

# Why we built a Smartwatch in ARM Research and ARM mbed

**ARM**

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mbed fest Osaka!  
12 – 20 – 2015

# ARM Research... Back in 2012

**We thought that great IoT wearables should:**

Last months on a battery. Not just days!

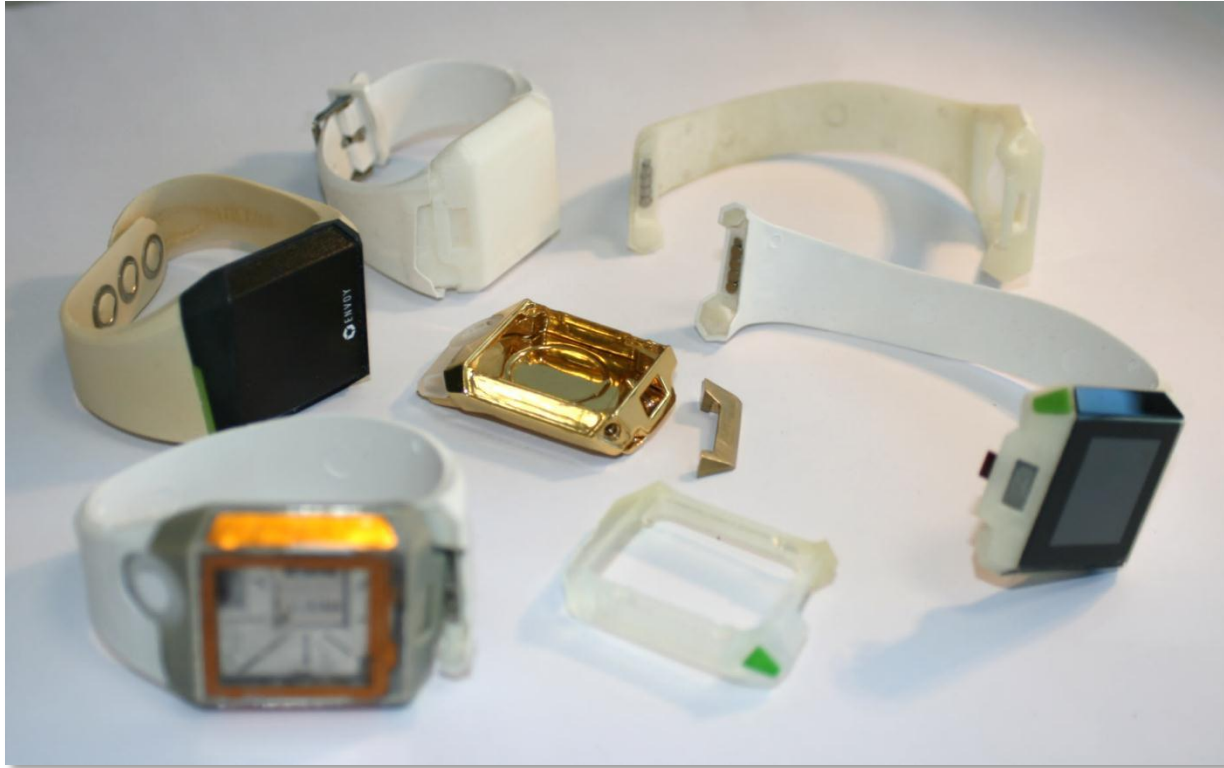
Connect and interact with all your devices easily

