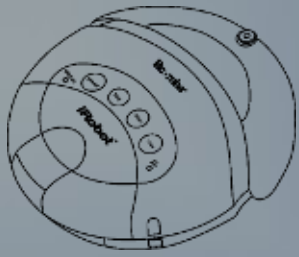


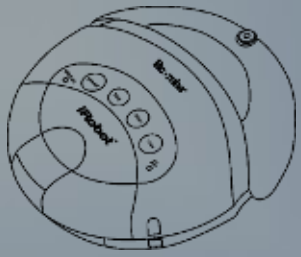
# WiFi - Roomba

- Disclaimers
- Roomba Dissection
- SCI (Serial command interface)
- Router Mods
- OpenWrt Package creation
- Roomba Control Software
  - Version 1: CGI/WWW
  - Version 2: UDP/GUI
- Try it out.



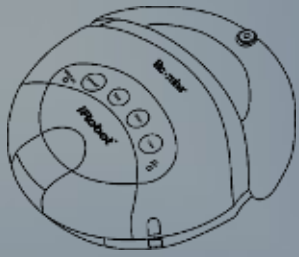
# Disclaimers

- Will void all warranties
- Risk of Bodily Injury
- Risk of property damage
- FCC / regulatory compliance
- Patent infringement
- Fitness for a particular Purpose
  - Obligatory Star Trek quote
- Double talk



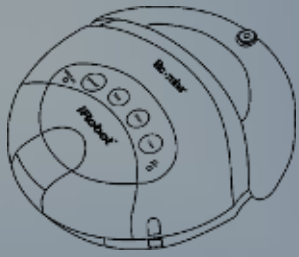
# Roomba Dissection

- Removable components
- Top cover
- Layout
  - Sensors
  - Ports
  - Motors
- Beater
- Control board
- Drive assemblies



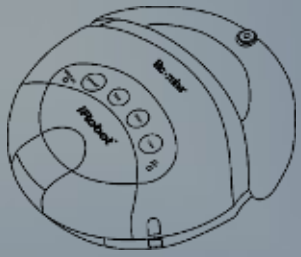
# I robot's SCI

- Hacking encouraged
  - Specification
- Connection
- SCI Modes
- Built-in operations
- Motors
- LEDs
- Songs
- Sensors



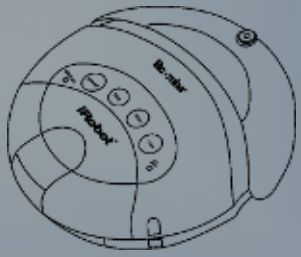
# Router Mods

- Disassembly
- OpenWrt flash
- Serial ports
  - 1
  - 2
  - Repair
- Power
- SCI connector



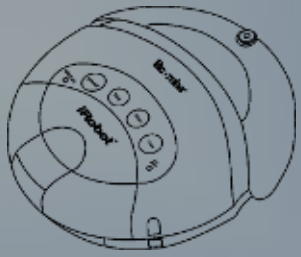
# OpenWrt Package

- OpenWrt buildroot
- Customization
- Packages/`roomba` --> `../../roomba`
- Package Makefile
- Source
- Source Makefile
- Building package



# Roomba Control v1

- BusyBox WWW server
- Web Control Panel
- CGI script
- STTY
- Binary files
- Echo
- No feedback
- Very buggy



# Roomba Control v2

- Credit to the Player project
- Specialized `server/client`
- UDP datagrams
- Mixed C & C++ code
- QT based GUI