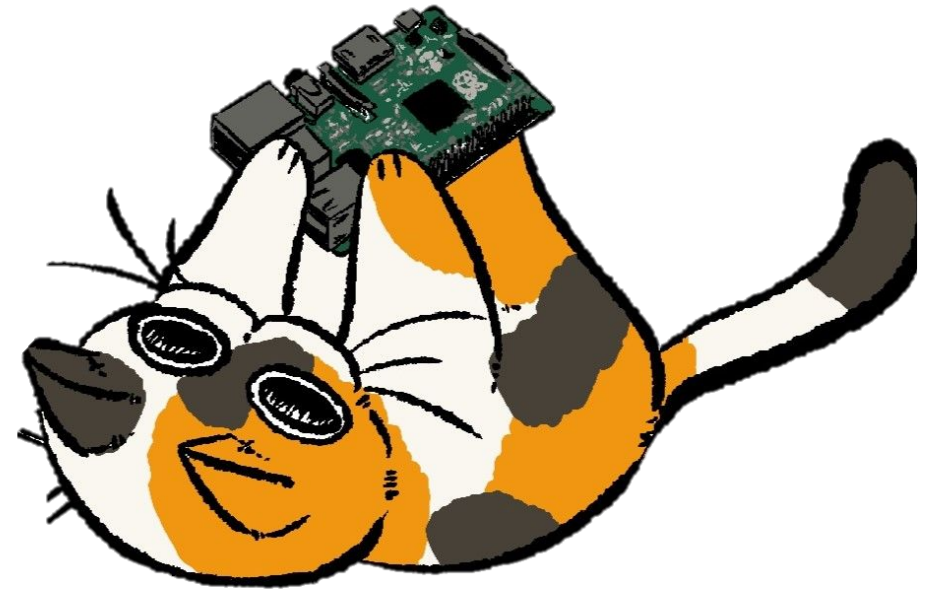




Student Branch Chapter @ USF

Introduction to Electronics Repair
Hardware Lead: Liam

Check in! Support Us



Follow Us



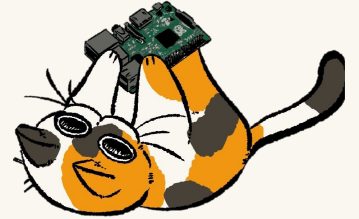
Discord

LinkedIn

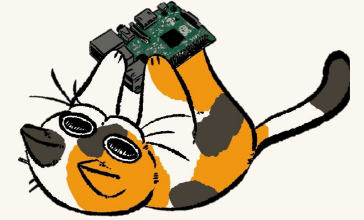
Instagram

**Bulls
Connect**

GitHub



What are we doing today?



- **Short presentation**
 - **Basics of electricity**
 - **Hands-on cable activity**
 - **Right to Repair**
- **Device destruction**
 - **Controllers**
 - **Laptop**
 - **Extras**