Be trusted to open doors, unlock computers and make payments

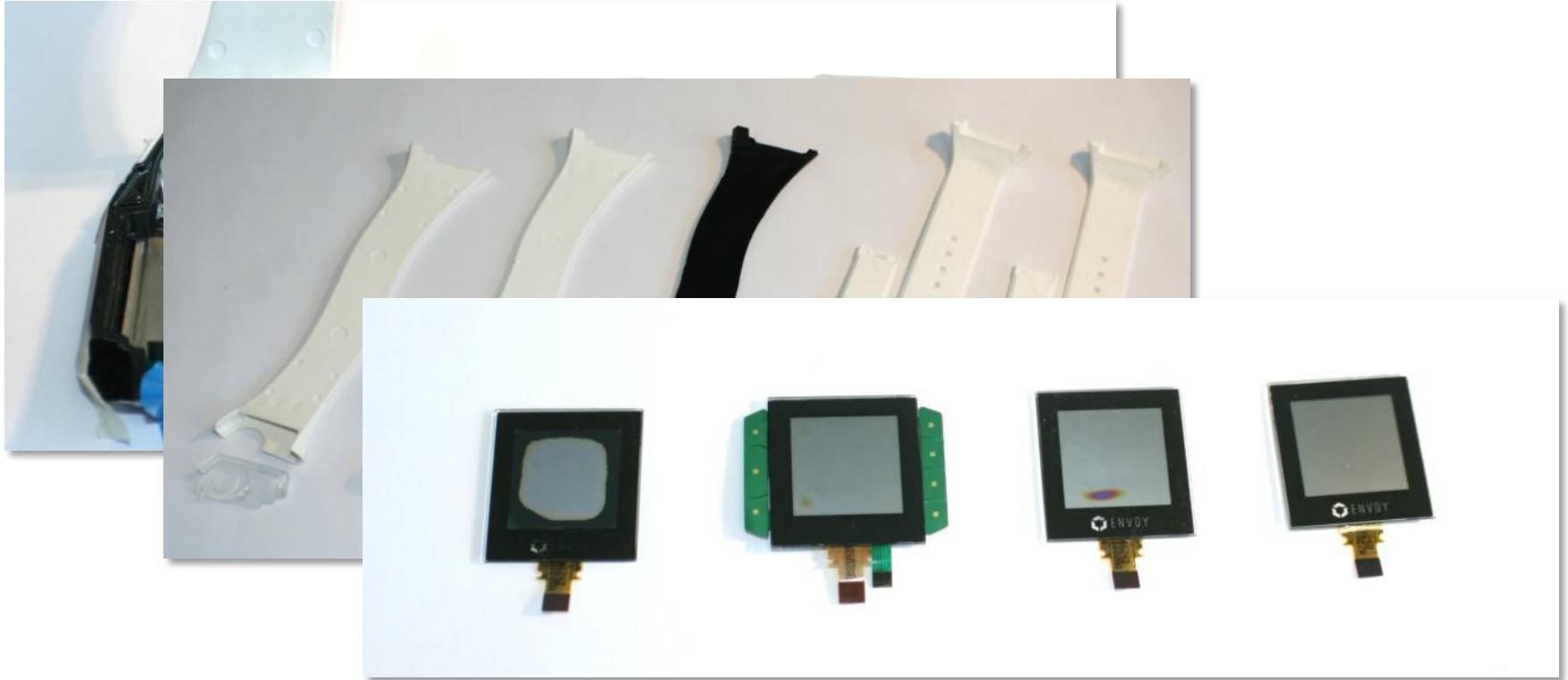
Fade in to the background, not be a replacement for your phone



