

# While you wait...

- Install Python 2.7, py(win)USB and PIL
  - <http://www.pythonware.com/products/pil/>
  - <https://pypi.python.org/pypi/pywinusb/>
- Download the Tamagotchi tools
  - <https://github.com/natashenka/Egg-Shell>
- Put batteries into your Tamagotchi
  - There's a few screwdrivers floating around
- Hatch your Tamagotchi
  - Press 'B' to get started
- Connect the Egg Shell board to your laptop via USB make sure it's detected as a HID



**Hacking  
Tamagotchis  
for Fun and...**

**... Well, That's  
Pretty Much It**



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# Your Tamagotchi

- Press 'B' button and enter details to start hatching
- Once hatched, press 'A' to navigate, 'B' to select and 'C' to cancel
- The top right icon is the figure icon (only appears when figure attached)
  - Most tools use figures
- Press A + C to turn off sound
- Feed it quickly before it dies!!!



# Egg Shell Board

- Supports figure programming over SPI and IR (no software)
- Detected as a HID over USB



# Assembled at Kwartzlab



# Programming a Figure

- Use figurewrite.py to program figure  
`figurewrite.py infile`
- Loads figure image file onto figure
- Image files must be 0x80000 bytes long
- Board must be reset using button between each load



**WARNING: program only the figure that came in separate packaging. Do NOT program the one that came with the Tamagotchi!! Tamagotchis (and boards) WILL DIE!!!!!!!!!!!!!!**

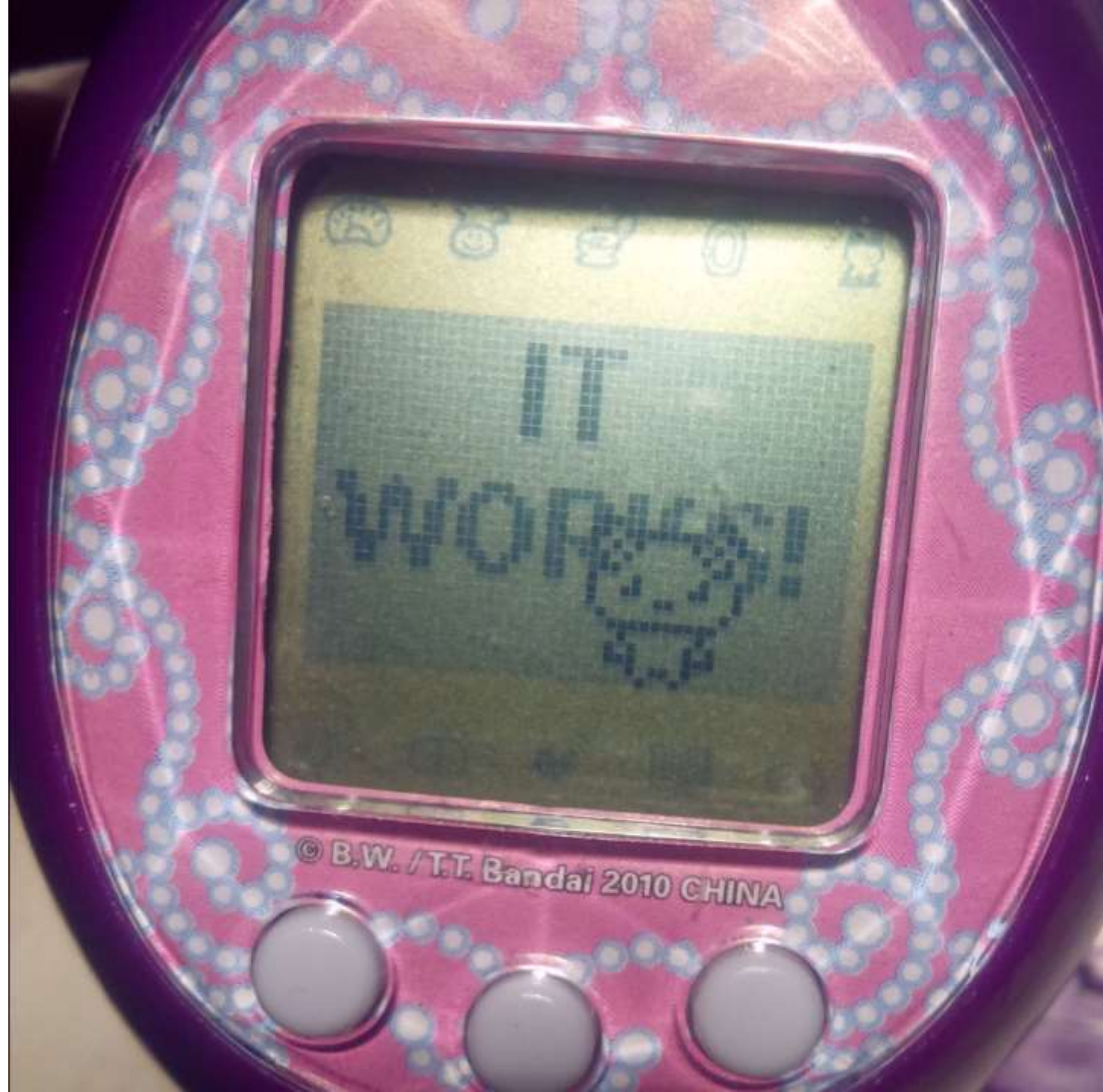
# Programming a Figure

- Programming a figure requires pressure!
  - Push hard!
- Linux script is quite slow
  - Rubber bands at the front if holding gets too hard
  - Prize for anyone who speeds it up!



# Testing the Board

- Load Egg-Shell/test/itworks.txt
- Attach figure





# Creating Your Own Picture

- Find a 48 x 31 picture
  - Or use one from /samples
- Save it as a 16-bit bitmap using four tones
  - Note that images are three-tone. Dark grey, grey and white show up as expected. Black is transparent.



- Run

```
portrait.py <your image> <outfile>
```

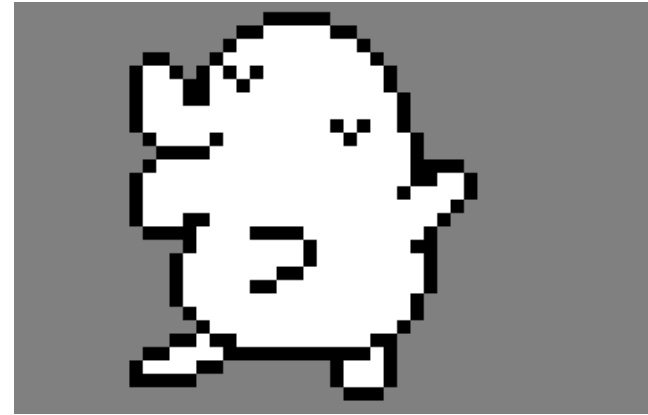
- Load image
- Attach figure

# Creating a Tamagotchi Music Video

- Create a script for your 'video'
  - See `/itemmake/samplescript`
- Add images and sound
- Run

```
itemmake.py <script> <outfile>
```

- Load image
- Buy item
  - There's entropy involved!
- Use item



# Writing Assembly

- Write 6502 assembly
  - See /6502/samples
- 0x100 – 0x200 is usable RAM
  - The stack is great too
- Check README for convenience functions
- Run

```
tASMgotchi.py <infile> <images> -o <outfile>
```
- Load image onto figure
- Play “Sound Block” in the figure games



**Have fun!!**



# Questions?



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Don't forget to show me all the cool stuff you made!