"This is the best book ever written for a beginner." Chicago Tribune

Electricity

FOR DUMMIES®

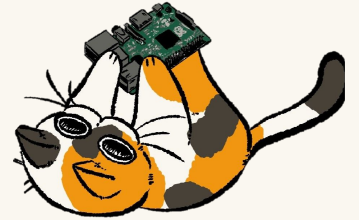
3rd Edition

Run DOS
applications on
your Windows PC

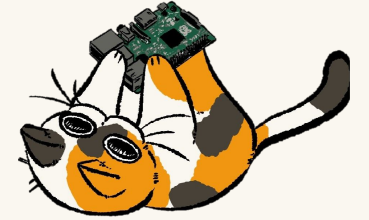
*A Reference
for the
Rest of Us* **f**

Dan Gookin

#1 bestselling author of
PCs For Dummies®



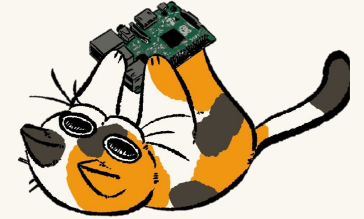
Electricity Basics - Resistance



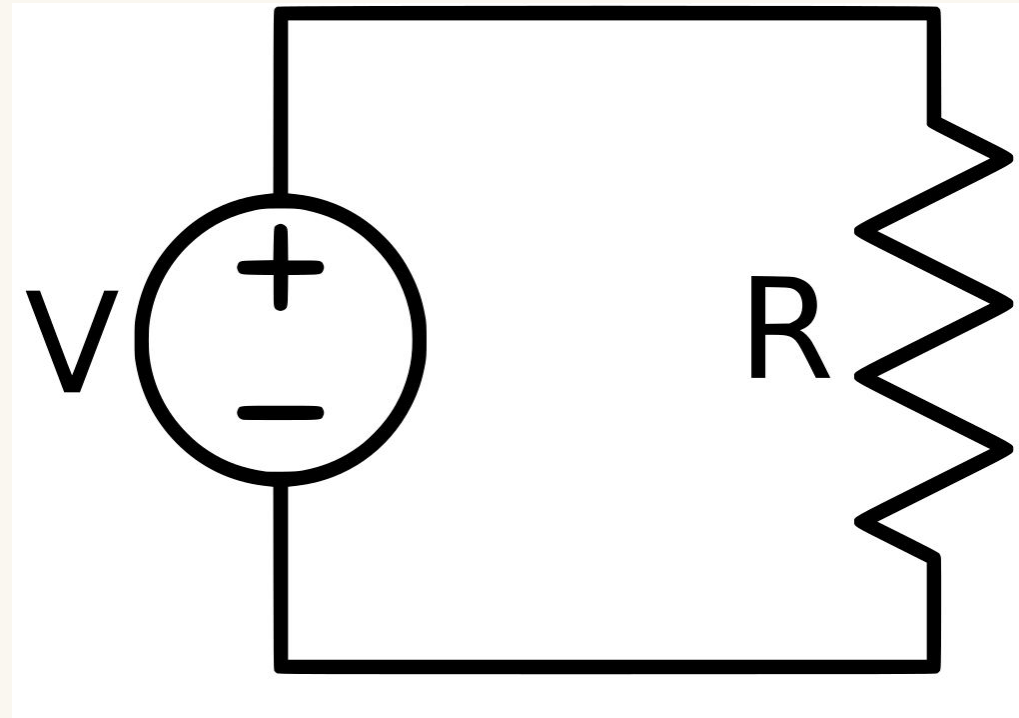
- Slows electrons from moving
- Determines the current flowing
- Lots of things have resistors:
 - Light bulbs
 - Vibration motors
 - Toasters
 - Heated bath tubs
- Not important for us today



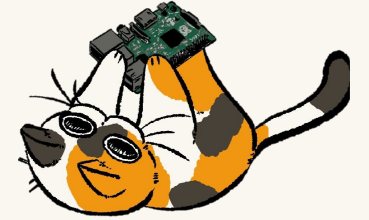
Electricity Basics - Voltage



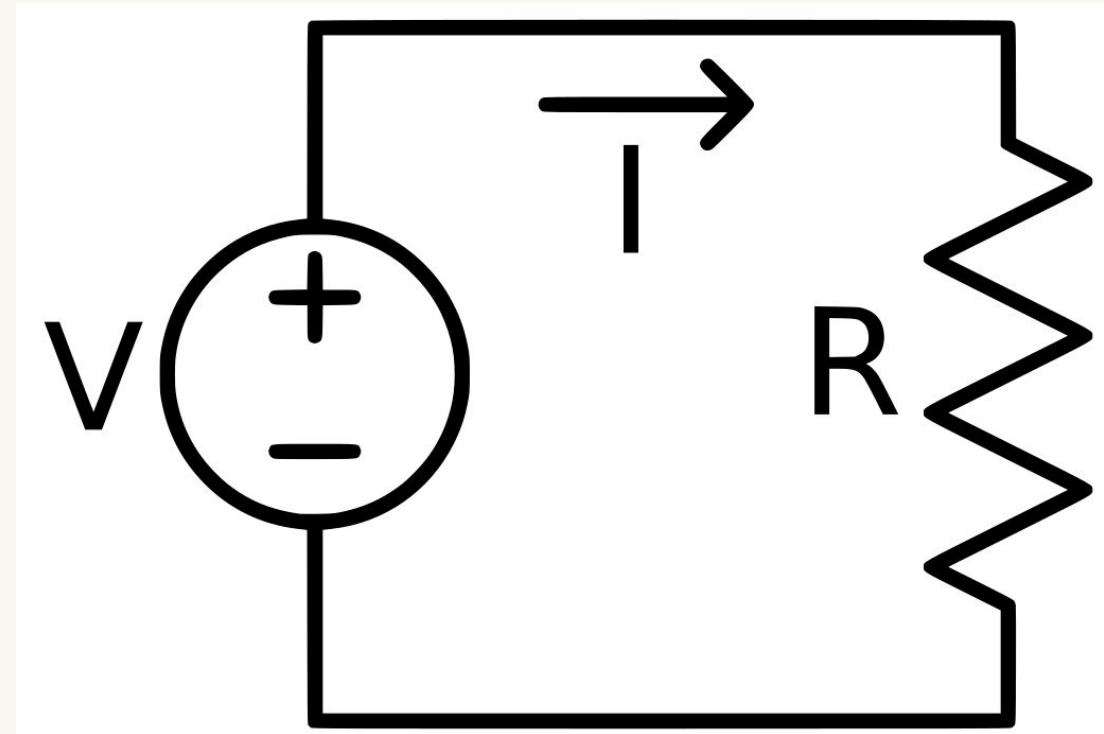
- Potential energy difference of 2 points
- Determines the current flowing
- Always resistance stopping it
- Many metaphors to understand:
 - Height of a fall to determine impact
 - Water pressure in a tank or faucet
 - You and the girl (or guy) you like



