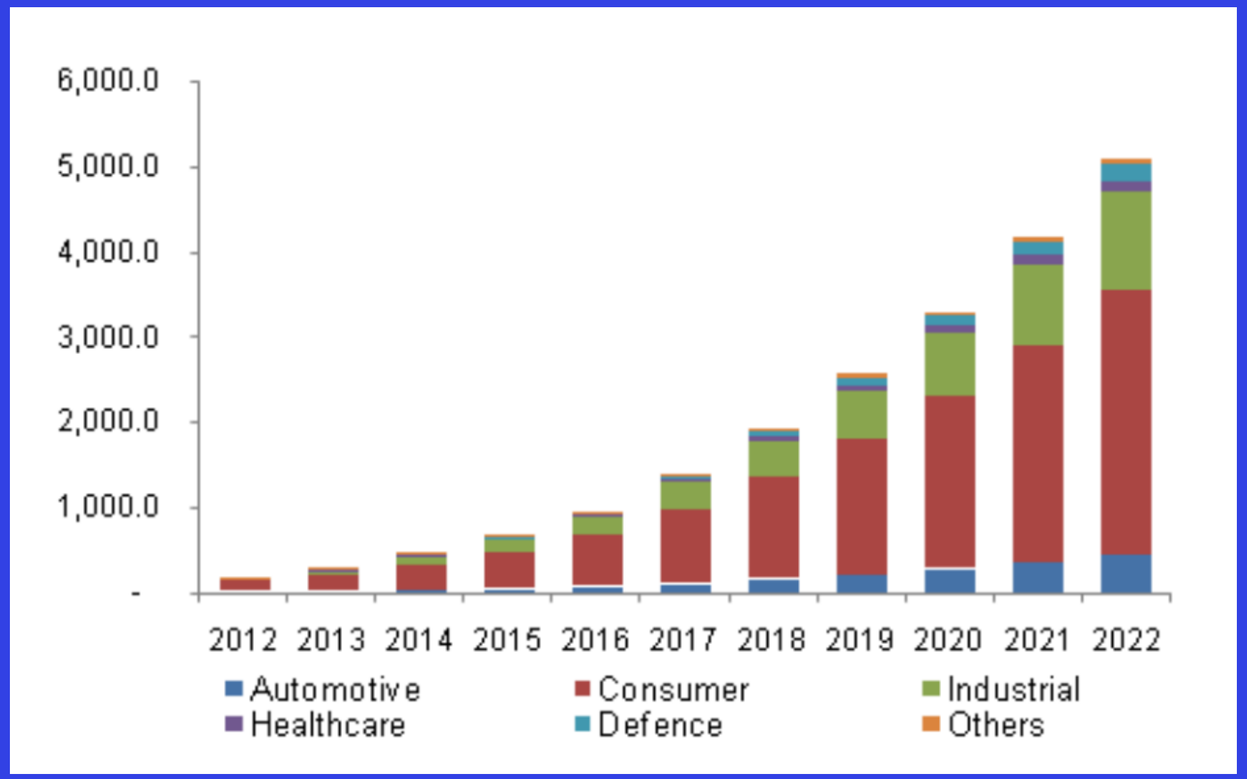
Wireless Power for Electrical Devices

Imagine using an electrical device that didn't need to plugged in.

LUXX Light Technology

But first...

Market Trends for Wireless Power



In 2012, the market started very small and was comprised entirely of consumer applications (basically phones and tablets). In 2015, the market grew to just under $1 billion.

Today, growth for 2016 is projected to exceed $1 billion. By 2022, wireless power is expected to achieve aggressive growth of over $5 billion.

It will most likely continue to be dominated by the consumer market, though it is hoped to expand to the industrial and automotive markets.

Future Proof Wireless Power

Whether you’re looking to get rid of a power port, remove something you don’t want in the system, or advance your product from water-resistant to waterproof, wireless power is the perfect solution for you.

Wireless power supports a multitude of real-world applications with anywhere from 0 to over 50W of power transfer with an efficiency level of over 80%.

No installations, no batteries, no recharging, the power will be there! Welcome to the world of future proof wireless power!

What is Wireless Power

First and foremost, let’s define what wireless power transfer is and how it works.

As you may have guessed, wireless power transfer is the transmission of electrical energy from a power source to an electrical device without the use of cord conductors.

Since wireless charging is such a widespread need among both consumers and businesses, the technology is constantly improving and becoming more common in industries all across the board.So how does wireless power work?

Fundamentally, it uses a basic concept most engineers are very familiar with: Resonant inductive coupling. Also known as magnetic phase synchronous coupling it consists of inductive coupling where the coupling becomes stronger when the "secondary" (load-bearing) side of the loosely coupled coil resonates.

