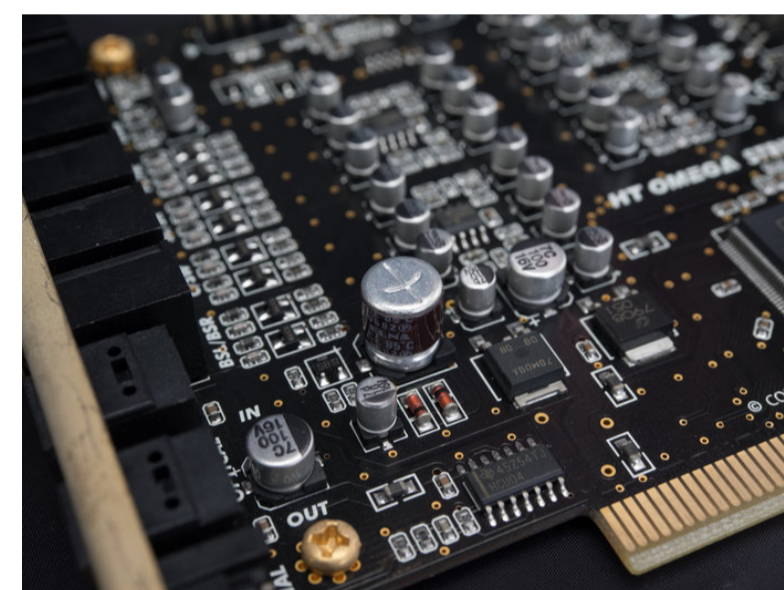


## QPlan - NPI tools included

Fast programming of SMT machines and NPI testing in one breath

[QPlan](#) provides a simple and easy-to-use solution for both: the tooling process and NPI tests. Customers using QPlan report that tooling errors are drastically reduced and in many cases are eliminated. They also report that tooling time is reduced from hours to less than 30 minutes and even less, depending on PCB complexity. Additionally, the number of FAI cycles is reduced. Other reported benefits of using QPlan are savings in material costs and decreased turn around time for models.

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### Focus on Tests : Basic Functions

#### [Angles \(Rotation\)](#)

This is based on position of polarity (first pin) from CAD file and default position of mark polarity from SMT machine component library.

#### [X,Y position of component center](#)

It solves a problem of deviations automatically such as First Pin as Center of Component (a classic problem).

### Focus on Tests : NPI Tools

We found that NPI process of SMT is mostly similar and sometimes overlapping to tooling process. In addition, in most cases the programmer is part of the team working on the NPI process.

So, [QPlan](#) was extended with NPI Tools as a part of tooling process. This allows the team to carry out the NPI process at **offline**. And at the end of it, [they can create corrected SMT program at zero time](#).



NPI Tests is including:

- Pin size vs. Pad size based on IPC-7351 standard
- Pin on Pad symmetric positions (Pitches)
  - Important to prevent pin in the air
- Keep Out between Components
  - Important to keep distance for rework
- Components, Pads and Fiducials on PCB margin
- Overlapping space between components:
  - Component over Component
  - Shared PAD position between components
  - Distance between PADs of closest components
    - Eliminates short between pads
    - and more ...
- Correlation of shape names between CAD and BOM
  - Important to detect incompatibility of shapes such as 01005, 0201, 0402 etc.



### Also included...

- Check compatibility between CAD and BOM
- Check for missed components on SMT machines
- Build panelization
- "Locator" – A graphical display of the placement plan based on SMT machine shape library
  - Locator allows for component search by catalogue number, shape and designation.
  - Ability to change placement angle
  - Export tabular file for other machines such as AOI
  - Recheck SMT program with a CAD file

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