

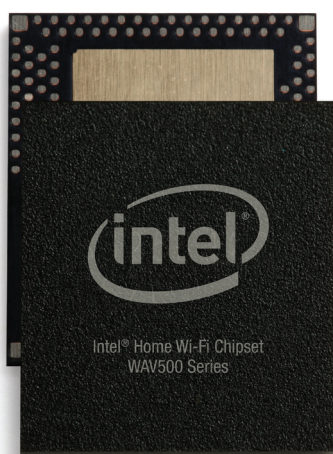
PRODUCT BRIEF

Connected Home
Intel® Home Wi-Fi Chipset WAV500 Series



Advanced Wi-Fi Solution Optimized for Home Networks

Intel's 5th Generation Chipset for 802.11ac Access Point Technology



Wi-Fi has become ubiquitous in the home, and Intel offers the only Wi-Fi solution in the marketplace that can support aggregated Gigabit speeds in a multi-client environment with up to 128 clients simultaneously.¹ This offers our customers exceptional performance to meet the needs of today's connected home infrastructure and scalability to handle the expected rapid growth of the number of connected devices in the home.

The Intel® Home Wi-Fi Chipset WAV500 Series is engineered to deliver best-in-class throughput rates for a mix of small and large packet sizes for Cable, xDSL, Fiber, and consumer retail gateways to help ensure optimal performance across devices and applications. It is optimized for the Intel® AnyWAN™ SoCs and Intel® Puma™ 7 Family to fully offload the wireless functionality with zero CPU utilization, freeing the CPU performance for advanced services such as security, analytics, photo/video hosting, and cloud storage while delivering a consistent user experience.

Improved Speed

The WAV500 Series provides 802.11ac speeds of up to 1733 Mbps, enabling providers to deliver up to eight times faster Wi-Fi speeds than 802.11n. This allows for smoother streaming of higher resolution 4k videos, fewer dropped connections, less congestion, and higher speeds for remote clients. With beamforming, MU-MIMO, and dynamic bandwidth control, the WAV500 Series also offers the highest aggregated throughput in the industry.¹ As the number of wireless clients in the home increases, it is critical to deliver robust throughput to each client separately.

Larger Capacity

The WAV500 Series introduces a new chip architecture that obtains and optimizes each transmission to enhance the total network efficiency. When running small to medium packet sizes in Internet MIX (IMIX) traffic scenarios, the WAV500 Series outperforms competitive solutions.² It also includes advanced airtime fairness, highly intelligent band steering technologies, and traffic shaping to enable high-quality video transmissions and management of the home network.

Better Coverage

The WAV500 Series utilizes various data transmission techniques to provide enhanced reach and coverage, including Low-Density Parity-Check (LDPC), Maximum Likelihood decoders, linear decoders, and Space-Time Block Coding (STBC) linked with explicit and implicit beamforming techniques.

Superior Interference Rejection

The WAV500 Series uses advanced radio frequency technology to deliver robust interference rejection of other Wi-Fi interference and non-Wi-Fi noise such as LTE, Bluetooth,* and Zigbee.

Intel® Home Wi-Fi Chipset WAV500 Series Technical Specifications

General

Dimensions (W x D)	14 mm x 12 mm MRQFN 164-pin
Digital Technology	Maximum Likelihood, LDPC, STBC (2x1), explicit and implicit beamforming
Full CPU Offloading	Supported for Intel® AnyWAN™ SoC GRX350, GRX550 and GRX750, and Intel® Puma™ 7 Family
Connectivity	<ul style="list-style-type: none"> • 128 clients and 16 virtual access points per radio • WDS 4 address mode AP-client support • L2NAT client mode support
Connector Interface	PCIe, 2.0
Operating Temperature (Adapter Shield)	0° to +70° C
MU-MIMO	4 clients in each MU-MIMO group; supports up to 16 MU-MIMO groups
Operating Systems	Linux* 3.10.xx
Wi-Fi Alliance	<ul style="list-style-type: none"> • Wi-Fi CERTIFIED for 802.11ac, Wi-Fi CERTIFIED a/b/g, Wi-Fi CERTIFIED n, WMM,* WPA,* WPA2,* and WPS2.0, PMF • Passpoint 2.0 for hotspots
AnyClient* BF	Supports implicit AnyClient BF for legacy 11g/a/n products and standard explicit 11ac BF
IEEE WLAN Standard	IEEE 802.11abgn, 802.11ac, 802.11d, 802.11e, 802.11i, 802.11h, 802.11w
Roaming	Software support for 802.11k/v/r/ai and band steering algorithm
Dynamic Bandwidth	Supported on per-packet basis
Security	
Authentication	WPA and WPA2, 802.1X (EAP-TLS, TTLS, PEAP, LEAP, EAP-FAST), EAP-SIM, EAP-AKA
Encryption	64-bit and 128-bit WEP, AES-CCMP; GCMP-128 and WAPI support by hardware
Wi-Fi Direct* Encryption and Authentication	WPA2, AES-CCMP
Management Frame Protection	802.11w (WFA-Protected Management Frames)
Compliance	
Government	FCC Section 15 relevant chapters, ETSI EN 300328 v1.9.1, and EN 301 893 V1.7.1

Product Name	Model Number	Classification
WAV512/513/514	PSB83512M/513M/514M	802.11n, 2.4G 2x2/3x3/4x4, up to 800 Mbps PHY rate
WAV522/523/524	PSB83522M/523M/524M	802.11ac, 2x2/3x3/4x4, up to 1733 Mbps PHY rate

For more information on Intel® products for the connected home, visit intel.com/connectedhome



¹ Aggregated throughput comparison of WAV500 Series and similar Wi-Fi chipsets, in the IXIA IxVeriWave* WaveBlade* Wi-Fi Module.

² UDP throughput comparison of WAV500 Series and similar Wi-Fi chipsets in the IXIA IxVeriWave* WaveBlade* Wi-Fi Module.

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