

PRODUCTION INSTRUCTIONS

REMOTE CONTROL PCBA

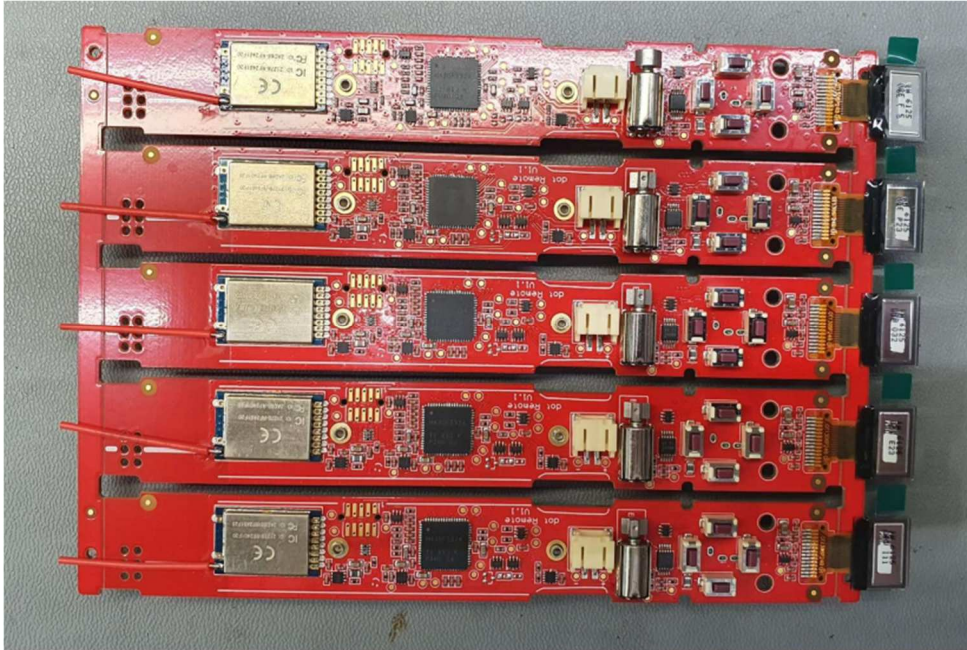
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Product: Electric Skateboard
Company: Globe Brand

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2 PRODUCTION REQUIREMENT

V1.1

500 units, supplied in panel.



3 PRODUCTION BOM CHANGES

V1.1 - No change.

Please ensure the wireless module wire antenna from GNiceRF is included in BOM procurement. It was previously not included.

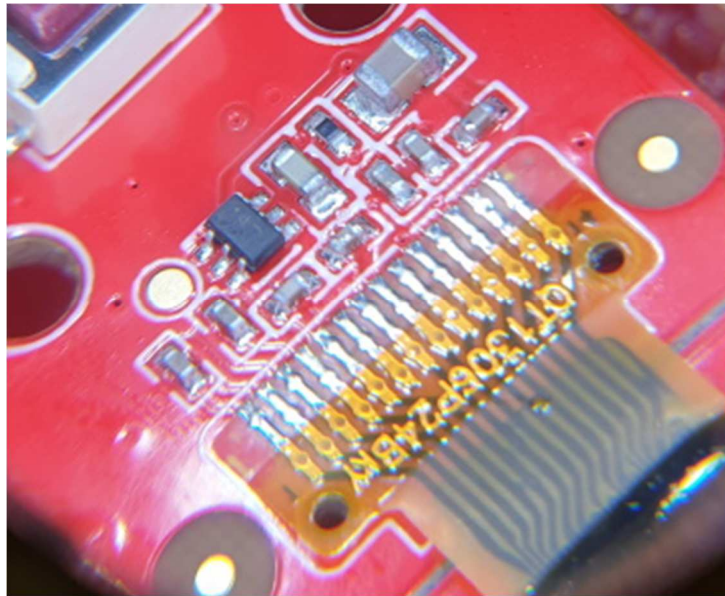
4 PRODUCTION PCB CHANGES

V1.1 - No change.

4.1 OLED ALIGNMENT

In previous production, Union provided feedback on the OLED tab soldering position. The OLED tab overlays the footprint exactly. It is not offset to allow soldering inspection at the edge. This offset could be accommodated by moving the tab alignment holes in the PCB.

Tab soldering in production was good.



The 1.0mm non-plated alignment holes were tight for managing tab alignment pins. It would be recommended to increase this hole size to 1.10mm.