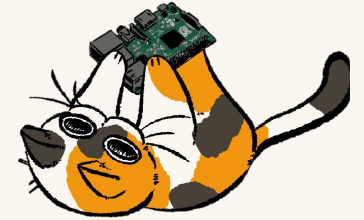
Electricity Basics - Current



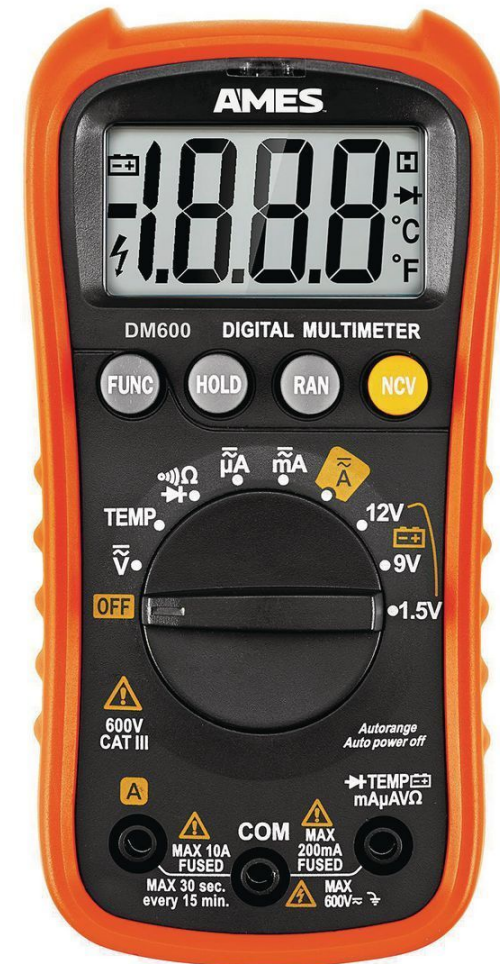
- Flow of electrons doing work
- Follows path of least resistance
- Ohm's law: $V = IR$ or $I = V/R$
- More current, more energy:
 - Brighter lights
 - More heat
 - Deadlier shocks



Multimeters

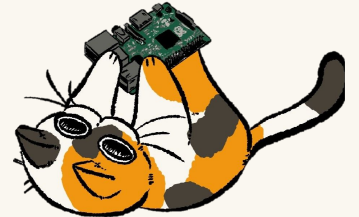


- General measurements
 - Ammeter
 - Voltmeter
 - Ohmmeter
- Special functions
 - Continuity test!