Examples of Wireless Power Applications

There are countless applications for wireless power transfer. Here are just a few examples of what companies are currently trying to achieve:

- Starbucks: phone charging stations at coffee tables
- Appliances: cordless kitchen appliances for the home
- Bosch: cordless power drills for construction sites
- Delphi: in-cabin phone charging and infotainment systems for vehicles
- IKEA: integrated furniture and lighting for entirely wireless homes

Problem

Installation

Getting power to a point, where it is needed, costs time, efforts and money. Example scenarios:

Retail

Routing wires on the retail floor can create a safety hazard, and dropping them from the ceiling can be ugly, expensive, or both.

Running power cables require certified electricians and make it difficult for stores to rearrange store layouts due to where the sources of power are located.

Problem → Installation

Residential - Bathroom

Everybody has a power cord coming out in the middle of a bathroom ceiling and a 2nd one at an illuminated mirror cabinet.

The lack of outlets and easy to access power points limits your ability to plug in multiple components such as hair blow dryers, curling and flatting irons, or electronic toothbrushes.

Installation

Problem

Commercial - Window

Nowadays windows (and doors) have modern features inside the double-glaze insulation glass, like inside window blinds, LCD shutter films, security features and many more.

All these need power. While cables break over the time and are hard to insulate (especially with air tight and gas filled windows), a wireless power transmission keeps them trouble free.

Solution

Worlds first long-range, high-efficiency wireless powering solution for commercial LED lighting applications

01

All that is needed is a sender, receiver, and antennas.

02

Power is wirelessly transmistted across a 10' radius.

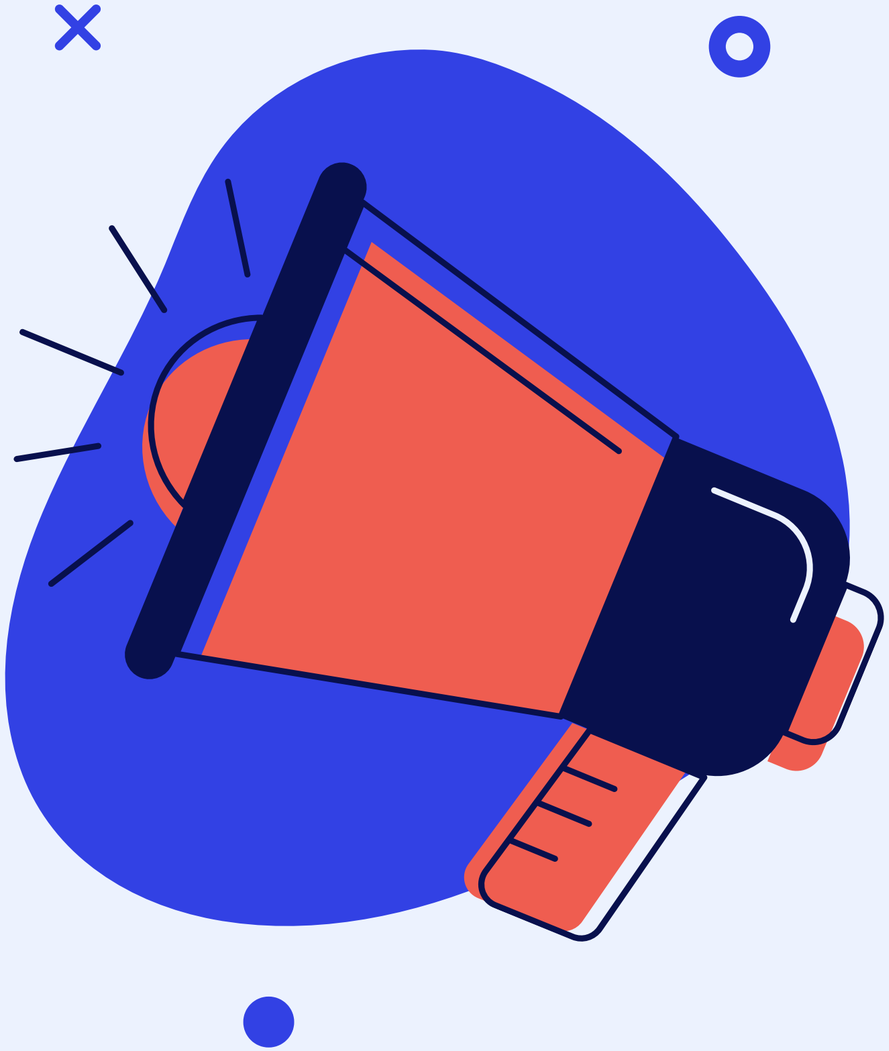
03

The efficiency level of transmisstion is over 80%.