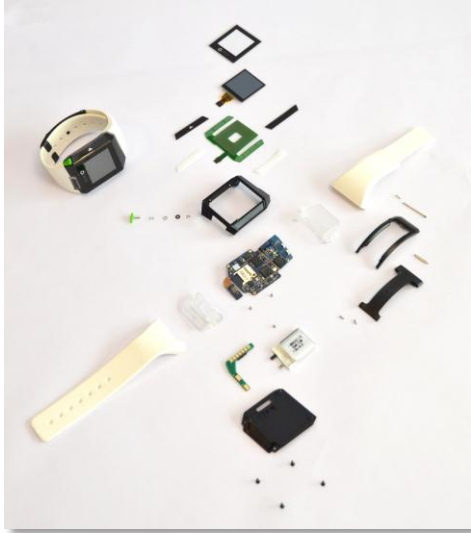
# Prototyping



# Product Design and Testing



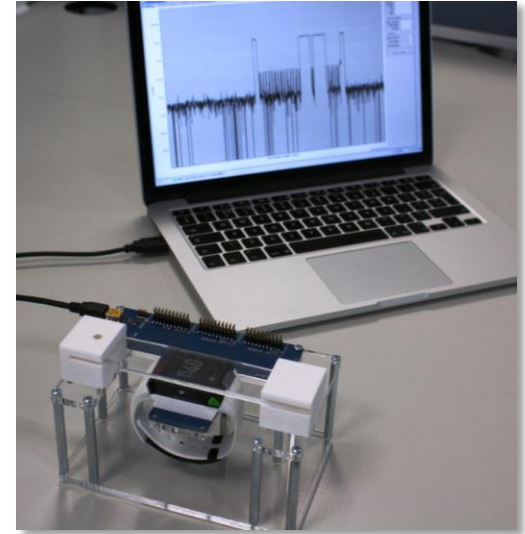
# Finished Watches



Mechanical parts and assembly



Rigid-flex PCB



Programmer and power monitor

# Finished Watches



# What does the Wearable Device do?



BLE  
for connecting to other devices  
and the internet



9-axis sensor  
for activity and health tracking



Fingerprint Sensor  
for securing applications



RFID  
for access control



GPS  
for location services



NFC  
for tag emulation, peer to peer  
communication and payments



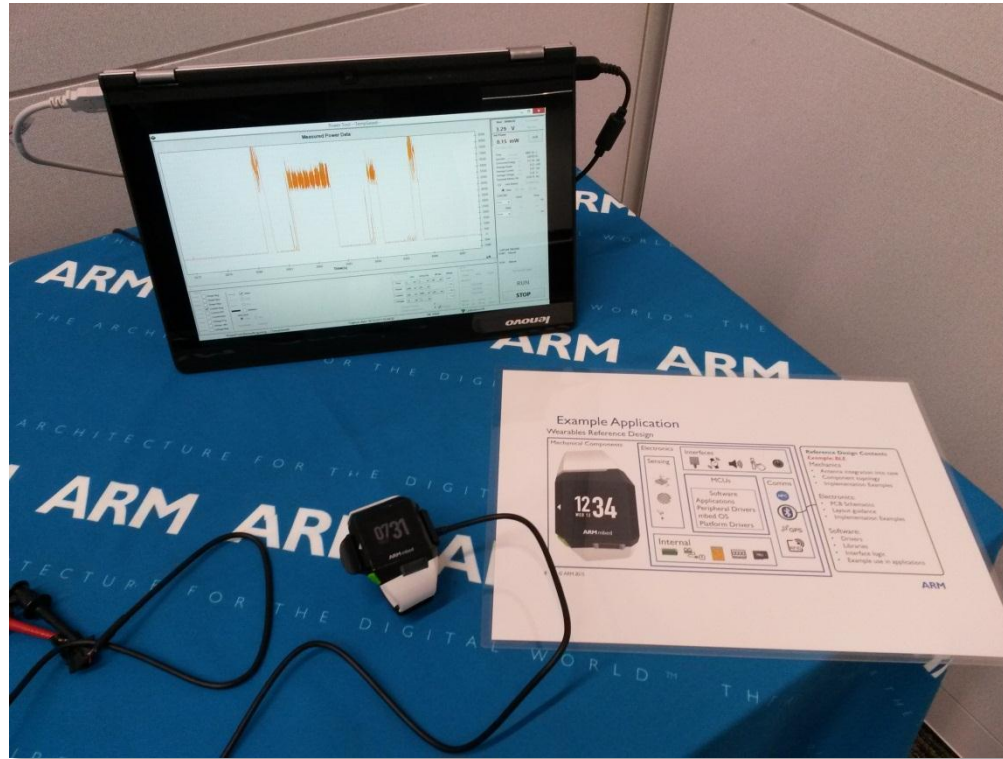
Energy Management  
for significantly longer battery life

