Measuring the reflow profile

Thermocouples are a good way to locally measure temperature. They are connected to a system that records the temperature changes in time. Different equivalent systems exist on the market.

**How to measure:**

- The profile has to be measured on the same board that runs in production.
- Measure on a solder island, close to a lead of a component.
- Do not cover thermocouples with tape. The leads can be taped to hold them.
- To get good contact, you can cover the thermocouple with a little bit of high melting point solder.
- Beware that the leads of the thermocouples cannot get stuck inside of the oven.

**Where to measure:**

- In the middle of the board on a small (1) and a big component (2).
- On the side of the board on a small (3) and a big component (4) (heat transfer to the conveyor).
- Near Heatsinks: Big copper masses, shields,... (5)

**Understanding:**

- The recorded profiles should be inside the process window limits of the prescribed profile.
- A fresh board consumes more energy than a measuring board that has already been soldered. Actual temperatures are a bit lower than the measured temperatures because of flux evaporation of the solderpaste.