

## 7th Generation Wi-Fi SoCs for Wi-Fi 7 based on IEEE 802.11be

### PRODUCT FAMILY (6GHz + 5GHz + 2.4GHz)

MxL31712 Tri-band (4 + 4 + 4)

MxL31708 Dual-band (4 + 4)

### FEATURES

- IEEE 802.11be Compliant
- Wi-Fi Alliance™ Wi-Fi 7 Certifiable
- Up to 320MHz and 4096 QAM
- Up to 12 spatial streams
- Up to 18.6Gbps PHY throughput

### HIGHLIGHTS

- Single-chip Wi-Fi 7 solution reduces board complexity, size, and BOM cost
- Seamless coordinated view of multi bands for optimal MLO experience
- On-the-fly MAC architecture optimizes packet scheduling
- Reduces dead spots with dedicated chain for ZWFDS

### APPLICATIONS

- Gateways
  - Cable, Fiber, Copper, Ethernet, 2-Box, FWA
- Routers, Access Points, Extenders, Repeaters, Mesh



Our new Wi-Fi 7 SoCs offer a world’s-first single SoC solution with best-in-class throughput, coverage, and performance. It is built on IEEE 802.11be standard, also called Extremely High Throughput (EHT), and delivers 11.5Gbps of peak throughput on the 6GHz (6E) spectrum. This makes the throughput more than twice as fast as previous generation, Wi-Fi 6. The increase is accomplished together by doubling the bandwidth to 320MHz and enhancing the modulation to 4096 QAM.

The single-chip solution offers unique advantages well beyond reduced board complexity, lower BOM, and smaller form factor. It provides a single seamless coordinated view of data flows across multiple channels in dual- and tri-band configurations for faster recovery from retransmissions in heavily congested environments like MDUs (Multi Dwelling Units). The chipset also has improved “on-the-fly MAC” architecture for enhanced network efficiency while boosting the throughput for small and large packet sizes in the network.

The MxL31712 and MxL31708 are the first SoCs with a dedicated antenna for Zero Wait DFS, which maximizes the opportunity to use radar channels in 5GHz without compromising performance to the connected clients. As the number of clients continue to increase within the home, the new chipset is future-proofed for connecting 256 Wi-Fi clients simultaneously.

The chipset is optimized for MaxLinear’s AnyWAN™ (URX) broadband SoCs and Puma™ family SoCs to fully offload the wireless traffic with zero CPU utilization. This frees up the CPU for advanced services such as edge compute, rendering for the Metaverse, security, analytics, photo/video hosting, and parental controls while delivering a consistent user experience.



Wi-Fi 7 SoCs that enhance gaming and AR/VR experiences

## Wi-Fi 7: A New Era of Connectivity

Wi-Fi 7 is built to maximize overall network capacity, minimize latency, and increase speed to every device at home, including legacy devices. Wi-Fi 7, built on IEEE 802.11be standard and technically referred to as “Extremely High Throughput (EHT)”, doubles the bandwidth to 320MHz versus Wi-Fi 6 at 160MHz and creates multiple links between the access point and devices, allowing transmission of large amounts of data quickly. Wi-Fi 7 further optimizes the usage of the same limited spectrum while making the connection significantly robust. We’ve built our latest Wi-Fi chips to realize the full potential of this next-gen technology.

### Wi-Fi 7 Key Features

Throughput	Latency Reduction	Enhanced Robustness	Reach
 <ul style="list-style-type: none"><li>6GHz: 320MHz</li><li>4K QAM</li><li>MRU</li></ul>	 <ul style="list-style-type: none"><li>Multi RU (MRU)</li><li>Multi Link Operation (MLO)</li><li>Restricted TWT</li></ul>	 <ul style="list-style-type: none"><li>MRU</li><li>MLO</li></ul>	 <ul style="list-style-type: none"><li>All Bands: MCS15</li></ul>

Double the bandwidth to deliver more content faster

Reduced network latency for improved Metaverse experiences

Enhanced robustness for reduced interference and improved security

Extended range for better coverage

### New Applications Drive Wi-Fi Technology



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