

# ION-E® approaches theoretical speed limit using MIMO and carrier aggregation

A recent speed test of the CommScope ION-E® unified wireless infrastructure solution, using MIMO and carrier aggregation on an LTE network, yielded a downlink speed of 215.45 mbps—96 percent of the theoretical maximum.

The test, conducted on the LTE network of a major carrier, featured collocated 2 x 2 MIMO UAPs placed three meters apart. Carrier aggregation at the base station combined a 15 MHz LTE channel in the 1800 MHz band and a 15 MHz LTE channel in the 2600 MHz band.

Under ideal conditions, the theoretical peak data rate of this setup is 225 Mbps.



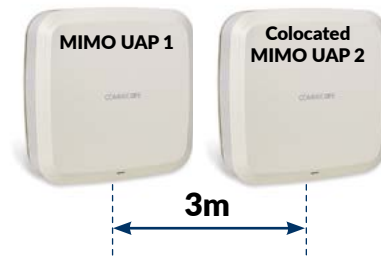
Ookla Speedtest Interface

## MIMO + carrier aggregation boosts LTE spectral efficiency and data rates

Multiple-input, multiple-output (MIMO) technology and carrier aggregation have been important strategies in helping wireless operators increase spectral efficiency and data rates in their LTE networks.

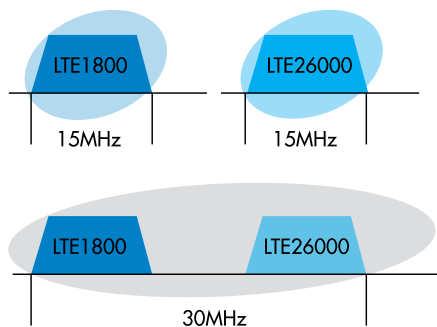
MIMO enables the parallel transmission of independent data streams over multiple channels. It uses multiple antennas spaced at least 10 wave lengths apart to guarantee adequate signal separation. In addition to increased capacity and data rates, MIMO can also provide the diversity necessary to help guard against channel fading.

Carrier aggregation can further enhance LTE efficiency by combining the bandwidth of two frequencies. The combined frequencies can be those of adjacent carriers, carriers within the same band or carriers in different bands.



## ION-E designed to support advanced wireless technologies and strategies

The recent speed test helps quantify the benefit of pairing MIMO and carrier aggregation with a unified wireless infrastructure solution. The ION-E is technology adaptive and designed to support emerging transmission strategies, including MIMO and carrier aggregation. The platform combines licensed wireless and Gigabit Ethernet into a single network.



Two blocks of 15 MHz bandwidth combined to create a single 30 MHz bandwidth using carrier aggregation.



It features multiband, multi-operator and multi-technology capabilities. Because the platform runs on standard IT structured cabling common in most commercial buildings, ION-E significantly reduces installation complexity, time and cost.

For information about ION-E, or to learn more about using it with MIMO and carrier aggregation in order to optimize your network efficiency, visit CommScope In-Building Wireless solutions.

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