



THOUGHTWIRE

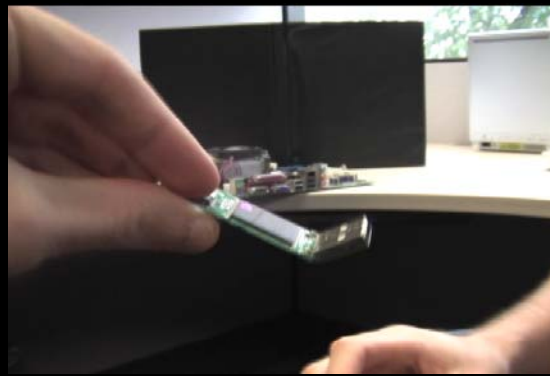
*US***B**SAFE

USB Problem Identified

USB, or Universal Serial Bus, is the preferred way to perform file transfers & connect external devices however it has a major drawback.

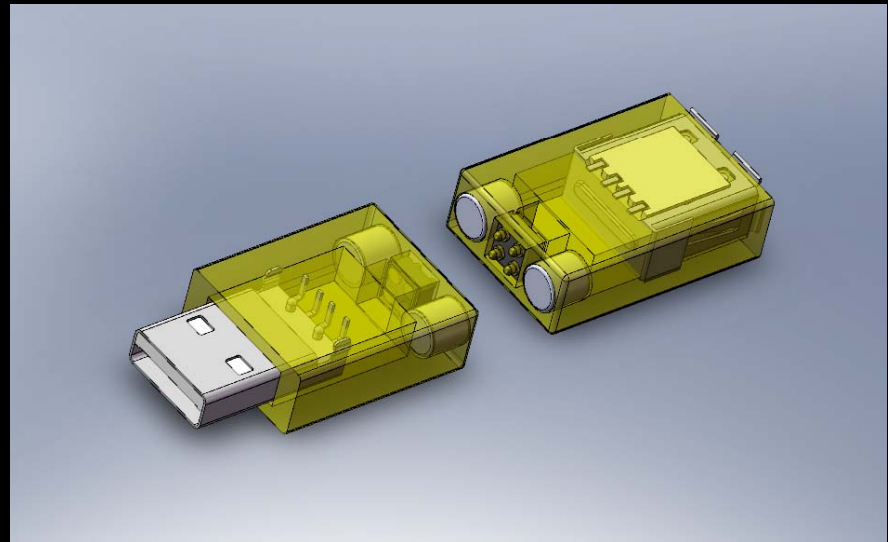
We noticed that USB devices and cables often protrude out from the computer, leaving the potential for breaking or shearing off the device, damaging the computer, or both.

Here is an example:



What is USB-Safe?

- USB-Safe is a magnetic quick disconnect for USB ports.
- Plugs into any PC USB port.
- Under strain the device will separate to prevent damage to device and computer.



