Creative Electron

• Design and Manufacturer of x-ray inspection systems – 100% Made in USA
• April 20 – Acquisition of FocalSpot
Why to teardown?

• Give back to electronic community
• Power insights on the way popular electronics are built
• It’s incredibly cool to us, geeks at heart
Apple – the market design consolidator

- MP3 Players ➔ iPod
- Smartphones ➔ iPhone
- Tablets ➔ iPad
- Music distribution ➔ iTunes
- Mobile PC ➔ MacBook
- Smartwatch ➔ Apple Watch(?)
• Lifestyle
<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Unit Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samsung</td>
<td>1,200,000</td>
</tr>
<tr>
<td>Pebble</td>
<td>700,000</td>
</tr>
<tr>
<td>Fitbit</td>
<td>600,000</td>
</tr>
<tr>
<td>Sony</td>
<td>550,000</td>
</tr>
<tr>
<td>Lenovo</td>
<td>500,000</td>
</tr>
<tr>
<td>LG</td>
<td>420,000</td>
</tr>
<tr>
<td>Garmin</td>
<td>400,000</td>
</tr>
<tr>
<td>Withings</td>
<td>170,000</td>
</tr>
<tr>
<td>Polar</td>
<td>150,000</td>
</tr>
<tr>
<td>Asus</td>
<td>120,000</td>
</tr>
</tbody>
</table>

Definition of a smartwatch: Wrist-worn device with indication of time and wireless access to the Internet.

Source: Smartwatch Group
Apple Is Already Dominating the Smartwatch Market

Estimated unit shipments and global market share of leading smartwatch vendors

**Worldwide Shipments**
- Apple: 0.7m
- Samsung: 0.3m
- Others: 0

**Global Market Share**
- Apple: 73.6%
- Samsung: 26.4%
- Others: 0%

Source: Strategy Analytics
First-year sales of each Apple Device

- **iPad**
  - Released: April 2010
  - 19.5 million

- **Apple Watch**
  - April 2015
  - 12-13m*

- **iPhone**
  - June 2007
  - 6.1m

- **iPod**
  - Oct. 2001
  - 0.6m

*Estimate  Source: the company; Bernstein Research and Above Avalon (Apple Watch estimate)
Some of the most popular features of the Apple Watch are already available on the iPhone

Notifications
A gentle tapping alerts you to new notifications such as text messages, important emails or changes in the weather.

Activity
Apple’s activity tracking consists of rings that track your daily progress in calorie burn, exercise time, and regularly standing.

Maps
Receive turn-by-turn directions with taps on your wrist. People use this for driving as well as walking around.

Apple Pay
By double tapping the side tab on the Watch, you can use Apple Pay to buy things on the go.

Source: the company
Apple Invents Solar Cell Light Sensors for Macs and iDevices

**FIG. 6**

1. **PATENTLY APPLE DISPLAY**
   - #502 Anisotropic Conductive Film

2. **SOLAR CELL ALS**
   - #44: Flexible Printed Circuit

3. **PCB**

4. **BATTERY**

**FIG. 15**

1. **DISPLAY LAYER**

2. **SOLAR CELL ALS**

3. **SOLAR CELL ALS**

4. **PATENTLY APPLE**
The history of iPhones in x-rays
12 years of cell phones

Nokia 1100a – November 2003

Kyocera ke433 – January 2004

Blackberry Curve 8330 – September 2007

iPhone – June 2007
12 years of cell phones

Nokia 6350 – October 2009
Motorola DROID X – June 2010

iPhone 5 – September 2012
Samsung Galaxy S5 – April 2014
X-ray video by Creative Electron