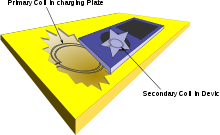
**INDUCTIVE CHARGING**

**Inductive charging** (also known as **wireless charging** or **cordless charging**) uses an [electromagnetic field](https://en.wikipedia.org/wiki/Electromagnetic_field) to transfer [energy](https://en.wikipedia.org/wiki/Energy) between two objects through [electromagnetic induction](https://en.wikipedia.org/wiki/Electromagnetic_induction). This is usually done with a [charging station](https://en.wikipedia.org/wiki/Charging_station). Energy is sent through an [inductive coupling](https://en.wikipedia.org/wiki/Inductive_coupling) to an electrical device, which can then use that energy to charge [batteries](https://en.wikipedia.org/wiki/Battery_(electricity)) or run the device.

Induction chargers use an [induction coil](https://en.wikipedia.org/wiki/Induction_coil) to create an alternating electromagnetic field from within a charging base, and a second induction coil in the portable device takes power from the electromagnetic field and converts it back into electric current to charge the battery. The two induction coils in proximity combine to form an electrical [transformer](https://en.wikipedia.org/wiki/Transformer).[[1]](https://en.wikipedia.org/wiki/Inductive_charging#cite_note-hsw-1)[[2]](https://en.wikipedia.org/wiki/Inductive_charging#cite_note-pat6972543-2) Greater distances between sender and receiver coils can be achieved when the inductive charging system uses [resonant inductive coupling](https://en.wikipedia.org/wiki/Resonant_inductive_coupling).

Recent improvements to this resonant system include using a movable transmission coil (i.e., mounted on an elevating platform or arm) and the use of other materials for the receiver coil made of [silver](https://en.wikipedia.org/wiki/Silver) plated [copper](https://en.wikipedia.org/wiki/Copper) or sometimes [aluminium](https://en.wikipedia.org/wiki/Aluminium" \o "Aluminium) to minimize weight and decrease [resistance](https://en.wikipedia.org/wiki/Electrical_resistance) due to the [skin effect](https://en.wikipedia.org/wiki/Skin_effect).

A wirelessly powered [model car](https://en.wikipedia.org/wiki/Model_car) at the [Grand Maket Rossiya](https://en.wikipedia.org/wiki/Grand_Maket_Rossiya) museum.

[](https://en.wikipedia.org/wiki/File:Inductive_charging.svg)

The primary coil in the charger induces a current in the secondary coil in the device being charged.

[](https://en.wikipedia.org/wiki/File:Wireless_Charging_Pad_2018.jpg)

Wireless charging pad used to charge devices with the Qi standard.

**Applications of inductive charging can be divided into two broad categories: Low power and high power**:

* Low power applications are generally supportive of small consumer electronic devices such as [cell phones](https://en.wikipedia.org/wiki/Cell_phones), handheld devices, some computers, and similar devices which normally charge at power levels below 100 watts.
* High power inductive charging generally refers to inductive charging of batteries at power levels above 1 kilowatt. The most prominent application area for high power inductive charging is in support of electric vehicles, where inductive charging provides an automated and cordless alternative to plug-in charging. Power levels of these devices can range from approximately 1 kilowatt to 300 kilowatts or higher. All high power inductive charging systems use resonated primary and secondary coils.