) |

For more information on Intel® products for the connected home, visit [intel.com/connectedhome](http://intel.com/connectedhome).

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