

# PRODUCTION INSTRUCTIONS

## BATTERY MODULE PCBA

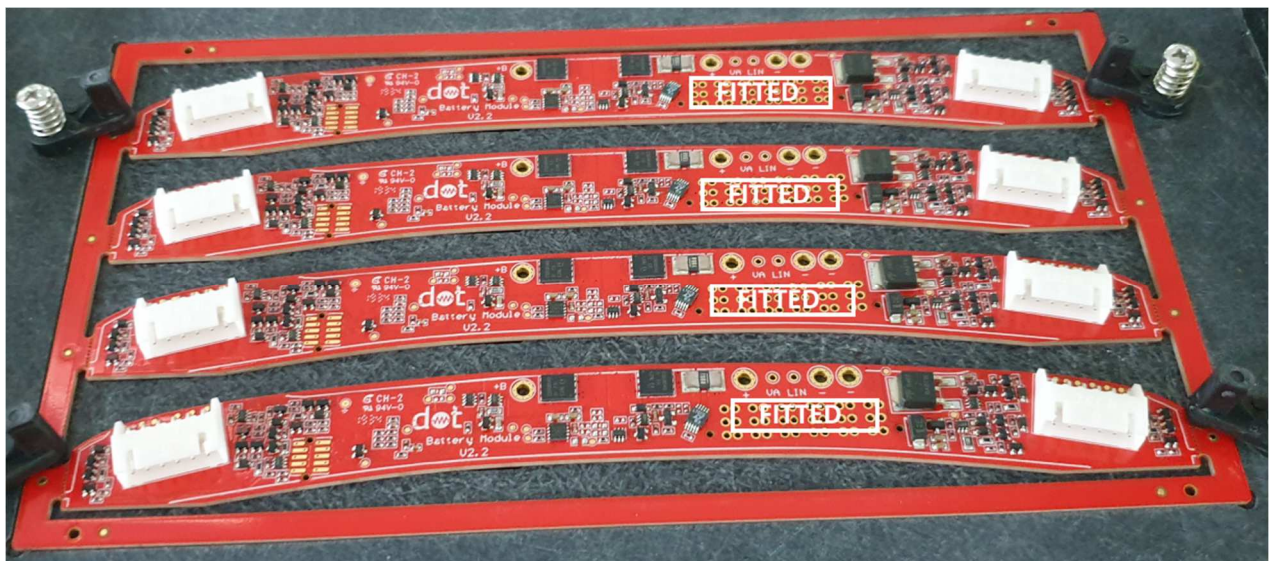
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**Product:** Electric Skateboard  
**Company:** Globe Brand

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## 2 PRODUCTION REQUIREMENT

### 2.1 V2.2

1. 1000 units, supplied in panel. Through hole connectors fitted. No wiring.
2. PCBA Panels to be programmed/tested by Globe in Australia.
3. Panels returned to Union for wiring and assembly. Work instructions for assembly to be provided seperately.



### 2.2 CONFORMAL COATING

Current interest is to have the PCBAs conformally coated with a water-resistant material. This is to be applied after wiring fitted, with connectors masked.

Union to advise on feasibility.

### 3 PRODUCTION BOM CHANGES

V2.2 - No change.