# Overview – Interface





# Demo – How to test Low Power?



# What next?

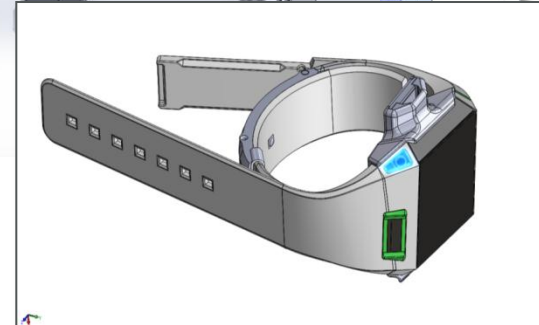
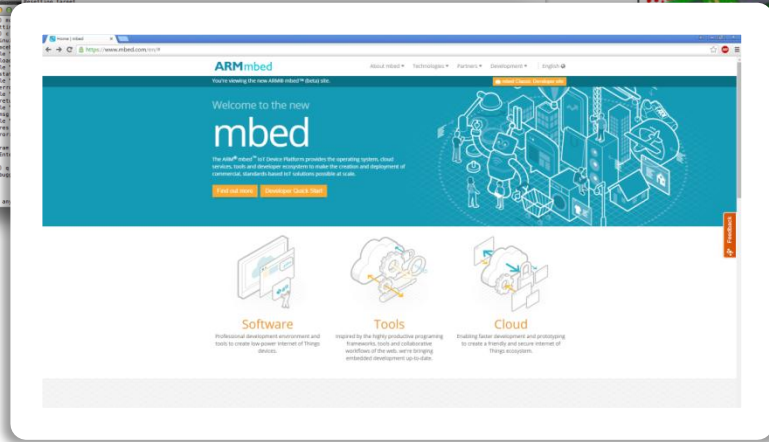
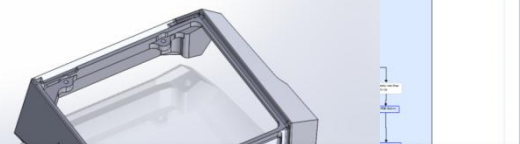
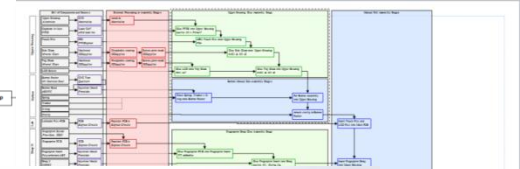
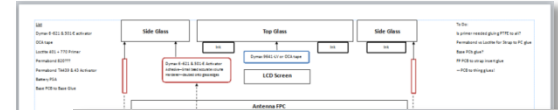
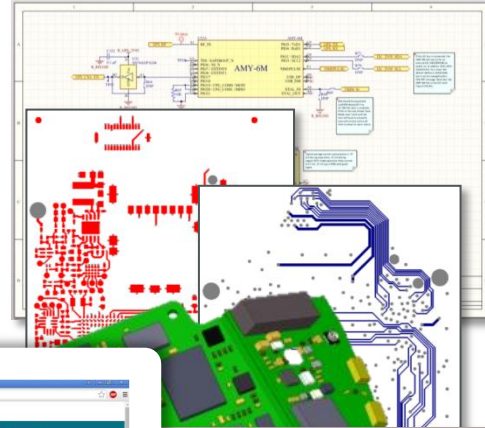
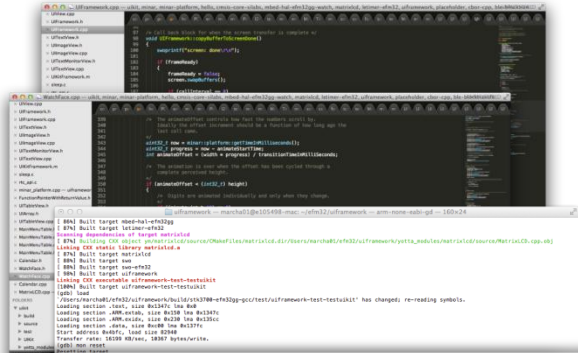
## ARM Research

## ARM<sup>®</sup>mbed™



Reference Design  
Free for developers!

# Available February 2016 on mbed.com



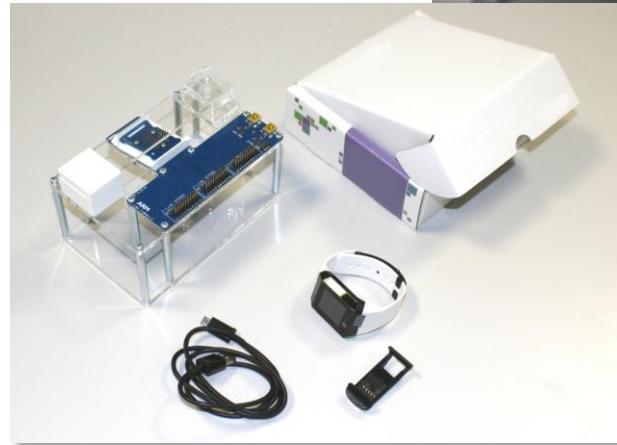
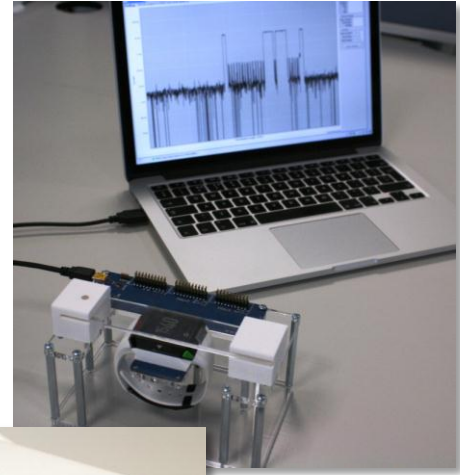
# Wearable Reference Design