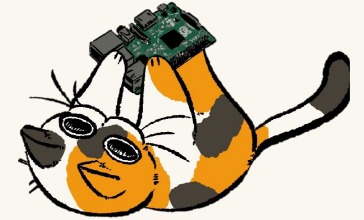
Static Grounding

- It is optimal to ground yourself from static
- Wearable wristbands can do this

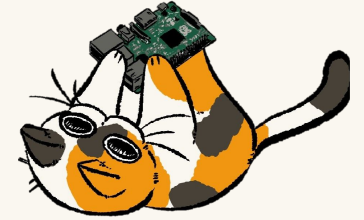


Static Grounding

- There has to be a wire or cable to connect
- If it's wireless, it's a total scam

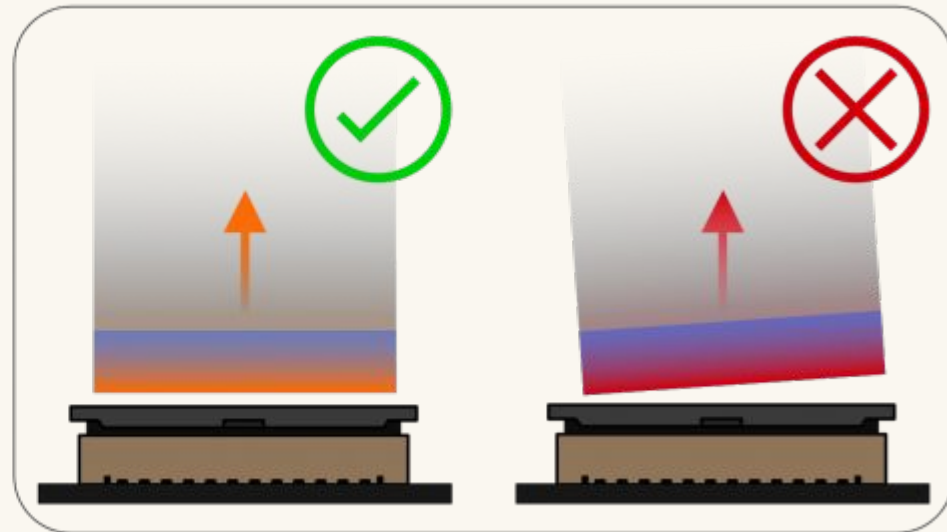
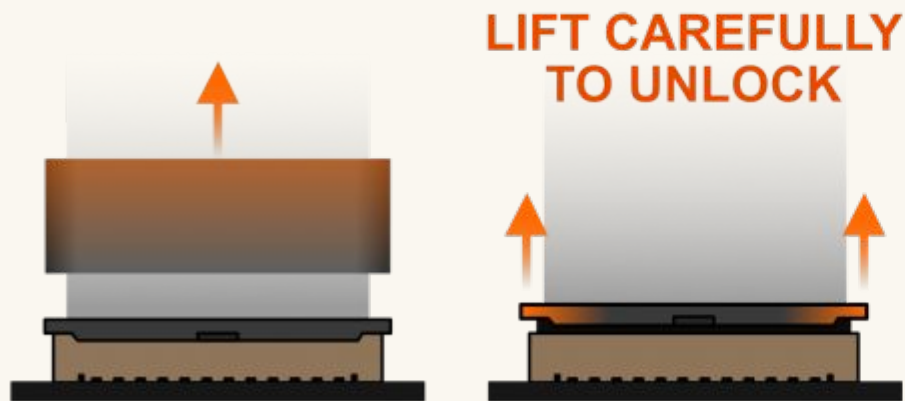
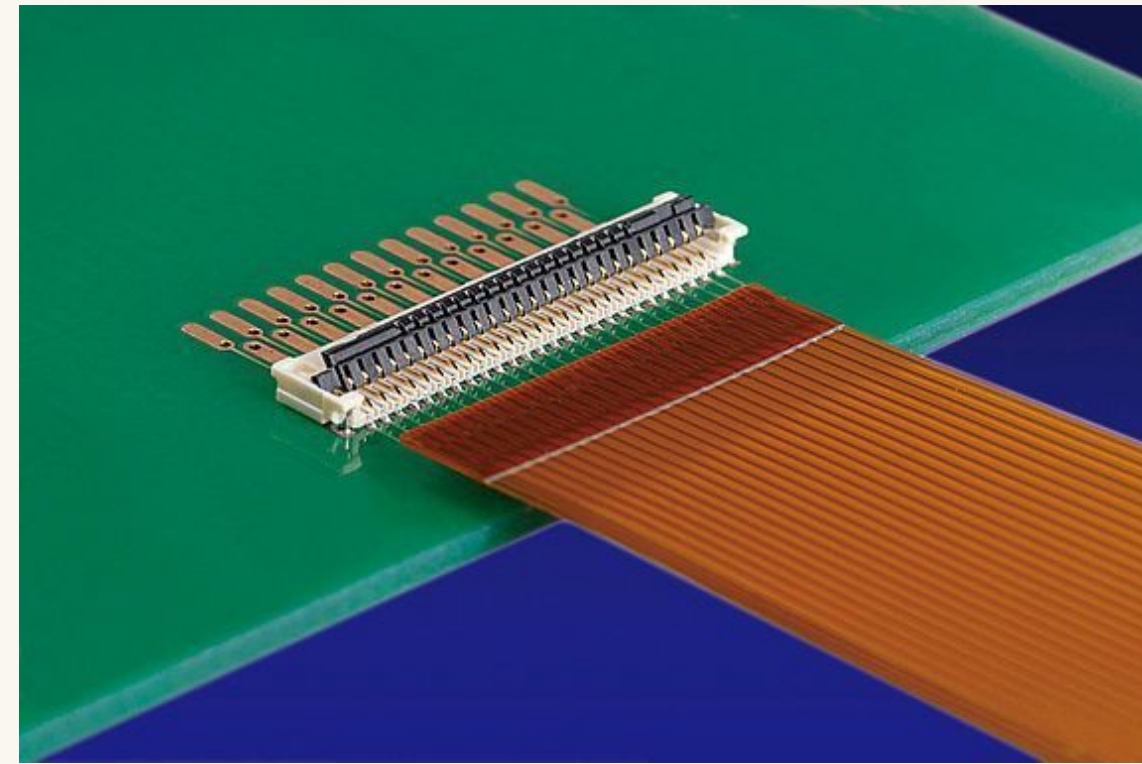


