WIRELESS CHARGING

The Cutting-Edge, Sleek Way to Charge Mobile Devices

Molex Wireless Charging Solutions offer quick charging capabilities without a cable. And instead of a clumsy cradle, cell phones can be placed in a convenient tray with a multi-coil system that always ensures fast and efficient charging.

Why Molex?

The intense use of smartphones in daily life drains their batteries, creating anxiety for users when phones “die.” In response, Molex has developed a convenient in-vehicle method of quickly charging mobile devices without depending on a cable.

How does it work?

To achieve maximum coverage, Molex Wireless Charging Units feature hardware that meets broad requirements, making it compatible with the communication protocol Qi (pronounced “chee”). Qi is part of the Wireless Power Consortium (WPC) and is widely used, having been adopted by more than 200 companies.

Qi is based on the principles of inductive coupling and uses an electromagnetic field. The charging process automatically starts when a device needing charging is placed in the tray and then stops when the battery is either fully recharged or the device is removed. If the device is not compatible with the Qi protocol, the system switches off immediately, protecting the device from interference.

Why does it matter?

Molex Wireless Charging Solutions create a perfect environment to integrate smartphone use in cars:

- Convenient charging without cables via multi-inductive coil system
- Compatibility with a wide range of devices by following the Qi protocol

This cutting-edge solution has broad applications in all segments, including both the mass and premium markets.

Benefits

Delivers quick and convenient in-vehicle charging of phones and other devices without a cable

Enables phones and other devices to be positioned any way in the tray via multiple-inductive coil system, which ensures optimal charging capacity

Delivers superior reception when combined with Molex antenna coupling

Identifies automatically the presence of metal (e.g., coins) in the tray to avoid overheating
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Technical Specifications

COMPATIBILITY STANDARDS
Qi (WPC = Wireless Power Consortium)
CAN/LIN
Optional
• Coupling antenna (GSM/UMTS/LTE)
• NFC
• BTLE

SIGNALIZATION
Via CAN/LIN -> Head Unit
LED

POWER
Transmission power: 5W / 8W / 15W
Efficiency: up to 74%
Power supply: 9 – 16V
Fixed frequency: 110kHz to 135kHz
Multi Coil Solution
Smart Device Cooling:
• Passive
• Active (integrated):
  Cooling of the smartphone during charging and independently from charging

MEMBERSHIPS AND TECHNOLOGY COOPERATIONS
WPC full member; member of automotive application group
NFC-Forum associated member
Texas Instruments
NXP

KEY-FOB INTERFERENCE REDUCTION
Self-contained by wireless charging system
Initiated by the car

AUTOMOTIVE REQUIREMENTS
Temperature: -40 to + 85°C
Litz Wire Coils
Flexible Ferrite (for automotive)
EMI: Shielding for electronic and electrical field
Safety:
• Detection of foreign objects
• Fixing the mobile phone in its original position

CYBER SECURITY
Physical Security
Security Assessment

COMPLETE SOLUTIONS TO ACHIEVE YOUR VISION
Our capabilities are constantly evolving to meet the demanding requirements for autonomous driving, infotainment and connectivity. We take an holistic solution approach to achieve end-to-end connectivity and optimal performance.