4.2 PCB PANEL DESIGN

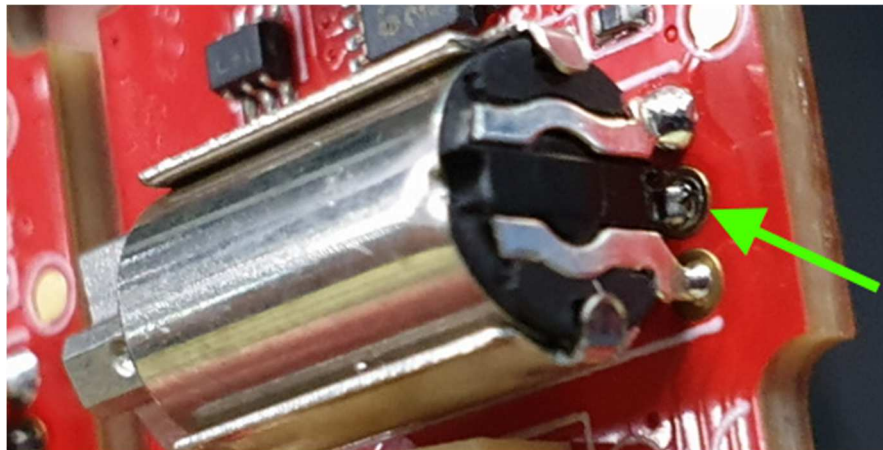
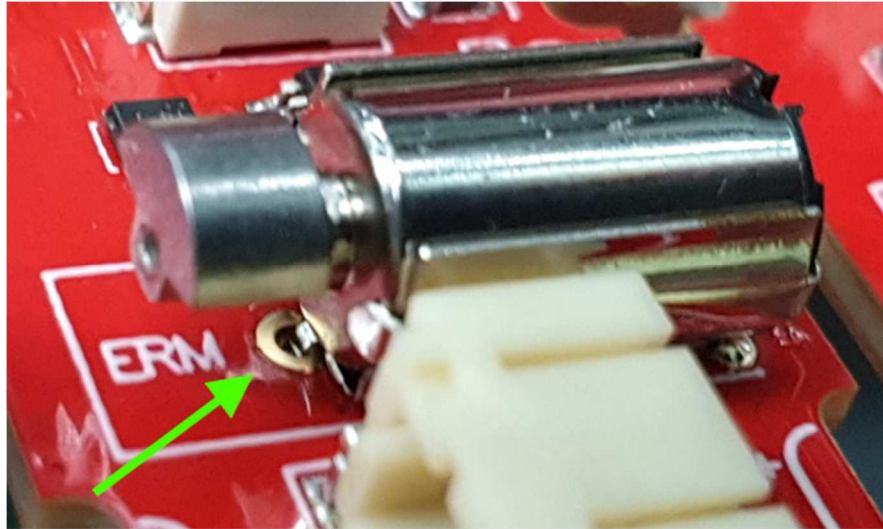
OLED damage had occurred from panel handling. The current panel used in production has 5mm breakoffs. The breakoff width needs to be increased to support and protect the OLED for handling and shipment. This tab must be 15mm.



