Queercon Badges

(kill all humans)

Introductions – Badge Team

- Jason Painter (jason) – Cat Herder, Money Guy, Etc
- Evan Mackay (Akio) – Hardware
- George Louthan (DUPLiCO) – Software
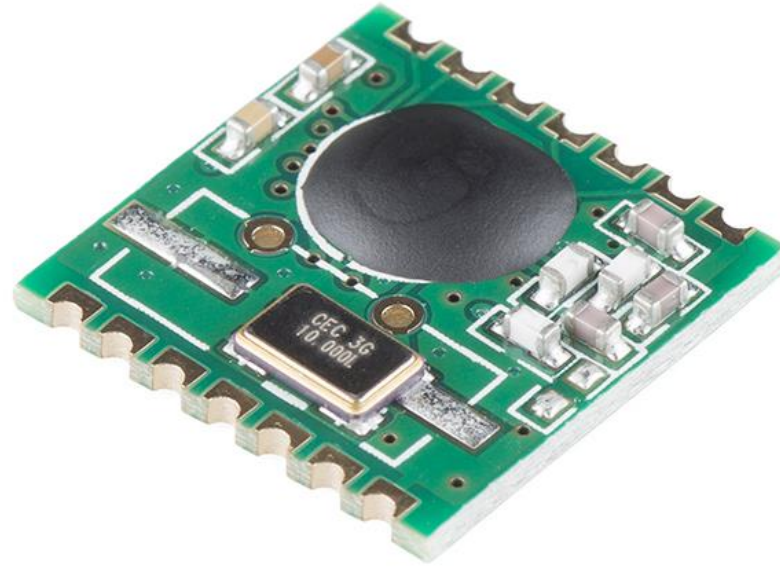- Johnathan Nelson (eurotwelve) – Interface and Graphics

Why would you do this?

- A lot of alcohol started us down this path, and continues to do so every year

What were you thinking?!
(goals of a badge)

- Originally?
  - Gaydar
  - Actually get one done
  - NOT designed by committee
- Later
 - Social and inclusive
  - Pretty
  - Fun
  - Grow every year from feedback

How do these come into being?

- Brainstorming Phase
- Mock Ups
- Development Boards
- Prototypes
- Code code code code
- Production Quotes (code code code code)
- Production! (code code code code)
- (code code code code)
- Flash Production code code code code

What about the QC12 badge specifically?

▶ The badge is built around the Tamagotchi concept, but with an attempt at being less annoying.

▶ Really wanted to have buttons this year (and last year...)

▶ Wanted to focus on the social aspects, but simplify

▶ Different form and use of LEDs

▶ All this equals buttons and display
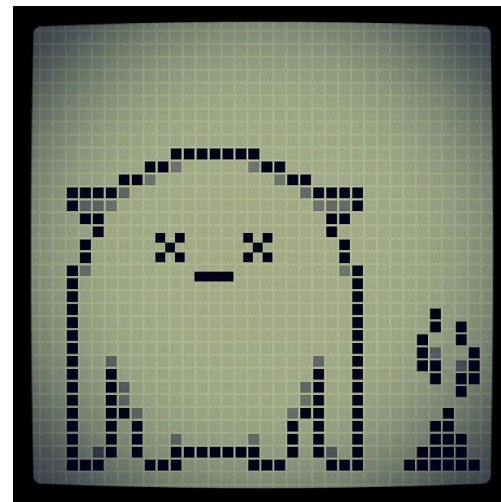
qc12badge technology stack

- Processor: Texas Instruments MSP430FR5949
  - 16-bit microcontroller with 48 KB FRAM memory
- LED controller: Texas Instruments TLC5948A
  - Same family as previous two years
- Display: 0.96" OLED, 128x64 <buydisplay.com>
  - SSD1306 controller onboard
- Radio: HopeRF RFM69CW
  - Proprietary ISM RF module @ 915 MHz
  - Chip antenna

qc12badge technology

▶ Character assembly

▶ Radio

  ▶ Beacon / "gaydar" – 1-minute sliding window

  ▶ Play

  ▶ Befriend

  ▶ Sleep mode

▶ TX Light (oops)