Ribbon Cables



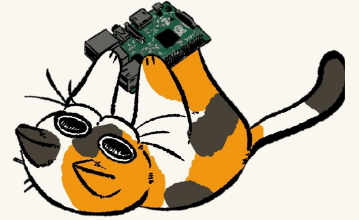
Hands On!

Typical ZIF (Zero Insertion Force) Connector Operation





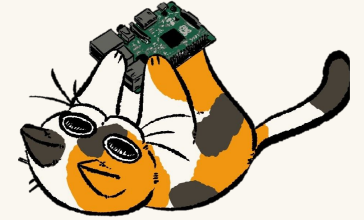
Right to Repair



Corporations hate:

- **Sustainability**
- **Long lasting products**
- **You**
- **Your freedoms**
- **Your dignity**
- **Your mother**

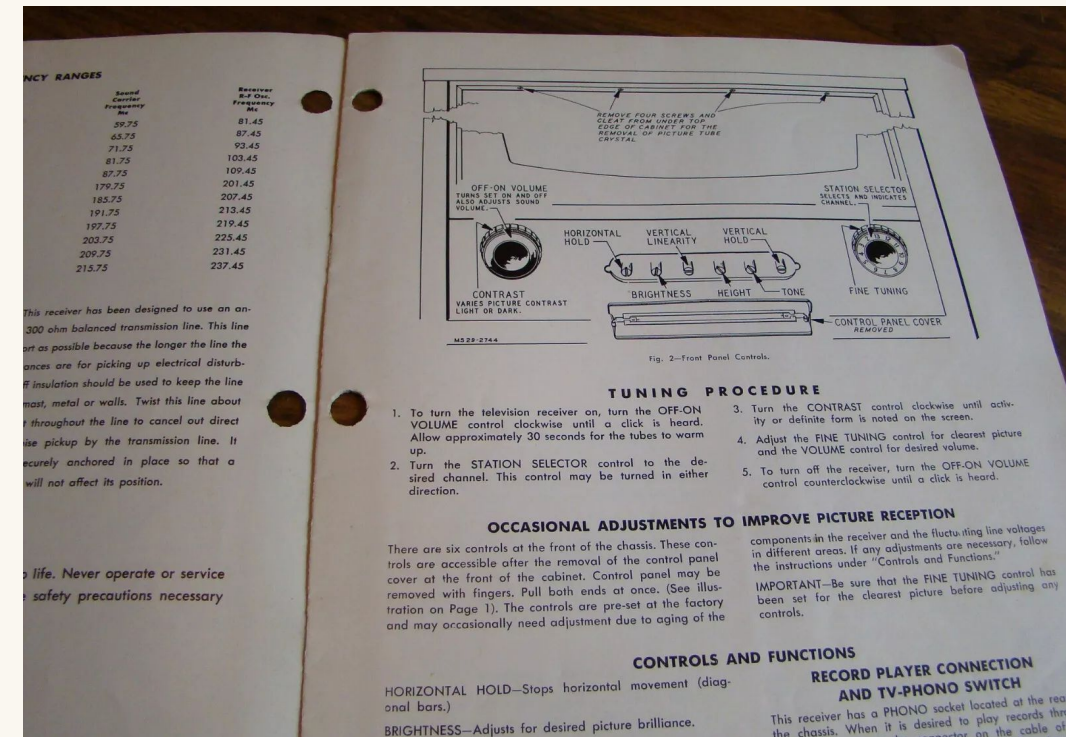
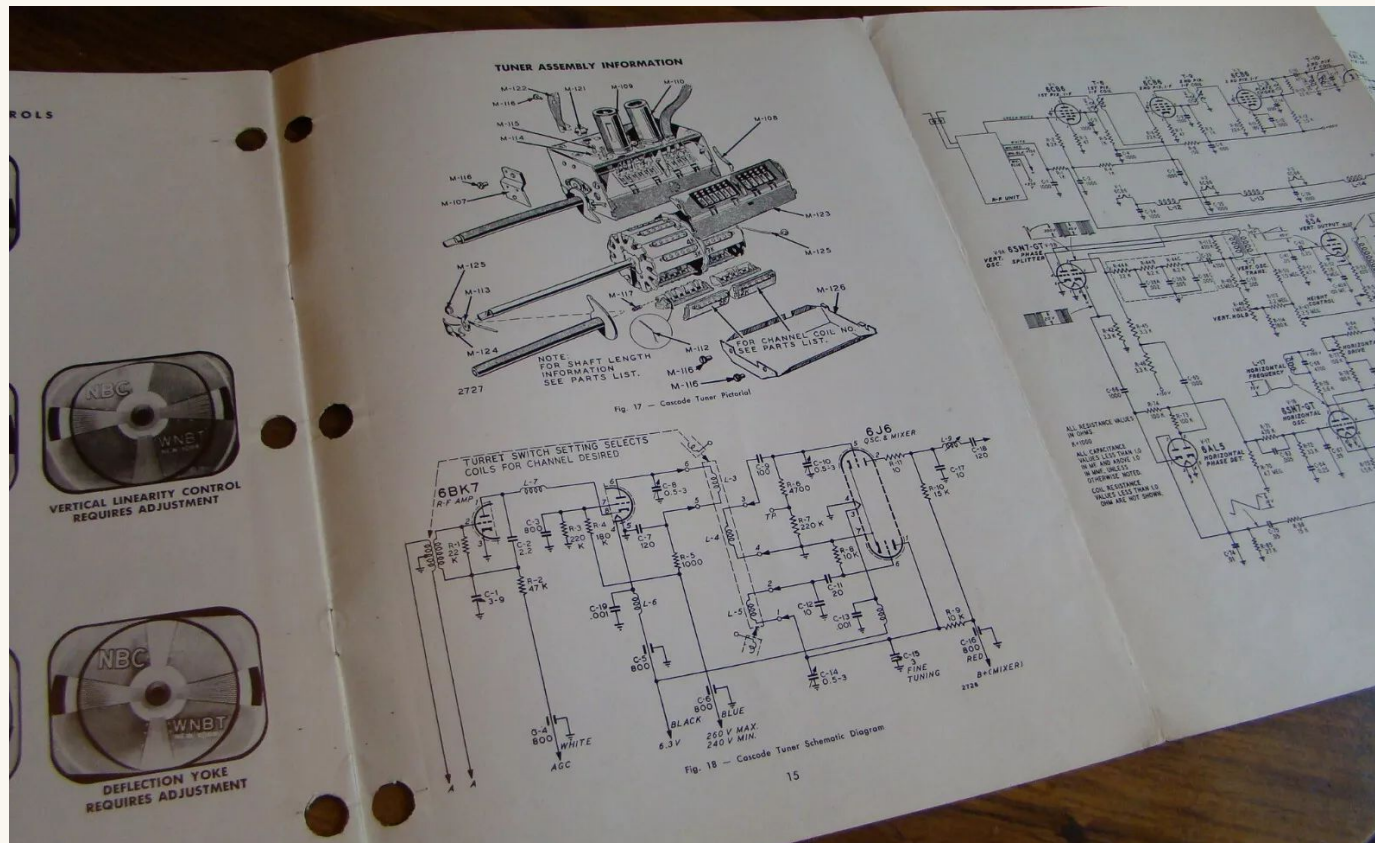
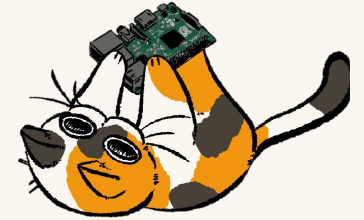
Right to Repair



