onsemi Advances Industrial Ethernet with 10BASE-T1S Controller

The NCN26010 supports multi-point Ethernet with up to 70% fewer wires and an 80% reduction in installation costs

PHOENIX – June 21, 2022 – onsemi (Nasdaq: ON), a leader in intelligent power and sensing technologies, today announced a new 10BASE-T1S Ethernet controller designed to provide reliable multi-point communication in industrial settings. The NCN26010 enables more than 40 nodes on a single twisted pair, exceeding five times the amount of nodes requested by the IEEE 802.3cg standard, to reduce installation cost and set-up complexity.

For in-cabinet wiring, the NCN26010 reduces wiring up to 70% while significantly increasing bandwidth. In backplanes, it simplifies the layout and power distribution without impacting data rates or latencies. Many applications, such as elevators, will be able to increase data throughput over existing wiring with the new device and, due to the ability to carry power over data cables, complex sensor networks can be built upon simple and low-cost cable runs.

"The NCN26010 enables multi-drop networks which reduces the total number of networks for large installations," said Michel De Mey, vice president of the Industrial Solutions Division, onsemi. "Customers benefit from our solution being smaller and easier to integrate than previous controllers."

The new controller implements multi-drop 10BASE-T1S (802.3cg) Ethernet that is an effective replacement for legacy point-to-point and multi-point industrial communication standards. The T1S MAC/PHY can replace RS-485, CAN, RS-232, HART and others. As a result, greater data throughput is achieved over existing wiring, eliminating the need to re-pull wires which is often the greatest expense in a networking installation.

Single-Pair Ethernet installations based upon the controller reduce the number, volume, and cost of wiring while the multi-drop capability allows for multiple nodes, such as sensors, to be connected to a single twisted pair. The NCN26010 also features a proprietary enhanced noise immunity feature which is essential for installations in electrically noisy industrial environments.

Additionally, the NCN26010 has lower capacitance on the line pins than existing T1S solutions which allows for more nodes to be implemented on a single network. As the communication with the NCN26010 can be over SPI, the pin count is lower and the package size is smaller. The NCN26010 is the industry's first PHY + MAC controller for 10BASE-T1S and can connect to controllers, sensors and other devices without the need for an external MAC.

The NCN26010 and supporting development hardware are available now through onsemi sales support and authorized distributors.

About onsemi

onsemi (Nasdaq: ON) is driving disruptive innovations to help build a better future. With a focus on automotive and industrial end-markets, the company is accelerating change in megatrends such as vehicle electrification and safety, sustainable energy grids, industrial automation, and 5G and cloud infrastructure. **onsemi** offers a highly differentiated and innovative product portfolio, delivering intelligent power and sensing technologies that solve the world's most complex challenges and leads the way to creating a safer, cleaner, and smarter world. **onsemi** is recognized as a Fortune 500® company and included in the S&P 500® index. Learn more about **onsemi** at www.onsemi.com.

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