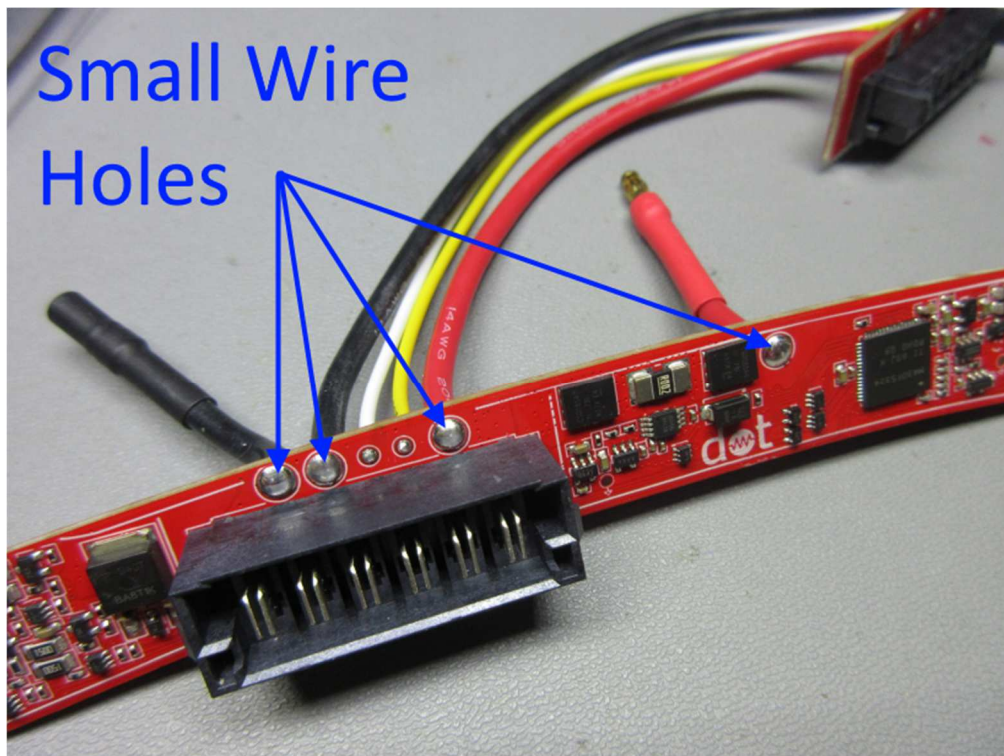
## 4 PRODUCTION PCB CHANGES

V2.2 – with drill hole change.

### 4.1 RECOMMENDED CHANGE – WIRE HOLES

The AWG14 wires on the battery module were not getting sufficient solder wicking in the through hole. This wiring has fine strands and there is less void in the wire cross section for solder to wick.

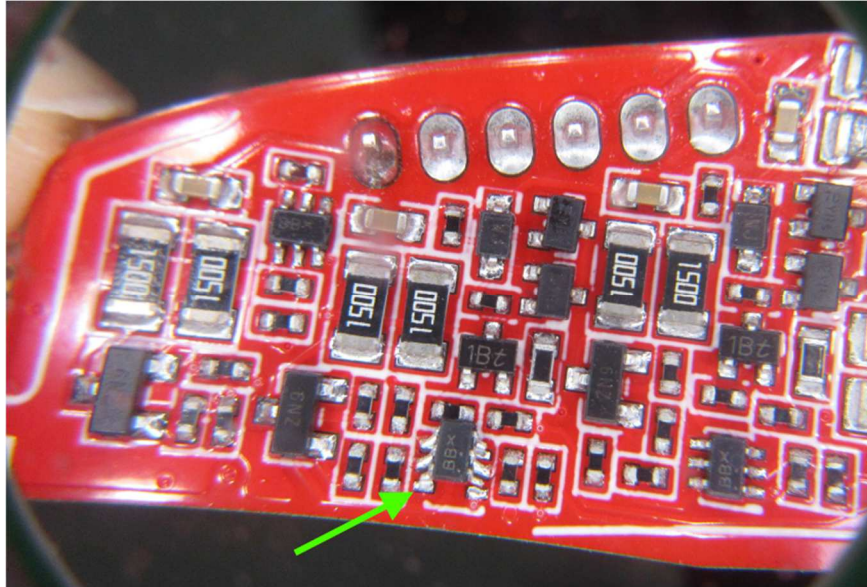
It is permitted to change the PCB drill file to increase the 4x 2.4mm plated through holes, to 2.6mm.



## 5 PRODUCTION FEEDBACK

### 5.1 COMPONENT PLACEMENT

Component T3\_B2 (SOT363) was mis-aligned to same effect for several boards.