Corporations have:

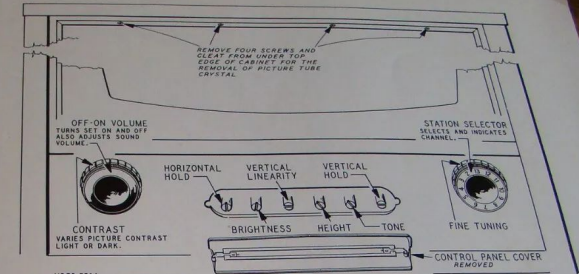
- **Stopped farmers from repairing their tractors' electronics**
- **Blocked repair shops from schematics to repair devices**
- **Banned suppliers from selling replacement parts**
- **Made fake repair programs for PR to pretend they care**
- **Paid lobbyists to block attempts at repair legislation**
- **Taken out attack ads to sway public opinion against repair**

Right to Repair



SOUND CARRIER FREQUENCY (MC)	RECEIVER R.F. OSC. FREQUENCY (MC)
59.75	81.45
65.75	87.45
71.75	93.45
77.75	103.45
83.75	109.45
89.75	115.45
95.75	121.45
101.75	127.45
107.75	133.45
113.75	139.45
119.75	145.45
125.75	151.45
131.75	157.45
137.75	163.45
143.75	169.45
149.75	175.45
155.75	181.45
161.75	187.45
167.75	193.45
173.75	199.45
179.75	205.45
185.75	211.45
191.75	217.45
197.75	223.45
203.75	229.45
209.75	235.45
215.75	241.45

This receiver has been designed to use an approximately 300 ohm balanced transmission line. This line is as close as possible because the longer the line the more chances are for picking up electrical disturbances. If insulation should be used to keep the line from touching metal or walls. Twist this line about 1/2 inch throughout the line to cancel out direct pickup by the transmission line. It must be securely anchored in place so that a vibration will not affect its position.



TUNING PROCEDURE

1. To turn the television receiver on, turn the OFF-ON VOLUME control clockwise until a click is heard. Allow approximately 30 seconds for the tubes to warm up.
2. Turn the STATION SELECTOR control to the desired channel. This control may be turned in either direction.
3. Turn the CONTRAST control clockwise until activity or definite form is noted on the screen.
4. Adjust the FINE TUNING control for clearest picture and the VOLUME control for desired volume.
5. To turn off the receiver, turn the OFF-ON VOLUME control counterclockwise until a click is heard.

OCCASIONAL ADJUSTMENTS TO IMPROVE PICTURE RECEPTION

There are six controls at the front of the chassis. These controls are accessible after the removal of the control panel cover at the front of the cabinet. Control panel may be removed with fingers. Pull both ends at once. (See illustration on Page 1). The controls are pre-set at the factory and may occasionally need adjustment due to aging of the components in the receiver and the fluctuating line voltages in different areas. If any adjustments are necessary, follow the instructions under "Controls and Functions."