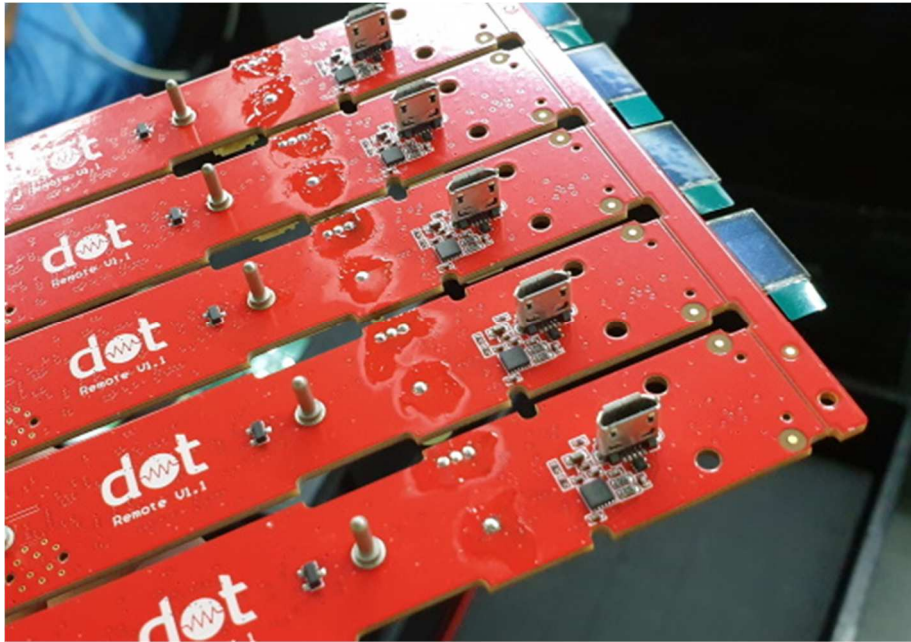
5 PRODUCTION FEEDBACK

5.1 ERM SOLDERING

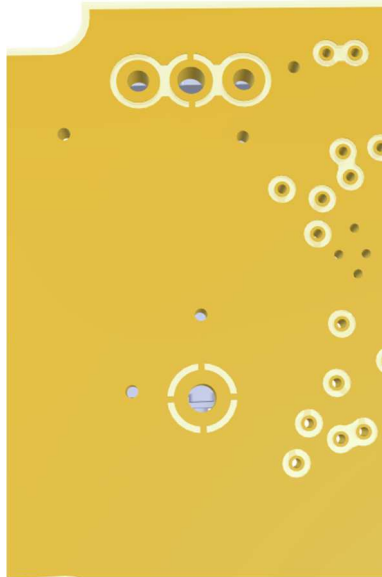
ERM soldering was a significant issue. The solder is not sufficiently wet in the through hole. This soldered joint needs to be improved.



Union Circuits attempted to re-solder all these joints, however re-wetting the existing joint was not effective.



The copper pour on the PCB design is connected with thermal reliefs only on top and bottom layers. Internal layers have pad geometry for all 4 through holes, but no connection. Future PCB revision could remove pad geometry from internal layers only.



Recommend production first uses higher temperature to achieve better through hole filling. Do not rely on re-work to achieve solder fill.

