PocketPD HW1.3 Thermal Testing August 10/02/2025

1. PocketPD without heatsink

PocketPD HW1.3 features back magnet that also serve as conducting interface when stick to large metal surface. The magnet is thermally conducted to PCB through thermal double-sided tape.

1.1 Test setup

Placing the unit on a plastic, poor thermal conductive surface. Pull 5A at 20V from resistive load. This is the worst-case scenario for thermal performance due to:

- Highest voltage-drop across 3.3V LDO for internal circuit
- Highest current load going through Load Switch.
- Plastic case on, retain more heat.

Test specification:

- Room temperature: 20°C
- Load: 4 Ohm, power resistor
- Measurement device: FLIR ONE Pro
- USB-C Charger: UGREEN Nexode 140W

Fig 1: PocketPD HW1.3 on plastic surface

1.2 Result

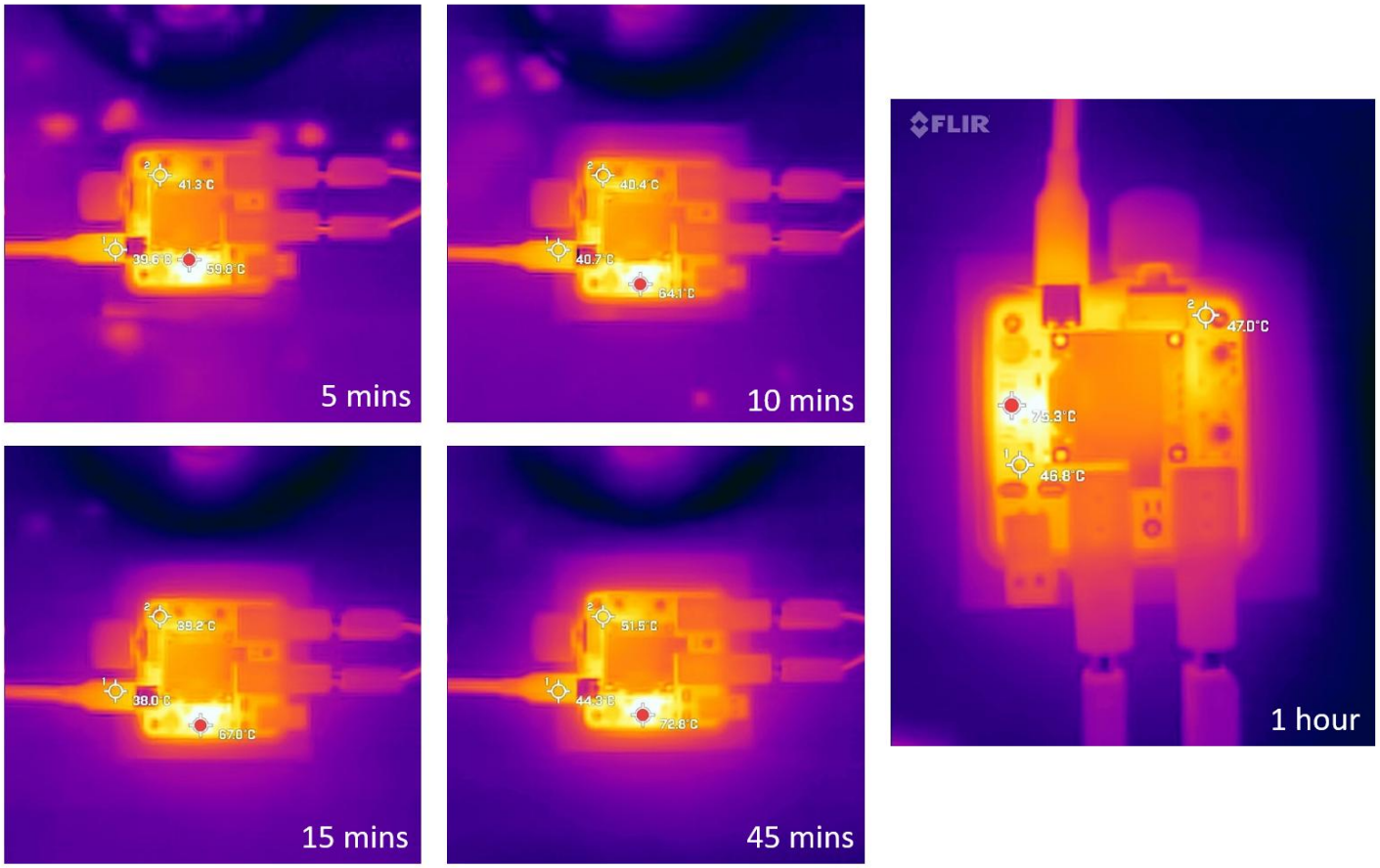

Fig 2: Test result for “no heatsink”

Time	Temperature (C)
5 mins	60
