

A Look into the New Crescendo: Up to 64x Faster

The new Ethernet Crescendo performs smart polling features that increase communications speeds up to 64x faster than a poll/response cycle with a conventional 19.2 kbps data radio. This improvement puts the Ethernet Crescendo beyond radios with more complex modulation schemes - whilst maintaining the reliability, selectivity and data integrity of a traditional 4-level FSK radio.



Polling is the process where a base radio sends and receives data from every subscriber in a network. The table below compares a typical poll time for a 19.2 kbps radio to the actual poll time of the new Crescendo Media Access Control (MAC). Max Poll Time represents a complete (quick) polling sequence plus two simultaneous packets of unsolicited data to report to base, whereas Min Poll Time represents an open poll – a single packet in the uplink direction from any arbitrary subscriber in the network.

Subscriber Count	Example Typical Poll Time (ms)	Max Poll Time Crescendo MAC (ms)	Min Poll Time Crescendo MAC (ms)	Speed-up
5	1,000	310	155	From 3.2x up to 6.5x
10	2,000	335	155	From 6x up to 12.9x
20	4,000	385	155	From 10.4x up to 25.8x
30	6,000	435	155	From 13.8x up to 38.7x
50	10,000	535	155	From 18.7x up to 64.5x

The smart polling features include adaptive slots that, instead of running long payload frames despite the size of the packet, 'vary on-the-go' up to the maximum slot size, so that small transmissions remain air-time efficient. The open poll function allows the best-case poll time for an arbitrary large subscriber network to take the same time it takes to poll and receive data from a single subscriber.

Another speed improvement of the Ethernet Crescendo is the TCP/IP Gateway function. Besides being a perfect match for linking LAN systems, this feature forwards data at the IP level, removing the link layer overheads while still being able to address each subscriber individually. It also gives more deterministic response times as no ARPs are sent across RF links.

These new features ensure the new Ethernet Crescendo is suitable for large wide-area networks where high speed, low latency Ethernet and TCP/IP links are required.

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