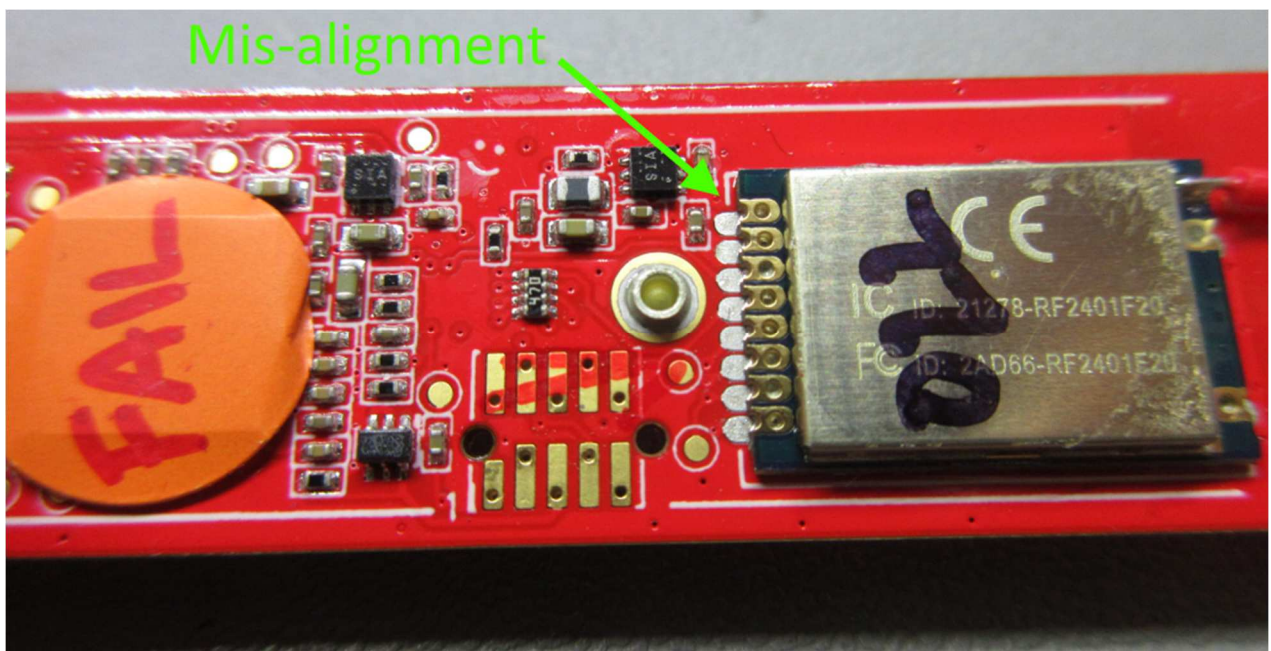
6 PRODUCTION FEEDBACK

6.1 WIRELESS MODULE PLACEMENT

IC7, RF2401F20

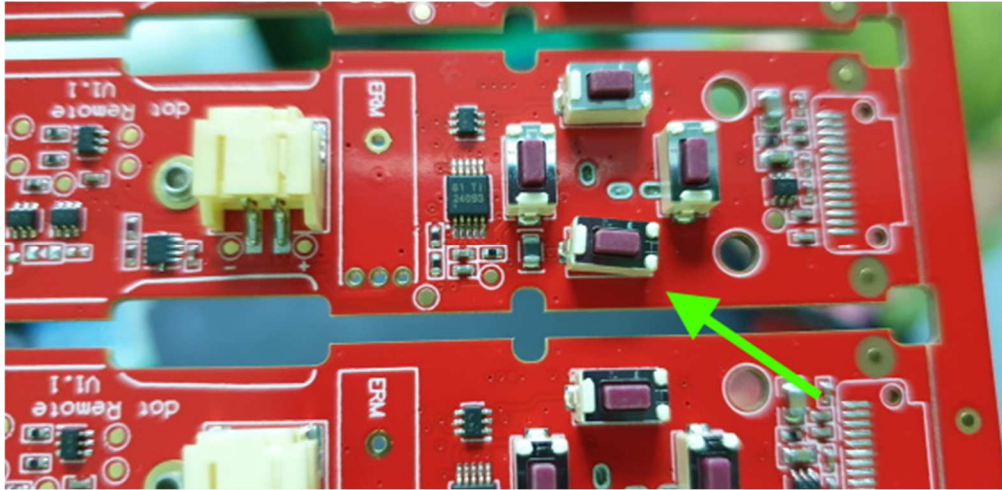
Footprint mis-alignment of this module resulted in failed boards. Alignment error was a production issue.

This must be improved, as many examples had poor soldered alignment.



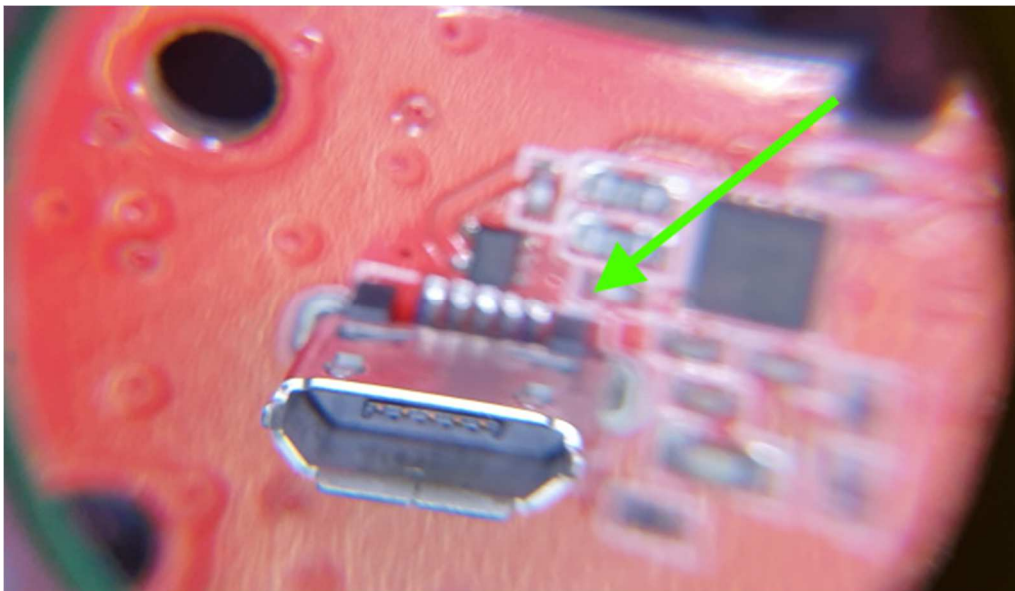
6.2 TACTILE BUTTON ALIGNMENT

Rare issue. Tactile button misaligned.



6.3 USB SOCKET ALIGNMENT

Placement error resulted in re-work for USB connector. Check placement prior to reflow.



7 COMPONENT QUALITY ISSUES

7.1 OLED

Several OLEDs were not functioning correctly. Lines missing in graphic display or low brightness.

Communications is by serial interface and soldering issues could not cause graphic line failures.

Low brightness was not a circuit issue. There were no solder issues. Display unresponsive to contrast commands. In all cases, replacement of OLED fixed issue.



8 SUMMARY

1. V1.1 - No BOM change.
2. V1.1 - No PCB design change.
3. OLED alignment non-plated hole recommended to be increased to 1.10mm. Drill file change.
4. PCB panel design change required. Breakoff where OLED fitted increased from 5mm to 15mm.
5. ERM soldering to improve solder through hole. Must be soldered correct first time.
6. Wireless module reflow soldering needs improved alignment.

<end of report>