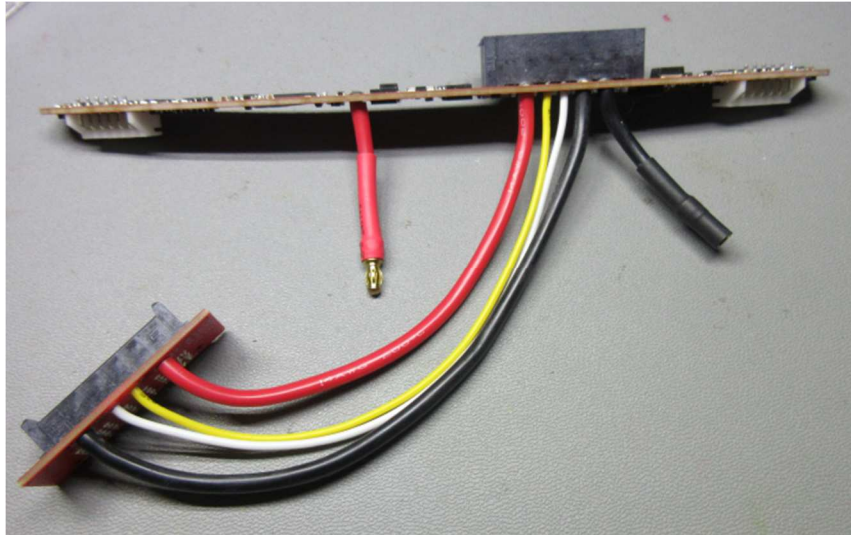


## 5.2 WIRE SOLDERING

Wire soldering needs good solder fill in through holes.

## 5.3 TINNED WIRING

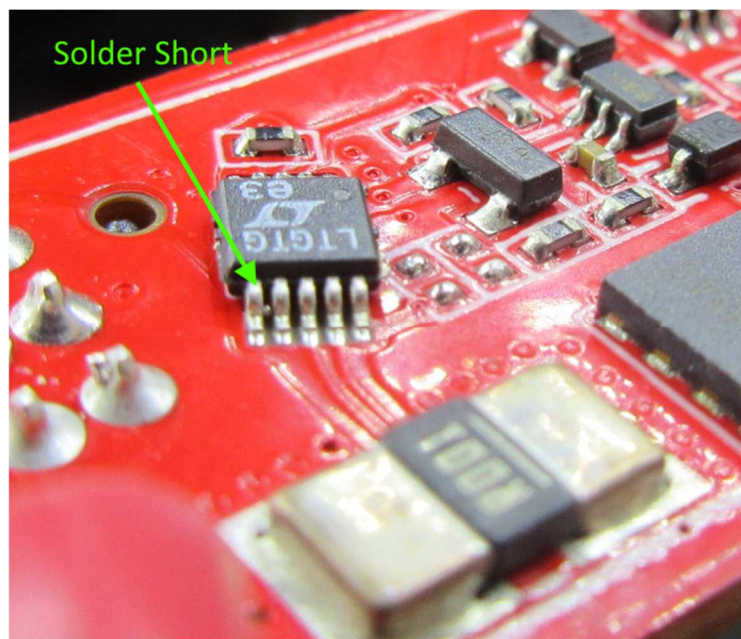
Union supplied wiring. Tinned ends had insufficient stripped length. Kenly advised Union need to revise stripped length to 2.5mm.



## 6 COMPONENT QUALITY ISSUES

### 6.1 IC9

A low number of IC9 (LTC4368IMS-1#PBF) failed initial testing. Only 1 was found with a solder short. There is some concern two reflow cycles and two wave soldering cycles may have contributed to the device failure prior to use.



## 7 SUMMARY

1. PCB drill file change recommended to improve wire soldering.
2. PCBAs to be supplied in panels, without wiring.
3. Panels to be programmed/tested by Globe, then returned to Union for wiring and product assembly.
4. Ensure wire solder through holes filled.
5. Union supplied wiring requires 2.5mm stripped ends.
6. Union to advise on water-resistant conformal coating feasibility.

<end of report>