



# Palm Touchstone Charger Teardown

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## INTRODUCTION

In this teardown, we will show you the innards of Palm's slick induction based Touchstone Charging Kit for the Pre.

### TOOLS:

- [iFixit Opening Tools](#) (1)
- [Spudger](#) (1)
- [Phillips #0 Screwdriver](#) (1)

## Step 1 — Palm Touchstone Charger Teardown



- The Palm Pre can be recharged in two fashions:
  - Wired Micro USB, included with the phone and rather lame.
  - Or the super-cool Touchstone wireless inductance charging system, which will set you back a measly \$69.99
- The Touchstone charger utilizes magnetic inductance, or electric current produced through a loop of wire in the presence of a magnetic field, to charge its internal battery wirelessly.
- The beautifully designed packaging includes:
  - Touchstone charging dock.
  - Touchstone back cover.
  - User guides and warranty information.

## Step 2



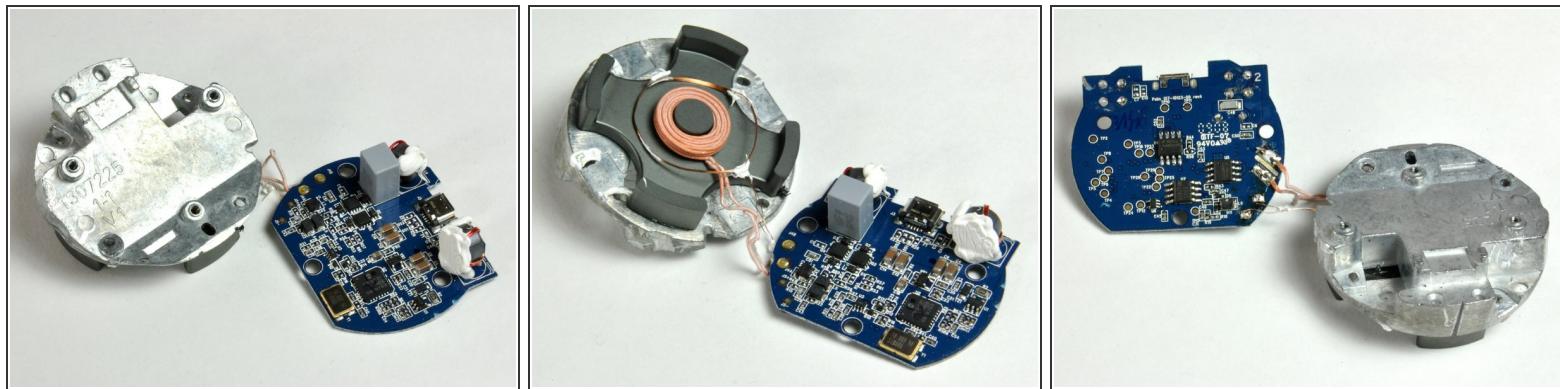
- Weighing in at a portly 118 grams, the Touchstone dock makes a great paperweight.
- And it's so pretty!
- Palm has attached pretty chrome dots to show you which cable plugs in where.
- The underside of the dock is nearly covered in a doughnut of foam tape. Don't stick it to a veneer table!
- The AC adapter has a detachable plug, presumably allowing for connectivity in foreign countries.

## Step 3



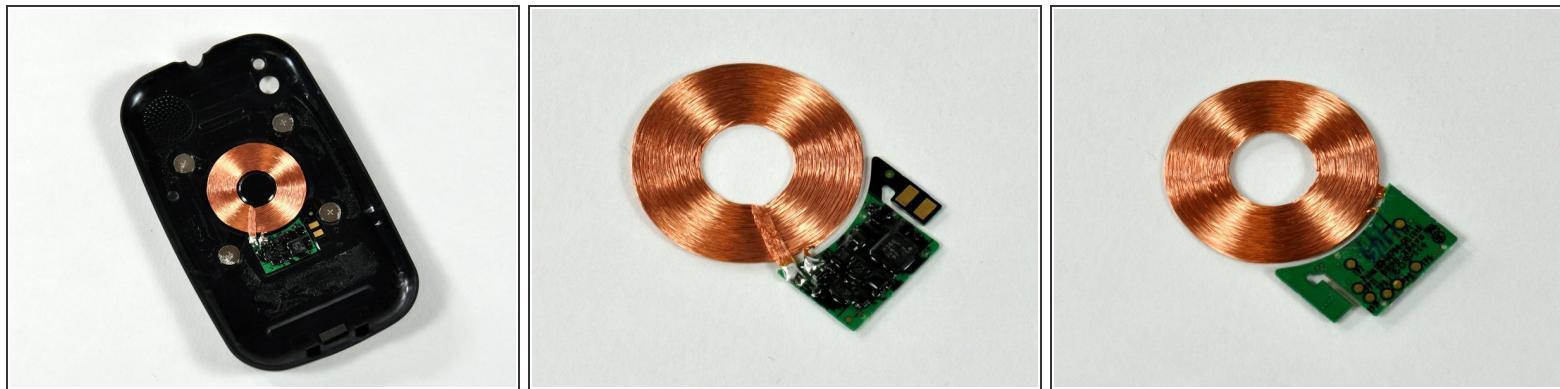
- Side-by-side view of the Touchstone back and the standard Pre rear panel.
- The Touchstone rear panel has a matte finish, probably to reduce visible wear from constant contact with the dock.
- The outline of the induction loop (large circle) is visible on the inside of the Touchstone rear panel. The current produced by induction flows into the Pre via two gold plated pressure contacts.
- The four small circles are magnets that align the Pre to the Touchstone dock, similar to the way Best Buy's iPod displays always align the iPod right side up.

## Step 4



- The inductor charging base assembly.
- The new Palm Touchstone wireless charger works on the principle of resonant induction. When you move a magnetic field near a coil of wire, it induces a current in the wire.
- Taking advantage of this principle, the Touchstone creates an electrical coupling between two coils of wire that are not physically connected. It does this with a primary coil of wire in the base unit which transmits energy to the secondary coil of wire in the phone via a magnetic field.
- The magnetic field generated by the base unit flips back and forth rapidly, generating a magnetic pulse that is carefully tuned to the dimensions of the wire coil inside the phone. This oscillating magnetic field induces a current inside the phone, allowing the battery to be charged.
- Similar technology is used to transmit power to some battery-operated toothbrushes, razors, etc.

## Step 5



- The Touchstone rear panel includes a secondary induction coil.
- ⓘ The magnetic field generated by the base unit turns on and off rapidly, generating a magnetic pulse that is carefully tuned to the dimensions of the wire coil inside the phone. This oscillating magnetic field induces a current inside the phone, allowing the battery to be charged.
- ⓘ Similar technology is used to transmit power to some battery-operated toothbrushes, razors, etc.
- This explanation is an oversimplification of a [very specific field](#) of electrical engineering.
- You'll note that the location of the induction coil is in the center of the device, well away from the antennas that line the perimeter of the phone.

To reassemble your device, follow these instructions in reverse order.