UI/ UX Design Slide

- Japanese Style
- Engrish
- Happy fun time
- Characters, unique but not

What went wrong this year? (Graphics)
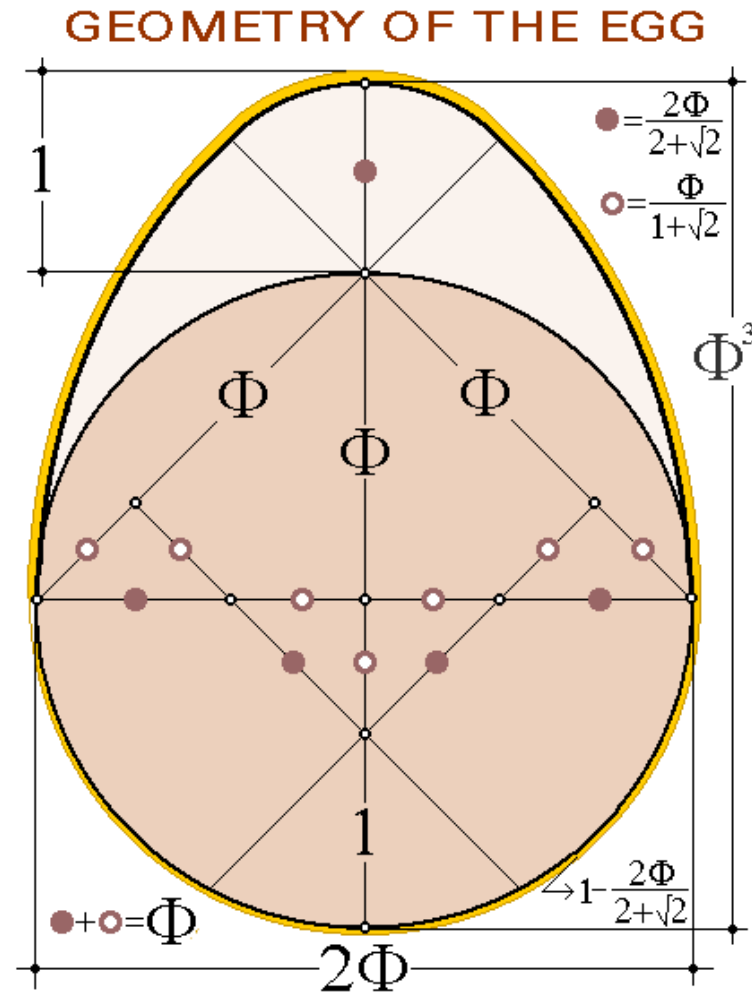
▶ Black Mage (lulz)

▶ Did anything else go wrong?

What went wrong this year? (Software)

- Pairing wtf
- Base station bounds checks
- Testing? What testing?

What went wrong, this year? (Hardware)

- ▶ Stacking headers are stupid
- ▶ Displays are hard
- ▶ Battery life
- ▶ Badge outline
- ▶ Crystal ☹

GEOMETRY OF THE EGG

Funny Story – Datasheets Suck

ABS25-32.768kHz-4 =
(12.5p, 30 ppm) **or**
(4.0p, 20 ppm) ?

Easter egg
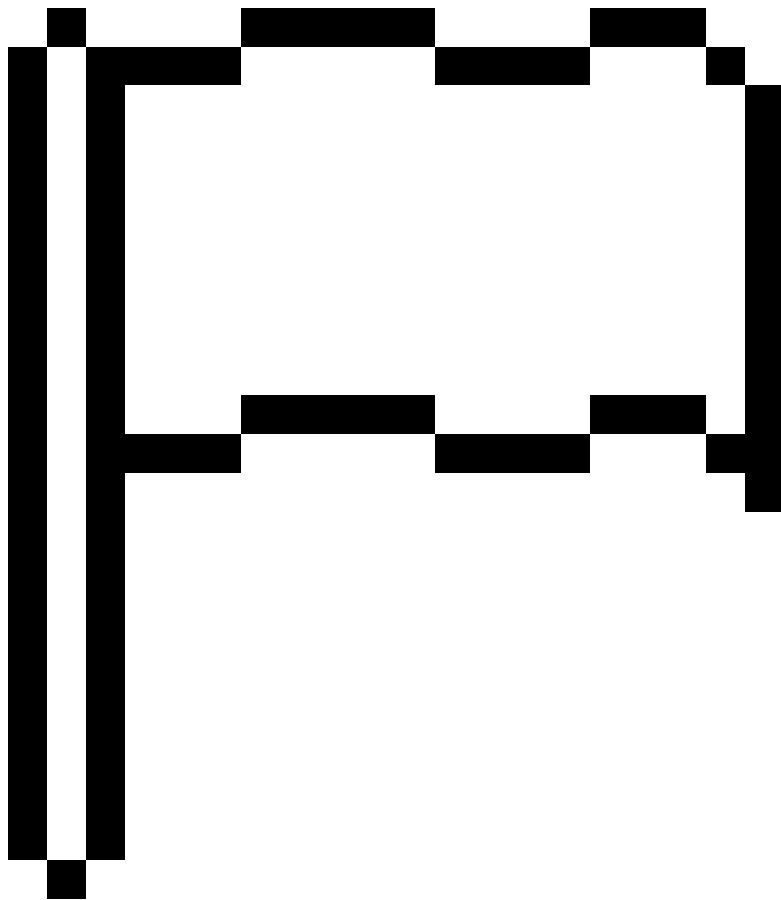
Questions? Ask away!

- ▶ Why don't you want anyone to ask about QC11 Rev C?
- ▶ What was up with party mode during QC10?
- ▶ Why is my badge making that noise?
- ▶ What can I do to help?
- ▶ What is up with the Uber badges?
- ▶ Where do I get parts for previous badges?
- ▶ Why did we go through so many batteries for QC10?