Soldering the SMT Base to Your PCB

There are three recommended ways to solder the SMT base to your PCB.

- **Infrared re-flow** soldering machine and solder paste.
- **Hot air** re-work station and solder paste.
- **Hand soldering**. (Optional alignment pins are recommended in this case.)

Hand soldering

1. Make sure the yellow Kapton tape is in place on the bottom of the SMT base to assure that there is no unwanted contact with the target board circuits.

2. Use rosin core solder wire. 31 Mil thick soldering wire works best.

3. Alignment.
   - **Visual alignment**. When not using guide pins, the SMT base must be held in position while soldering. Use a small piece of double sided adhesive tape, a drop of slow acting glue or a touch of solder in opposing corners to temporarily maintain alignment.
   - **Guide pin alignment.** Using optional pin guides and creating matching PCB holes makes base alignment accurate and easy. The SMT base alignment pins are then plugged into properly placed matching holes that were designed into the target PCB. (Drawings are available on request.)

4. Use the correct soldering flux.
   - Apply **only rosin based flux** to the mounting pads and SMT base.
   - Water soluble flux is an organic acid. It cannot be cleaned from the narrow gap between the base and the target PCB. In a couple of days or weeks (dependent on humidity and temperature) damaging corrosion takes place.
   - Use flux liberally - Flood the contact area with flux.

5. Use an appropriate soldering iron having sufficient heat capacity.
   - Use approx. **50 mil wide chisel iron** or a one of a similar heat capacity.
   - The soldering iron must be able to maintain a constant temperature of at least **700 degrees Fahrenheit** for the best results.
   - **Do not use** a needle tip soldering iron. It does not have enough heating capacity to maintain at least 700° F, and will make a bad solder joint and damage the SMT base side contacts.

6. Apply solder on the tip of iron until it makes a molten solder ball. Place the solder ball at the beginning of the line of base contacts. **Only the solder ball should touch the contacts** . Draw the iron down the line in a smooth motion. A line of 25 contacts (e.g. one side of a 100-lead QFP package) should take approximately one second to solder.