

QPlace-UPD

Decreasing Tooling Time and Errors

Update placement files in Line computer from ECO (NEW BOM)

Do your SMT line operators spend hour's manually editing BOM files from many sources and formats?

Do you experience expensive placement errors due to manual preparation of placement files?

The need for automated tooling

In today's electronic manufacturing world, there are Many Engineering Change Orders with little room for errors or wasted time. SMT lines face complex PCBs with increasing number of placements. As a result, the time spent on updating placements files increases and so does the risk of making placement errors. This problem is further intensified by the large diversity of products produced by SMT lines and due to the fact that the inputs for the tooling process arrive from a range of sources in a myriad of formats. Manual tooling can take hours if not days, depending on PCB complexity and quality of data. Errors in the tooling process lead to costly placement mistakes and result in even more expensive repair work. In this environment, an automated update mechanism that saves time and reduces errors is essential.

QPlace-UPD

QPlace-UPD provides a simple and easy to use solution for updating the placement files in the Line computers following ECOs. It does so by combining the new Bill of Materials with the placement files that already exist on the line computer. It validates the data and automatically creates all the necessary inputs required by the SMT machine.

QPlace-UPD also includes the "locator" - a graphical representation of the placement plan (PCB and its components) that allows the operator to view and modify component placements, emphasizing the changes from the original placement file.

Features

- Process new BOM files in any format (TXT, XLS, DOC etc)
- Merge placement files from line computer and new BOM data while verifying data integrity
- Identify components from new BOM that are missing from placement file.

- Match components to SMT machine's shape library
- Automatic generation of SMT machine setup files (Siemens Siplace and Siplace-pro).
- "Locator" - A graphical display of the placement plan based on SMT machine shape library (emphasizing changes from original placement).
- Component search by catalogue number, shape and designation.
- Ability to change placement angle
- Ability to perform Offline tooling
- Seamless file upload - upload files to the SMT machine without halting machine work (for models that have line computers).
- Support for hybrid SMT lines - One tooling for all machine types

| Ref | Call No | Description | Des | X | Y | Angle | Shape | Component | Shape | Top/Bottom |
|-----|---------|-------------|-------|-------|------|-------|--------------------|--------------------|-------|------------|
| 1 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 270.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 2 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 270.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 3 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 4 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 5 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 6 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 7 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 8 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 9 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 10 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 11 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 12 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 13 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 14 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 15 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 16 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 17 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 18 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 19 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 20 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 21 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 22 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 23 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 24 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 25 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 26 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 27 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 28 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 29 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |
| 30 | 01000 | 01000 | 01000 | 46.89 | 2.48 | 180.0 | 0805 2 (PT) 3 (mm) | 0805 2 (PT) 3 (mm) | TOP | TOP |

Figure 1: Merged placement and ECO data

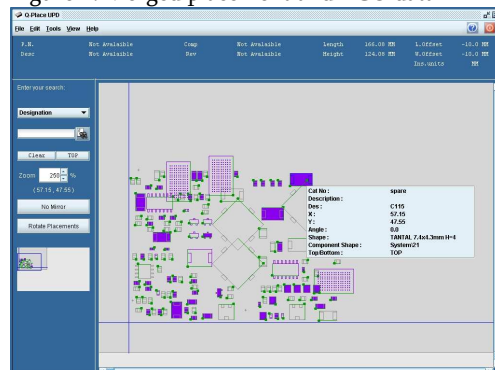


Figure2: Graphical display of placement plan emphasizing changes (in purple)