

AQRATE® 8-PORT ETHERNET PHY

2.5GBASE-T | 1000BASE-T | 100BASE-TX 8-Port Ethernet PHY

The Aquantia® AQRate AQR809 is the world's only 8-port, multi-gigabit (2.5GBASE-T/1000BASE-T/100BASE-TX) Ethernet PHY in the industry. AQRate technology enables higher speed connectivity for client systems like workstations, PCs, NAS, and new 802.11ac WLAN access points bridging the bandwidth gap between legacy Enterprise cabling infrastructure designed for 1 Gbps data rates and new applications that demand bandwidth in excess of 1 Gbps. AQRate delivers 5 GbE and 2.5 GbE network connectivity speed through 100 meters of Cat 5e or Cat 6 cabling enabling the unabated roll-out of 802.11ac WLAN infrastructure and other new use-cases with zero changes to legacy cabling or infrastructure.

AQRate PHYs are compatible with both the IEEE® 802.3bz standard and NBASE-T™ Alliance PHY Specification to perform all of the physical layer functions required to implement 2.5GBASE-T/1000BASE-T/100BASE-TX transmission over 100 meters of twisted pair cabling. The AQRate PHY family integrates such features as Energy Efficient Ethernet (EEE), 1588v2, and MACsec, and supports all PoE standards up to 100W.



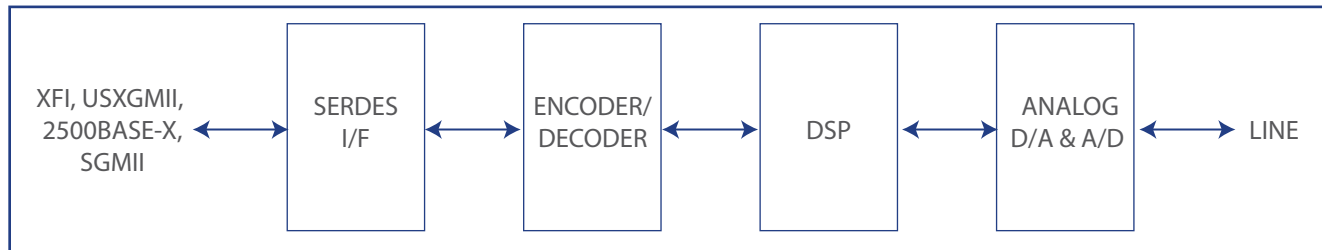
DEVICE NAME	SPEEDS	LINE RATES
AQR809	3-speed	2.5 Gbps/1 Gbps/100 Mbps

8-Port

The AQR809 is a multi-gigabit, 8-port PHY housed in a compact 23 mm flip-chip BGA package enabling the most efficient high-density design for high port-count and compact switches.

FEATURES	SUMMARY OF BENEFITS
<ul style="list-style-type: none"> • IEEE 802.3bz and NBASE-T compliant, featuring AQRate Adaptive Rate Operation <ul style="list-style-type: none"> - Supports 2.5GBASE-T/1000BASE-T/100BASE-TX • Integrated MACsec, 1588v2, EEE support <ul style="list-style-type: none"> - Full support for AES-256 and stand-alone operation • Advanced Cable Diagnostics <ul style="list-style-type: none"> - On-chip high-resolution cable analyzer • Built-in Thermal Management <ul style="list-style-type: none"> - On-chip thermal sensor with alarm and warning thresholds • High-Performance Interfaces <ul style="list-style-type: none"> - Full KR with auto-negotiation/XFI/USXGMII/2500BASE-X/SGMII 	<ul style="list-style-type: none"> • 100 meters over Cat 5e and Cat 6 at 2.5 Gbps/1 Gbps/100 Mbps <ul style="list-style-type: none"> - Requires no change to existing infrastructure or cabling • MACsec, 1588v2, EEE <ul style="list-style-type: none"> - Enables refresh of legacy switches without ASIC re-spin • Robust Radio Frequency Interference (RFI) Performance <ul style="list-style-type: none"> - Resilient operation when exposed to RFI • Comprehensive Interface Support <ul style="list-style-type: none"> - Supports legacy and next-generation MACs/switches/processor interfaces

AQUANTIA AQRATE PHY BLOCK DIAGRAM (PER-PORT)



APPLICATIONS

Aquantia's AQRate is a game changing technology that enables Enterprise Networking to evolve beyond 1 Gbps to 5 Gbps and 2.5 Gbps data rates. The AQR809 8-port PHY is ideally suited for high-port density and compact switches that support from 8 to 48 ports of multi-gigabit traffic providing significantly reduced complexity and area than possible with lower port-count PHYs.

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