- A reference design represents the smallest possible set of components, code and infrastructure needed to bootstrap the simplest working system
- It is a starting position from which a working system can be built, and the building blocks from which it is built upon.
- We want to help people who use mbed and mbed OS to move from hobby project or prototype to real product

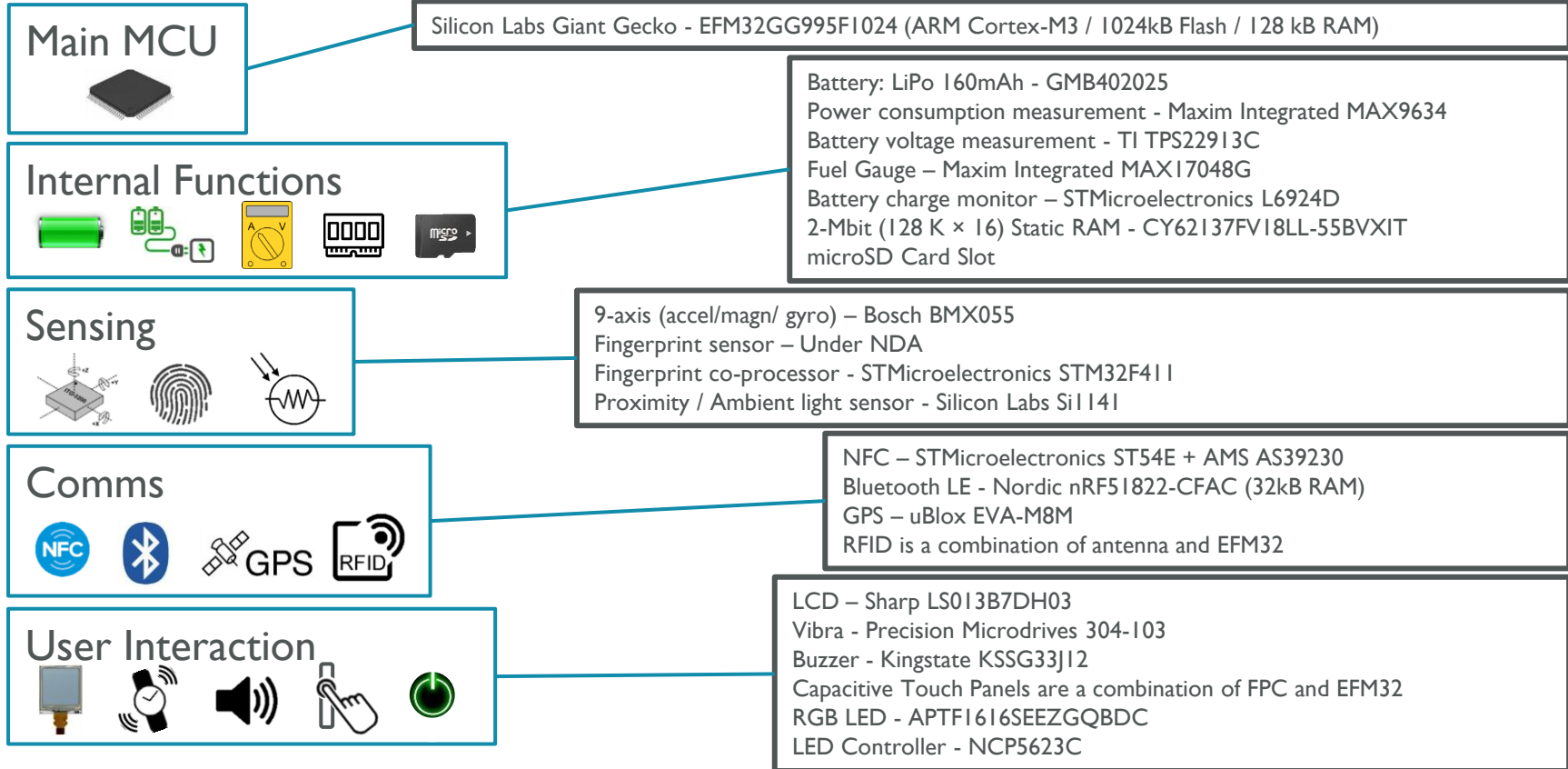


# Are you interested?

- Contact us if you are interested in building a product based on the reference design.
- Coming soon to: <http://www.mbed.com/wearables>
- Email: [support@mbed.com](mailto:support@mbed.com)
- Thank you for listening!
- Questions?



# Bonus Slide – Hardware Specifications



# Bonus Slide - Software Stack