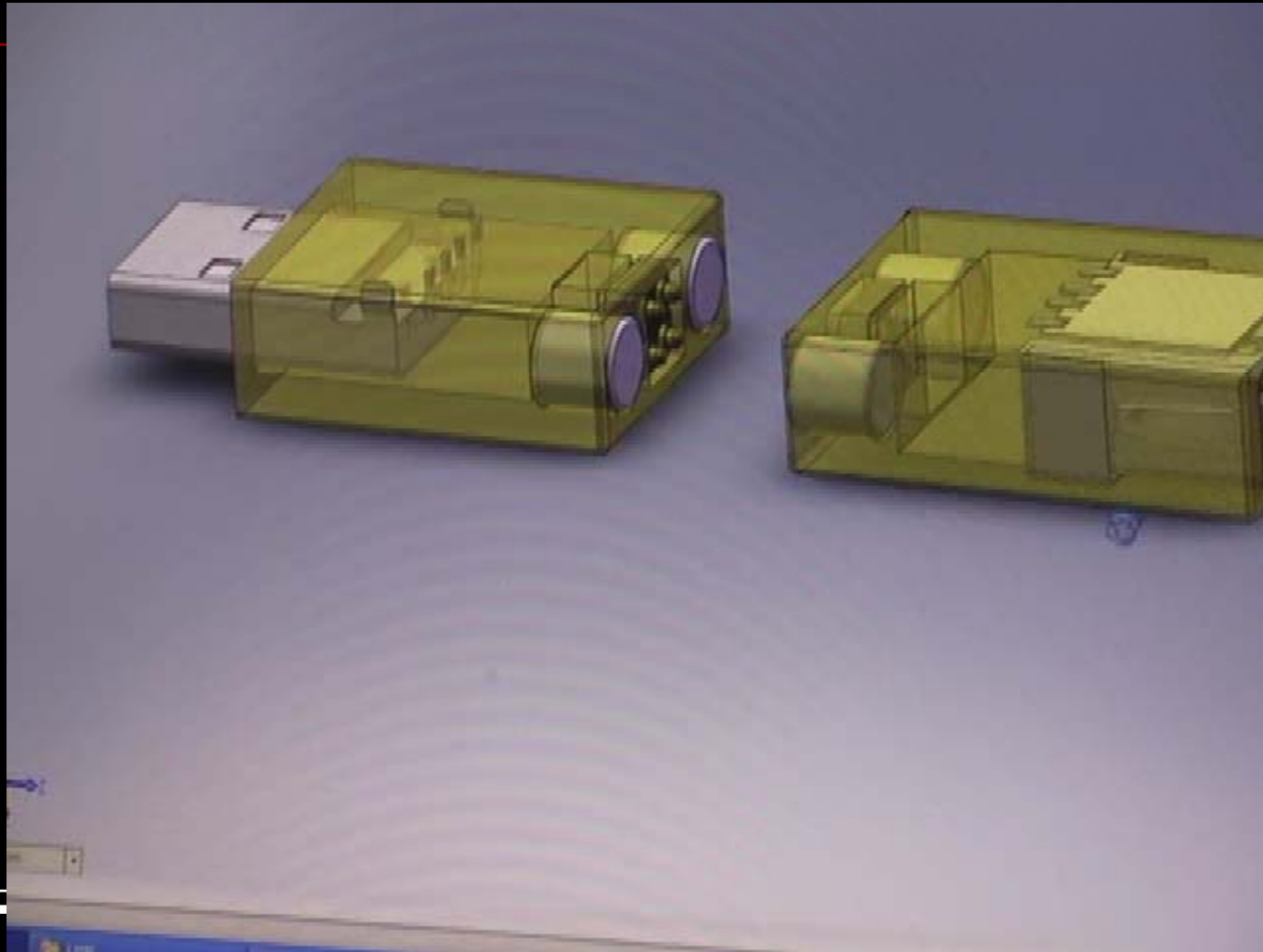
Market Demographic

- USB is arguably the most common device connector so nearly anyone could use it
- Anyone with a computer would be interested in protecting their investments

How?

- USB-Safe utilizes neodymium magnets and spring pin connectors that allow the USB-Safe to break apart and prevent damage to both your USB devices and computer
- Spring pin connectors provide secure connection that will disconnect when forced
- Neodymium magnets hold the USB-Safe halves together and allow for quick and easy connection

CAD Design (Video)



Constructing the Prototype

- Shells printed on SLA
- 5mm cylinder magnets and spring-pin connectors ordered from suppliers
- Solder connections
- Assemble
- Fix components with hot glue and UV-cured resin

Electrical Testing (Video)



Contact Rating and Lifespan

- Contacts are rated at 3 amps, six times the USB limit of 500 ma
- Industry proven Spring-Loaded (Pogo Pin) rated for 1,000,000 cycles
- Precision-machined gold-plated components and a low-resistance springs
- Tested to a minimum of 50G shock and 10G vibration with no spikes $>1\mu\text{s}$ and $>1.15\text{V}$ with 0.5A applied

Demonstrating the Magnets (Video)



