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IMPLANTING MICROCHIPS: INNOVATIVE IDEA OR HEADING DOWN A DANGEROUS PATH?

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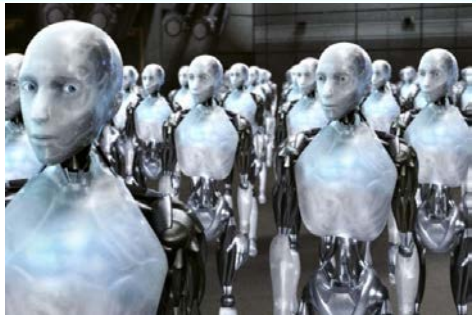
Biometric Implants –Getting Under Your Skin

- Microchip implants are typically shaped like small cylinders
- Contain a small microchip that is a ‘bio-safe epoxy resin’
- There is a micro copper antenna wire coil encased in borosilicate glass
- No battery or power source as they are field powered
- Biometric implants are inert until they come with the field produced by a reader device.
- Implants communicate over a magnetic field

Getting 'Chipped' Makes You a cyborg



- The implant is the size of a piece of rice
- Most small implants utilize Near Field Communication (NFC)
- This technology is what is in our contactless credit cards
- We may be familiar with ApplePay or Google Wallet– both use NFC
- Three Square Market Employee Use
- Swedish Commuter Rail

What Implants Can Do

- Computer Login
- Subway
- Payments
- Tracking
- Enter Building
- And much more
- The Claims
- The Hacks

RFID Technology & Bluetooth

- Low frequency : 124 and 134 kHz
- High frequency : 13.56 MHz
- UHF (Ultra-High Frequency) : 800-915 MHz
- Bluetooth low energy -2.4 GHz fast frequency hopper

Hacking Wireless Implants

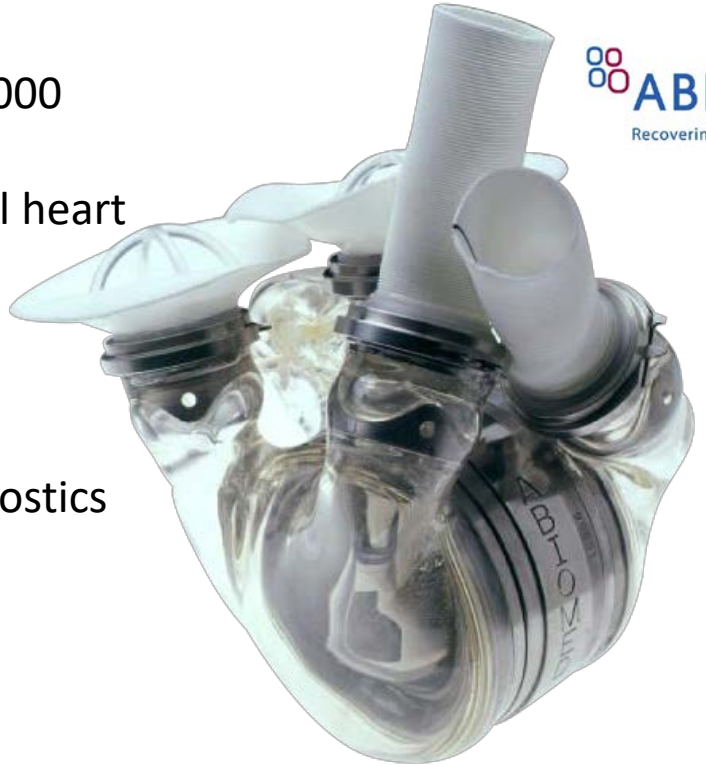
Berkeley Developed wireless link for Abiomed's first artificial heart back in 2000

Remotely hacking a pacemaker, artificial heart

Targeted malware prohibits a hospital from communicating with implants

Modern implants rely on wireless diagnostics

What's next…



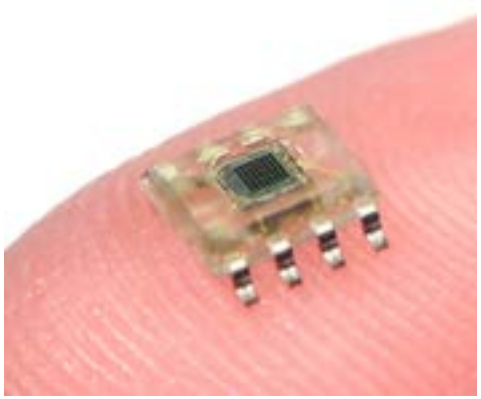
ABIOMED
Recovering hearts. Saving lives.

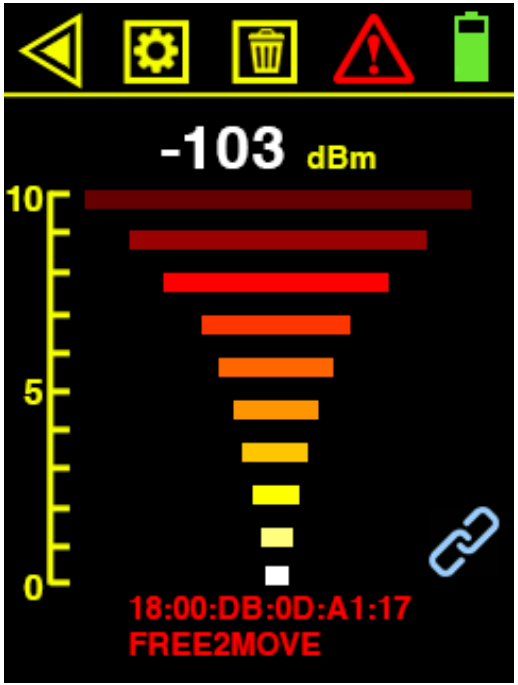
Berkeley
Varitronics Systems
Wireless Detection

Locate Bluetooth Implants Demo

- Direction Find all nearby

BT and BLE devices





Apply

- Do your research before getting a microchip implant including reading the terms of service
- Remember that you want to update all firmware and software on any device
- Just because something is considered secure today…it may not be tomorrow
- Know the security of protocols your microchip is using and the vulnerabilities you may be opening yourself up to

QUESTIONS…