



Tropical Assemblies Program Guidelines (Including Consigned Jobs):

Thank you for considering TAI as your provider for your custom electronic assembly needs. This deliverables list assumes that this order is **not** RoHs compliant and **is** IPC Class 2, unless specified on your RFQ and PO. In order for us to meet our commitment, we will need you to provide us with the following list of deliverables. **TAI will begin work on your project upon receipt of all deliverables.**

1. **Purchase Order**
2. **Credit application - unless already on file and approved.**
3. **Name, phone/fax/ numbers and email address's of key contacts (Design Engineer, QA, Purchasing)**
4. **Bill of Material (BOM) in ASCII format or -excel (.xls)**
 - The BOM needs to include complete part descriptions, package sizes, component types, tolerances, values, reference designators, voltages (if applicable), and manufacturers' part numbers.
5. **Customer Supplied Parts (Consigned)**
 - Whenever possible, a minimum of 10% spare parts (attrition) should be included (i.e. extra resistors, capacitors, SOT23 packages, diodes, IC's, etc.).—**a leader requirement of 6" must be met on all reels.**
 - Parts must be labeled with part number and supplied with a packing list of complete kit.
 - Surface mount components **must** be supplied ready for acceptance by the automatic placement equipment (on tape and reel with a minimum 6" leader, in tubes, or in waffle packs). Please **do not** ship loose parts, unless with prior acceptance, as this will only delay the job and could increase the price.
 - We are unable to machine place components larger than 2.9" x 2.9".
 - Parts are to be supplied in ESD shielded or dissipative bags. TAI reserves the right to return or reject any components not properly packaged in ESD safe packaging. TAI will return any unused components in the same packaging it was sent to us in.
 - If bare boards are customer supplied, they **must** be accompanied with a Certificate of Compliance. TAI reserves the right to reject any bare boards that does not conform to appropriate IPC or cleanliness standards. Also, if the board is in a different configuration than quoted (i.e. no rails on the board when quoted with rails), then TAI will determine if additional labor or tooling/fixturing are required and notify the customer accordingly.
 - Customer supplied components containing hazardous material (e.g. Mercury) must be labeled and the assigned TAI Program Coordinator must be notified prior to shipping to TAI Facility.

Moisture Sensitive components must be in a vacuum-sealed moisture barrier bag with desiccant and a humidity indicator card contained inside. The humidity indicator card must include the following humidity increments 5%, 10% and 15% and must be blue when received by TAI. When the humidity indicator is blue, this ensures that the humidity level inside the vacuum-sealed moisture barrier bag is below the required recommended lever per IPC and JEDEC. If the components are not in a vacuum-sealed moisture barrier bag or the sealed packaging has been compromised in such a way that the humidity indicator reads (pink) 10% or greater, the components will require baking. If this condition is evident, a delay in the order may occur. If baking is required, specific instructions must be provided and an additional expenditure may be added for the baking process.

6. **Complete gerber files, PCB fabrication, and Assembly prints or drawings on disk, or e-mailed directly to the assigned TAI Program Coordinator. Data should be packaged in a single zip file.**
 - **Verification of complete and usable gerber files must occur by 10:00 a.m. Eastern Standard Time in order to consider that particular day the first day of your total delivery time.**
 - Drill files should be grouped by size and in Excellon format.
 - Apertures should be flashed rather than drawn.
 - Please output route profiles, end points, test points, etc. whenever possible.
 - **Complete gerber files and fabrication drawings include:**
 - Gerbers in electronic format (RS274x format preferred, **apertures imbedded**.)
 - Drill file and report listing finished hole sizes, tolerances and quantities for each hole (**Hole chart**).
 - Soldermask file(s).
 - Solder paste file(s).
 - Silkscreen(s)- with polarity and pin 1 markings identified properly.
 - Board profile, outline, array size, number up.(step in x, step in Y).
 - Fabrication drawings in .gbr, .dwg, .dxf, **pdf**, or hardcopy format.
 - Aperture list information should include coordinate format, coordinate mode (absolute or incremental) and zero suppression.
 - Net List provided in IPC-D-356 or Mentor Neutral format.
 - Any Board Specifications.
 - Any other pertinent information needed to begin production according to customer specifications.
 - **Any change to any of the data supplied may reset timeframes.**
7. **CAD Data File in ASCII format**
 - This data is converted to a program to run the surface mount machines. It should include component Reference Designation, centroid data x, y coordinate information, Rotation, package information.
8. **RoHS Compliant - Customer Supplied Parts (Consigned)**
 - It is assumed that the customer will alert TAI of any lead-free components that TAI must place on the board. Given that lead-free components tend to have a higher thermal profile, TAI assumes that the customer has reviewed all of the board components and the PCB, and that they (board and all components) will withstand the higher thermal profile. If you are placing a Lead free BGA, the bare board must withstand higher temps and will need a Tg of 180 or higher. The customer must provide a data sheet for all active components that are lead-free to assure that proper thermal profiling is performed. TAI cannot guarantee/warrant proper adhesion to the board or properly wetted solder fillet for lead-free components if the customer does not alert TAI of the component requirements in advance of production.