10 mins	64
15 mins	67
45 mins	72
1 hour	75
1 hour 30 mins	75

2. PocketPD with heatsink

PocketPD is placed on a steel plate that will act as heatsink. Heat is conducted through double-sided tape, through the back magnet to the metal surface.

2.1 Test setup

Placing the unit on a steel, thermal conductive surface. Pull 5A at 20V from resistive load. This is the worst-case scenario for thermal performance due to:

- Highest voltage-drop across 3.3V LDO for internal circuit
- Highest current load going through Load Switch.
- Plastic case on, retain more heat.

Test specification:

- Room temperature: 20°C
- Load: 4 Ohm, power resistor
- Measurement device: FLIR ONE Pro
- USB-C Charger: UGREEN Nexode 140W

Fig 3: PocketPD HW1.3 on metal surface

2.2 Result

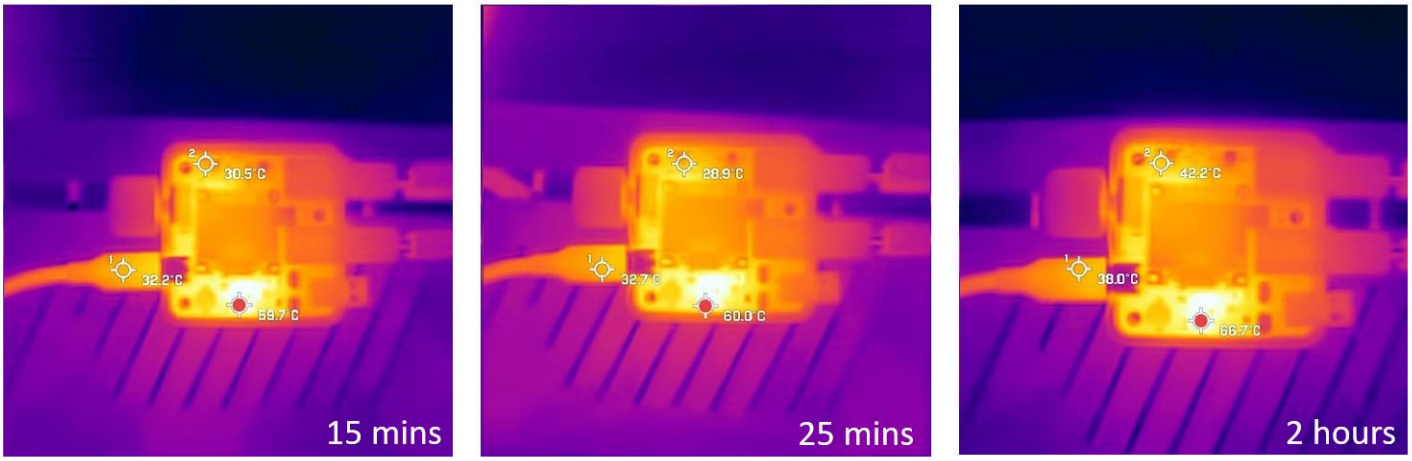

Fig 4: Test result for “no heatsink”

Time	Temperature (C)
15 mins	60
25 mins	60
1 hour	66
2 hours	67