IMPORTANT—Be sure that the FINE TUNING control has been set for the clearest picture before adjusting any controls.

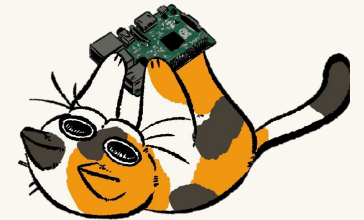
CONTROLS AND FUNCTIONS

HORIZONTAL HOLD—Stops horizontal movement (diagonal bars).
BRIGHTNESS—Adjusts for desired picture brilliance.

RECORD PLAYER CONNECTION AND TV-PHONO SWITCH

This receiver has a PHONO socket located at the rear of the chassis. When it is desired to play records through the connector on the cable at the

Next workshops 😊 !



Pizza will be provided!

Internship Panel

Learn from past interns!

SEPTEMBER 23 | 6 - 7:30PM | TBD

- Ask students about their internships in software/hardware
- Learn how to get your own internship / go to conferences
- Experience as international student



Register here!



Pub subs and brownies will be provided!

Code Your Own Interactive Resume!

SEPTEMBER 24 | 5 - 6:30PM |

- Beginner friendly!
- Teaches:
React.js
CSS
JS
Next.js
Firebase



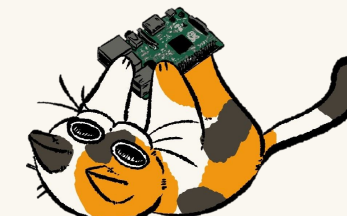
Register here!



FREE IEEE-CS
STICKERS



Next workshops 😊 !



Publix catering will be provided!

CISCO Presents: Amazon Web Services & Microsoft Azure Cloud Certifications

SEPTEMBER 27 | 3:30 - 5:00 PM | TBD

- Learn about AWS, Azure & Cisco Cloud certifications
- Learn how they will make you appealing to recruiters
- Listen about exam taking experience



Register here!



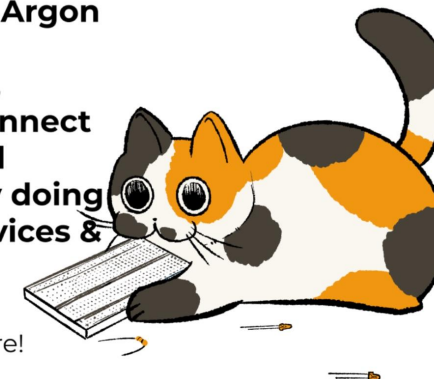
Publix catering will be provided!



Build & Keep Internet of Things Circuit

OCTOBER 4 | 4 - 5:30PM | TBD

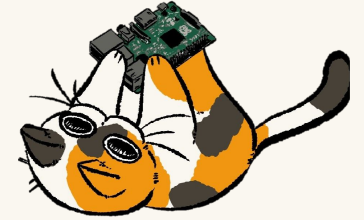
- Build & keep a circuit w/ Argon Particle Board (Nordic processor, resistors, LED, breadboard), that can connect to WiFi, Bluetooth, Cloud
- Learn about IoT, industry doing smart houses, health devices & self-driving cars
- Open to all majors



Register here!



Next workshops 😊 !



IEEE CS
TECHX Florida

NOVEMBER 23 | TBD

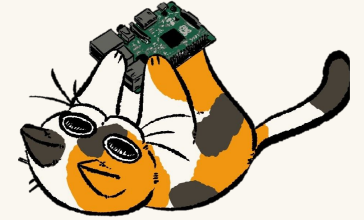
- IEEE-CS Conference about Internet of Things
- Features speakers from Cisco & Particle
- Hands-on workshop with Argon Particle Boards

Register
here!



 IEEE
COMPUTER
SOCIETY
Student Branch Chapter at
the University of South Florida

Next workshops 😊 !



October 9 5pm-6:30pm
Introduction to SQL Databases



No flyer but taught by Zarina :D
(pretend this looks good)

Food will be provided!

Resume Critique by CISCO Engineers

OCTOBER 11 | 5 - 6:30PM | TBD

- Learn about job opportunities at CISCO
- Get your resume reviewed by CISCO engineers
- Network with CISCO engineers



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the University of South Florida

Register here!

