Progress Update 2

Introduction

Questions and updates in preparation for Client Meeting 2

## Progress

* Tested 8x8 matrix LED – working with micro:bit
* Designed the footprint for all the components needed (180/90 degrees female header, 5x5 LEDs, driver, etc.) - PCB coming together well, planning to order first revision test PCB by Friday once design is confirmed.

## Hardware Queries

* **Size:** Around A4 or bigger. Full size A4 PCB would be very expensive, around £200 the cheapest as we'd need soldering mask ideally, and also very wasteful. Better option would be smaller PCB inside 3D printed (or acrylic with 3d printed backing) case.
* **Buttons:** The ideas that were considered for the buttons are as follows:
* Buttons in the front (middle)
* Buttons in the front (bottom)
* Buttons at the back with indicators in the front for students to see
* After the survey results, it seemed that most of the teachers would rather have the buttons in the front of the megabit. Retaining style of micro:bit important for allowing visually impaired students to use it as a learning tool.
* **LEDs:** 8x8mm (relatively low brightness), will students be able to see it?
* We are considering the option of having LEDs at the back to make it easier for teachers. The results of the survey were 50/50 regarding that option.
* Use two micro:bits, one at the back maybe as an alternative
* **Powering:** Use of a switch to power either with 5V USB or 2AA batteries (implemented via DPDT on-off-on switch).
* For the 2AA batteries, a boost converter steps the voltage up from 3V to 5V for the LED driver. The driver works for 4.5-5.5V.
* To power the micro: bit and edge connector the output of the boost converter or the 5V USB are fed into a 3.3V linear voltage regulator.

## Survey Results

* **Built-in speakers/headphone socket?**This will be low-quality sound as there isn't an AnalogOut pin. If we do it. we would need to sacrifice 2-3 pins.
* **Handle for people with disabilities?**
* **Stand for megabit?**