Solution Benefits

Wireless power opens the door to flexibility and efficiency:

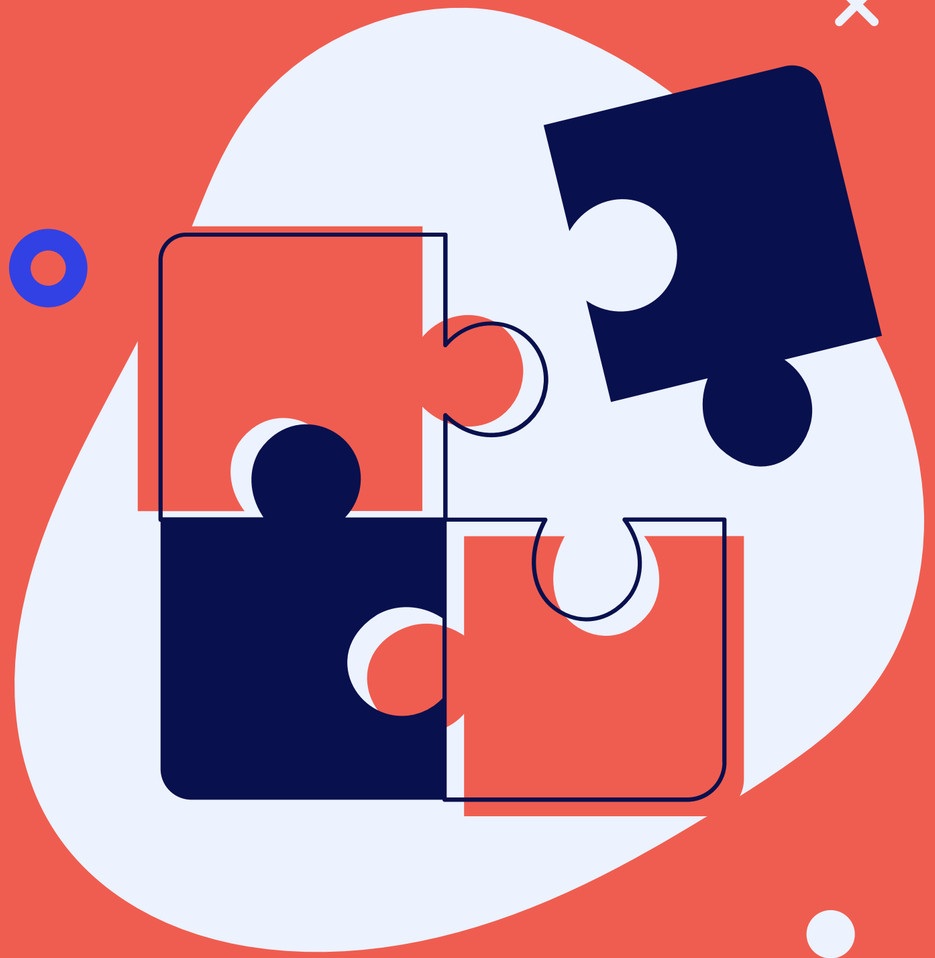
- **Reducing the losses**: In the power transmission grid, there can be significant losses of electricity by up to 30%.
- **Minimal maintenance**: When there are no wires, there will no need for correcting or maintaining them.
- **Improved Safety**: No wires mean, no accidents, and no unwanted disconnecting
- **Convenience**: Items can be freely and instantly moved around without having to be unplugged and re-connected again.



Long Range Scalability

The wireless powering technology is easily scalable. With only one transmitter you can power:

- 1 electronic device of 70 watts at the distance of 25 centimeters.Up to 4 electronic devices of 17,6 watts at the distance of 50 centimeters
- Up to 16 electronic devices of 4,4 watts at the distance of 1 meters
- Up to 64 electronic devices of 1,1 watts at the distance of 2 meters
- Up to 256 electronic devices of 0,275 watts at the distance of 4 meters



How does it work?

The solution consists of two simple components:

Sending Antenna

A dipole antenna that transmits the power in a 10 ft radius in all directions. Max. 50W per sender, cascadable (daisy-chainable). The size of the antenna + electronics + housing is about a picture postcard footprint, 2" high. The sender will need a 50W power supply with an output voltage of 48V DC.

Receiving Antenna

A linear antenna with max 50W power consumption per receiver, not cascadable (daisy-chainable). The size of the antenna + electronics is about a pencil. The receiving electronics can provide up to 50W in 5V DC or 12V DC or 24V DC (or any other DC voltage, but one voltage per electronic, not combinable, or universal type).

About LUXX Light Technology

Since 1996, LUXX Light Technology has been a global leader in the custom engineering and manufacturing of LED lighting solutions for the Retail Display market, Commercial Refrigeration, Shelf Lighting, and unique Profile extrusions.

In 2019 LUXX introduced the worlds thinnest LED neon rope series, the worlds first IP54 power track, and most recently released a new eShelf video display.

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Let's talk more!

414-763-3141

info@LUXX.com

www.LUXX.com