

## Wireless Power Transfer System (#6080, 6081, 6106)

*Efficient wireless transfer system which can transfer both data and power*

Inventors at Georgia Tech and Florida International University have developed an innovative approach for transferring power wirelessly using resonant embedded loops. This series of technologies allows for efficient magnetic resonant power delivery by using specific geometric loops in the design of the resonators. This design also allows for radially and axially misaligned resonators to retain charging efficiency, which is an issue for both inductive and resonant power delivery techniques. These loops can be placed in any number of devices or could even be embedded into other materials. Multiple resonating elements can be combined to allow for both data and power to be transmitted simultaneously.

### Benefits/Advantages

- **Small in size** - Resonators are compact geometric shapes, aiding in volume or weight limited applications
- **Resistant to misalignment** - Retains comparable efficiency levels regardless of relative angles of transmitter and receiver
- **Versatile** – Both data and power can be simultaneously transmitted

### Potential Commercial Applications

- Wireless power delivery and charge to consumer electronics
- Power delivery to medical implants and other scenarios where physical contact is impractical
- Electric vehicle charging, resonator can potentially be embedded in vehicle body material

### Background/Context for This Invention

This technology was developed to enable efficient wireless power transfer. Wireless charging of consumer devices, such as phones and tablets, has become common while other applications (electric vehicles, medical implants) have active development underway. Many wireless charging systems have drawbacks over traditional wired power such as inefficiency, slower charge rate, and short range or precise placement to charge. However, the convenience and potential safety features of wireless power transmission still generates demand for commercial applications.

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## More Information

### Publications

**For more information about this technology, please visit:**

<https://licensing.research.gatech.edu/technology/wireless-power-transfer-system>

Images:

The automated sequential delivery of multiple fluids. A varying number of delay gates imprinted in the branches are shown in the figure.

COVID-19 and flu saliva test on paper: (A) The automatic sequential delivery of multiple reagents required for virus test; (B) Water pouring into the device triggers the virus assay, allowing the presence of SARS-CoV-2 and influenza A & B viruses to be visually identified by the color changes in the corresponding detection spot