



**Powercast** *simply wire free™*  
114 North Saint Clair Street  
Ligonier, PA 15658  
[www.powercastco.com](http://www.powercastco.com)

# WHITE PAPER

## TECHNOLOGY OVERVIEW

### Introduction

The use of radio frequencies (RF) for communications is a century-old technology. It is such a mainstay of modern life that people take it for granted. Radio, television, cell phones, Wi-Fi, and Bluetooth all use RF.

Now Powercast has developed a revolutionary new use for RF: wireless power.

The Powercast Wireless Power Platform™ enables power to be transmitted safely and reliably through the air. For the first time electronic devices can be powered, and batteries can be recharged, continuously.

### How Does It Work?

Think AM/FM radio. A radio station broadcasts to everyone in range of the tower. The closer to the tower, the better the radio reception. The Wireless Power Platform works the same way, but Powercast has maximized power transfer.

Wireless Power Platform Powercaster™ modules utilize patented algorithms that can more than double the effective range (compared to traditional RF transmission) without increasing the average power output. Wireless Power Platform Powerharvester™ modules employ a patented circuit design that captures up to 70% of theoretical maximum power anywhere within the Powercaster's effective range — even while moving. All Powerharvesters within the range of a Powercaster will be powered — simply wire free™.

WIRELESS POWER PLATFORM  
TRANSMITTER MODULE



WIRELESS POWER PLATFORM  
RECEIVER MODULE



### Advantages of Powercast Technology

Powercast's pioneering technology has many advantages when compared to either wired or battery powered technology. Here are a just a few:

- More cost effective per Watt than batteries
- Eliminates the need for batteries in many devices
- Reduces form factor and weight of devices
- Environmentally friendly
- Eliminates the need for multiple power adapters
- Allows for powering on an "as needed" basis
- No wires dramatically reduces installation time
- Eliminates temperature sensitivity inherent with batteries
- Functions as a backup power source to increase product reliability

### Integrating Powercast Technology

Powercast offers a variety of transmitter (Powercaster) and receiver (Powerharvester) modules that encompass multiple frequency ranges, voltage requirements, form factors, and environmental conditions (commercial, industrial, mil-spec, etc.). Full custom designs are also possible.



ACTUAL SIZE

Integrating these modules into devices is simpler than one might think. Only the power circuit need be modified to fit the small Wireless Power Platform Powerharvester module. The antenna can easily be molded into the device. Some customers currently utilizing Powercast technology have simply placed the Powerharvester/antenna circuit in the device's battery compartment!

Transmitter design is greatly simplified using Powercast's highly integrated Powercaster module. Once the desired range is determined, the module is simply connected to the appropriate amplifier circuit. It doesn't get much easier.

Datasheets, application notes, and expert engineering support are available to assist with integration. And of course, all Powercast products are designed to meet regulatory and safety standards.



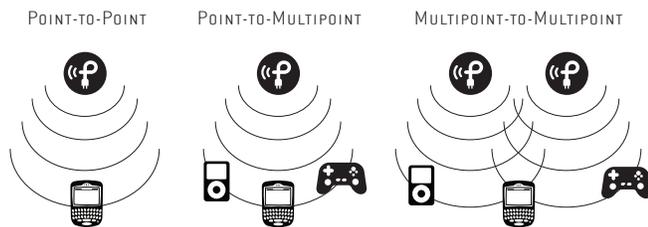
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## Wireless Power Platform Networks

Setting up a Wireless Power Platform network is much, MUCH simpler than architecting a communications network. Cancellation? Nope. Interference? Forget about it. In fact, Powercast Powerharvesters™ LOVE noise, which they merely convert into power for their host devices.

And every topology imaginable is supported:



Powercast has software tools and support staff to help optimize any network configuration that may be desired.

## About Powercast

Powercast, LLC, was founded in 2003 to develop the groundbreaking concept of the Wireless Power Platform. Since its inception, Powercast has broadened its portfolio, grown its skilled management team, and increased its exceptional engineering staff. Today Powercast and its clients are at the forefront of an exciting new wirelessly powered world.

## For More Information

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