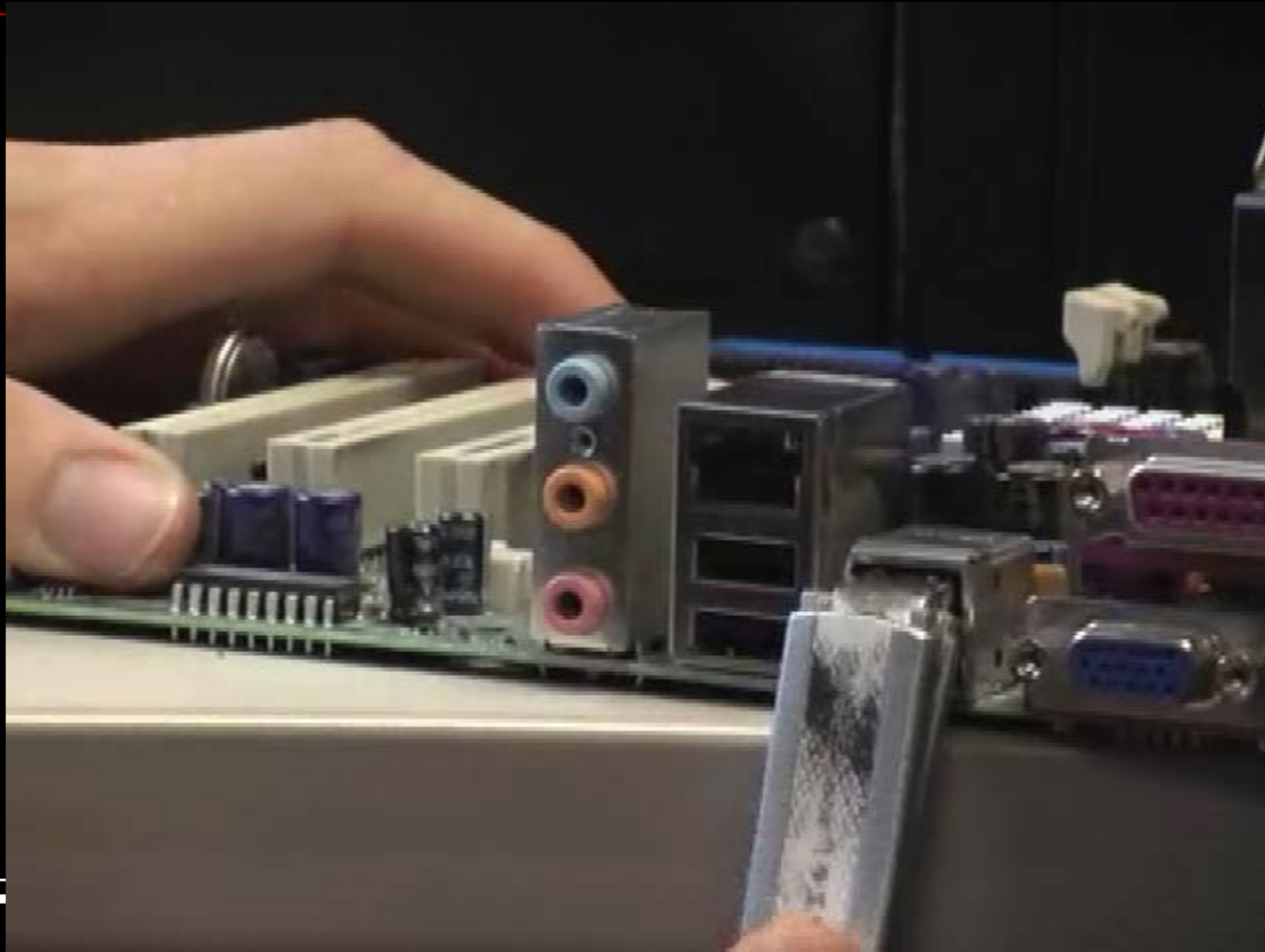
Testing on PC (Video)



Packaging Design (Video)



Risk to USB Port (Video)



Demonstrating Functionality (Video)

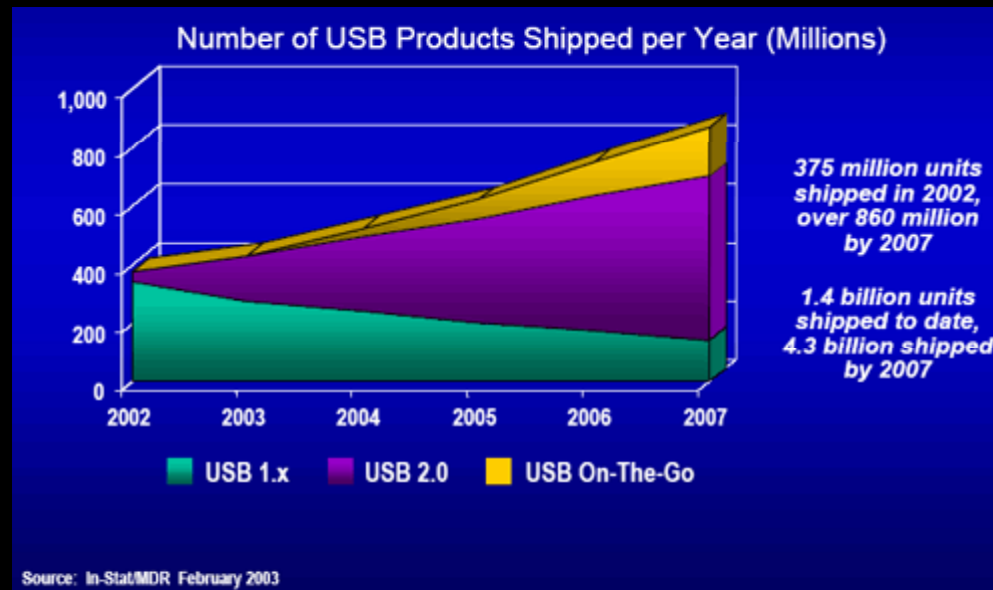


Other Tests (Video)



Marketing plan

- Our product would be advertised in technology magazines and websites as well as on public television
- This device has a very large target market allowing a wide variety of buyers.



Key market segments

- Flash memory drives
- MP3 Players
- Digital and Video Cameras
- Mobile Phones
- PC to PC connections
- USB Wi-Fi Adaptors
- Other PC Peripherals

Future Developments

- Replace adapter wiring with circuit board
- Add LED indicator
- 8-pin connectors that work both ways
- Right-angle or pivoting adapters
- Break-away adapters for other applications (firewire, audio plugs, power cords, etc.)
- Devices with break-away design built in

Thoughtwire Group Members

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