



Low profile, efficient, reliable chip inductor solutions for industrial IoT applications

The global Internet of Things (IoT) industry is currently thriving. With current trends, experts predict the industry will keep expanding through the coming years as designers build devices and systems further enhance our personal and professional lives.

In industrial settings, IoT systems greatly simplify, organize, and increase the efficiency and reliability of industrial processes at both the pilot and commercial scale with new applications springing up in manufacturing, medicine, transportation, and more every year.

To design intelligent IoT systems for industry, manufacturers must overcome several limitations. In the communications sector, common problems with RF/

wireless devices include electromagnetic interference, impedance mismatching, signal reflections, and power losses.

Inductors are passive components used for several purposes in modern systems, such as in 'choking' operations to inhibit AC current while allowing the flow of DC, in electrical noise filtering, RF tuning, and more.

OEMs require high-reliability products from reliable supply networks to ensure stable production of high-quality products. Additionally, these components should be sufficiently lightweight and low-profile to cater to systems that are becoming increasingly miniaturized.

With some of the highest Quality Factor (Q-Factor)

ratings, high-current handling capability, and smallest dimensions in the industry, Eaton's [Multi-layer \(MCL\)](#) and [Wire-wound \(WCL\)](#) chip inductors are suitable for a wide range of IoT devices and systems. Both products are small-footprint, surface mount devices for high-frequency RF/ wireless circuits.

The MCL family of chip inductors are small-footprint components with a multi-layer construction that provides a great balance between Q-factor, direct current resistance (DCR), and inductance tolerance. Eaton's MCL inductors are suitable for a wide range of industrial applications, such as in RF matching for wireless devices, as chokes/filters to minimize EMI in circuits, and for resonance setting in mobile

communications equipment.

Eaton's WCL chip inductors feature a wire-wound construction on a ceramic core. They are low-profile components which offer an extremely high Q-factor, high current-handling capability, and are suitable for use in RF matching in antennas, Bluetooth/Wi-Fi devices, power amplifier circuits, resonance tuning in IF circuits, and more.

Eaton is a global leader in electronics manufacturing with extensive partnership channels with leading OEMs/ODMs/EMS from across the globe. Our vast selection of magnetic components is quality-assured and certified to global industrial and environmental standards with user-friendly product selection tools to aid product sorting and procurement.

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