

Multigigabit over UTP Copper: Assessing Cisco Catalyst 3850 and 4500E Multigigabit Performance

Can conventional UTP (unshielded twisted pair) cabling support bi-directional data transmission at data rates over 1 gigabit/s? It turns out it can, and depending on cable type, as much as 10 gigabit/s, using Cisco’s new Multigigabit technology, or mGig.

In this fascinating study, Miercom tested the data-carrying capacity of UTP – including widely installed Cat5e (Category 5 enhanced) cable – at data rates above and beyond 1 gigabit/s.

Cisco mGig technology is offered in the form of standard line modules for various Catalyst switching systems.

What We Measured

Miercom’s job was to independently validate the performance of Cisco’s Multigigabit technology. Our test bed was devised to ascertain the maximum bi-directional data rate that could be auto-negotiated and sustained over copper-cable environments:

- Cat6a UTP cable is the newest form of copper transmission infrastructure.

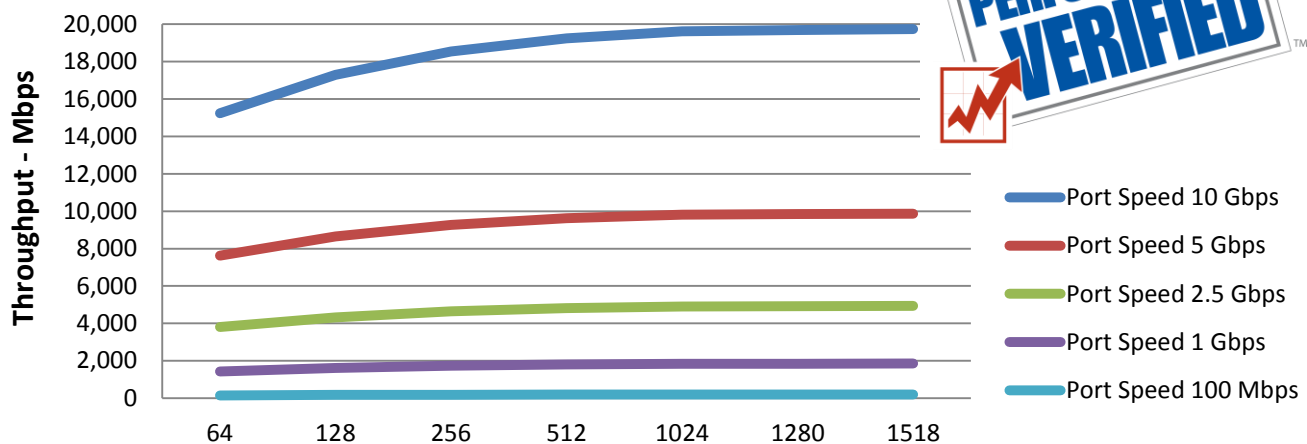
- Cat6 UTP cable, a slightly older copper transmission infrastructure.

- Cat5e UTP cable, a vast portion of earlier, already installed copper transmission infrastructure.

Key Findings

- With Cat6a cable, the Multigigabit ports auto-negotiate and operate at the full 10-gigabit/s rate in each direction – yielding 20 gigabit/s of combined bi-directional bandwidth.
- A 100-meter run of Cat5e and Cat6 UTP cable, connecting Multigigabit port on Catalyst 4500E and 3850 switches can support 10 Gbps of full-duplex transmission (5 gigabit/s in each direction).
- RJ-45 Multigigabit ports support all the same in-line power options: including standard PoE, PoE+, and delivery of 60W of power via Cisco Universal Power over Ethernet (UPOE).

Cisco Catalyst 4500E ↔ 3850 mGig-port Connection via 100m Cat6a Cable
Bi-directional Throughput



Copyright © Miercom 2016. For 28 years Miercom has been the world leader in independent security and performance testing. Miercom has published hundreds of network-product-comparison analyses that are free to consumers. Testing is based on a methodology that is jointly co-developed with the vendor. We’re Miercom, it’s what we do.



Scan to read the full report or visit www.miercom.com/cisco